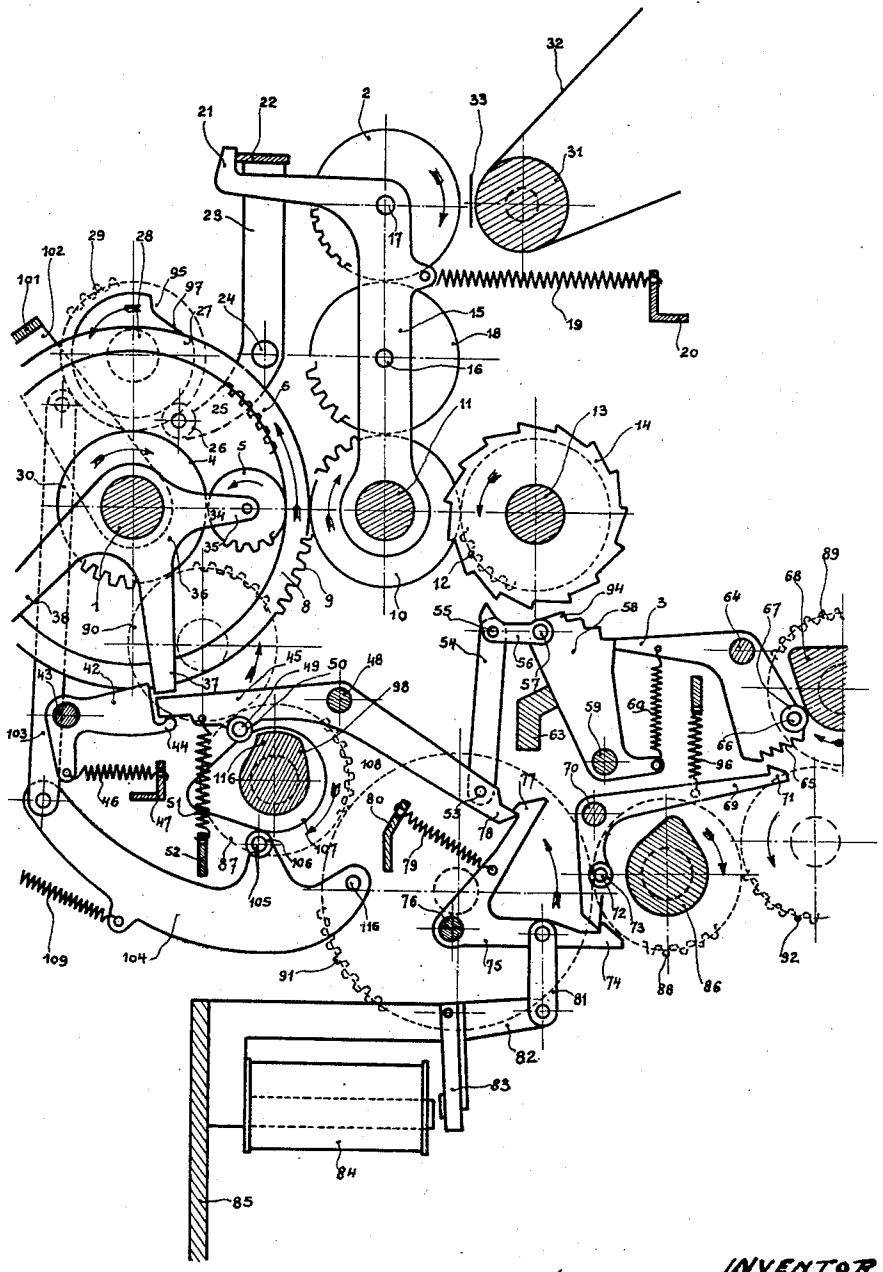
Oct. 10, 1939. K. A. KNUTSEN 2,175,530

PRINTING DEVICE, PARTICULARLY FOR TABULATING MACHINES CONTROLLED BY RECORD CARDS OR BANDS

Filed Feb. 29, 1936 4 Sheets-Sheet 1

Fig. 1



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PRINTING DEVICE, PARTICULARLY FOR TABULATING MACHINES CONTROLLED BY RECORD CARDS OR BANDS

Filed Feb. 29, 1936 4 Sheets-Sheet 2

Fig. 2

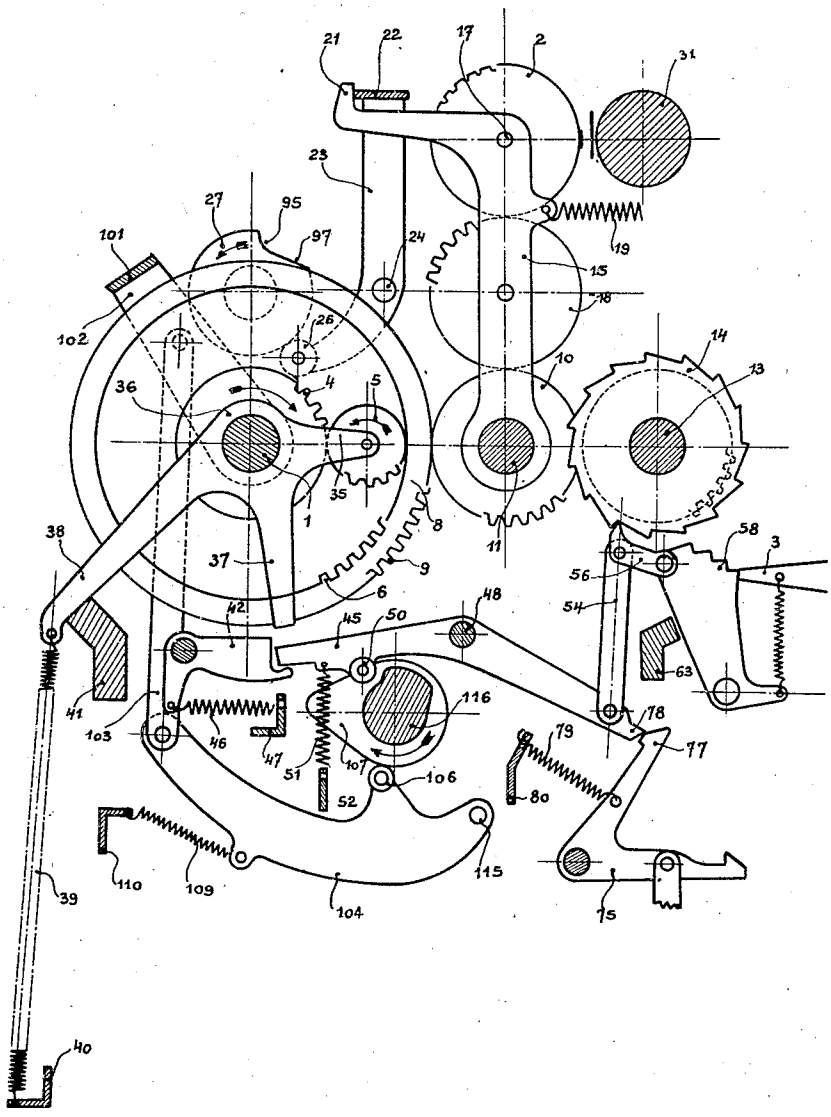

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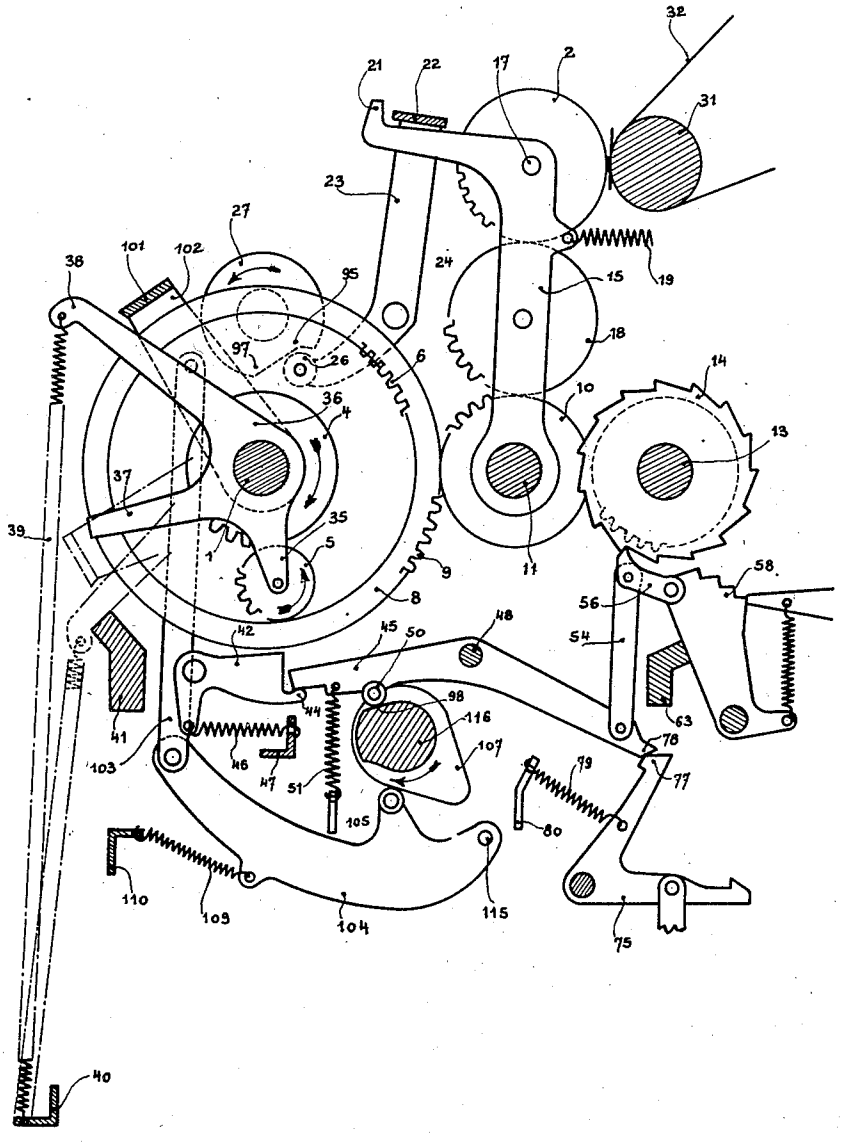
Fig. 3



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Filed Feb. 29, 1936 4 Sheets-Sheet 4

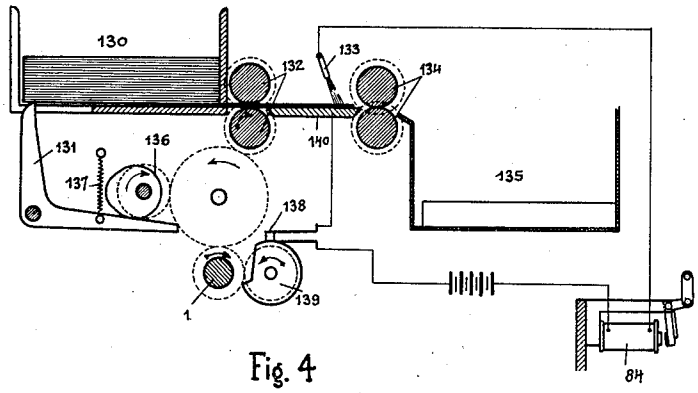

Fig. 4

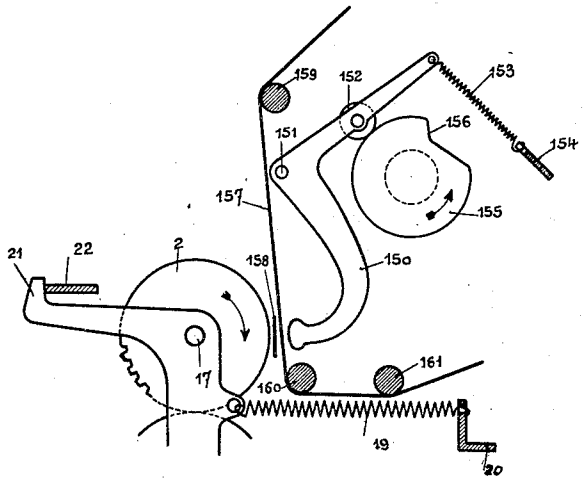

Fig. 6

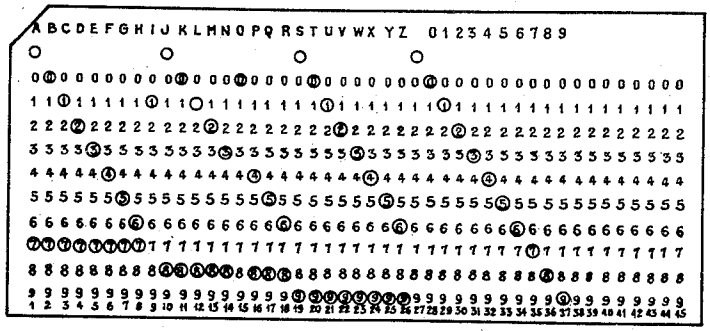

Fig 5

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UNITED STATES PATENT OFFICE

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PRINTING DEVICE, PARTICULARLY FOR TABULATING MACHINES CONTROLLED BY RECORD CARDS OR BANDS

Knut Andreas Knutsen, Paris, France

Application February 29, 1936, Serial No. 66,477
In France June 14, 1935

9 Claims. (Cl. 101—93)

The present invention has for object a printing device particularly adapted to be used in combination with machines controlled by record cards or bands.

The invention refers more particularly to improvements in printing devices comprising a typewheel meshing with a rotating shaft, in which the printing is effected by blocking the typewheel or another wheel in mesh with the typewheel.

In some of these known devices disclosed in the applicant's prior patents, the typewheel effected the printing of a type by performing a rolling movement in relation to the paper. These printing devices were generally utilized in combination with perforated cards machine, and the printing operations controlled by the perforations of the cards. The cards used for such machines contain generally in each column 12 different positions of perforations, each position indicating a determined value. When a perforation reached the card-reading device, the printing operation of the corresponding value could immediately be brought in action, or it was brought in action when a second perforation in the same column reached the card-reading device. The printing of a value of one or a plurality of perforations situated in a column of the card could thus be effected at different moments during the passage of the card in front of the card-reading device, which moment of printing depended on the value of the said perforations, and during this time the paper on which the printing was effected had to remain motionless. The movement of the paper to bring a new line in position for printing could only take place in the time when none of said perforations passed the card-reading device, that is, the movement of the paper was limited to take place within a small part of the card cycle.

When the machine was used for instance to print blank receipts, the paper had to be moved a rather long distance in the interval between the printing of two lines, and the time available would be insufficient for this motion of the paper, without stopping the feeding of the cards.

According to the present invention, in a printing device comprising a typewheel meshing with a rotating shaft, the printing of the selected type may be delayed a certain time after the printing operation has been initiated, and the printing effected at a determined portion of the cycle of the machine, independent of which type is to be printed, in order to increase the time available for the motion of the paper.

According to the invention, in a printing device of the type described, all the typewheels may print at the same time, independent of the time at which the printing operation of the particular typewheel has been initiated.

The invention comprises also improvements in the construction of the printing devices of the kind described, which improvements increase the security and the speed of the printing and simplify the construction.

Between two cycles of the printing machine, the rotating shaft may evidently be stopped and again set to work, and this would not modify the essential of the present invention. The object of such stopping of the shaft could be for instance, to reduce the diameter of the typewheel; this could be obtained by stopping the main shaft of the device in the time during which there is no card under the card-reading device, without interruption of the passage of the cards.

The printing device, according to the invention, may also be used in combination with other machines than the cards-controlled machines, for instance in combination with calculating machines, telegraph machines or others, and the control of the printing device may be effected by electrical, mechanical, pneumatical, photoelectrical means, etc.

The device embodying the above and other features of this invention will now be described, by way of example only with reference to the accompanying drawings which show a printing device adapted to a tabulating machine for perforated cards, and in which:

Figs. 1, 2 and 3 are the same schematic vertical section of the printing device, showing the parts in different positions.

Fig. 1 shows the device in the position of rest.

Fig. 2 shows the device at the moment when the magnet has been energized and the blocking lever released, so that it blocks the blocking wheel of the device and initiates the printing operation in order to print a selected one of the types on the typewheel.

Fig. 3 shows the device in the position that corresponds to the printing of a type.

Fig. 4 shows diagrammatically the operating of the printing machine from perforated cards.

Fig. 5 is a view of a perforated card showing how a cipher may be indicated by a single perforation, and a letter by a combination of two different perforations in a column.

Fig. 6 shows an alternative construction of the upper part of the machine.

The whole of the printing device is driven by a common shaft 1—Fig. 1—which in the present

case turns synchronously with a tabulating machine for perforated cards, so that the typewheels 2 turn one revolution for each perforated card passing the card-reading device of the tabulating machine.

The tabulating machine may be either mechanical or electrical. In the present case, which will be now described with reference to the drawings, the machine is electrical, and a perforation in a card admitted in the machine closes for each determined column of the card an electric circuit which energizes a magnet 84 that controls a typewheel and initiates a printing operation in order to print a type corresponding to the value of the perforation in said column of the card.

In Fig. 4 is shown the known manner of operating the printing machine from perforated cards. From a receptacle 130 the cards are passed one by one, by a picker 131 to a pair of rollers 132 past a contact device 133 which may be a brush, to another pair of feeding rollers 134 and finally to the receptacle 135. The picker is moved by a cam 136 and a spring 137. The contact device 133 is connected to the magnet 184, and the circuit passes by a contact 138 to a contact plate 140. The contact 138 is closed by a rotating cam 139 as long as a card is engaged underneath the contact device 133, but open in the interval between two cards.

The feeding rollers, and the cams 136 and 139 are integral with toothed-wheels which are in mesh with each other and with a toothed wheel integral with the shaft 1—Fig. 4 and Fig. 1—of the printing device, such that for every card that passes the contact device, the cams 136 and 139 and the shaft 1 make one revolution. Every time a perforation passes underneath the contact device 133 a circuit is closed, which energizes the magnet 84—Figs. 4 and 1.

Generally the columns of a statistical card comprise only 12 different positions of perforations. In order to represent by the perforations of a card a great number of types or signs—for instance 30—a combination of two or more perforations in a same column may be utilized according to a determined code, an example of which is shown in Fig. 5. The lower or the upper perforation in one column may indicate a group of signs and set in action a group selecting device; the other perforation may indicate the position of the type in each group and initiate the printing operation.

The present invention may be applied to printing machines controlled by cards with one single perforation in each column, whereby no selecting device is needed or, as in the case described, it may be applied to a machine with a group selecting device which may be controlled by cards with a combination of two or more perforations in each column.

The main shaft 1 of the printing machine runs over the whole length of the machine—Fig. 1—and comprises for each typewheel, a fixed toothed-wheel 4 constantly meshing with a toothed-wheel 5 also constantly meshing with the interior toothing 6 of a wheel 8 loosely mounted on the main shaft 1. Wheel 8 is provided on its outside circumference with a toothing 9 constantly meshing with wheel 10 which is loosely mounted on the fixed shaft 11. The toothed-wheel 10 is further constantly meshing with the toothed-wheel 12 loosely mounted on the fixed shaft 13. Integral with wheel 12 is a ratchet 14. For each wheel 10 is loosely mounted on the fixed shaft 11, a support 15 on which are fixed the two pins 16 and 17 on which may turn the toothed-wheel 18 and the typewheel 2. The toothed-wheel 18 is constantly meshing with the toothed-wheel 10 and with the typewheel 2. In the present case, the wheels 4—10—12—18 and the typewheel 2 have the same diameter so that when the wheel 4 or the shaft 1 turn one revolution, ratchet 14 and typewheel 2 make also one revolution. To support 15 is fixed a spring 19 fixed at the other end to the pin 20 integral with the frame. Support 15 is further provided with an extension 21 leaning against a bar 22. Bar 22 is common for all the typewheels and stretches all along the series thereof. At each end the bar 22 is integral with a lever 23, each lever 23 pivoting on a pivot 24 fixed to the frame. The extended end of each lever 23 carries a pin provided with a roller 26 leaning against a cam 27 on each side of the machine. The two cams 27 are each integral with a toothed-wheel 29 meshing with a toothed-wheel 30 fixed on shaft 1. Cam 27 makes one revolution for each revolution of the main shaft 1. Spring 19 maintains support 15 in the position indicated Fig. 1, leaning with the extension 21 against the bar 22 which is kept in position by cam 27. In the position shown Fig. 1, the typewheel is situated at a certain distance from a platen 31 provided with paper 32. Between the typewheel and the platen is suitably placed the printing ribbon 33.

The toothed-wheel 5 may turn freely on the pin 34 fixed on the arm 35 of a lever 36, which latter is provided with the arms 37 and 38, and may turn freely on the main shaft 1. Lever 36 is kept in its position of rest by a spring 39, Fig. 2, which at one end is fixed to the pin 40 integral with the frame, and at the other end to the extremity of the arm 38. The spring 39 keeps the arm 38 leaning against the stop-bar 41 integral with the frame, Fig. 2, and holds the toothed-wheel 5 in the position shown Figs. 1 and 2. Further, in order to maintain wheel 5 in this determined position, the arm 37 is meshed with a pawl 42, which in its position of rest, prevents lever 36 from turning clockwise. Pawl 42 pivots on shaft 43 integral with the frame and is kept in the position shown in Fig. 1, leaning with its nose 44 against the extremity of lever 45 pulled by spring 46 which at the other end is fixed to the pin 47 integral with the frame. Lever 45 pivots on shaft 48 integral with the frame and is provided with a pin 49 carrying a roller 50. Lever 45 is further provided with a spring 51 fixed at the other end to the plate 52 integral with the frame. At the other extremity, lever 45 carries a pin 53 on which is articulated a lever 54 articulated at the other end by the pin 55 to the pawl 56. This latter is articulated on the axis 57 fixed on sector 58 pivoting on the fixed shaft 59. Sector 58 is kept in the position shown Fig. 1, leaning against the fixed stop 63, by a spring 60, which at the other end is fixed to lever 3 which pivots about the fixed shaft 64, said lever 3 being provided with a toothing 65 and a pin 66 carrying a roller 67, which leans against the cam 68. Lever 69 pivots about the fixed shaft 70 and is provided with a nose 71 and a pin 72 carrying a roller 73. An extremity of lever 69 is engaged with the nose 74 of lever 75, which pivots about the fixed shaft 76, and at its other end is provided with a nose 77 which is engaged with the extremity 78 of lever 45. Lever 75 is provided with a spring 79 which at the other end is fixed to the plate 80 integral with the frame. To lever 75 is articulated the rod 81 which at the other end is articulated to a lever 82 fixed to the armature 83

of the magnet 84; this is fixed on a plate 85 integral with the frame.

Cam 116 is integral with a toothed wheel 87, and cam 68 is integral with the toothed-wheel 89. Wheels 87, 88 and 89 have the same diameter as the toothed-wheel 30 on shaft 1; they are connected together by the intermediate toothed-wheels 90, 91 and 92 in such a manner that when shaft 1 turns one revolution, the cams 116, 86 and 68 perform also one revolution. Cam 116 serves to push back lever 45 to its initial position, and further to block said lever while the selection takes place. Cam 86 serves to push back lever 69 in its position of rest Fig. 1. Cam 68 serves to move lever 3 so that the toothing 65 passes before the nose 71 in timed relation to the passing of the perforations of selection in front of the card-reading device of the tabulator, said movement taking place in counter-clockwise direction.

It will now shortly be described how the locking of lever 3 takes place, controlled by the perforation of selection. In the present case, this perforation is situated on the inferior part of the card, so that it is the first perforation to pass the card-reading device. When this perforation having the lowest position on the card passes the feeling device, lever 3 is completely pushed back in clockwise direction by the cam 68. If this point on the card is perforated, magnet 84 is energized, lever 75 is swung against the spring 79, lever 69 is released, and moved by spring 96, so that the nose 71 meshes with the toothing 65 locking lever 3. During this operation, cam 116 blocks lever 45 and keeps this latter in the position shown Fig. 1. When all the places for the perforation of selection have passed the card-reading device, cam 116 ceases to block the lever 45, but this is still kept in position as shown Fig. 1 by the lever 75. The second perforation in the same column of the card now reaches the card-reading device and energizes again the magnet, which again swings lever 75 releasing now lever 45; lever 45 swings so that pawl 56 meshes with a tooth of the ratchet 14. The ratchet which turns in synchronism with the passing of the cards in front of the examining device, pushes sector 58 until this latter is blocked by lever 3. In the case described, it is the step 94 which will touch the extremity of lever 3, because lever 3 was locked when the roller 67 was on the extreme point of cam 68. The sector 58 may thus take different blocking positions depending on the value of the perforations of selection, that is depending on the position in which the lever 3 was locked. On the typewheel there are in the present case 4 different types for each tooth of ratchet 14. When sector 58 is pushed one step back against lever 3, the typewheel will turn a distance corresponding to the ¼ of the tooth of the ratchet, thus setting a determined type in printing position. Thereby the second perforation may effect the printing of different types depending on the position of sector 58; that is of the value of the first perforation, that is the perforation of selection. It will now be supposed that there is no perforation of selection. Lever 3 swings then for each card passing the card reading device, until it takes the position shown Fig. 1, thus blocking sector 58 in its initial position. Now when the perforations which are not perforations of selection close the circuit for the magnet 84, lever 45 is released, and the pawl 56 blocks the ratchet 14 as previously described, and the pawl 42 is swung out of mesh with lever 37.

Owing to the fact that sector 58 cannot push back, the rotation of ratchet 14 is stopped, and thereby is also stopped the rotation of wheels 10, 12, 8 and of the typewheel 2, while main shaft 1 continues to rotate in synchronism with the passage of the cards. Wheel 29 which is meshing with wheel 30, cam 27 and all the other cams will continue to turn. Because wheel 4 continues to turn, and wheel 8 is stopped, wheel 5 is moved by the toothing 30, but stopped by the toothing 6 so that wheel 5 is forced to roll on toothing 6 pushed by the toothing of wheel 30, and lever 36 is forced to turn against spring 39. This movement continues until all the positions of perforations of a column of the card have passed the card-reading device. Meanwhile cam 27 has turned so that roller 26 meshes with the notch 95 as shown Fig. 3, allowing the spring 19 to swing the support 15 and with it the bar 22, so that the typewheel is struck against the paper. Immediately after the typewheel has struck the paper, the inclined edge 97 on cam 27 swings back levers 23, and with them the bar 22 and the support 15 will be brought back by the cams 27 in their position of rest shown Fig. 1. At the same time the slope 98 of cam 116 pushes back lever 45 in its initial position and takes pawl 56 out of mesh with ratchet 14, whereafter lever 45 is locked by the nose 77 of lever 75. From the moment when pawl 56 ceases to mesh with ratchet 14, the wheels 10, 12, 18 the typewheel 2 and the wheel 8 are free to rotate, and spring 39 will then return lever 36 in its initial position. During this movement the wheel 5 may be turned in the same direction as before, but at an accelerated speed, which will accelerate the rotation of wheel 8 in the direction of the arrow, and of the typewheel 2. When the wheel 5 has taken again its position of rest, it continues to turn at a normal speed and typewheel 2 and ratchet 14 turn again in synchronism with main shaft 1 and with the passing of the cards before the card-reading device. The perforations of a new card can therefore again act upon the magnet 84 in the manner described. When the arm 37 returns to its position of rest, it will swing pawl 42 this latter returns to its initial position—Fig 1—and locks the lever 36. This return of lever 36 can further be assured by a bar 101 common to all the levers 36. This bar is fixed at each extremity to a lever 102 which may pivot about the main shaft 1. To each link 102 is articulated a lever 103, which in the other end is articulated on a lever 104. This latter pivots about a pin 115 fixed to the frame. On lever 104 is fixed a pin 105 which carries a roller 106 leaning against cam 107. Cam 107 is fixed to each side of the machine on shaft 108 which carries the cam 116. Further on lever 104 is fixed a spring 109 which at the other extremity is fixed to a plate 110 integral with the frame. Spring 109 keeps constantly lever 104 in such a position that the roller 106 leans against the cam 107. When all the levers 36 will have to be returned after the printing operation, cam 107 will swing lever 104 so that the bar 101 brings back the levers 36 to their initial position. Spring 19 which effects the printing could also be fixed on one side to nose 21 and on the other side to the bar 22.

Fig. 3 shows the maximum of the backward movement of lever 36 corresponding to the print-

ing of value 9. For the printing of value 1, said lever would only need to swing very little.

When the described device is adapted to work only for cards having simple perforations, the pin 57 may be fixed to the frame and cam 116 arranged to release lever 45 when the first position of perforation of a card arrives under the card-reading device. The pieces 58, 3 and 69 will then be eliminated.

The printing may also be effected by striking the paper against the typewheels, instead of striking the typewheel against the paper. For this purpose, the device may, in known manner comprise hammers instead of the platen 31 as indicated on Fig. 6. One hammer 150 for each typewheel is loosely mounted on the stationary spindle 151 and provided with a roller 152 and a spring 153, which spring at the other end is fixed to a plate 154 fixed to the frame. The spring 153 keeps the hammer in the position shown on Fig. 6, leaning with the roller 152 against a rotating cam 155. The cam 155 is integral with a toothed-wheel, not shown, meshing with the toothed-wheel 29—Fig. 1—in such a manner that the cam 155 makes one revolution for each revolution of the shaft 1. The cam 155 is provided with a notch 156 in which in a determined moment of the cycle the roller 152 will engage, so that the hammer 150 forced by the spring 153 may swing about the spindle 151 and strike the paper 157 and the ribbon 158 against the typewheel 2. The cam 155 will then immediately return all the hammers to their initial position. The paper 157 is guided by the rollers 159—161. The bar 22 may be stationary, and the cam 27 and the levers 23 may be eliminated. There will be no change needed for all other pieces that remain, as indicated on Figs. 1 to 3 and work as previously described.

As described all the typewheels when printing will touch the paper at the same time in one determined part of the card cycle, and only for a short moment. During the remaining part of the card cycle, that is during nearly a complete card cycle, the paper may be moved. This gives the possibility of moving the paper for each card a maximum of distance, without stopping the card feeding means, or without reducing the speed of the machine and still retaining the meshing of the typewheel with the rotating main shaft.

While I have described what I deem to be practical and efficient embodiments of my invention, it should be well understood that I do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of my invention as comprehended within the scope of the appended claims.

What I claim is:

1. A printing device comprising a platen, a typewheel mounted adjacent said platen, a rotating shaft opposite said typewheel, a gear train between said typewheel and the rotating shaft for the rotating of the typewheel, means for selecting any type on the typewheel for the printing of said type, means for maintaining the typewheel motionless with the selected type in printing position until all the types on the typewheel would have passed the printing position, if said typewheel had not been stopped, means for printing the selected type in a determined part of the cycle of the printing device, and means included in said gear train for maintaining said gear train between the immobilized typewheel and the rotating shaft in such a manner that the typewheel after the printing has been effected catches up the advance of the rotating shaft and returns to a predetermined position in relation to said rotating shaft.

2. A printing device comprising a platen, a typewheel adjacent said platen, a rotating shaft opposite said typewheel, a gear train between said typewheel and said rotating shaft for the rotation of the typewheel in synchronism with the rotating shaft, selectively operated movable blocking means for immobilizing the typewheel in a position for printing a selected type, a displaceable toothed wheel in the gear train between the typewheel and the rotating shaft, means for displacing said toothed wheel when the typewheel has been immobilized until in a determined part of the cycle of the machine the printing has been effected and the typewheel released from said blocking means, and automatic means for returning said toothed wheel to its initial position in said gear train.

3. A printing device comprising a platen, a typewheel adjacent said platen, a rotating shaft opposite said typewheel, a gear train between said typewheel and said rotating shaft for the rotation of the typewheel in synchronism with the rotating shaft, selectively operated movable blocking means for immobilizing the typewheel in a position for printing a selected type, at least one planet wheel in the gear train between the typewheel and the rotating shaft, means permitting the rotating shaft to take an advance in relation to the immobilized typewheel by displacing at least one planet wheel in the maintained gear train, means for printing the selected type in a determined part of the cycle of the machine, and means for returning the displaced planet wheel to its initial position in another determined part of the cycle of the machine, causing the typewheel to recover its initial position relative to the rotating shaft.

4. A printing device comprising a platen, a typewheel mounted on a support, said typewheel having a plurality of type elements spaced along the periphery thereof, which elements belong to different groups of types, a stationary axis pivoting said support, a rotating shaft opposite the typewheel, a gear train between said typewheel and said rotating shaft, two toothed members adapted to engage one with the other, one of said members moving in relation to the other when the typewheel is rotated, said members being provided with such a number of teeth that only one single tooth of one member passes a tooth of the other member for each type belonging to a determined group on the typewheel that passes the printing position, means comprising said toothed members for immobilizing the typewheel with a selected type in printing position when said toothed members have been engaged one with the other, means for maintaining the support of the typewheel in its initial position when the typewheel is immobilized, cam controlled means for moving the support about its pivot in a determined part of the cycle of the machine, and means comprising said gear train for establishing the typewheel in the same position in relation to the rotating shaft as the typewheel would hold if it had not been stopped.

5. A printing device comprising a platen, a typewheel adjacent said platen, said typewheel having a plurality of type elements spaced along the periphery thereof, which type elements belong to different groups of types, a rotating shaft opposite said typewheel, a gear train between said

typewheel and said rotating shaft, means for selecting the group to which the type to be printed belongs, means for selecting the type to be printed within each group, cam controlled blocking means for maintaining a positive gear drive between the typewheel and the rotating shaft until the group and the type to be printed within each group has been selected, means for changing said positive gear drive to a resilient one when the type to be printed has been selected, and one single magnet for the control of said group selecting means, said type selecting means and said means for changing the positive gear drive into a resilient one.

6. In combination with a record card controlled tabulating machine having card feeding rollers, a printing device comprising a platen, a typewheel mounted adjacent said platen, said typewheel having a plurality of type elements spaced along the periphery thereof, which type elements belong to different groups of types, a rotating shaft opposite said typewheel, a gear train between said typewheel and said rotating shaft for rotating said typewheel, another gear train between said rotating shaft and the card feeding rollers of the tabulating machine, means for analyzing said record cards when they are moved past the analyzing means, a ratchet mounted on a stationary shaft in the gear train between the rotating shaft and the typewheel, said ratchet rotating in one direction in synchronism with the movement of the card past the analyzing means, blocking means adapted to engage with a tooth of the ratchet under control of the card analyzing means, means for rotating one single tooth of the ratchet past said blocking means for every emplacement of record that moves past the card analyzing means, means for selecting under control of said analyzing means the group to which the type to be printed belongs, means for neutralizing said blocking means when the group is selected, means for selecting the type to be printed within each group by engaging said blocking means with a tooth of the ratchet under control of the analyzing means, whereby the typewheel will be immobilized with the selected type in printing position, and means for maintaining the gear train between the typewheel and the rotating shaft when the typewheel is immobilized.

7. A printing device comprising a platen, a typewheel mounted adjacent said platen, said typewheel having a plurality of type elements spaced along the periphery thereof, which elements belong to different groups of types, a rotating shaft opposite said typewheel, a positive gear train between said typewheel and said rotating shaft for rotating the typewheel in a determined relation to the rotating shaft, means for selecting the group to which the type to be printed belongs, means for maintaining the positive gear drive between the typewheel and the rotating shaft when the group is selected, means for selecting the type to be printed within each group, means for changing the positive gear drive to a resilient gear drive when the type to be printed is selected, and means for stopping the typewheel with the type to be printed in printing position after the gear drive thus has been made resilient.

8. A printing device comprising a platen, a type wheel mounted adjacent said platen, a shaft adapted to be continuously rotated opposite said type wheel, a gear train between said type wheel and said rotating shaft and arranged to rotate the type wheel to move all type thereon past a printing position once per cycle of operation of the parts of the printing device, means operated selectively during an early part of the cycle for immobilizing the type wheel when any selected type on the same reaches the printing position, cam controlled means constantly driven by said shaft and coordinated therewith for operation to effect printing from the selected type after completion of the early part of the cycle, said gear train comprising biased means for maintaining said gear train between the immobilized type wheel and the rotating shaft in such a manner that the type wheel will recover its initial position in relation to the rotating shaft on release of said immobilizing means.

9. A printing device comprising a platen, a type wheel mounted adjacent said platen, a shaft adapted to be continuously rotated opposite said type wheel, a gear train between said type wheel and said rotating shaft and arranged to rotate the type wheel to move all type thereon past a printing position once per cycle of operation of the parts of the printing device, means operated selectively during an early part of the cycle for immobilizing the type wheel when any selected type on the same reaches the printing position, cam controlled means constantly driven by said shaft and coordinated therewith for operation to effect printing from the selected type after completion of the early part of the cycle, said gear train including energizable means for returning the type wheel after the printing has been effected, by increased speed thereof, to the same position relative to the rotating shaft that it would have occupied if its rotation had not been stopped.

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