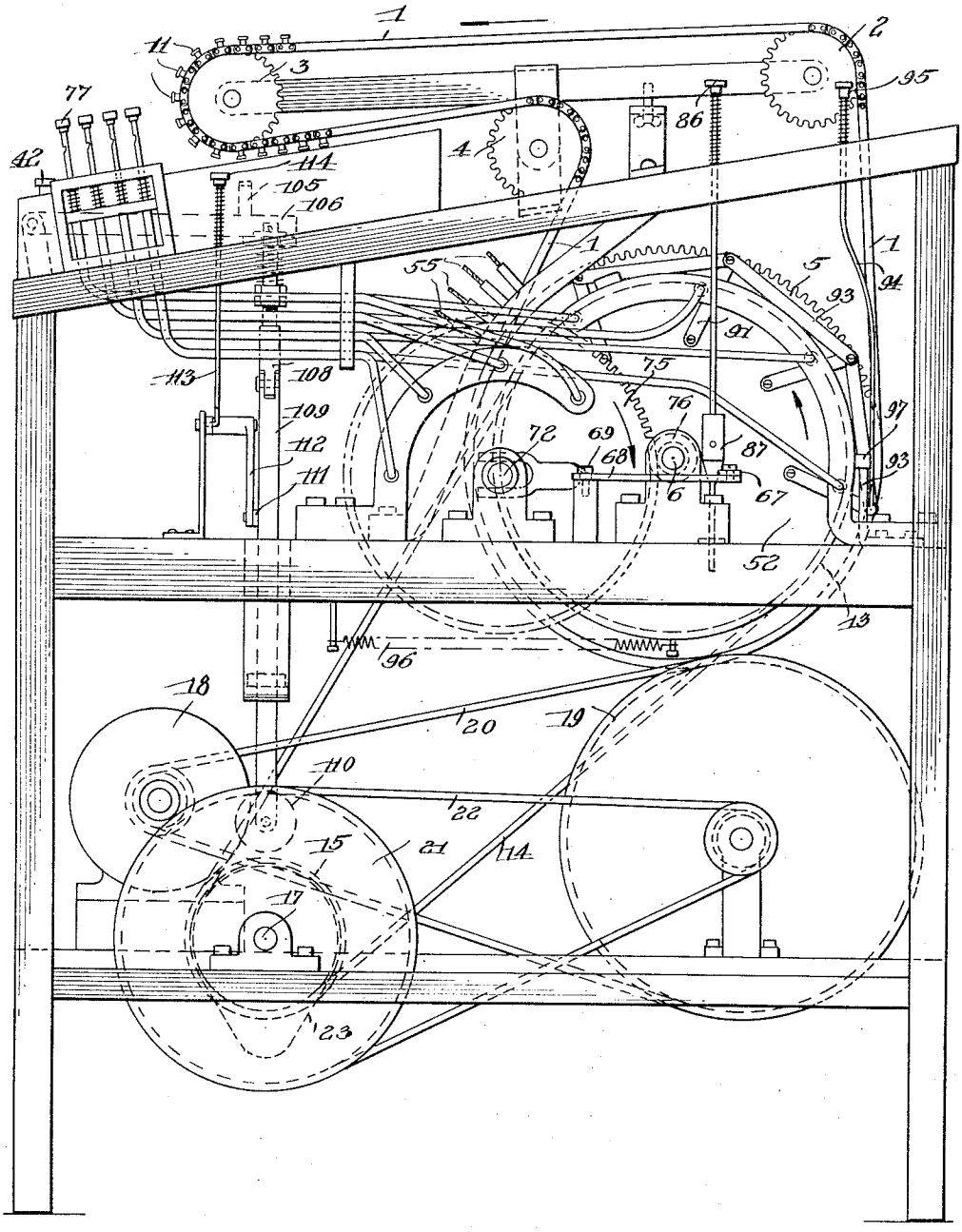
June 11, 1940. W. D. RYAN ET AL 2,204,153

MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 1

Fig. 1



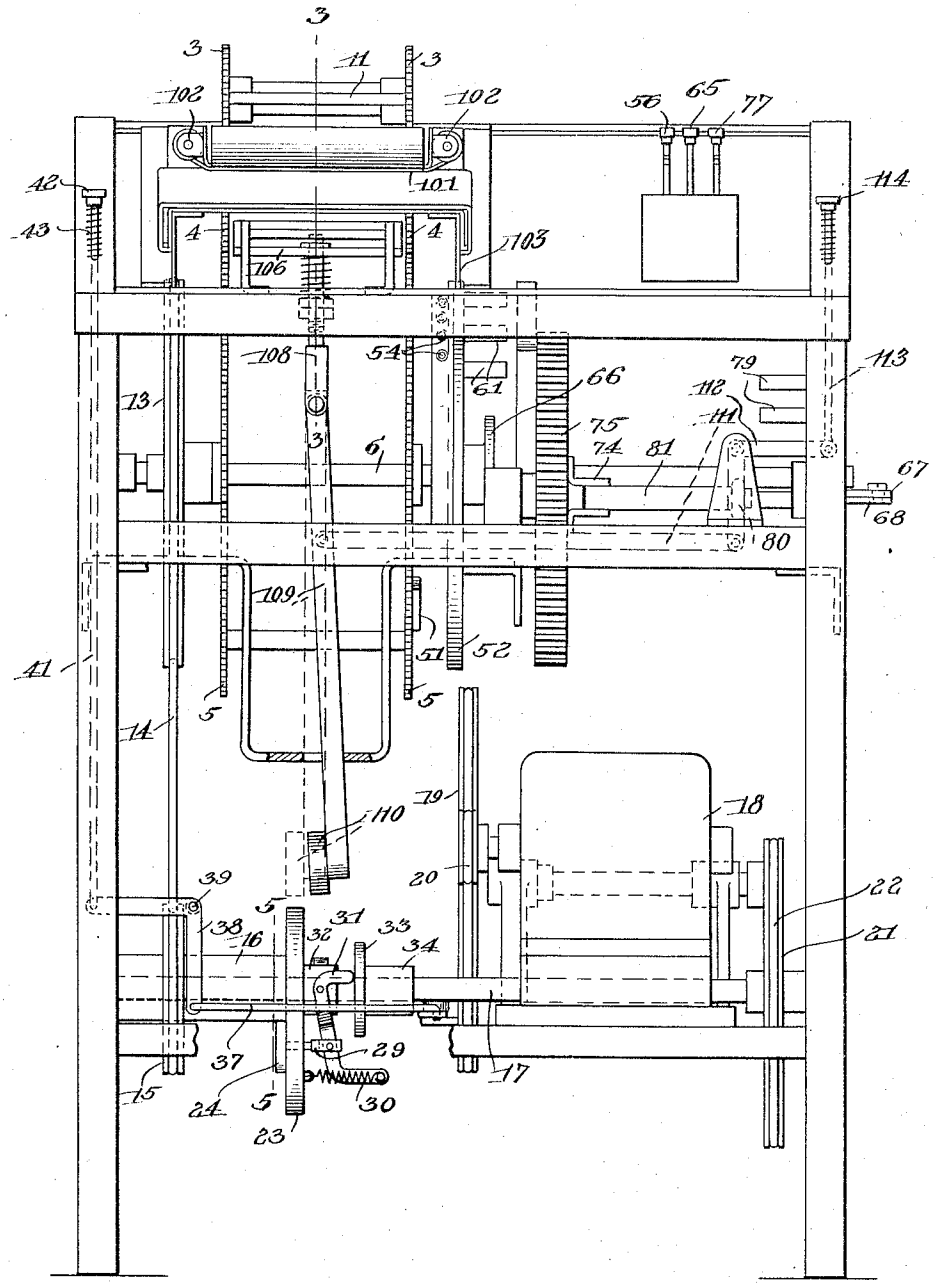
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MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 2

Fig. 2



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MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 3

Fig. 3

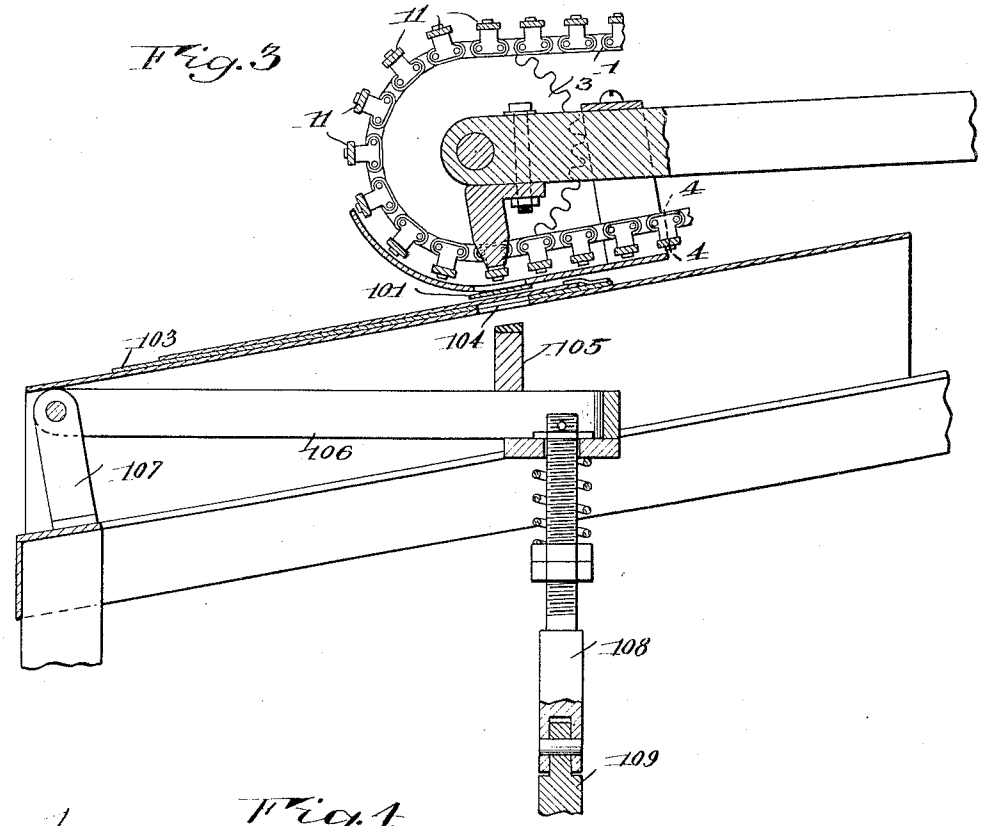


Fig. 1

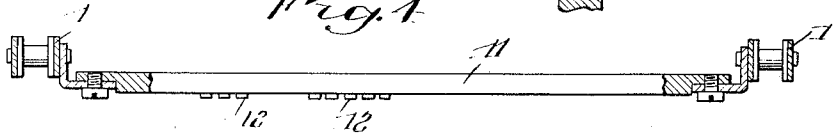


Fig. 5

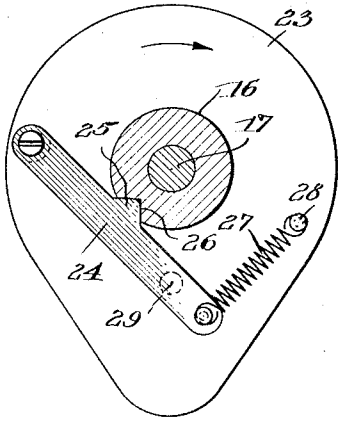
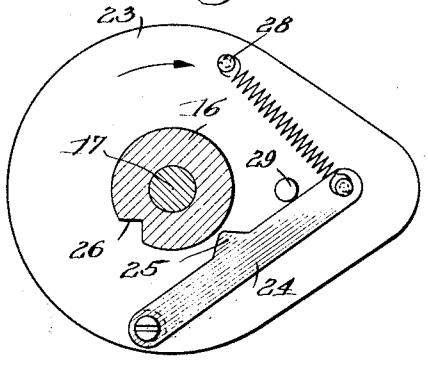


Fig. 6



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June 11, 1940. W. D. RYAN ET AL 2,204,153

MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 4

Fig. 7

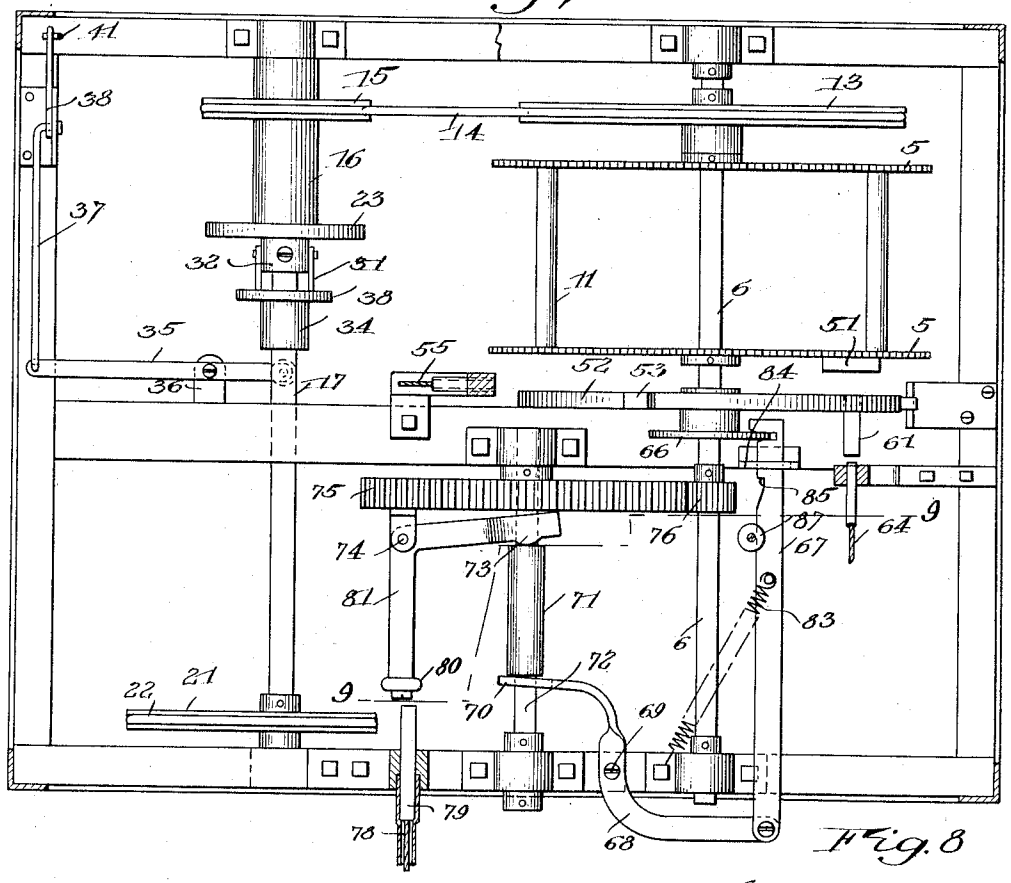


Fig. 8

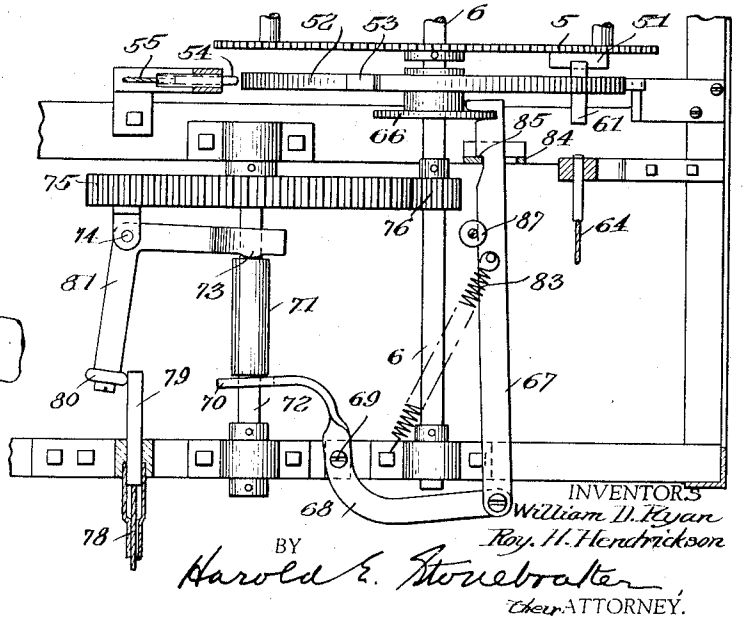


Fig. 15

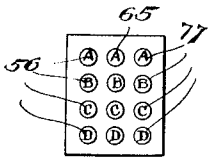


Fig. 16

ABC Bacon

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June 11, 1940. W. D. RYAN ET AL 2,204,153

MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 5

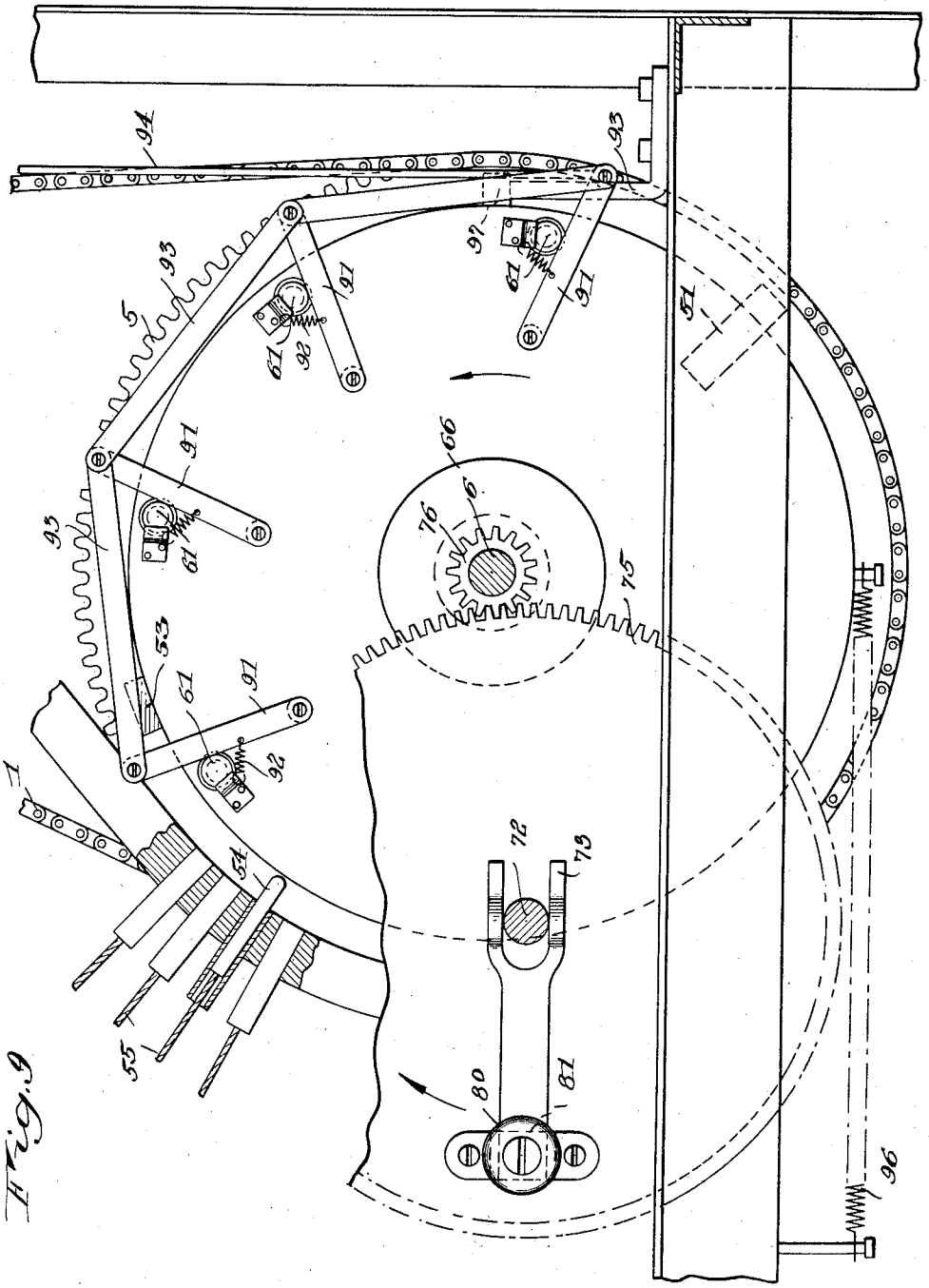


Fig. 9

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MACHINE FOR DECODING SYMBOLS

Filed June 14, 1938 6 Sheets-Sheet 6

Fig. 10

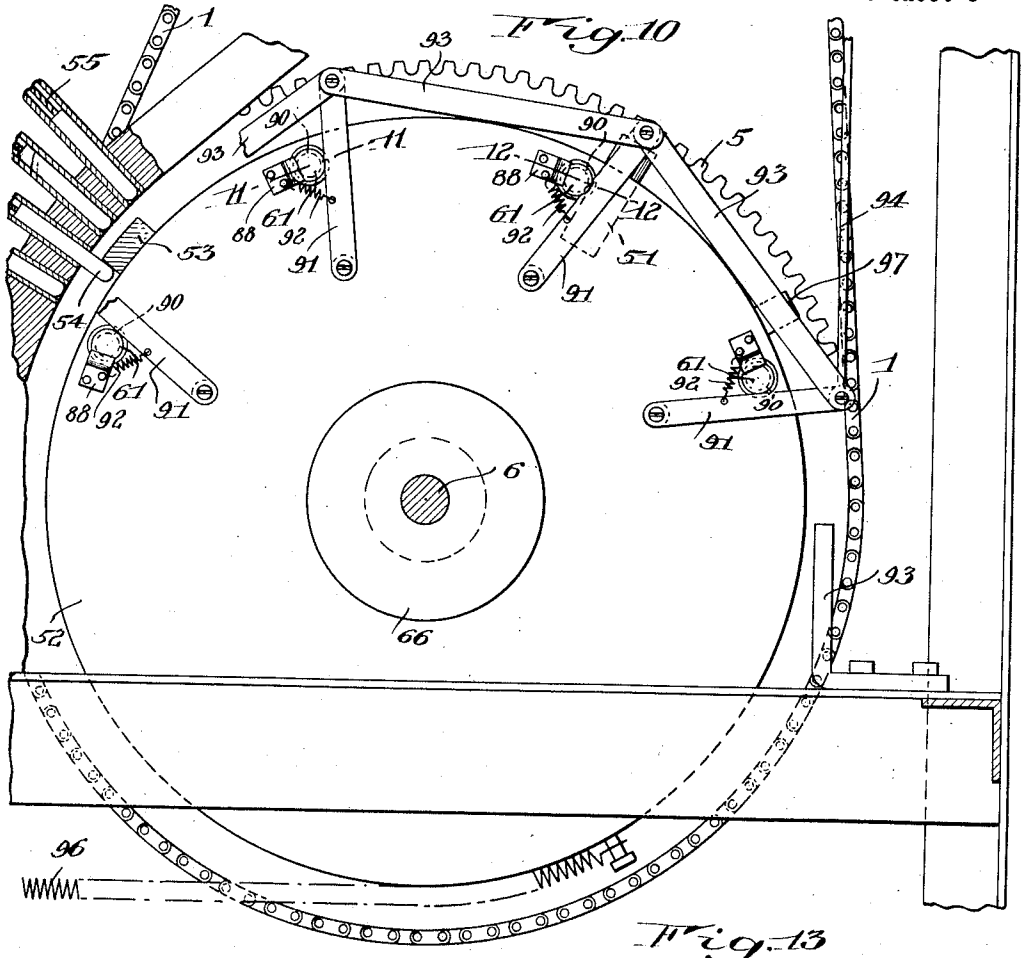


Fig. 11

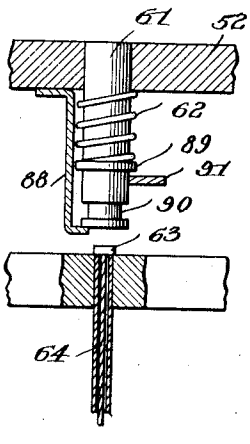


Fig. 12

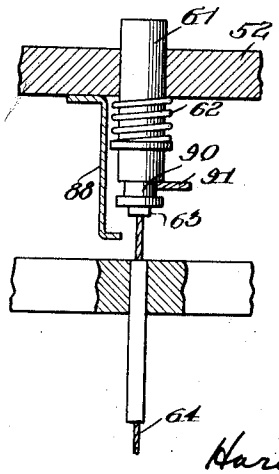


Fig. 13

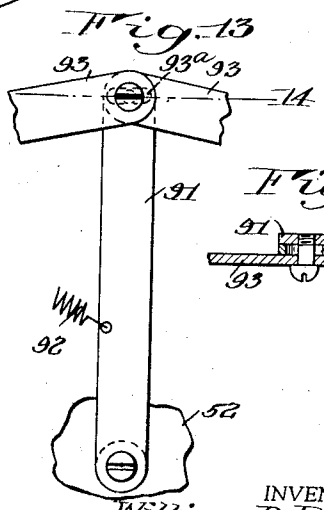


Fig. 14

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Patented June 11, 1940 2,204,153

UNITED STATES PATENT OFFICE

2,204,153

MACHINE FOR DECODING SYMBOLS

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Rochester, N. Y.

Application June 14, 1938, Serial No. 213,647

14 Claims. (Cl. 101—94)

This invention relates to a machine for decoding symbols, and has to do more particularly with a mechanism that can be operated by a series of keys and automatically selects from a large number of units one corresponding to a particular symbol, composed of a series of letters or characters.

In the packing industry, the various products, of which there may be a large number put out by a single plant, are ordered by symbols, each symbol comprising for instance three different letters of the alphabet. Thus ABC may represent bacon, BCD ham, CBD shoulder, and so forth, and when orders are telegraphed, symbols such as described are employed instead of writing out the words in full, in order to save time and expense.

It then becomes necessary at the receiving office in the factory to translate or decode the symbols of the various orders before they are filled and shipped, and heretofore this has been done by clerks who would, upon consulting a record sheet, write on the order alongside the symbol or symbols, the full name and description of the product corresponding thereto. For instance, where the order carries the symbol ABC, the clerk would write "bacon", and after the symbol BCD, the clerk would write "ham", and so forth.

It is the purpose of this invention to provide an automatic mechanism so arranged that the operator would need only to depress keys or selectors corresponding to the several letters of the symbol, and the machine would thereupon print or otherwise indicate the particular symbol and the name of the product which it represents, thus greatly facilitating and reducing the time required for performing this operation.

More particularly, the invention has for the purpose to afford an endless carrier or chain provided with a multiplicity of printing units, each corresponding to one of the symbols employed, and controlling the carrier through operating means and stop mechanism which acts to arrest movement of the carrier at a predetermined point corresponding to the particular symbol desired, such arresting operation being determined by keys or selectors corresponding to the several letters or characters of the particular symbol.

A further purpose of the invention is to arrange such printing units on the carrier in successive groups, and to provide a series of groups of selectors corresponding to the grouping of the printing units on the carrier so that by operating a key of the first group, the corresponding group of printing units is selected, by operating a key of the second group, the corresponding secondary group of printing units is selected, and by operating a key of the third group, the corresponding individual printing unit of said secondary group of printing units is selected.

A further purpose of the invention is to afford a simple and practical mechanism that enables readily starting movement of the carrier and arresting such movement at a predetermined point, in accordance with the particular selectors that are operated, and thereafter easily and quickly effecting a record from the printing unit that is selected.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear clearly from the following description when read in conjunction with the accompanying drawings, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is an end elevation of a machine constructed in accordance with one embodiment of the invention;

Fig. 2 is a front elevaton of the same;

Fig. 3 is an enlarged sectional view on line 3—3 of Fig. 2, with parts broken away;

Fig. 4 is a sectional view on line 4—4 of Fig. 3;

Fig. 5 is a sectional view on line 5—5 of Fig. 2 with the clutch in engaged position for moving the printing unit carrier;

Fig. 6 is a similar view with the clutch disengaged after movement of the printing unit carrier has been arrested;

Fig. 7 is a plan view, with parts removed, showing the normal position of the stop mechanism before the selectors are operated;

Fig. 8 is a similar view showing the position of the parts of the stop mechanism after operation of the keys or selectors;

Fig. 9 is an enlarged sectional view on the line 9—9 of Fig. 7, with parts broken away and showing one selector operated and before movement of the interlocking member or wheel;

Fig. 10 is a view in side elevation of the interlocking device or wheel, with parts appearing in section and showing the wheel after it has moved to engage the pin 54 in the Fig. 9 position, and with one of the stops 61 selected;

Fig. 11 is an enlarged detail sectional view on the line 11—11 of Fig. 10;

Fig. 12 is a similar view on line 12—12 of Fig. 10;

Fig. 13 is an enlarged elevation of a portion of the stop retaining means;

Fig. 14 is a detail sectional view on line 14—14 of Fig. 13;

Fig. 15 is a detail plan view of the operating keyboard or selectors, and

Fig. 16 is a detail view showing the impression made by one of the printing units.

The invention my be carried out in conjunction with a mechanism involving a movable carrier provided with a multiplicity of units for indicating or printing different symbols, and in the illustrated embodiment, there is employed an endless chain with provision for initiating its movement and thereafter arresting such movement in accordance with the operation of a plurality of keys or selectors.

Referring more particularly to the drawings in which like reference characters refer to the same parts throughout the several views, 1 designates the carrier, see Fig. 1, comprising endless chains traveling around sprocket wheels 2, 3 and 4 and the large sprocket wheel 5 that is fixed upon the driven shaft 6. The carrier or endless conveyor 1 includes two oppositely arranged chains which are connected by a series of bars 11, see Figs. 3, 4 and 7, each of which carries printing characters 12, the data printed by one of the printing units being illustrated in Fig. 16, as "ABC Bacon."

It will be understood that there are as many printing units or bars 11 as there are symbols provided for in the machine, and that each printing unit carries with its symbol the necessary information showing what the symbol means. Thus for instance, another printing unit might print "BCD Ham", and so forth, the printing operation being effected after the particular unit is selected by mechanism that will shortly be described.

The driven shaft 6, which effects movement of the endless carrier, carries a pulley 13 fixed thereon, see Fig. 7, engaged by a belt 14 that engages the driving pulley 15, fixedly connected to or constructed as part of a sleeve 16 that is loosely mounted on the shaft 17 and adapted to be connected therewith by a clutch mechanism under the control of the operator when it is desired to operate the carrier.

The shaft 17 is driven continuously by an electric motor 18, see Figs. 2 and 7, which drives pulley 19 through belt 20, and the pulley 19 in turn drives pulley 21 through belt 22, the pulley 21 being fixed upon the continuously operating driving shaft 17 and adapted to be connected with the sleeve 16 by the operator in the following manner.

Referring to Figs. 5, 6 and 7, 23 designates a cam plate fixedly mounted on the shaft 17 and having pivotally mounted on one side thereof an arm 24 that is provided with a tapered dog or projection 25 engageable with a V-shaped recess 26 provided in the sleeve 16 which is loose on the shaft 17. 27 is a spring connecting one end of the arm 24 to a post 28 fixed on the cam plate 23, and functioning to actuate the arm 24 toward the position shown in Fig. 5, in which the sleeve 16, and consequently the endless carrier, is operated by the shaft 17 through the friction clutch mechanism described.

When the operator selects a particular symbol or printing unit by operating keys or selectors as will be described presently, movement of the endless carrier is arrested at such point, and this results in stopping movement of the sleeve 16, whereupon continued movement of the shaft 17 and cam plate 23 causes the friction dog 25 to move out of the notch or recess 26, against the action of spring 27, as shown in Fig. 6. The arm 24 is held in this disengaged position by a spring-actuated locking pin 29 which is movable through an opening in cam plate 23 and engages the side of the arm 24 to prevent its returning to the position shown in Fig. 5 until the operator effects movement of a controlling device for this purpose. When the parts are in driving relation, as shown in Fig. 5, the locking pin 29 is immediately beneath the arm 24, and cannot move into locking position until it is released by the arm 24 moving laterally, as indicated in Fig. 6.

The locking pin 29, see Figs. 2 and 7, is connected to and controlled by the yoke lever 31 which is pivoted on a collar 32 carried by the cam plate 23 and actuated by spring 30. The yoke lever 31 is engaged and adapted to be tilted by the disk 33 on a sleeve 34 that is movable endwise on the shaft 17, such movement being effected by a roller on the end of a lever 35 pivoted on the bracket 36 and having its outer end connected by a link 37 to a bell crank 38, see Fig. 2, which is pivoted at 39 on a suitable bracket and is connected to the rod 41 extending upwardly therefrom. A handle or key 42 is provided at the upper end of rod 41 in position to be engaged by the operator who depresses said rod 41 to withdraw pin 29 and thus initiate movement of the carrier through the mechanism just described, said key 42 being returned to normal position by the spring 43.

With the parts thus far described, by depressing key 42, the endless carrier is adapted to move until arrested by stop mechanism governed by the previous operation of certain keys or selectors, and the mechanism by which this stopping operation is effected will now be described in detail.

Referring to Figs. 7 and 8, the sprocket wheel 5 constitutes a controlling device, and is provided with a stop 51 while 52 designates an interlocking member or wheel that is adapted to be brought into interlocking relation with the stop 51 at a selected point to be moved thereby and to be stopped at a second selected point by groups of selectors, as will be described presently. The interlocking member or wheel 52, as shown in this embodiment, is loosely mounted on the shaft 6 upon which it may turn and is also axially movable thereon and provided with a stop 53, see Figs. 7 and 10, that is engaged by one of a series of pins or stops 54 which are adapted to be projected by the flexible cables 55 that are under the control of the keys or selectors 56, see Figs. 8 and 9. In the present embodiment, four selectors are shown in the group which determine the particular point at which the stop 53 is engaged and the interlocking member 52 thereby stopped in its travel in order to stop the endless carrier, although it will be understood that the number of selectors in each group may be multiplied, this depending upon the capacity of the machine and the number of printing units with which it is provided.

Four selectors in each group is sufficient to illustrate the construction and operation of the parts, there being a second group of selectors to determine the point at which the interlocking member 52 is brought into interlocking relation with the controlling device or sprocket wheel 5 to be driven thereby, and a third group of selectors to determine the point at which the interlocking member 52 is moved axially of the shaft 6, to bring it into a position where it may be locked to the controlling device 5, and the mech-

anism by which these operations are performed will now be described.

Mounted for transverse shifting on the interlocking member **52** is a series of stops **61**, see Figs. 7, 9, 10, 11 and 12. There are four such stops **61**, each slidable transversely of the interlocking member or wheel **52**, and held normally in retracted position by a spring **62**, see Figs. 11 and 12. Each stop **61** is controlled by a follower **63** on the end of a flexible cable **64** which is movable endwise by one of the keys or selectors **65**, see Fig. 15, there being one such selector **65** for each of the stops **61**, so that the operator by depressing one of the selectors **65** causes the corresponding stop **61** to be moved transversely of the interlocking member **52** and into the path of the stop **51**, as shown in Fig. 8. When thus positioned, stop **61** is engaged by the stop **51** and rotated thereby when the carrier moves, until the stop **53** on interlocking member **52** is engaged by the selected stop **54** already described, which arrests movement of the interlocking member and consequently of the carrier. The mechanism will now be described for effecting the necessary endwise or axial movement of the interlocking member **52** from the position shown in Fig. 7, where it is out of locking relation, to the position shown in Fig. 8, this movement being effected at a preselected time through a third group of selectors.

To accomplish this, the interlocking member **52** is provided with a disk **66** that is engaged by a shifting bar **67** having a recess at its one end cooperating with said disk **66** to effect movement thereof when the bar **67** is shifted endwise. Said bar **67** is pivotally connected at its outer end to a lever **68** pivoted to the frame of the machine at **69** and having an inner end **70** located in the path of a sleeve **71** that is slidable on a shaft **72** and adapted to be moved by a yoke **73** forming part of a bell crank that is pivoted at **74** on the gear wheel **75**.

The gear wheel **75** is engaged and driven by the pinion **76** that is fixedly mounted on the aforementioned driven shaft **6** so that the gear **75** is driven along with and in fixed timed relation to the endless carrier, and at a selected point in the rotation of the gear **75**, the bell crank carrying the yoke **73** is tilted from the position shown in Fig. 7 to that shown in Fig. 8 by operation of a selector, and through the mechanism just described, effecting endwise movement of the shifting bar **67** from the position of Fig. 7 to the position of Fig. 8, and corresponding endwise or axial movement of the interlocking member **52**.

To effect the necessary movement of the bell crank and yoke **73**, a third group of selectors **77** is provided, each controlling a cable **78** and plunger **79** which is thereby movable into the path of the roller **80** on the arm **81** of the bell crank so that when the latter reaches the particular plunger **79** that has been selected by the operator, it is swung to the position of Fig. 8. The keys or selectors may be returned to normal position by any suitable clearing mechanism which it is deemed unnecessary to show.

The mechanism as shown includes three groups of keys or selectors indicated at **56**, **65** and **77** in Fig. 15, each group containing keys corresponding to the letters A, B, C and D. The printing units on the carrier are arranged in groups, that is to say, there are four major groups, corresponding to and selectible by the first group of selectors **77**, four secondary groups within each major group, the secondary groups corresponding to and being selectible by the second group of selectors **65**, and four units or printing elements in each such secondary group, the individual printing units corresponding to and being selectible by the third group of selectors **56**. Briefly the operation of this part of the mechanism generally is as follows: the driving shaft **17** is normally in rotation but unclutched from the sleeve **16**, see Fig. 6, so that the controlling device or sprocket wheel **5**, driven shaft **6**, and the endless carrier **1** are stationary. The operator first depresses three keys or selectors, for instance, if the symbol to be decoded is ABC, the first selector A of the first group **77** would be depressed, the second selector B of the second group **65** would be depressed, and the third selector C of the third group **56** would be depressed. Operation of the selector A in the first group moves the corresponding plunger **79** inwardly, operation of the selector B in the second group moves the corresponding stop **61** on the interlocking member transversely thereof, and operation of the selector C in the third group moves the corresponding stop **55** inwardly, as shown in Fig. 10.

The three selectors corresponding to the letters of the symbol to be decoded having been operated, the carrier is started by depressing the key **42** and rod **41**, see Fig. 2, causing the friction clutch to engage, as shown in Fig. 5. This effects rotation of the shaft **6** and the sprocket wheel **5**, see Fig. 7, and likewise turns the pinion **76** and gear **75**. The latter continues to turn until the bell crank arm **81** is swung by the preselected plunger **79**. This effects movement of the shifting bar **67** and consequent axial movement of the interlocking member **52** from the position shown in Fig. 7 to that shown in Fig. 8, and when the stop **51** on sprocket wheel **5** reaches the selected stop **61** on the interlocking member **52**, it carries the latter with it in rotation until stop **53** on the interlocking member is engaged by the preselected stop **54**. This arrests movement of the sprocket wheel **5** and endless carrier, permitting the friction clutch to disengage, as shown in Fig. 6, so that the carrier is held with the printing unit that corresponds to the three operated selectors at the printing point.

Consequently, when the printing operation is effected, as will be described presently, the notation "ABC Bacon" is printed on a sheet. It will be understood that any one of the four selectors of each group may be operated, and that there is a printing unit for each different combination of selectors. Thus there may be as many printing units as there are possible combinations between the selectors of the three groups, and by operating one selector of each group, for example, the keys corresponding to ABD, or BAC, or CDB, the corresponding printing unit is automatically selected and brought to the printing point of the machine.

The printing units are preferably arranged on the carrier in four successive major groups, as already mentioned, the first group containing all the symbols commencing with A, the second group containing all the symbols commencing with B, the third group containing all the symbols commencing with C, and the fourth group containing all the symbols commencing with D. The portion of the carrier holding the printing units in the major group would be determined by the actuation of one of the selectors of the first group **77**.

Each major group of printing units would be arranged in four successive secondary groups of printing units, in accordance with the second letter of the symbol. Thus the first secondary group would contain all symbols in which the second letter is A, the next secondary group would contain all symbols having the second letter B, the third secondary group would contain all symbols having the second letter C, and so on, there being four of these secondary groups of printing units in each major group, and the secondary group selected depends upon the operation of the particular selector 65 of the second group of selectors which operates one of the stops 61.

Each of such secondary groups contains four individual printing units, the first in which the last letter of the symbol is A, the second in which the last letter of the symbol is B, the third in which the last letter of the symbol is C, and so forth, and owing to the timed relation of the gear 75 to the movement of the carrier, and likewise the timed relation of the interlocking member 52, the carrier is automatically stopped at the particular point of the printing unit that corresponds to the three selected keys. It will be understood that there will be as many keys or selectors in each group as there are letters used in the various symbols. In the arrangement disclosed, the printing units employ letters from A to D, and if it is desirable to provide the carrier with more printing units than are possible with four letters, this can be accomplished by increasing the number of keys or selectors in each group, but the operation of the machine will be the same as already described.

The shifting bar 67, lever 66, and the parts connected thereto are restored to normal position by the spring 83, and the bar 67 is held in the position illustrated in Fig. 8 by a shoulder 34 that engages a notch 85 on the side of the bar 67 to hold the latter in the position shown in Fig. 8 until it is restored to normal position by the operator. This is effected by the depression of a plunger 86, see Fig. 1, which through a cable effects downward movement of a conical member 87, the inclined side of which engages the edge of the shifting bar 67 and moves it laterally from the position shown in Fig. 8 until the notch 85 is clear from the shoulder 34, whereupon the spring 83 retracts the lever 67 to the position of Fig. 7.

It is also necessary to hold the selected stop 61 in the position to which it is moved on the interlocking member 52 until the operation is completed, and this is effected by the structure shown in Figs. 10 to 14. Each stop 61 on the interlocking member 52 is held in initial position against a bracket 88, fixedly secured to the wheel 52, by the spring 62 which is located between the face of the disk 52 and a shoulder 89. In order to lock the stop 61 in operating position, it is further provided with a recess 90 adapted to be engaged by a locking plate 91, which latter is pivoted to a stud mounted on the wheel 52, and actuated by a spring 92 connected at one end to the locking plate 91 and at its opposite end to a suitable pin or bracket carried by the disk. 93 designate a series of links pivotally connected with the several locking plates 91, one of each pair of connecting links being slotted as at 93a to permit movement of any one of the four locking plates 91 independently of the others. Thus when the selected stop 61 is actuated, as shown in Fig. 12, the locking plate 91 that is adjacent thereto drops into the recess 90 under the impulse of the spring 92, as shown in Figs. 10 and 12, and prevents return of the stop 61 to its initial position until the locking plate is retracted. To effect release of the stop 61 and permit its return to normal position under action of spring 62, there is provided a cable or wire 94 connected to one of the locking plates 91, as shown in Fig. 10, and leading to an operating lever 95. By depressing the lever or plunger 95, the operator depresses wire 94 and moves all of the locking plates 91 away from locking engagement with the stops 61 and thus permits return of the latter to initial position by their respective springs 62. This operation, and likewise the operating of lever 86 to restore the shifting bar 67 to its initial position, are effected after the printing operation has been completed and when it is desired to restore the parts for another operation. The interlocking member or wheel 52 is restored to its initial position, when released, by a spring 96, see Fig. 1, one end of which is connected to a stationary post and the other end being connected to the interlocking member, which also carries a stop 97 that engages a bracket 98 when in its initial position, where it is held by the spring 96.

After the selected printing unit has been brought to printing position by the operations already described, it is desirable to effect a printed record, and to accomplish this, a ribbon 101 is provided, see Fig. 3, which may travel around suitable supporting spools mounted in lugs 102, see Fig. 2. Beneath said ribbon is a suitable support 103 upon which the paper sheet is positioned, said support having an opening 104 thereon through which is movable a platen 105. When the platen 105 is actuated upwardly, it moves the paper with the ribbon thereabove against the printing unit, effecting the desired record on the paper sheet.

The platen 105 is mounted upon a support 106 that is pivotally mounted on the arms 107 and has connected thereto a post 108 pivotally associated with a connecting rod 109. The connecting rod 109 is provided at its lower end with a suitable roller 110 that is engaged by the cam plate 22 during rotation of the latter, when the connecting rod 109 is moved from the position shown in Fig. 2 in full lines to the position shown in dotted lines. To effect this, the connecting rod 109 has a link 111 pivotally connected thereto, see Fig. 2, which in turn is connected through a bell crank 112 to an operating rod 113 provided at its upper end with a handle 114.

Normally these parts are held in the position illustrated in full lines in Fig. 2, and after the printing unit has been selected, the operator, wishing to effect a printed record therefrom on the order blank or paper sheet, depresses the handle 114, causing connecting rod 109 and with it the roller 110 to be moved laterally, as shown in dotted lines in Fig. 2, into the path of the cam 23 so that upon the next rotation of the shaft 17, the connecting rod 109 is moved upwardly by the cam 23 and the platen 105 thereby brings the paper and ribbon into contact with the printing element.

While the invention has been described with reference to a particular arrangement, it is not confined to the structure illustrated, and this application is intended to cover any changes, modifications or departures coming within the purposes of the improvements or the scope of the following claims.

We claim:

1. The combination with a movable carrier

having a series of symbols arranged in successive groups thereon and a carrier controlling device, of an oscillatory and axially movable interlocking member having a series of stops movably mounted thereon for selective engagement with the carrier controlling device, a group of selectors including one connected to each of said stops, a second group of selectors any of which can be operated to effect engagement with the interlocking member at a predetermined point to stop its oscillating movement, means for moving the interlocking member axially into operative position, and a third group of selectors controlling said last named means, any of the last mentioned selectors being operative to move the interlocking member into operating position at a predetermined point.

2. The combination with a movable carrier having a series of symbols arranged in successive groups thereon and a rotary carrier controlling device movable therewith and provided with a stop, of an oscillatory and axially movable interlocking member having a series of stops movably mounted thereon for selective engagement with the stop on the carrier controlling device, a group of selectors for said stops, a second group of selectors any of which can be operated to engage with the interlocking member at a predetermined point to stop its movement, means for actuating the interlocking member axially, and a third group of selectors controlling said last named means, any of the last mentioned selectors being operative to move the interlocking member axially at a predetermined time.

3. The combination with a movable carrier having a series of symbols arranged in successive groups thereon and a rotary carrier controlling device movable therewith and provided with a stop, of an oscillatory and axially movable interlocking member, means for moving said interlocking member axially including a gear operatively connected to the aforesaid rotary carrier controlling device, a group of selectors operatively associated with said last mentioned actuating means and selectively operable to move the interlocking member axially at a predetermined time, a series of stops movably mounted on said interlocking member for selective engagement with said stop on the carrier controlling device, a group of selectors operatively associated with said movable stops on the interlocking member, and a third group of selectors which are individually operable to stop movement of said interlocking member at a predetermined time.

4. The combination with a movable carrier having a series of symbols arranged in successive groups thereon and a rotary carrier controlling device movable with the carrier and having a stop thereon, of an oscillatory and axially movable interlocking member having a series of stops movably mounted thereon for selective cooperation with said stop on the carrier controlling device, and a plurality of groups of selectors cooperating with said interlocking member, one of said groups of selectors determining the endwise movement of the interlocking member, another of said group of selectors determining the movement of one of the stops on said interlocking member, and the third group of selectors determining the point at which the movement of the interlocking member is stopped, relatively to movement of said carrier.

5. The combination with a movable carrier having a series of symbols arranged in successive groups thereon and a rotary carrier controlling device movable with the carrier and having a stop thereon, of an interlocking member movable toward and from and also with said controlling device, a series of stops mounted on said interlocking member, means for moving said interlocking member toward the carrier controlling device, a group of selectors controlling said means for moving said interlocking member toward the controlling device, a second group of selectors for moving the stops on the interlocking member, and a third group of selectors for engaging and stopping movement of the interlocking member and controlling device.

6. The combination with an endless flexible carrier having a series of printing symbols arranged thereon in successive groups, operating means for the carrier, a wheel engaged and driven by said carrier, a stop on said wheel, an interlocking member movable into and out of operative relation with said stop on the wheel, a series of stops movably mounted on said interlocking member, operating means for the interlocking member including a gear driven by said carrier operating means, an actuator movably mounted on said gear and operatively associated with said interlocking member, and a plurality of groups of selectors, one of said groups of selectors effecting movement of said actuator at a selected time, another of said groups of selectors effecting movement of one of said stops on the interlocking member, and another of said groups of selectors acting to stop movement of the interlocking member at a predetermined time.

7. The combination with an endless flexible carrier having a series of printing symbols arranged thereon in successive groups, of stop mechanism therefor including an interlocking device and a series of stops movably arranged thereon, a group of selectors operable individually to move the interlocking device in one direction at a predetermined time, a second group of selectors operable individually to move said stops on the interlocking device for operation by the carrier, and a third group of selectors which are operable individually to stop movement of the interlocking device and carrier at a predetermined point.

8. In a machine of the character described, the combination with a movable carrier having a series of symbols thereon and a carrier controlling device, of a movable interlocking member having a series of stops adjustably mounted thereon for selective engagement with said carrier controlling device to determine the point at which the interlocking member is engaged and moved by the carrier controlling device, a group of selectors including one connected to each of said stops, a second group of stops adjustably mounted for selective engagement with said interlocking member to determine the extent of its movement, and a group of selectors connected to the latter stops.

9. In a machine of the character described, the combination with a movable carrier having a series of symbols thereon and a carrier controlling device, of an oscillatory interlocking member having a series of stops adjustably mounted thereon for selective engagement with said carrier controlling device to determine the point at which the interlocking member is engaged and moved by the carrier controlling device, a group of selectors including one connected to each of said stops, a second group of stops adjustably mounted for selective engagement with said interlocking member to determine the extent of its

movement, and means for automatically restoring the oscillatory interlocking member when released to initial position.

10. In a machine of the character described, the combination with a movable carrier having a series of units corresponding to different combinations of symbols thereon and a group of manually operated selectors corresponding to each of the different symbols, of controlling means separately associating said selectors with said units, said controlling means including a movable member having a series of stops thereon which are selectively positionable by one of said groups of selectors, and a second group of stops selectively positionable for engagement with said member and controlled by another group of selectors, whereby the operation of different combinations of selectors affects operation of different units of the movable carrier.

11. In a machine of the character described, the combination with a movable carrier having a series of units corresponding to different combinations of symbols and a group of manually operated selectors corresponding to each of the different symbols, of controlling stop means for said carrier including an oscillatory interlocking member having a series of stops mounted thereon and selectively positionable by one of said groups of selectors, and a second group of stops selectively positionable by another of said groups of selectors for engagement with the interlocking member, whereby the separate operation of different combinations of selectors affects operation of different units of the carrier.

12. In a machine of the character described, the combination with a movable carrier having a series of symbols thereon and a carrier controlling device, of a movable interlocking member arranged to be engaged and moved by the controlling device to a predetermined stopping point, a series of stops which are adjustable for selective positioning to determine the point at which the controlling device engages and moves the interlocking member, a second series of stops which are adjustable for selective positioning to determine the extent of movement of the interlocking member, and separate groups of selectors connected to said stops for operating them.

13. In a machine of the character described, the combination with a movable carrier having a series of symbols thereon and a carrier controlling device, of an oscillatory interlocking member arranged to be engaged and moved by the controlling device to a predetermined stopping point, a series of stops which are adjustable and arranged arcuately on the interlocking member for selective positioning to determine the point at which the controlling device engages and moves the interlocking member, a second series of stops arranged arcuately around and spaced from the interlocking member and adjustable to determine the extent of movement of the interlocking member, and separate groups of selectors connected to said stops for operating them.

14. In a machine of the character described, the combination with a movable carrier having a series of units corresponding to different combinations of symbols and a group of manually operated selectors corresponding to each of the different symbols, of controlling stop means for said carrier including a rotary controlling device, an oscillatory interlocking member mounted coaxially of the controlling device and having a series of stops mounted thereon which are adapted to be selectively interposed in the path of the controlling device, a second series of stops which are adapted to be selectively interposed in the path of the interlocking member to limit its movement, and groups of selectors connected to said series of stops.

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