

April 1, 1941.

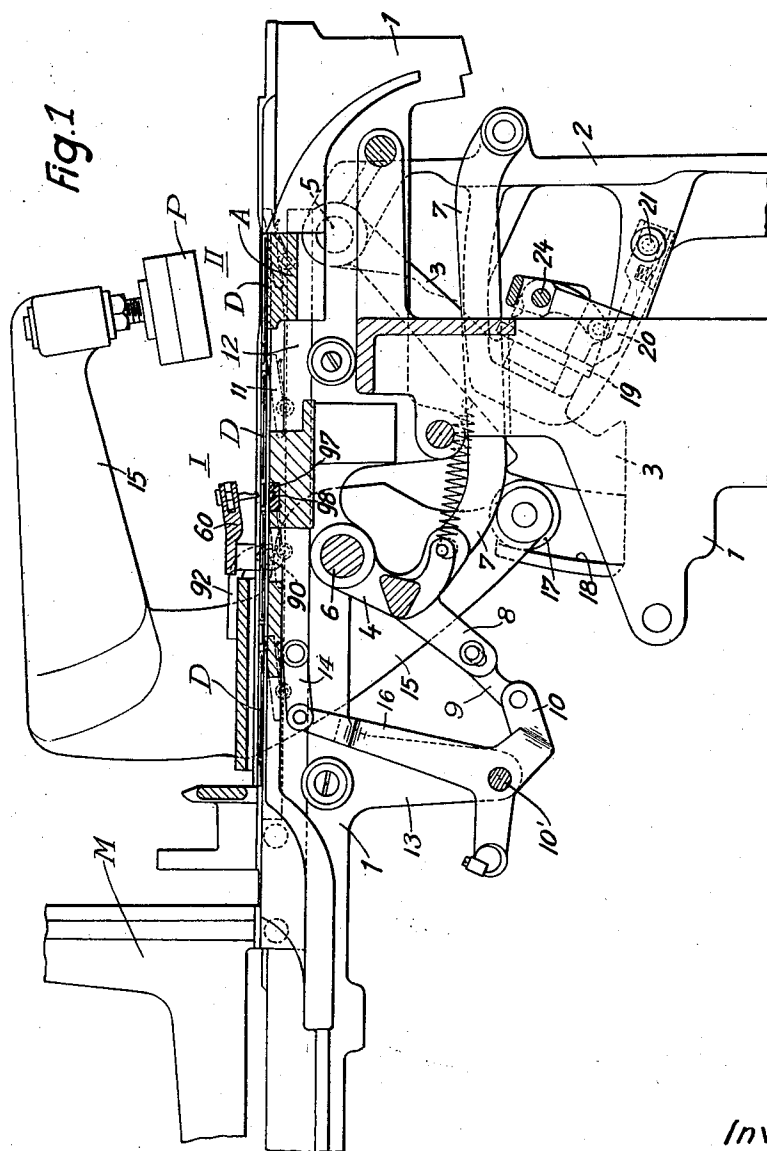
A. THURMANN

2,236,632

PRINTING MACHINE

Filed July 10, 1939

6 Sheets-Sheet 1



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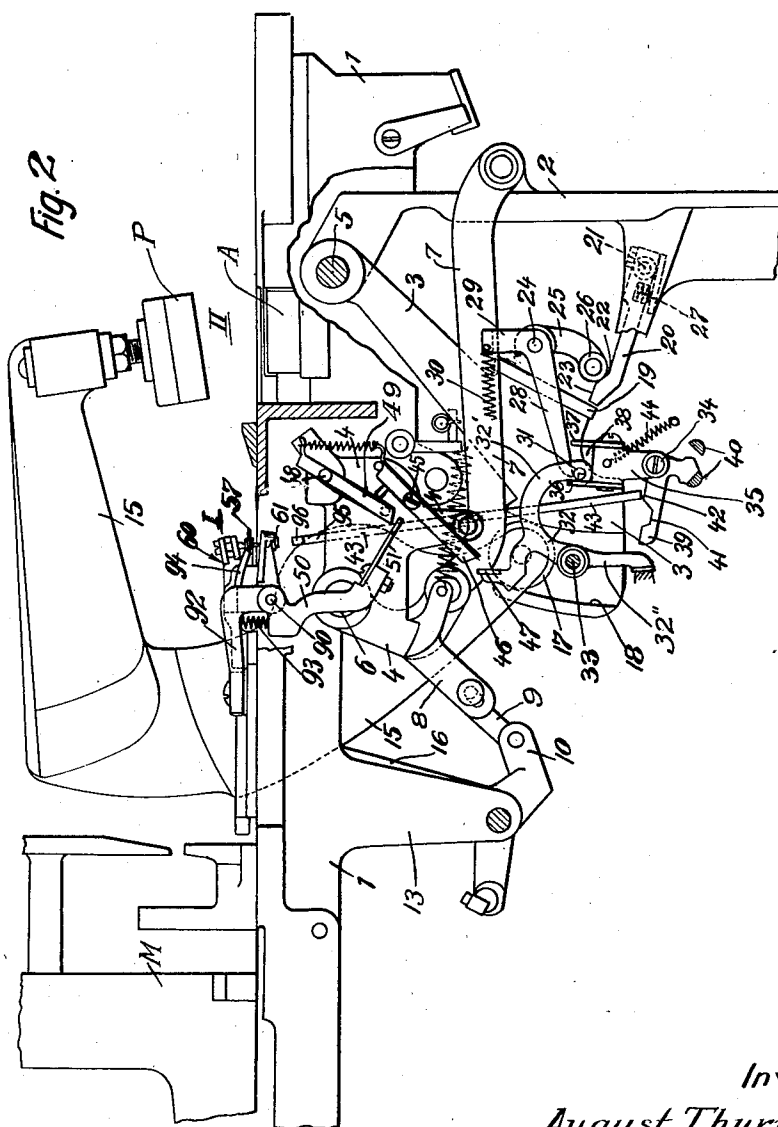
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A. THURMANN
PRINTING MACHINE

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6 Sheets-Sheet 2



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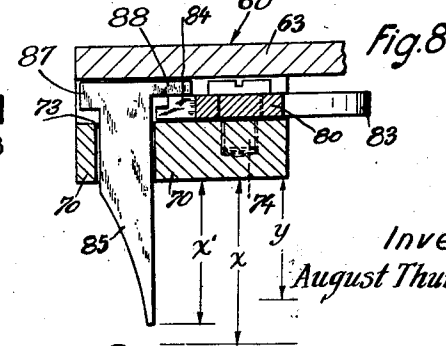
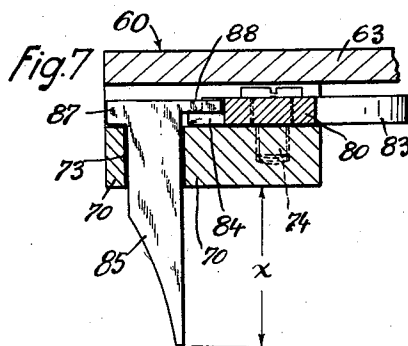
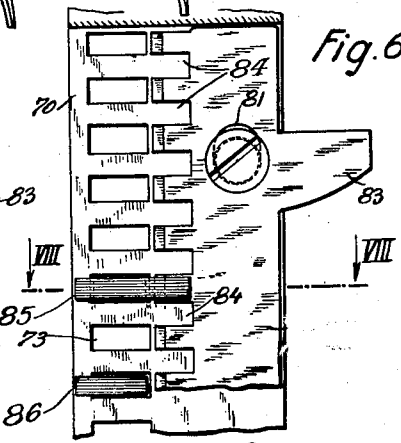
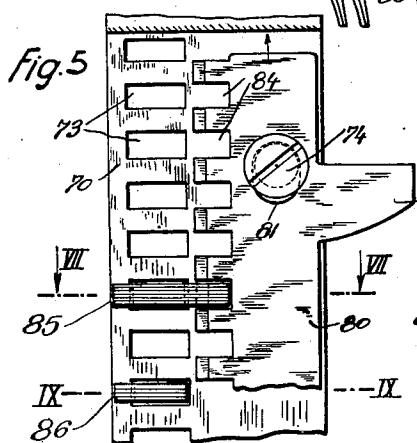
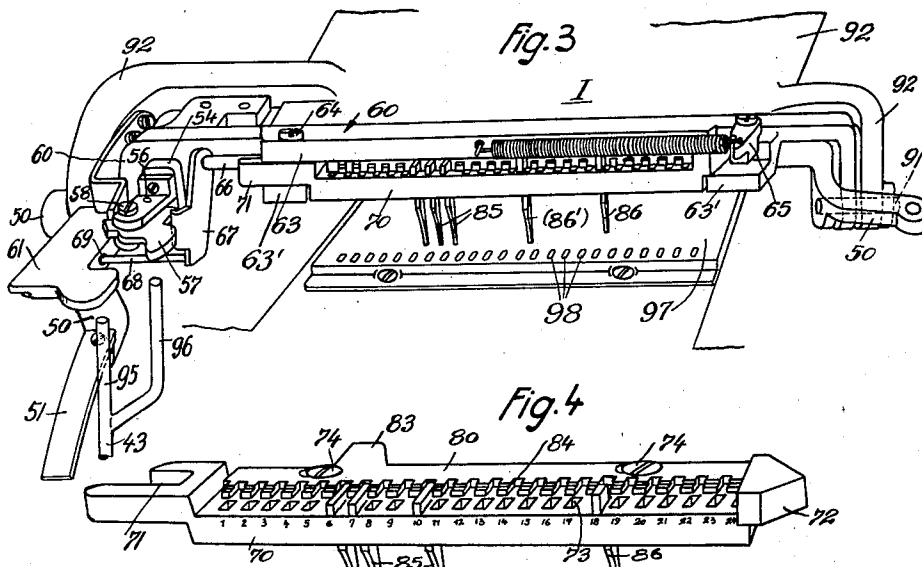
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PRINTING MACHINE

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6 Sheets-Sheet 3



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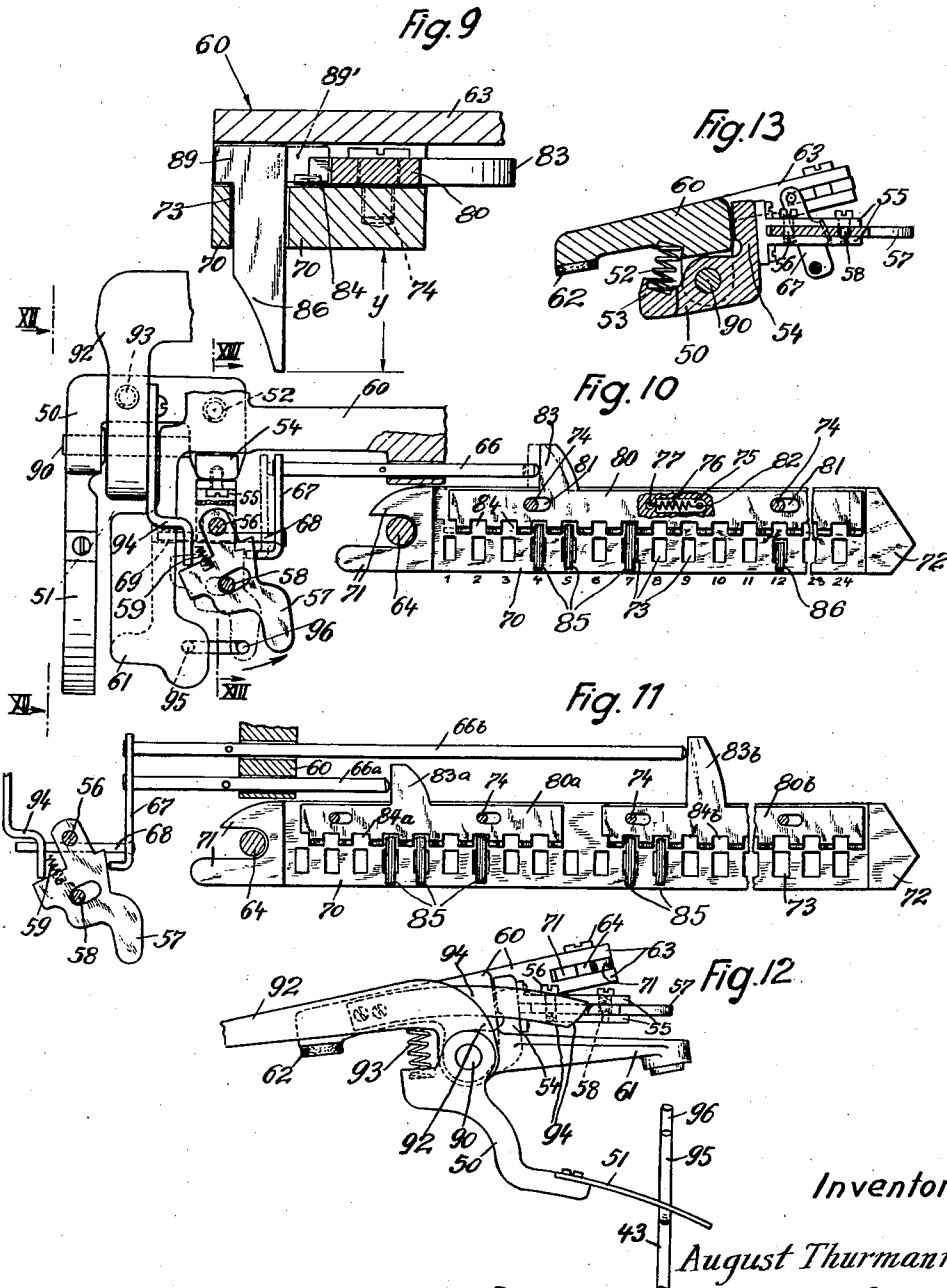
A. THURMANN

2,236,632

PRINTING MACHINE

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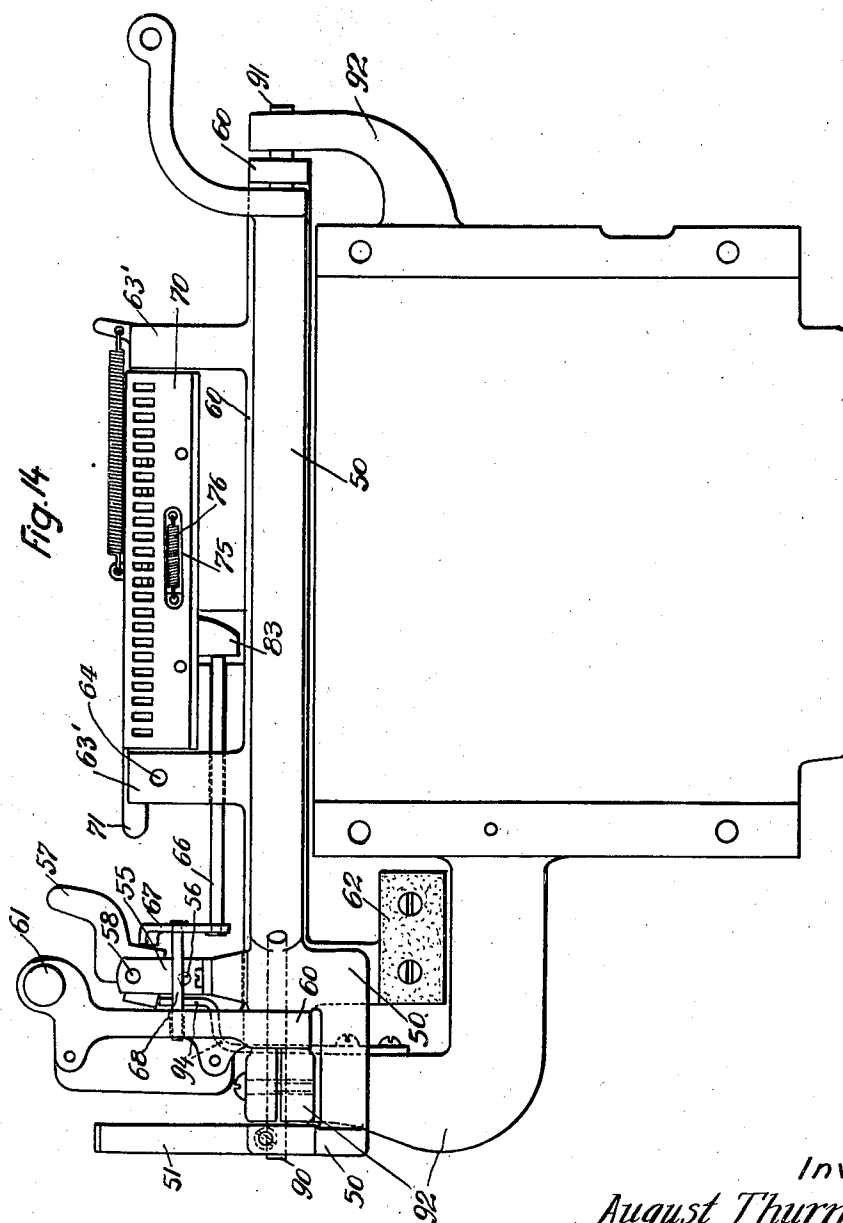
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PRINTING MACHINE

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6 Sheets-Sheet 5



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2,236,632

PRINTING MACHINE

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6 Sheets-Sheet 6

FIG. 15.

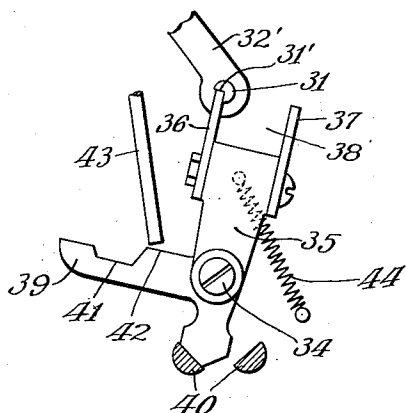


FIG. 16.

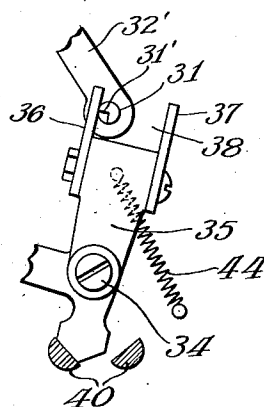


FIG. 17.

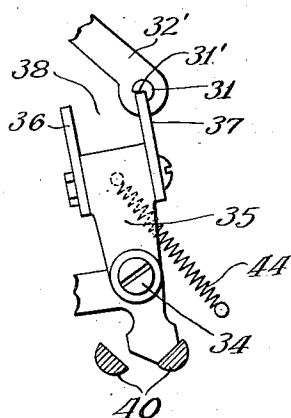
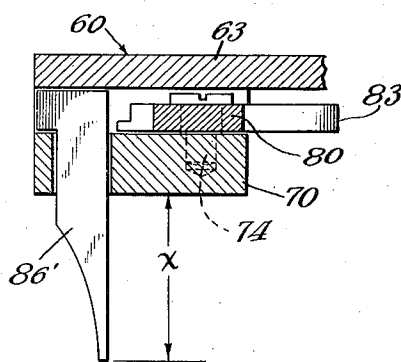


FIG. 18.



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UNITED STATES PATENT OFFICE

2,236,632

PRINTING MACHINE

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Application July 10, 1939, Serial No. 283,669
In Germany August 2, 1938

24 Claims. (Cl. 101—58)

This invention relates to printing machines of the kind through which printing devices are sequentially passed to have impressions made therefrom and more particularly to machines responsive to means, such as tabs, notches, perforations or the like, that impart identifying characteristics to the printing devices.

Printing devices of the kind employed in my machine, when not in use, are usually filed in a determined sequence in drawers that are stored in suitable cabinets. When impressions are to be made from the printing devices they are introduced into a magazine in the machine from which they are withdrawn and sequentially passed through the machine by suitable means provided therein and the devices are thereafter collected to again be stored as aforesaid. As the printing devices advance through the machine means in the machine cooperating with the identifying means on the printing devices determine whether or not impressions are to be made therefrom and when it is determined that an impression is to be made from a particular printing device, that device is said to be printed, and when it is determined that an impression is not to be made from a particular printing device, said printing device is said to be skipped.

In addition to determining whether a printing device is to be printed or skipped, the means in the machine which cooperate with the identifying means on the printing device, and which are known in the art as selecting means, are sometimes employed to operate a signal or to control operation of a numbering or other auxiliary printing device or to effect the performance or non-performance of other operative functions in the machine.

The selecting means that have heretofore been provided in printing machines of the aforesaid character have either been mechanical or electrical, the mechanical type of selecting means operating through means directly responsive to the presence or absence of identifying means on the printing devices to bring about the desired operation of the means under control of the selecting means in accordance with a predetermined classification of the identifying means on the printing devices and the electrical means have included switches which were operated in accordance with the characteristics of the identifying means on the printing devices to either close or open electrical circuits and thereby bring about the desired selective operation of the means under control of the selecting means.

The identifying means provided on the print-

ing devices, and to which reference has been made hereinabove, which may be tabs, notches, perforations, or the like, may be selectively located at predetermined positions on the printing devices, there being a predetermined number of potential positions at which such identifying means may be located and the selective location of the identifying means at these potential positions serves to impart individual characteristics to each of the printing devices. It is the cooperation of the aforesaid selecting means in the machine with such identifying means that causes the selection to be made, which is to say, to cause an operation to be performed or not to be performed in accordance with the individual characteristics of each device.

Frequently the arrangement has been such that but a single identifying means at a predetermined position on the respective printing devices was effective to bring about the desired selection, as for example, the presence of an identifying means at a particular one of the potential positions on the printing devices serving through the selecting means to cause an impression to be made from each printing device having an identifying means at such position, while the absence of an identifying means at such position would cause such printing device to be skipped, the foregoing being an instance where the selecting means was operative to bring about either printing or skipping of the printing devices and being typical of the use of a selecting means. Where but a single identifying means is utilized in this manner, the particular selection thus resulting is known in the art as an individual selection.

In addition to individual selection, what is known as group selection has been utilized, and this entailed so arranging the selecting means that it would be responsive to the presence or absence of identifying means on various printing devices at two or more of the potential positions on each device whereat identifying means could be located.

An example of a selecting means capable of use in printing machines of the aforesaid character is shown and described in United States Letters Patent No. 1,209,414, patented December 19, 1916, and the selector therein shown is capable of being used in those instances where an individual selection as above described was to be performed or where a group selection was to be performed and in this machine the group selection, to bring about a predetermined operative function of the means under control of the

selecting means, required the presence of two identifying means at predetermined of the potential locations therefor on each of the printing devices. In this apparatus, however, two independent devices were provided for cooperation with the identifying means on the printing devices and conjoint operation of such devices was essential in order to bring about the desired operation of the means under control of the selecting means. Thus, one of the important objects of the present invention is to enable but a single device, adapted for cooperation with the identifying means on the printing devices, to be utilized for bringing about either an individual or a group selection.

In many instances it will be desirable to so arrange the printing machine that an individual selection and/or a group selection may be brought about and while so-called matrix selectors such as are shown in United States Letters Patent No. 1,992,661, patented February 26, 1935, or United States Letters Patent No. 2,006,991, patented July 2, 1935, are capable of being used to bring about either an individual selection or a group selection, such selectors are not capable of being used to bring about, in a particular set-up thereof, both an individual and a group selection and, therefore, still another object of the present invention is to enable both an individual selection and a group selection to be effected from a single set-up of a selecting means.

While electrical selectors of the character hereinabove referred to, an example of which is shown in United States Letters Patent No. 1,945,644, patented February 6, 1934, may be utilized, such arrangements require the utilization of a plug board to enable potential electric circuits to be variably established and any improper plugging of such plug boards results in improper operation of the means under control of the selecting means included in the printing machine end, while such selecting means have been capable of performing an individual and/or a group selection, such devices, in addition to requiring a plug board, by reason of the electrical apparatus employed therein were not directly responsive, as would be a mechanical means, to the identifying means on the printing devices. Thus, still another object of the present invention is to utilize mechanical devices directly responsive to the presence or absence of identifying means on the printing devices for bringing about an individual and/or a group selection.

It has been proposed, in a matrix type of mechanical selector, to provide for a great variety of complex selections by equipping the selector mechanism with a plurality of matrices or like control members, as shown in United States Letters Patent 2,153,642, patented April 11, 1939. Such an arrangement, however, requires the provision of two or more independent control members to co-act with the mechanism that is responsive to the presence or absence of identifying means on the printing devices, and conjoint operation of such control members with said mechanism is essential to bring about the desired complex selective operations of the machine. Hence, it is a further object of my invention to enable both individual and group selections to be effected without resorting to the use of a plurality of control members acting conjointly with the mechanism adapted to cooperate with the identifying means on the printing devices.

A more specific object is to provide a selector

apparatus which can be operated under control of group sensing members adapted to sense the presence or absence of identifying means on printing devices successively presented at a sensing station in the printing machine, and operable to effect selections of all printing devices which bear identifying means at all of the selected group positions thereon, and one or more individual sensing members severally responsive to the presence or absence of identifying means on such printing devices and operable to effect selections of all printing devices which bear identifying means in at least one of the selected individual positions thereon.

Still another object is to provide a selector apparatus of the above type with at least one other sensing member which is operable upon sensing a corresponding identifying means to suppress a selection which may otherwise be effected by the group or individual sensing members.

A further object is to select a printing device when all of the group sensing members sense the presence of corresponding identifying means, but to suppress the selection if at least one but less than all of the group sensing members sense the presence of corresponding identifying means, even though there may be an identifying means aligned with an individual sensing member, and to permit the individual sensing members to become effective only when none of the group sensing members senses the presence of a corresponding identifying means.

Stated more broadly, it is an object to provide for both individual and group selection, with the group control predominating, so that the group control will effect a selection if the group is fulfilled, and the individual control will be rendered operable only when the group is empty, but both the individual and the group controls will be rendered ineffective if the group is only partially fulfilled.

A still further object is to enable a plurality of group selections to be carried out, so that a selection will be effected if at least one of the groups is fulfilled.

A still further object is to enable the setting of the selector apparatus to be readily apparent to the machine operator at all times from a mere casual inspection of the sensing bridge.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration, show preferred embodiments and the principles thereof and what I now consider to be the best modes in which I have contemplated applying those principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings,

Fig. 1 is a vertical sectional view through the printing device guideway of a printing machine;

Fig. 2 is another vertical sectional view similar to Fig. 1 with many of the parts broken away;

Fig. 3 is a perspective view, on an enlarged scale, of a sensing and selecting apparatus constructed in accordance with my invention;

Fig. 4 is a detailed perspective view showing the pin bar of the sensing apparatus of Fig. 3;

Figs. 5 and 6 are fragmentary enlarged views looking down on the pin bar of Fig. 4 and show-

ing the component parts thereof in different operative positions;

Figs. 7 to 9 are sectional views taken along the correspondingly numbered lines provided with Romanic numerals in Figs. 5 and 6, showing some of the various types of sensing members which are employed in the sensing and selecting apparatus;

Fig. 10 is a plan view of the sensing apparatus of Fig. 3 with certain parts deleted therefrom;

Fig. 11 shows a modified embodiment of my invention as adapted for double group selection;

Fig. 12 is a view taken along the line XII—XII of Fig. 10 and showing a side elevation of the group and individual selectors;

Fig. 13 is a sectional detail view taken along the line XIII—XIII of Fig. 10;

Fig. 14 is a view of the sensing apparatus of Fig. 3, as seen from below;

Figs. 15 to 17 are detail views of another portion of the selecting apparatus showing the parts thereon in various operative positions; and

Fig. 18 is a detail view similar to Figs. 7 to 9 and showing still another type of sensing member.

In machines of the character to which this invention pertains, printing devices D are introduced into a magazine M arranged at the rear end of the machine, and these printing devices are moved forwardly along a suitable printing device guideway, being successively advanced in a step-by-step manner to sensing and printing positions I and II, respectively, in the machine. As each printing device D comes to rest at sensing position I, it will be sensed by the sensing means there provided and the selecting apparatus under control of the sensing means will be adjusted in accordance with the results of the sensing operation to cause that particular printing device to be printed or skipped. Each printing device D, after it leaves the sensing position I, is next advanced to printing position II above the anvil A and beneath a suitable inking ribbon (not shown). Depending upon the results of the previous sensing operation performed upon the device D, at position I, and the resultant setting of the selector apparatus, the platen P will then either descend to cause an impression to be made from the device D onto a sheet disposed thereabove, or will fail to descend so that a skip operation is effected. Various other operative functions of the printing machine may also be effected under control of the selector apparatus as will be explained hereinafter.

The main drive rocker 2 of the machine is pivotally mounted on a shaft 5 carried by the machine frame 1, Figs. 1 and 2. A link 7 connects the main drive rocker 2 to another rocker 4 pivotally mounted on a stationary shaft 6 also carried by the machine frame 1. The rocker 4 includes an arm 8 and a link 9 connects the arm 8 to a rocker 10 pivotally mounted at 10' on the boss 13 depending from the frame 1. Upstanding arms 16 on the rocker 10 are pivotally connected by a link 14 to a pair of carrier bars 12. Pivotally mounted on the carrier bars 12 at spaced intervals therealong are the feeding pawls 11. Reciprocatory movement is imparted to the carrier bars 12 from the main drive rocker 2 through the linkages described above. During forward movement of the carrier bars 12, the pawls 11 engage the rearwardly disposed edges of the printing devices D and advance said printing devices forwardly a predetermined distance.

The printing devices D will be thus successively advanced from the rear to the front of the machine through the printing device guideway upon each forward movement of the carrier bars 12 and pawls 11. The device D, which was at sensing position I, will thus be advanced to printing position II while the device D which was at printing position II will be discharged into a suitable discharge chute provided at the front end of the printing device guideway. During rearward movement of the carrier bars 12 the feeding pawls 11 will pass inactively below the printing devices disposed rearwardly of the printing devices previously engaged and will subsequently engage the rear edges of the first-named printing devices. Then during the succeeding forward reciprocation of the carrier bars 12 a new printing device D will be fed from the magazine M and the device D which was formerly at position I will now be advanced to position II, while the device which was at position II will be discharged.

An arm 3 is pivotally mounted on the shaft 5 and this arm has at its lower extremity a cam groove 18 which is engaged by a roller 17 on the lower end of the platen arm 15. The platen arm 15 is pivotally mounted on the shaft 6. A pusher 20 pivotally mounted at 21 on the main drive rocker 2 is adapted to engage a pad 19 on the arm 3. If the pusher 20 on the main drive rocker 2 is in position to engage the pad 19 on the arm 3 when the main drive rocker 2 is rocked clockwise, as viewed in Figs. 1 and 2, then the arm 3 will also be rocked clockwise and the movement of the cam groove 18 relative to the roller 17 causes the platen arm 15 to swing clockwise, as viewed in Figs. 1 and 2, and the platen P thereupon causes an impression to be made from the printing device D in position II. If, however, the pusher 20 is not in position to engage the pad 19 when the main drive rocker 2 is rocked clockwise, the arm 3 will not be rocked and therefore the platen P will remain in its upper or inoperative position and the printing device D at position II is skipped.

The arrangement of the parts shown in Figs. 1 and 2 is such that when the main drive rocker 2 is being rocked clockwise to effect a printing operation (if one is to be effected) the carrier bars 12 will be moving rearwardly, the pawls 11 at this time passing inactively beneath the now stationary printing devices D. Then, while the main drive rocker 2 and platen P are being restored to their initial at rest positions, the carrier bars 12 will move forwardly and the pawls 11 will engage the printing devices D to advance them to their next positions.

The means for effecting positioning of the pusher 20 relative to the pad 19 is fully disclosed in United States Reissue Patent 20,437, patented July 6, 1937. The pusher 20 is provided with a recess 22 and a shoulder 23. An arm 25 pivotally mounted on a stationary pin 24 carries a roller 26 which engages either the upper or the lower portion of the cam surface afforded by the recess 22 and shoulder 23 on the pusher 20. A spring 27 constantly urges the pusher 20 against the roller 26. A bell crank lever 28, 29 is attached to the arm 25 and is likewise pivotally mounted on the stationary pin 24, this bell crank being under the influence of a spring 30 anchored to the upper arm 29 thereof, which spring tends to urge the lever 28, 29 in a counterclockwise direction, Fig. 2. The movement of the bell crank lever 28, 29 under the influence of the spring 30 is limited by engagement of the arm 28 with a pin 31 which

is mounted in an arm 32' of the triple-armed rocker 32. The rocker 32 is pivotally mounted at 33 and carries a pad 47 at the end of another of its arms. Rotation of the rocker 32 in a clockwise direction is limited by the third arm 32' thereof engaging a stop on the machine frame.

The rocker 4 which reciprocates in synchronism with the main drive rocker 2 is provided with a pawl 46 pivotally mounted at 45 thereon. The pawl 46 is adapted to engage the pad 47 on the rocker 32 during the clockwise rocking movement of the main drive rocker 2, and the rocker 32 is thereby rocked counterclockwise about its pivot 33 and in so doing it causes the pin 31 thereon to raise the arm 28 of the bell crank 28, 29. At this time, as will be explained in greater detail hereinafter, the sensing and selecting apparatus will function to sense a printing device at position I, and in accordance with the presence or absence of identifying means at selected positions on the printing device, a member 35, Fig. 2, will be positioned to dispose either of the plates 36 or 37 thereon or a recess 38 therein below the pin 31 on the rocker arm 32'. Then as the main drive rocker 2 is returned to its normal at rest position and the pawl disengages the pad 47 on the rocker 32, the pin 31 will, in accordance with the selected operation that is about to be effected, either seat upon one of the plates 36 or 37 or will enter the recess 38 of the member 35. If the pin 31 seats on a plate 36 or 37, it will cause the bell crank lever 28, 29 to assume its extreme clockwise position, as viewed in Fig. 15 or 17, and the roller 26 will thereupon engage the shoulder 23 of the pusher 20. This will cause the end of the pusher 20 to be depressed below the lower end of the pad 19 so that when the main drive rocker 2 is again rocked in a clockwise direction the pusher 20 will not engage the pad 19 but will instead pass inactively beneath said pad. Therefore, if the pin 31 is seated on either of the plates 36 and 37 of the member 35 the arm 3 will not be rocked and the platen P will remain in its upper or inoperative position. On the other hand, if the pin 31 enters the recess 38 of the member 35, the bell crank lever 28, 29 will assume its extreme counterclockwise position and the roll 26 on the arm 25 will now bear against the recessed portion 22 of the pusher 20, Fig. 2. Hence, the pusher 20 will remain in alignment with the lower end of the pad 19 and when the main drive rocker 2 is actuated it causes the arm 3 to be rocked and the platen P will thereupon descend to effect an impression from the printing device that is now in position II.

It will be recalled that the rocker 32 is rocked to raise the pin 31 during the clockwise rocking movement of the main rocker 2. Shortly thereafter the printing device in position I is sensed to effect the proper positioning of the member 35 and the rocker 32 is then permitted to lower. Preferably, the parts are arranged to allow ample time for the pin 31 to be lowered into an operative position with respect to the member 35 before the member 35 is released from the control of the sensing means. During the return movement of the main rocker 2 the printing device which was in position I is now advanced to position II. At the commencement of the next reciprocation of the main rocker 2 the platen P will, if a printing operation is to be effected, immediately descend to cause an impression to be made from the printing device which is now in position II. The succeeding printing device, which is now in position I, will thereafter be sensed to control the

new setting of the bell crank 28, 29, arm 25, and roll 26 thereon. It is to be noted that when the main rocker 2 commences its clockwise swinging movement about its axis 5, the pusher 20 will either immediately engage the pad 19 on the arm 3, or will pass beneath it, depending upon whether the printing device which was formerly at position I, and which is now in position II, is to be printed or skipped. In either event, the subsequent re-positioning of the various parts associated with the selector member 35, under control of the printing device now in position I, will not affect the pusher 20 until the main rocker 2 has again returned to its home position, Fig. 2, and after the required print or skip operation has been performed on the printing device in position II.

The member 35 is attached to an arm 39 which is pivotally mounted on a pin 34. The lower extremity of the arm 39 is adapted to bear against one of two stops 40 which are mounted in spaced relation to each other on the machine frame 1 and which limit the movement of the arm 39 and member 35. When the arm 39 is in its normal at rest position, as is more particularly shown in Fig. 16, it bears against the left-hand one of the stops 40. A spring 44 anchored to the machine frame tends to draw the member 35 and arm 39 to the right, as viewed in Fig. 2, until the movement of the arm 39 is limited by the aforesaid left stop 40. The arm 39 is provided with a recess 41 and a shoulder 42. A substantially vertically mounted control rod 43 is adapted to bear either on the recessed portion 41 or the shoulder 42 of the arm 39. As is explained in the aforesaid Reissue Patent 20,437, the control rod 43 may be adjusted to lie in alignment either with the shoulder 42 for "positive" operation of the machine, or it may be aligned with the recess 41 to effect "inverse" operation of the machine. In the present disclosure it will be assumed that the machine is set for "positive" operation, in which the printing devices are printed when a selection is effected and are skipped when a selection is not effected. It will be understood, of course, that this is purely illustrative and that my invention can be equally well applied where "inverse" operation of the machine is to be effected.

During the sensing operation which is performed on the printing device at position I the control rod 43 will be adjusted to one of several longitudinal positions which it may occupy, in accordance with the presence or absence of identifying means at selected positions on the printing device. If the control rod 43 has been depressed to its lowermost position (assuming that the lower end of this rod is aligned with the shoulder 42) the member 39 will be rocked counterclockwise until the lower extremity of the arm 39 is engaging the right-hand stop 40, Fig. 17. In this instance, when the rocker arm 32' is lowered, the pin 31 will seat on the plate 37 of the member 35. However, if the control rod 43 remains in its upper or inoperative position, the parts will assume the relative positions shown in Fig. 15 in which the arm 39 is engaging the left-hand stop 40 and the pin 31 is latched up on the plate 36. Again, if the control rod 43 has been depressed into an intermediate position, the parts will assume the relative positions shown in Fig. 16 in which the pin 31 has entered the recess 38 of the member 35.

It will be noted from Figs. 15, 16 and 17 that the pin 31 is provided with a recess 31' to enable

it to seat firmly on the plate 36 or 37 whenever either of these plates is disposed beneath the pin. This recess 31' in the pin 31 serves the additional purpose of preventing the member 35 from rotating clockwise when said member is in the position shown in Fig. 17, after the control rod 43 has been retracted into its normal upper position and until such time as the rocker arm 32, Fig. 2, is rocked to raise the pin 31 from the plate 37.

If the recess 38 has been disposed beneath the pin 31 during a particular sensing operation, the parts will assume the positions shown in Fig. 16, after the control rod 43 has again been raised. Assume now that on the next sensing operation the control rod 43 does not depress the positioning arm 39, Fig. 2. The rocker arm 32 will be rocked at the proper instant to raise the pin 31. Due to the angle at which the plate 36 has been resting against the pin 31, this plate and the member 35 and arm 39 will be moved slightly counterclockwise as the pin is raised, but when the pin 31 reaches the level shown in Fig. 15, the plate 36, as well as the member 35 and arm 39, will move a slight distance clockwise until the arm 39 again bears against the left-hand stop 40, and the top of the plate 36 will then move into alignment with the recess 31' in the pin 31, so that the pin 31 will be supported by the plate 36 during this selection operation, and no impression will take place. If, on the next sensing operation, the control rod 43 is depressed to either its mid-position or to its lowermost position, the member 35 will be rocked into either of the positions shown in Fig. 16 or 17 when the pin 31 is raised, so that when the pin 31 is again lowered, it will either drop into the recess 38 or will seat on the plate 37.

The sensing mechanism at position I in the machine is shown in perspective in Fig. 3. The actuating means for said sensing mechanism comprises a pawl 49, Fig. 2, which is pivotally mounted on a pin 48 carried by the rocker 4. The lower end of the pawl 49 is disposed to engage the inclined surface of a plate 51 that is attached to a downwardly extending arm of a bail 50. Each time the rocker 4 is reciprocated in synchronism with the main drive rocker 2, the pawl 49 will engage the plate 51, and will cause the bail 50 to be rocked clockwise as viewed in Fig. 2. Referring again to Fig. 3 it will be seen that the bail 50 extends transversely of the printing device guideway and is pivotally mounted at either side thereof. As viewed in Fig. 10, the pivotal mounting for the bail 50 to the left of the printing device guideway is afforded by a pin 90 which is carried by a stationary lug of the plate 92 which is fixed to the machine frame above the printing device guideway. At the right side of the printing device guideway the pivotal mounting for the bail 50 is afforded by another stationary pin 91 carried by another lug of the plate 92. It will be seen therefore that each time the main drive rocker 2 is actuated, the pawl 49 on the rocker 4 will engage the plate 51 on the bail 50 and the bail 50 will thereupon be rocked sharply in a clockwise direction as viewed in Fig. 12. A spring 93 is interposed between the stationary lug 92 and an extension of the bail 50 to restore the bail 50 into its extreme counterclockwise position upon disengagement of the pawl 49 from the plate 51, such restoring movement of the bail 50 being limited by means to be presently described.

In Fig. 3 it will be noted that a bridge 60 is also

pivotally mounted on the stationary pins 90 and 91, said bridge 60 coextending with the bail 50 across the printing device guideway. Bridge 60 is coupled to the bail 50 by a spring 52, Fig. 13, which is interposed between the bridge 60 and an extension 53 of the bail 50. Normally an upstanding arm or extension 54 of the bail 50 engages a corresponding face of the bridge 60, and due to the force exerted by the spring 93, Fig. 12, upon the bail 50, the bridge 60 will be urged into an extreme counterclockwise position which is its normal at rest position. Such movement of the bail 50 and bridge 60 under the influence of the spring 93, is limited by engagement of a pad 62, located on an extension of the bridge 60, with a portion of the machine frame.

When the bail 50 is rocked clockwise as viewed in Figs. 12 and 13 upon engagement of the pawl 49, Fig. 2, with the plate 51, the bridge 60 will tend to follow the bail 50, being tightly urged against the upstanding arm 54 of the bail 50 by the spring 52. Movement of the bridge 60, however, may be arrested before the bail 50 has completed its stroke, as will be explained hereinafter, whereupon the spring 52 will be compressed, after the bridge 60 has been arrested, while the bail 50 is completing its stroke. When the pawl 49 now becomes disengaged from the plate 51 the bail 50 will be urged counterclockwise under the influence of springs 52 and 93 until the upstanding arm 54 thereon engages the bridge 60. Thereafter restoring movement of the bail 50 will be under the sole influence of spring 93 and will continue until the pad 62, on the bridge 60, again engages the machine frame.

The control rod 43 terminates at its upper end in two branches, 95 and 96. The bridge 60 is provided at its left-hand extremity, Figs. 3 and 10, with a lever 61, which is fixed to the bridge, said lever 61 overlying the branch 95 on the rod 43. The bail 50 is provided with a forked plate 55 which is suitably secured to the extension 54 thereof, Fig. 13. A lever 57 is disposed in the bifurcation of the plate 55 and is pivotally mounted on a vertical pin 56 which passes through the upper and lower portions of the forked plate 55, said lever 57 being adapted to swing laterally in the bifurcation of the plate 55. Inasmuch as the bail 50 always makes a complete stroke of predetermined length, the lever 57 will also make a predetermined stroke each time the sensing and selecting apparatus is actuated by the pawl 49. Normally, the lever 57 occupies the full-line position shown in Fig. 10, being urged into such position by a spring 59, anchored to the bail 50. Movement of the lever 57 under the influence of the spring 59 is limited by a pin 58 which is fast in the bifurcated plate 55 and which normally is in engagement with the end of a suitable slot in the lever 57. When the lever 57 occupies its right-hand or full-line position, Fig. 10, it will have no effect upon the branch 96 of the control rod 43 when the bail 50 is rocked, and will merely pass inactively downward to one side of the branch 96. When, however, the lever 57 has been rocked into its dotted line position, by means to be hereinafter described, the outwardly disposed end of the lever 57 will overlie the branch 96 of the control rod 43, and hence when the bail 50 is rocked and the lever 57 depressed, said lever will become effective to push the control rod 43 downwardly. The lever 61, however, is fast to the bridge 60 which may not always make a complete stroke so that while the lever 61 cannot be shifted out of alignment with the end 95 of

the control rod 53, it may nevertheless be arrested in its downward movement before it strikes the end 95.

The sensing means which controls the selective positioning of levers 57 and 61 is mounted in the bridge 60 transversely of, and overlying, the printing device guideway. By referring to Fig. 3 it will be noted that the bridge 60 includes a forwardly extending upper plate 63 which has a length substantially equal to the width of the printing device guideway. The bridge 60 also includes a pair of forwardly extending lugs 63' which are disposed below the level of the upper plate 63. The left-hand one of the lugs 63', Fig. 3, is so disposed in relation to the left-hand end of the upper plate 63 as to define a bifurcation therebetween. A vertical pivot pin 64 (see also Fig. 14) extends from the upper plate 63 to the left-hand one of the lugs 63'.

In Fig. 4, there is shown a perspective view of the selector pin bar 70. This bar 70 has upwardly offset arms 71 and 72. The end 71 is bifurcated to receive the pin 64 when the selector pin bar 70 is mounted in the bridge 60, Fig. 3. The end 72 of the bar 70 is provided with a cam surface which is engaged by a spring-urged snapping latch 65 mounted on the bridge 60. The end 71 of the bar 70 is adapted to lie in the bifurcation defined by the upper plate 63 and the lower left-hand lug 63' of the bridge 60. The end 72 rests on the right-hand lug 63'. When it is desired to remove the pin bar 70 from the bridge 60 the latch 65 is pushed outwardly against the action of its retaining spring, thus permitting the end 72 of the bar 70 to be swung outwardly away from the bridge 60. The end 71 may then be withdrawn from the pin 64 to free the pin bar 70 from the bridge 60.

It will be noted in Figs. 3 and 4 that the selector pin bar 70 may be provided with sensing pins such as 85, 86, or 86'. When a printing device is fed into sensing position I beneath the bridge 60, it will come to rest in such a position that the tabs or like indicia carried thereon can overlie the corresponding openings 98 in a horizontal plate 97 that is fast to the machine frame. Said openings 98 are disposed in vertical alignment with a corresponding series of openings 73 in the pin bar 70. The sensing pins hereinabove referred to are adapted to be inserted in the opening 73 with the shanks thereof extending downwardly. In the event that no tabs are disposed in alignment with the ends of the sensing pins, these sensing pins will enter the corresponding openings 98 in the plate 97 when the bridge 60 is depressed, and in such event the bridge 60 will make a full stroke downwardly. It will be noted in Fig. 3 that the upper plate 63 of the bridge 60 overlies the heads of the sensing pins which are positioned in the bar 70. If, however, one or more of the sensing pins contacts a tab on a printing device disposed in sensing position, the bridge 60 will be arrested in its downward movement upon engagement of any of the pins with a tab. Thus, while the bail 50 continues to make a full downward stroke, the bridge 60 will be held up by engagement of the heads of one or more of the sensing pins with the upper plate 63 of the bridge 60. The bridge 60 will thus be supported through the medium of the pins by the tabs on the printing device.

The sensing pins 85 are shown in detail in Figs. 7 and 8. These pins 85 constitute the "group pins" of my invention. As will be seen in Figs. 7 and 8, the group pins 85 are equipped

with forwardly extending head portions 87 and rearwardly extending head portions 88. The head portion 87 of each group pin 85, serves to support the pin by bearing on the foremost edge of the pin bar 70 when the pin 85 is in its lower or latched position.

Referring again to Fig. 4 and more particularly to Figs. 5 and 6, it will be seen that the pin bar 70 is equipped with a long, flat bar or slide 80. The slide 80 is mounted on the pin bar 70 in such a manner that it may move laterally a limited distance relatively thereto. Guide pins 74 are extended through slots 81 in the slide 80 and are secured to the pin bar 70 to guide the slide 80 in such shifting movement thereof. A spring 76, Figs. 10 and 14, mounted in a suitable opening 75 in the pin bar 70, is anchored at 77 to the bar 70 and at 82 to the slide 80. The spring 76 constantly tends to urge the slide 80 into its left-hand or dotted-line position shown in Fig. 10. The slide 80 is provided with a series of notches 84 along its forwardly disposed edge. The notches 84 correspond to the openings 73 in the pin bar 70, and when the slide 80 is moved into its right-hand or full-line position, Fig. 10, against the action of the spring 76, the notches 84 in the slide 80 will be in alignment with the openings 73 in the pin bar 70. In this position of the slide 80, the rearwardly extending head portions 88 of the group pins 85, Fig. 7, will enter the corresponding notches 84 in the slide 80, and so long as at least one group pin 85 is in its lower or latched position, Fig. 7, the head portion 88 of that pin will serve to prevent the group slide 80 from being shifted relatively to the pin bar 70, and the relative positions of the parts will be as shown in Fig. 5.

If, however, each and every one of the group pins 85 strikes a tab disposed therebelow, then all of the group pins 85 will occupy their upper or unlatched positions as shown in Fig. 8. It will be observed that a sufficient clearance is provided between the head of each group pin 85 and the upper plate 63 of the bridge 60 so that the pin 85 can be raised sufficiently to allow the head portion 88 of such pin to disengage the notch 84 of the slide 80 with which it had been previously in engagement. Assuming that all of the group pins have been raised due to the engagement thereof with tabs disposed therebelow, the group slide 80 will be free to shift to the left, Fig. 10, and the parts will assume the relative positions shown in Fig. 6, wherein the notches 84 are now out of alignment with the openings 73 in the pin bar 70. In this event, the teeth defined by the notches 84 in the slide 80 will support the group pins 85 in their raised positions.

The group slide 80 is provided with a rearwardly extending part 83. This extension 83 bears against the end of a rod 66 which is mounted for lateral shifting movement in the bridge 60. The rod 66 carries at its opposite end a bent plate 67 which bears against the right side of the pivot lever 57, Figs. 3, 10, and 14. Another rod 68 is fast to the plate 67 and extends into a suitable socket 69 in the lever 61, being shiftable therein. Thus, the plate 67 is permanently held against rotatable movement by the rods 66 and 68, but is free to shift laterally. Upon release of the group slide 80 in the manner hereinabove described, the slide 80 will shift to the left, Fig. 10, and through its extension 83, will cause the rod 66 and plate 67 to shift into their dotted-line positions. This will occur

in the course of downward rocking movement of the bail 50 and bridge 60.

It will be recalled that the pivot lever 57, which shall hereinafter be referred to as a "group lever," is connected to the bail 50 and hence it will always have a predetermined length of stroke. However, the group lever 57 will be active or inactive depending upon whether or not it has been swung above the end of the branch 96 of the control rod 43. Assuming that the plate 67 has been shifted due to the release of the group slide 80, the lever 57 will now be swung over by the plate 67 until it occupies a position directly above the branch 96. Continued downward movement of the bail 50 causes the lever 57 to push the control rod 96, 43 downwardly into its middle position. This will be effective upon the arm 39 and member 35, Figs. 2 and 16, to cause the member 35 to occupy its middle position wherein the recess 38 is disposed beneath the pin 31. In the meantime the rocker 32 will have been actuated by the pawl 46 so that the arm 32' thereof and pin 31, are in their upper positions above the member 35. Upon release of the rocker 32, due to disengagement of the pawl 46 with the pad 47, the pin 31 will drop into the recess 38 in the member 35. The bell crank lever 28, 29 will thereupon be urged into its extreme counterclockwise position, Fig. 2, and the roller 26 on the arm 25 will now be engaging the recess 22 in the pusher 20. During the succeeding movement of the main drive rocker 2, the pusher 20 will therefore be permitted to engage the pad 19 on the arm 3. The printing device which was at sensing position I will now have been fed forwardly into the printing station II and when the platen P descends it will cause an impression to be made from such printing device.

Restoration of the group slide 80, group lever 57 and associated parts, is accomplished in the following manner. As the bail 50 is returned to its upper at rest position, a portion of the group lever 57 engages a cam surface on a plate 94 which is rigidly attached to one of the lugs 92 that is fast to the machine frame. Continued upward movement of the bail 50 causes the cam surface on the plate 94 to urge the group lever 57 to the right into its dotted-line position, Fig. 10. This is effective through the plate 67, rod 66 and extension 83 to force the slide 80 to the right against the action of its retaining spring 76. The group pins 85 have previously been held in their upper or unlatched positions as shown in Fig. 8 by the head portions 88 thereof which rested on the teeth defined by the notches 84 in the slide 80. However, upon movement of the slide 80 to the right, the notches 84 will once more come into alignment with the heads of the pins 85, and these pins will thereupon drop downwardly into their lower positions until they are effective to latch the slide 80 against movement under the influence of spring 76. In this connection it should be stated that whenever the slide 80 is released, this will occur at a time when the group lever 57 is free of the cam surface of the plate 94. The spring 76 acting on the slide 80 is strong enough to overcome the force of the spring 59 acting upon group lever 57 so that release of the slide 80 will result in the movement of the outward end of the group lever 57 above the branch 96 of the control rod 43.

Now assuming that at least one of the group pins 85 fails to contact a tab, the head portion

88, Fig. 7, of this group pin 85, will remain in engagement with its corresponding notch 84 in the group slide 80. Under these circumstances the slide 80 will not be released even though each of the remaining group pins 85 has been raised into the position shown in Fig. 8, and therefore the group lever 57 will be inactive, inasmuch as the plate 67 which actuates this lever remains in its inoperative position. The length of the shank of each group pin 85 is such that when the group is only partially fulfilled, the heads of the pins 85 which are in engagement with the tabs butt up against the plate 63 of the bridge 60 and arrest downward movement of the bridge 60 before the lever 61 attached thereto can contact the end 95 of the control rod 43. Therefore, neither of the levers 57 nor 61 will contact the upper ends of the rod 43. Now when the rocker 32 is actuated by the pawl 46, Fig. 2, and the pin 31 is raised, the control rod 43, not having been depressed, will have no effect upon the arm 39 and the plate 36 of the member 35 will be disposed beneath the pin 31. Hence when the arm 32' is lowered, the pin 31 will seat upon the plate 36, Fig. 15. This will cause the bell crank lever 28, 29, Fig. 2, to assume its extreme clockwise position so that the roller 26 in the arm 25 is now engaging the shoulder 23 on the pusher 20. This will have the effect of suppressing the printing operation which would otherwise take place, as has been explained hereinabove. During subsequent restoration of the bridge 60 to its normal upper position, the group pins 85, which were in engagement with tabs during the previous sensing operation, will merely drop back into place in their corresponding notches 84, inasmuch as the group slide 80 has not been shifted.

Still another possibility is that none of the group pins 85 will find tabs on the printing devices disposed in sensing position. Assuming that none of the other pins on the pin bar 70 comes into engagement with a tab on the printing device, the bridge 60 will then make a complete downward stroke. In this operation the group slide 80 will not be released and a group lever 57 will therefore be ineffective. However, the lever 61, which shall be referred to hereinafter as an "individual lever," is now effective to engage the end 95 of the control rod 43 and push the control rod into its lowermost position. Under these circumstances the control rod 43 will become effective to cause the member 35 to assume its extreme counterclockwise position as shown in Fig. 17, and when the arm 32' and pins 31 are lowered, the pin 31 seats on the plate 37, and the printing device which has now been advanced to printing station II will not have an impression made therefrom, or, in the parlance of the art, this printing device will be skipped.

The pin 86, shown in Fig. 9, is called an "individual" pin. Each individual pin 86 is provided with a head portion 89 which has a height substantially equal to the distance separating the upper plate 63 from the pin bar 70 of the bridge 60. The shank of the pin 86 is of such length that when the pin 86 contacts a tab on a printing device disposed therebelow, the bridge 60 will be arrested in its downward movement in such a position that the individual lever 61 attached thereto will become effective upon the control rod 95, 43 to push it downwardly to its middle position. As has been previously described, this will result in pushing the member 35, in Figs. 2 and 16, into its middle position wherein the recess 38 is disposed below the pin 31. Thus whenever

an individual pin 86 contacts a tab, the individual lever 61 becomes effective to adjust the selector mechanism for a print operation.

The individual pins 86 do not shift vertically relatively to the bridge 60, due to the heights of their heads 89. By reversing the position of an individual pin 86 in the pin bar 70 so that the head portion 89 extends rearwardly as indicated at 89', Fig. 9, it is effective to lock the group slide 80 against movement and with this arrangement the selector apparatus may be made to function as an individual selector only. If it is desired that the selector operate on individual selection only, the group pins 85 are not utilized and the group slide 80 is locked against lateral movement in the manner just explained. An alternative arrangement would be to provide the individual pins 86 with both a forwardly extending head portion 89 and a rearwardly extending head portion 89' so that it will not be necessary to reverse the positions of the individual pins 86 in the openings 73 in the pin bars 70.

Still another type of pin is what will be referred to hereinafter as a "long pin" 86'. In the present disclosure these long pins 86' function to effect suppression of all selections which would ordinarily be effected by the group pins 85 or the individual pins as 86. A long pin 86' is illustrated in detail in Fig. 18 and is similar in shape to an individual pin 86 except that it has a longer shank extending below the pin bar 70. The head portion of the long pin 86' has a height substantially equal to the distance between the upper surface of pin bar 70 and the lower surface of the plate 63 of the bridge 60. If a long pin 86' should engage a tab on the printing device it will prevent the group pins 85 and the individual pins 86 from functioning in their customary manner and a skip operation will result. The manner in which this is accomplished will be brought out more fully hereinafter.

It will be noted that the openings 73 in the pin bar 70 are rectangular in shape and the various pins 85, 86 and 86' are of rectangular cross-section to correspond thereto. This serves to prevent the sensing pins from twisting or turning after being mounted in the openings 73, thereby providing a distinct advantage over sensing pins of circular cross-section. When it is desired to insert new pins in the pin bar 70, the latch 65 is released, and the pin bar 70 is swung outwardly and then removed from the bridge 60. After the new sensing pins have been inserted into the selected openings 73 in the pin bar 70, the end 71 thereof is now inserted in the bridge 60 in such a manner that the bifurcation in the end 71 receives the vertical pin 64. The end 72 of the pin bar 70 is then swung back until it is engaged by the latch 65, and the selector is now ready to perform the desired functions in the selection of printing devices.

To enable the selective positioning of the member 35 to be accomplished by the sensing means, the group pins 85, individual pins 86, and long pins 86' may be made in various lengths. Thus, when a group pin 85 is in its lower or latched position, Fig. 7, the length x of that portion of the shank of the pin 85 that is disposed below the pin bar 70 is preferably substantially equal to the length x' of that portion of the shank of a long pin 86', Fig. 18, which extends below the pin bar 70. From this it will be seen that if a long pin 86' strikes a tab on a printing device, the pin bar 70 and bridge 60, Fig. 3, will be maintained in raised position at such a height

that the group pins 85 will all remain in their lower or latched positions, as shown in Fig. 7, and the group lever 57 will therefore remain in its right-hand or full-line position in Fig. 10, so that when the group lever 57 descends, it will not act upon the control rod 96, 43, Fig. 2, to depress it. Likewise, when the bridge 60 is maintained in elevated position by the long pin 86', the individual lever 61 is rendered ineffective, since it is prevented from contacting the control rod 95, 43. In this operation, the spring 52, Fig. 13, which couples the bridge 60 to the bail 50, will be compressed as the bail 50 goes through its full stroke and the bridge 60 is maintained in raised position by the pin 86'.

The length y of that portion of the shank of an individual pin 86 that extends below the pin bar 70, Fig. 9, is less than the corresponding length x' of the shank of a group pin 85, Fig. 8, when said group pin is in its upper or unlatched position. It is evident, therefore, that so long as at least one group pin 85 is engaging a tab, the individual pins 86 will be ineffective, inasmuch as they are prevented from contacting tabs due to the height at which the bridge 60 is arrested in its downward movement by the heads of the group pins 85 butting up against the upper plate 63 thereof. Likewise, if a long pin 86' strikes a tab, the bridge 60 will be maintained in an elevated position and the individual pins 86 will be ineffective.

If no tabs are disposed beneath any of the group pins 85 or long pins 86', however, but a tab lies beneath an individual pin 86, said pin 86 will become effective to permit lowering of the individual lever 61 to the point where it pushes the control rod 95, 43 into its mid-position. Still assuming that the machine is adjusted to print when a selection is effected, this lowering of the control rod 43 into its mid-position, due to an individual pin 86 striking a tab, will have the effect of rocking the member 35 into the position of Fig. 16, wherein the recess 38 is disposed below the pin 31, and a print operation results.

By using sensing pins of different lengths, it is possible to perform still further control operations in the manner herein indicated. It is likewise feasible to use tabs having different stop planes, for instance, as disclosed in United States Letters Patent No. 2,132,410, patented October 11, 1938, and by making other modifications it is possible to exert other and additional selecting operations in the well-known manner.

The sensing operation and resultant actuation or nonactuation of the control rod 43 take place during the downward movement of the bail 50 and of the members of the selecting device carried or moved by said bail 50. If during this action a group is "fulfilled," the group lever 57 comes into the operative position above the end 96 of the rod. If the group is not "fulfilled," the group lever remains inactive and passes at the side of the end 96 of the rod. When the pawl 49 has left the plate 51, Fig. 2, the selecting device is returned into raised position by the spring 93 acting on the bail 50, and the control rod 43 is retracted into its upper at rest position by suitable retracting means. During the return of the bail 50 the left shoulder of the group lever 57 comes into contact with the oblique surface of the cam 94 rigidly mounted on the stationary machine part 92. This cam urges the lever 57 back into the position shown in full lines in Fig. 10, and through the medium

of the plate 67 and the rod 66, the extension 83 of the group slide 80 is likewise urged to the right and the group bar is restored into its tensioned position. The group pins are, therefore, enabled to reenter the notches 84 of the group slide, which notches will have been again brought into registry with the pins. The selecting device is now ready for the next operating cycle.

If it is desired for organization purposes to provide, additionally to the individual selection, a group selection according to more than one group, the group slide 80 may be divided into a plurality of group slides as 80a and 80b, Fig. 11, which may be shifted independently from each other. The selecting pin bar 70 is then provided with a corresponding plurality of guiding pins 74 and restoring devices as 76. Each group slide 80a and 80b is likewise provided, at the forward edge, with corresponding notches as 84a or 84b, and additionally with a controlling extension as 83a or 83b, respectively, at the rearward edge thereof. Instead of one rod 66, in this event, a plurality of rods as 66a and 66b are used, these rods cooperating with the corresponding extensions 83a and 83b in the same manner as the rod 66 cooperates with the extension 83 in Fig. 10. Both rods 66a and 66b act in common on the plate 67 to control the group lever 57. If, for instance, in this embodiment, the one group consists, for instance, of the positions 4, 5 and 7 and the second group of the positions 10 and 11, and if a printing device appears which, for instance, carries only the group 10 and 11 but not the group 4, 5 and 7, the controlling action is imparted by the second group slide 80b in the same manner as described above for the group slide 80. The restoration of the group slide 80b into its initial tensioned position is performed in the same way as in the embodiment having but one group slide.

Operating examples

To give an idea of the operation of the machine, some operating examples will now be described, it being understood, of course, that these are purely illustrative and that the selecting apparatus can be readily adapted to handle other problems in a similar manner should the need arise.

In the first of these examples, it will be supposed that the "group" comprises the identifying positions 4, 5 and 7 on the printing devices and that furthermore the individual position 12 thereon is of interest. In this event, the selector pin bar 70 is provided with group pins 85 at the positions 4, 5 and 7 and with an individual pin 86 at the position 12, so that the machine will make impressions from all those printing devices which carry tabs at positions 4, 5 and 7, i. e., fulfill the group, or which carry a tab at 12, or which fulfill the group in addition to bearing individual tabs at their 12-positions.

If a printing device appears without tabs at any of these positions, so that none of the pins finds a tab, then when the bail 50 makes its full stroke, it will do so with its group lever 57 in normal position, i. e., in the position shown in full lines in Fig. 10, it being recalled that the bail 50 and lever 57 always make a complete downward stroke. In the present example the bridge 60 with its individual lever 61 also makes a full stroke, due to the absence of tabs beneath any of the pins. The individual lever 61 comes into contact with the control rod 95, 43

and depresses this rod sufficiently to bring the member 35 into its extreme counterclockwise position in which the arm 39 is resting against the right stop 40, as shown in Fig. 17. In this position of the member 35, the pin 31 bears on the plate 37 so that the pusher 20 does not cooperate with the pad 19 on the arm 3 which actuates the platen arm 15, Fig. 2, and hence, no impression is made. In this operation the group lever 57 passes inactively downward to one side of the arm 96 of the two-armed control rod 43.

Let us suppose now that another printing device appears which fulfills the group, i. e., carries tabs at positions 4, 5 and 7 thereon. In this event, during the downward movement of the bail 50, bridge 60, and selector pin bar 70, the group slide 80 is released from locked position by the raising of the group pins 85 as they cooperate with the corresponding tabs, as explained hereinabove. The group lever 57 is thereby pivoted into the position shown in dotted lines in Fig. 10 in which position the lever 57 is just above the end 96 of the control rod 43. During the further downward movement of the bail 50, the group lever 57 therefore depresses the rod 96, 43. As has been noted hereinabove, the parts are so dimensioned that when the head portions of the raised group pins 85 butt up against the plate 63 of the bridge 60, the individual lever 61 will be prevented from touching the control rod 43. However, the rod 43 will have been pushed downwardly a limited distance by the group lever 57 and into a position in which the member 35 is in its middle position, as in Fig. 16. Consequently, the pusher 20 may operate the printing arm rocking member 3, and an impression is made.

Now suppose that a printing device appears which carries a tab at least at the position 12 but which, however, does not carry tabs at any of the group positions 4, 5 or 7. In this event, the downward movement of the bridge 60 and of the individual lever 61 therewith is stopped after the individual pin 86 has come into contact with the tab. The parts are so dimensioned that in this event the control rod 95, 43 is depressed by the individual lever 61 into its middle position, causing the member 35 to be positioned to dispose the recess 38 beneath the pin 31, and an impression is made. The group lever 57 which has not been pivoted by reason of the group not having been fulfilled, passes inactively to one side of the end 96 of the control rod 43.

If so desired, more than one individual pin 86 may be employed, in which event an individual selection operation will be effected if at least one of such individual pins finds a tab.

If a printing device now appears which fulfills the group as well as carrying an individual tab 12, the control rod 43 is again depressed to its middle position by the group lever 57 which has now been rocked, and the machine is set to print. The individual pin 86 and individual lever 61 are ineffective in this sensing operation for the reason that the bridge 60 is arrested by the group pins before the individual pin strikes a tab.

Assume now that a printing device appears which carries only two tabs of the group 4, 5 and 7, for instance the tabs 4 and 7. In this event, it is true, the group pins 85 at the positions 4 and 7 are raised. As, however, the group pin 5 does not cooperate with a tab, the group slide 80 remains locked so that the group lever 57 is not rocked. The bridge 60 will be arrested in its

downward movement when the heads of the group pins 85 at positions 4 and 7 butt up against the upper plate 63 on the bridge 60. This will arrest downward movement of the individual lever 61 before it has had an opportunity to engage the control rod 43. Inasmuch as neither of the levers 57 nor 61 is now effective on the control rod 43, the member 35 will assume its extreme clockwise position as shown in Fig. 15, when the rocker arm 32 raises pin 31, and the pin 31 will then become latched up on the plate 36 when the rocker arm 32' is lowered. This prevents an impression from being made, for the reasons noted hereinabove.

Assume now that a printing device bearing tabs at positions 4, 7 and 12 thereon is moved into sensing position. In an example such as this, the group control will predominate and will cause the printing device to be skipped, inasmuch as the group is not fulfilled because of the absence of a tab at position 5, and notwithstanding the presence of a tab at the individual position 12. Thus, the bridge 60 will be arrested by the group pins 85 striking tabs at positions 4 and 7 therebelow before the individual pin 86 at position 12 can engage the tab disposed therebelow, and hence before the individual lever 61 can contact the control rod 95, 43. Inasmuch as the group pin 85 at position 5 is still unlatched, the group slide 80 will remain in its most right-hand position, as viewed in Fig. 10, and rod 66 will not be moved, so that the group lever 57 remains in its full-line position and passes inactively downward to one side of the control rod 95, 43. Since neither of the levers 57 nor 61 is now effective upon control rod 43, the member 35 will assume the position shown in Fig. 15, wherein the pin 31 is latched up on plate 36, and no impression will be made from the sensed printing device.

We shall now consider an example in which it is desired to normally effect a printing operation only when tabs are provided at positions 4, 5 and 7, or at position 12, or at 4, 5, 7 and 12 on the printing devices, but to suppress printing under all circumstances when a tab is present at position 11. In this event, the pin bar 70 must be provided with a long pin 86' at position 11 thereon, in addition to the group pins 85 at positions 4, 5 and 7, and the individual pin 86 at position 12. Now, when a printing device appears carrying a tab at position 11 thereon, the long pin 86' will engage the tab and maintain the bridge 60 in raised position whereby the group pins 85 remain in their lower or latched positions, as in Fig. 7, while the individual pin 86 is held clear of its tab, should there be one disposed therebelow. This is due to the extreme length of the long pin 86', as has been previously explained. Hence, if a tab is present at position 11 on the printing device, regardless of whether or not the group 4, 5, 7 is fulfilled or whether a tab is at position 12, the printing device will be skipped. In other words, all printing devices bearing tabs in the eleventh position thereon will, under the conditions assumed, be skipped by the machine.

It is sometimes desirable to adapt the selector to individual selection only. In this event, no group pins 85 will be inserted in the pin bar 70. An individual pin or pins 86 will then be inserted in the pin bar 70 at the desired position or positions therein, at least one of such pins having an extended head portion 89', Fig. 9, for locking the group slide 80 against movement, so that the group selection means is thereby rendered inoper-

ative; or, alternatively, a pin 86 can be inserted in the pin bar 70 in reverse position to allow its head portion 89 to extend into one of the notches 84 in the group slide 80. The effect of thus locking the slide 80 against movement is to allow the selector to operate as an individual selector only, in the well-known manner. Long pins 86' can also be employed, if needed, in this arrangement of the selector.

Where group selection is to be effected in accordance with any one of a plurality of groups, as has been explained, an arrangement as shown in Fig. 11 can be advantageously employed. With this arrangement, two groups can be accommodated, and if either of the groups is fulfilled, one or the other of the slides 80a or 80b will be released, and will act on its associated rod 66a or 66b to push the plate 67 to the left, as viewed in Fig. 11, whereby the lever 57 is swung above the end of the control rod disposed therebelow and will effect a group selection upon being depressed. It will be apparent that any number of groups can be provided for, in the manner suggested by the construction in Fig. 11, fulfillment of any one group being effective to select a printing device for printing. Long pins 85' and/or individual pins 86 may also be employed with this arrangement, in the manner described hereinabove, in connection with the basic arrangement of Fig. 10.

Another special use to which the double-group selector of Fig. 11 may be adapted is that of performing independent group and individual selections. For example, assuming that a group comprises the tab positions 4, 5 and 7 on the printing devices, and that the individual position is 12, group pins 85 are inserted in the pin bar 70 at all of the positions 4, 5, 7 and 12, the group pins at 4, 5 and 7 controlling the slide 80a and the pin at 12 controlling the slide 80b. Now if a printing device appears which bears tabs, for instance, at only the positions 4, 7 and 12 thereon, the pin 85 at position 12 will rise and release the slide 80b to thereby cause the group lever 57 to swing above the end 96 of the control rod 43, and the printing device will be printed even though the group 4, 5 and 7 is only partially fulfilled. In this way the machine will select all printing devices having tabs at position 12 thereon, regardless of the condition of the group 4, 5 and 7. It will also select all printing devices on which the group 4, 5 and 7 is fulfilled, whether or not a tab is at 12, or on which tabs are present at 4, 5, 7 and 12.

The above described examples of different kinds of operation are only to be regarded as indicative of the possibilities of utilizing my invention to control selection operations in printing machines. Obviously, by providing other dimensions and arrangements of the pins, tabs, and working parts of the selector, still further selection operations may be readily performed. Likewise many details of the selecting apparatus described may be changed without departing from the spirit of the invention. For instance, it would be possible to impart a shifting impulse to the group slide or any member corresponding thereto by a yieldingly mounted cam or similar means operating in synchronism with the machine, rather than by spring tension. The invention may be likewise applied to either power-driven or hand-operated machines.

Another important practical advantage is the possibility of incorporating the selecting apparatus according to my invention in existing printing machines with only slight structural changes

therein, for as the foregoing description has shown, aside from the change in the sensing mechanism proper (which may be bodily removed from the machine) the control rod or corresponding member need merely be provided with two or more extensions or arms, whereby the existing printing machines may likewise be adapted to perform individual and/or group selection. Signalling devices may be provided without difficulty, whereby the operator is informed whenever a group has appeared. Such a group signal could, for instance, include a member with which the group lever 57 cooperates when said lever is in rocked position during its downward movement.

Obviously, the known re-adjustment of the working parts of the machine from "positive" to "negative" operation can be afforded, whereby the printing devices will be skipped when a selection is effected and printed when a selection has not been effected.

Another advantage is that the setting of the selector apparatus is evident from a mere casual inspection of the sensing bridge. No elaborate combinational code systems are employed which would tend to confuse the operator. The sensing pins can be conveniently designated by appropriate symbols as being "group," "individual," "suppressing," or the like, whereby the operator can tell, by looking at the positions and designations of the pins, the selecting operations that the printing machine is set to perform. Electrical circuits are likewise eliminated, along with their attendant maintenance difficulties.

Thus while I have illustrated and described selected embodiments of my invention it is to be understood that these are capable of variation and modification and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the ambit of the following claims.

I claim:

1. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of a plurality of sensing members adapted to be mounted for sensing cooperation with identifying means in a selected group of positions on such a printing device, movable means governed solely by said plurality of sensing members and movable only upon cooperation of all of said sensing members with corresponding identifying means on a printing device to effect a predetermined operation of the control means of the machine, at least one other sensing member adapted to be mounted for sensing cooperation with identifying means in selected of the positions on each printing device exclusive of said group of positions, said movable means operating independently of said at least one other sensing member, and means under control of said at least one other sensing member and operating upon cooperation thereof with corresponding identifying means on a printing device, in the absence of identifying means in said group of positions, to effect said predetermined operation of the machine.

2. In a selector for use in a printing machine through which printing devices having a plurality

of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of selecting means comprising a pair of movable elements individually shiftable to effect a predetermined operation of the control means of the machine, and sensing means comprising a plurality of sensing members adapted to be mounted for sensing cooperation with identifying means in selected of said positions on such a printing device, said sensing members being adapted for mounting with at least one sensing member in controlling relation to each of said movable elements to cause shifting of the associated movable element only when sensing cooperation occurs between all of the sensing means associated with the particular movable element, each of said movable elements being operable independently of the sensing member or members controlling the other movable element.

3. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, a selector comprising a shiftable member normally biased to an active position to effect a predetermined operation of the control means of the machine, a plurality of sensing members adapted to be mounted for limited shifting movement in positions for sensing cooperation with identifying means in a selected group of positions on such a printing device, each of said sensing members normally having a releasable latching relation with said shiftable member to restrain movement of said shiftable member to said active position, and said individual latching relation of each of said sensing members being releasable as an incident to sensing cooperation with a corresponding identifying means, another sensing member adapted to be mounted in a position for sensing cooperation with identifying means in a selected individual position on each of said printing devices, said shiftable member being operable independently of said other sensing member, and movable means responsive to said other sensing member and actuated to an active position upon cooperation of such member with an identifying means on a printing device, in the absence of identifying means in said group of positions on such device, to thereby effect said predetermined operation of the machine.

4. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, selector means comprising a first sensing member adapted to be mounted for sensing cooperation with identifying means in any selected position on a printing device, movable means governed by said first sensing member upon sensing cooperation between said member and identifying means in the selected position on a printing device to effect a predetermined opera-

tion of the control means of the machine, a plurality of group selection sensing members adapted to be mounted for sensing cooperation with identifying means in a selected group of positions on such a printing device, and means movable only in response to cooperation of all of said group selection sensing members with corresponding identifying means on a printing device to effect said predetermined operation of the control means of the machine.

5. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of a plurality of group selection sensing members adapted to be mounted for sensing cooperation with identifying means in any selected group of such positions on a printing device, means governed by said sensing members and movable only upon sensing cooperation of all of said members with identifying means on a printing device to effect a predetermined operation of the control means of the machine, and a sensing element adapted to be mounted for sensing cooperation with identifying means in any selected one of said positions on a printing device and operable upon such sensing cooperation to render said group selection sensing members inoperative.

6. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of sensing means comprising a sensing member for cooperating with any selected individual identifying position on a printing device to sense the presence or absence of identifying means at such position thereon, and a plurality of other sensing members for cooperating as a group with a corresponding plurality of selected group identifying positions on a printing device and operable in dependence upon each other to sense the presence or absence of identifying means at such positions thereon, means responsive to the first-named sensing member upon sensing of identifying means to adjust said control means to effect predetermined operative functions of the machine, and means responsive to said group sensing members upon sensing of identifying means by all of such group sensing members operable to adjust said control means to effect said predetermined operative functions of the machine.

7. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of sensing means comprising sensing members for severally cooperating with selected individual identifying positions on a printing device to sense the presence or absence of identifying means at such posi-

tions thereon, and a plurality of other sensing members for cooperating as a group with a corresponding plurality of selected group identifying positions on a printing device and operable in dependence upon each other to sense the presence or absence of identifying means at such positions thereon, means responsive to the first-named sensing members upon sensing of identifying means by at least one of such members and operable to adjust said control means to effect predetermined operative functions of the machine, and means responsive to said group sensing members upon sensing of identifying means by all of such group sensing members and operable to adjust said control means to effect said predetermined operative functions of the machine.

8. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected identifying positions on such printing devices, the combination of individual sensing means comprising at least one individual sensing member for cooperating with predetermined individual identifying means on a printing device to sense the presence or absence of such predetermined individual identifying means thereon, and a plurality of other sensing members for cooperating as a group with a corresponding plurality of selected group identifying positions on a printing device and operable to sense the presence or absence of identifying means at all of such group identifying positions thereon, means responsive to said individual sensing means upon sensing of an identifying means thereby and operable to adjust said control means to effect predetermined operative functions of the machine, and means responsive to said group sensing members upon sensing of identifying means by all of such group members and operable to adjust said control means to effect said predetermined operative functions of the machine.

9. In a selector as claimed in claim 8, at least one other sensing member for cooperating with a selected identifying position on a printing device to sense the presence or absence of an identifying means at such position thereon, said means responsive to said individual sensing member and said means responsive to said group sensing members being primarily under control of said last-mentioned other sensing member.

10. In a selector for use in effecting control operations upon a machine in response to each of a series of control elements where each control element is adapted to have indicating means in each of a plurality of possible control areas, said selector comprising a plurality of sensing members adapted for sensing cooperation as a group with a selected group of such areas to sense the presence or absence of indicating means in such areas, an individual sensing member adapted for sensing cooperation with a selected single one of such areas to sense the presence or absence of indicating means in such area, governing means for such a machine adapted in a predetermined setting to cause the machine to perform a desired function, and means operatively associated with said governing means and said sensing members to effect said predetermined setting of said governing means when said individual sensing member senses the presence of corresponding

indicating means or when all of said group sensing members sense the presence of corresponding indicating means, and being ineffective to produce said predetermined setting when one or more but not all of said group sensing members sense the presence of corresponding indicating means.

11. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of an actuator having a predetermined stroke, a carrier movable yieldingly by said actuator from an inactive position, a sensing bar adapted to be mounted on said carrier and having a plurality of mounting devices thereon corresponding to said identifying positions, sensing means comprising a plurality of group sensing members shiftably mounted in selected ones of said mounting devices and each adapted to be shifted therein as an incident to the sensing of a corresponding identifying means, a control member adapted to be actuated from said carrier, to a first position when no identifying means is sensed by any of said sensing members and to a second position when one or more but less than all of the group sensing members fails to sense an identifying means, and means mounted in part on said carrier and in part on said actuator and operable only in response to the shifting of all of said group sensing members to shift said control member to a third position.

12. A mechanical selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be located are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at one or more selected identifying positions on such printing devices, the combination of a sensing bridge movable from a retracted position to a sensing position, an individual sensing element adapted to be mounted on said sensing bridge in any selected position to sense an identifying means in a corresponding position on such a printing device, means operable upon the control means of the machine in response to the sensed presence or absence of identifying means at such corresponding position to control such operative function of the machine, a plurality of group sensing elements adapted to be mounted on said sensing bridge for cooperation with identifying means in selected other group identifying positions on such printing devices, and means independent of said individual sensing element associated with said group sensing elements and responsive only to the sensing thereby of group identifying means in all of the corresponding positions on a printing device to govern said control means and control said operative function of the machine, said group sensing elements predominating over said individual sensing element whereby said individual element is effective to determine the operation of the control means of the machine only in the complete absence of identifying means at said group identifying positions on the sensed printing device.

13. In a selector of the character described, a carrier movable between inactive and sensing positions, a selector bar adapted to be mounted

on said carrier and having a plurality of mounting positions, a plurality of group sensing members adapted to be mounted in selected ones of said positions on said selector bar to define a predetermined group, an individual sensing member adapted to be mounted on said selector bar in any selected one of said positions, and control means mounted on said carrier and operable under the joint control of all of said group sensing members to effect a desired control operation.

14. In a selector of the character described, a carrier movable between inactive and sensing positions, a selector bar adapted to be mounted on said carrier and having a plurality of mounting positions, a plurality of individually actuable group sensing members adapted to be mounted in selected ones of said positions on said selector bar to define a predetermined group, and control means including a slide member mounted on said carrier and operable under the joint control of all of said group sensing members, said slide member being moved relative to said carrier to effect a desired control operation only when all of said sensing members are concurrently actuated.

15. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, the combination of an actuator having a predetermined stroke, a carrier movable yieldingly by said actuator from an inactive position, a sensing bar adapted to be mounted on said carrier and having a plurality of mounting devices thereon corresponding to said identifying positions, sensing means comprising a plurality of group sensing members shiftably mounted in selected ones of said mounting devices and each adapted to be shifted therein as an incident to the sensing of a corresponding identifying means, an individual sensing member adapted to be fixedly mounted in any one of said mounting devices, a control member adapted to be actuated from said carrier, to a first position when no identifying means is sensed by any of said sensing members, to a second position when one or more but less than all of the group sensing members fails to sense an identifying means, and to a third position when said individual sensing member senses an identifying means, and means mounted in part on said carrier and in part on said actuator and operable only in response to the shifting of all of said group sensing members to shift said control member to said third position.

16. In a selector of the character described, the combination of a shiftable carrier, an actuator having a predetermined stroke, a yielding connection from said actuator to said carrier tending to impart said predetermined stroke to said carrier, a plurality of group sensing elements adapted to be mounted in selected positions on said carrier for limited relative movement as an incident to a sensing operation, an individual sensing element mounted on said carrier and operable in a sensing operation to limit the stroke of said carrier to a predetermined portion of said stroke, a control member shiftable between three positions, means operable by said carrier when its stroke is limited by said individual sensing element to shift said control member to a first

one of said positions and operable when movement of said carrier is not so limited to move said control member to a second one of said positions, any one of said group sensing elements being operable to limit said stroke of said carrier to cause positioning of said control member in said third position, and normally inactive means associated with said actuator and operable in response to said shifting of all of said group selector elements to actuate said control member to said first one of said positions.

17. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, a selector bar, actuating means therefor, an individual sensing member adapted to be positioned on said bar for sensing cooperation with identifying means in any selected one of said positions on a printing device, said individual sensing member being operable in response to the sensed presence or absence of a corresponding identifying means to control the movement of said selector bar, a plurality of group sensing members adapted to be mounted on said bar for sensing cooperation with identifying means in a selected group of said positions on a printing device, a control element adapted to be located in any selected one of a plurality of control positions, shifting means connected to said actuating member for moving said control elements to one of said positions, said shifting means having a normally inactive position, means normally tending to urge said shifting means to an active position, said last-mentioned means being latched against operation on said shifting means by the conjoint action of all of said group sensing members and being released only when all of said group sensing members sense an identifying means in corresponding positions on a printing device.

18. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, a selector bar adapted for yieldingly induced movement from a retracted position to a sensing position, an individual sensing pin of a particular length adapted to be mounted in a fixed relation on said bar in position to sense the presence or absence of identifying means in any selected one of the positions on a printing device, a plurality of group sensing pins adapted to be mounted on said selector bar for sensing cooperation with identifying means in any selected group of positions on a printing device, said group sensing pins being mounted for limited individual axial movement and being of such a length as to extend beyond the plane of the end of said individual pin in all positions, a control member mounted on said selector bar comprising a spring biased element normally tending to move in one direction to effect a control operation, and interacting means on said control member and each one of said group sensing pins operable to prevent such movement of said control member so long as any

one of said group sensing members fails to sense cooperating identifying means on a printing device.

19. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, a selector bar adapted for yieldingly induced movement from a retracted position to a sensing position, an individual sensing pin of a particular length adapted to be mounted in a fixed relation on said bar in position to sense the presence or absence of identifying means in any selected one of the positions on a printing device, a plurality of group sensing pins adapted to be mounted on said selector bar for sensing cooperation with identifying means in any selected group of positions on a printing device, said group sensing pins being mounted for limited individual axial movement and being of such a length as to extend beyond the plane of the end of said individual pin in all positions, a control member mounted on said selector bar comprising a spring biased element normally tending to move in one direction to effect a control operation, interacting means on said control member and each one of said group sensing pins operable to prevent such movement of said control member so long as any one of said group sensing members fails to sense cooperating identifying means on a printing device, and a supplemental sensing pin of an effective length greater than the length of either said individual sensing pin or said group sensing pins, said supplemental pin being adapted to be mounted on said selector bar in position for sensing cooperation with identifying means in any selected one of said positions on a printing device.

20. In a selector for use in a printing machine through which printing devices having a plurality of positions whereat identifying means may be provided are sequentially passed and wherein a control means is provided for effecting operative functions of the machine in response to the presence or absence of identifying means at selected of said identifying positions on such printing devices, a selector bar adapted for yieldingly induced movement from a retracted position to a sensing position, an actuator for inducing such movement, a plurality of group sensing pins adapted to be mounted on said selector bar for sensing cooperation with identifying means in any selected group of positions on a printing device, said group sensing pins being mounted for limited individual axial movement, a pair of control members mounted on said selector bar and each comprising a spring biased element normally tending to move in one direction to effect a similar control operation, said group sensing pins being separated into two groups each allocated to a respective control member, and interacting means on said control members and each one of said group sensing pins associated therewith operable to prevent such movement of the associated one of said control members so long as any one of said group sensing members associated with a particular control member fails to sense operating identifying means on a printing device.

21. In a selector for use in a printing machine through which printing devices having a plu-

rality of positions whereat identifying means may
 be provided are sequentially passed and where-
 in a control means is provided for effecting op-
 erative functions of the machine in response to
 the presence or absence of identifying means at
 selected of said identifying positions on such
 printing devices, a reciprocatory selector bar,
 actuating means for moving said bar between
 inactive and sensing positions, a plurality of in-
 dividually actuatable group sensing members
 adapted to be mounted on said bar for sensing
 cooperation with identifying means in a selected
 group of said positions on a printing device, a
 normally inactive control element mounted shift-
 ably on said actuating means, and means op-
 erable under the conjoint controlling action of
 all of said group sensing members only when all
 of said group sensing members are actuated upon
 sensing identifying means in corresponding po-
 sitions on a printing device to shift said con-
 trol element to an active position.

22. In a selector for use in a printing machine
 through which printing devices having a plurality
 of positions whereat identifying means may be
 provided are sequentially passed and wherein a
 control means is provided for effecting operative
 functions of the machine in response to the pres-
 ence or absence of identifying means at selected
 of said identifying positions on such printing de-
 vices, a selector bar adapted for yieldingly in-
 duced movement from a retracted position to a
 sensing position, a plurality of group sensing pins
 adapted to be mounted on said selector bar for
 sensing cooperation with identifying means in
 any selected group of positions on a printing de-
 vice, a control member operatively associated with
 identifying means in any selected group of po-
 sitions on a printing device, a control member
 operatively associated with all of said group sens-
 ing pins to move to a predetermined control po-
 sition only when all of said group sensing mem-
 bers sense cooperating identifying means on a print-
 ing device, and a supplemental sensing pin adapted
 to be mounted on said selector bar for sensing co-
 operation with identifying means in any selected
 position on a printing device, and means operable
 under the control of said supplemental pin to
 render said group sensing pins ineffective upon
 said control member when said supplemental pin
 senses an identifying means in the selected corre-
 sponding position on a printing device.

23. A mechanical selector for use in a printing
 machine through which printing devices having
 a plurality of positions whereat identifying means
 may be located are sequentially passed and where-

in a control means is provided for effecting op-
 erative functions in response to the presence or
 absence of identifying means at one or more se-
 lected identifying positions on such printing de-
 vices, the combination of a sensing bridge movable
 from retracted to sensing positions and having a
 plurality of mounting positions thereon corre-
 sponding to said positions on said printing plates,
 a control member mounted on said bridge for
 movement along said mounting devices, said con-
 trol member having a plurality of notches formed
 therein corresponding and adapted to be posi-
 tioned in registry with said mounting devices,
 spring means biasing said control member to
 move said notches out of registry, and shiftable
 sensing means mounted on said bridge and engag-
 ing said control member to maintain such registry
 and adapted to be shifted by operative engage-
 ment with a predetermined identifying means on
 a printing device to release said control member
 for movement by said spring means.

24. A mechanical selector for use in a printing
 machine through which printing devices having a
 plurality of positions whereat identifying means
 may be located are sequentially passed and where-
 in a control means is provided for effecting op-
 erative functions of the machine in response to the
 presence or absence of identifying means at one
 or more selected identifying positions on such
 printing devices, the combination of a sensing
 bridge movable from a retracted position to a
 sensing position, a first set of one or more sensing
 elements adapted to be mounted on said sensing
 bridge in selected positions to sense identifying
 means in corresponding positions on such a print-
 ing device, means operable upon the control means
 of the machine in response to the sensed presence
 or absence of identifying means at such corre-
 sponding positions to control such operative func-
 tion of the machine, a second set of group sensing
 elements adapted to be mounted on said sensing
 bridge for cooperation with identifying means in
 selected other group identifying positions on such
 printing devices, and means independent of said
 first set of sensing elements associated with said
 group sensing elements and responsive only to the
 sensing thereby of group identifying means in all
 of the corresponding positions on a printing device
 to govern said control means and control said
 operative function of the machine, said sets of
 sensing elements and the means controlled there-
 by being so arranged that one set is subordinate
 to the other.

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