C. W. CANINE.

LAUNDRY MARKING MACHINE.

APPLICATION FILED JAN. 24, 1920.

1,435,378.

Patented Nov. 14, 1922.

5 SHEETS—SHEET 1.

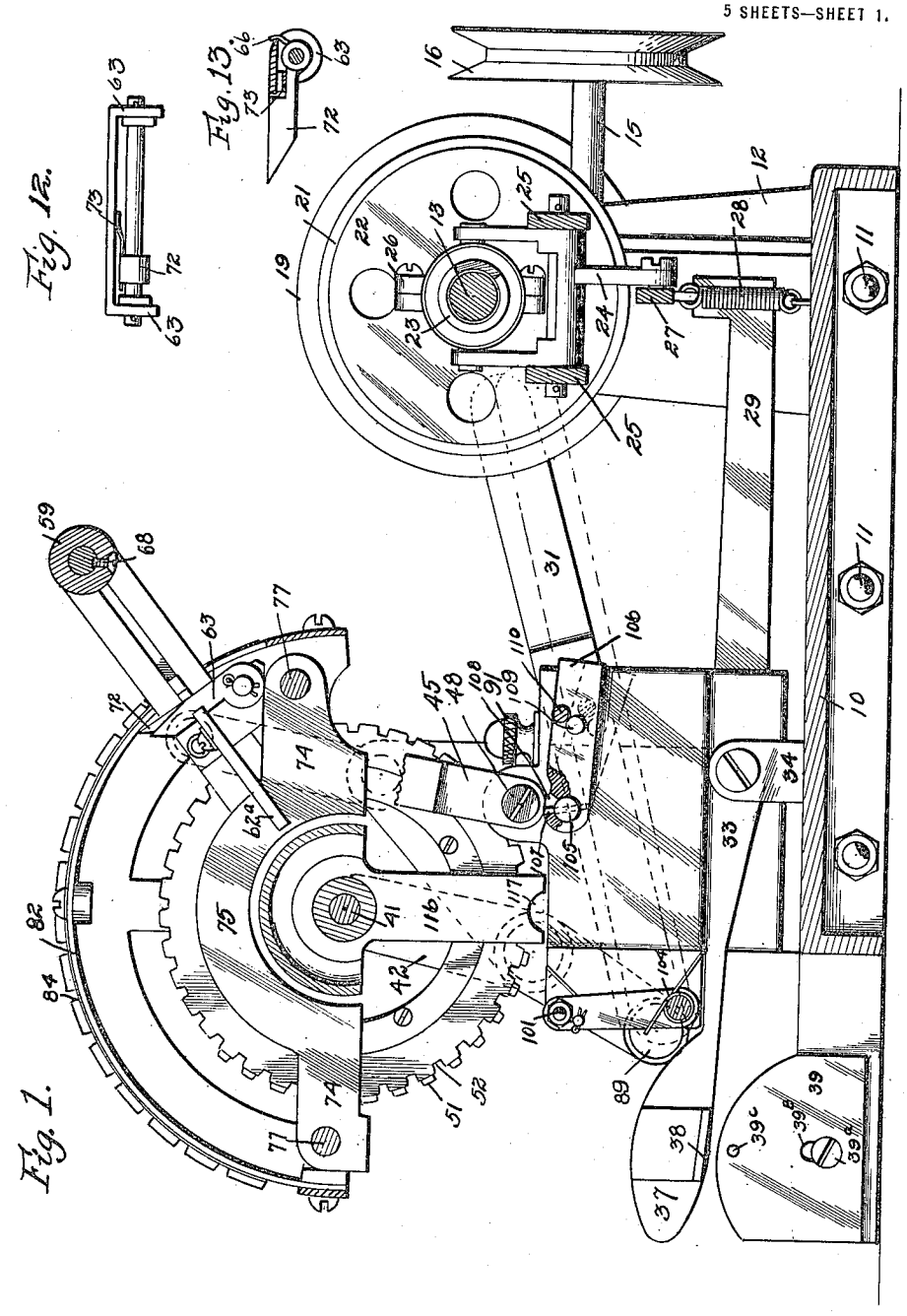


Fig. 1.

Fig. 12.

Fig. 13.

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5 SHEETS—SHEET 2.

Fig. 3.

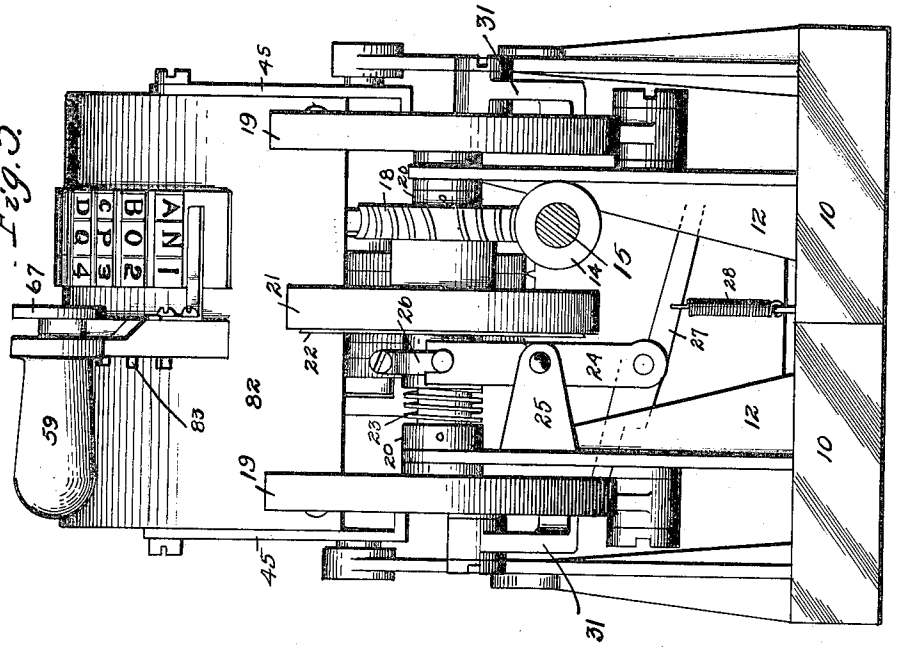
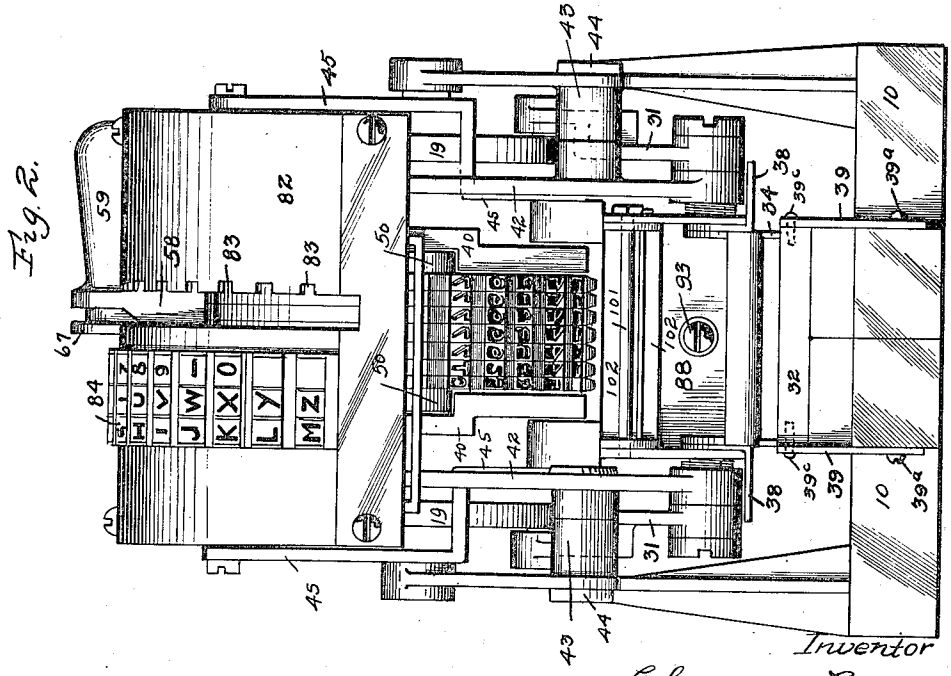


Fig. 2.



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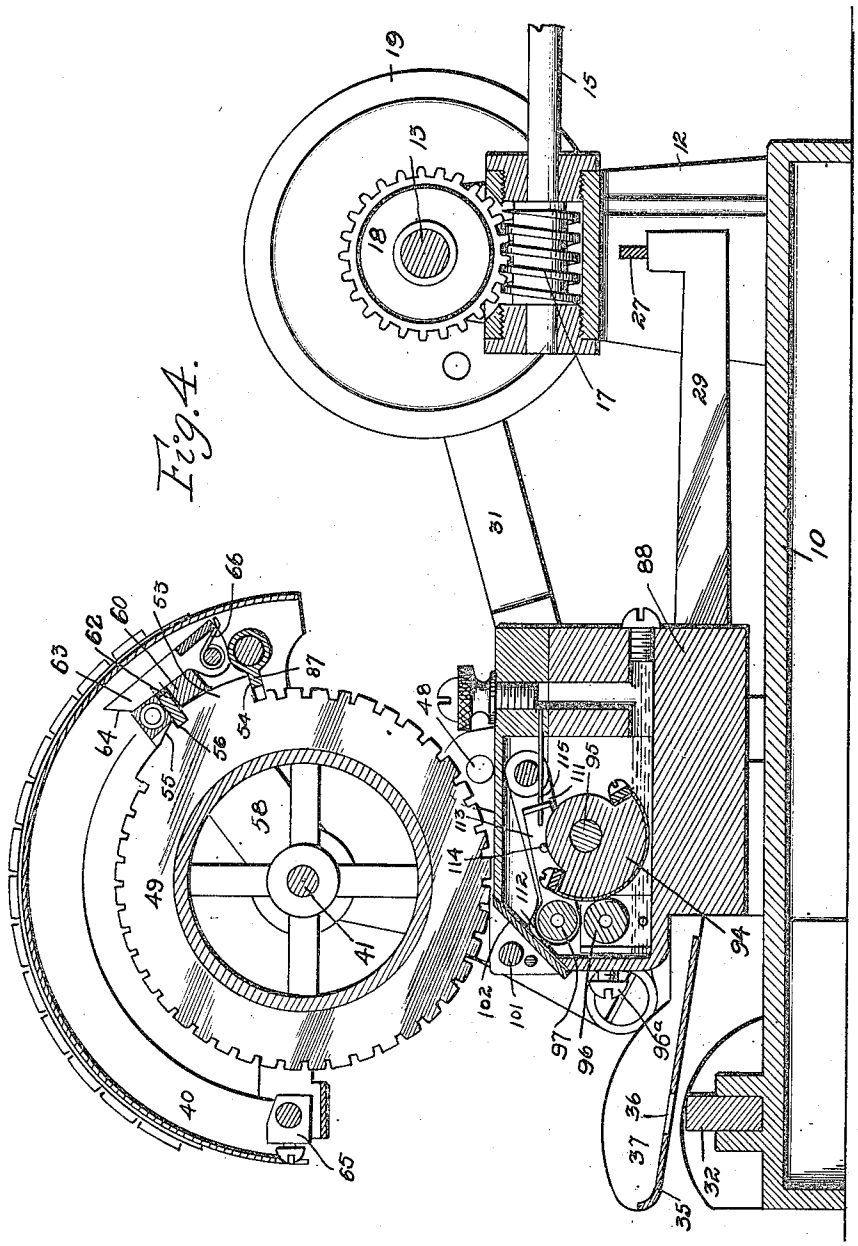


Fig. 4.

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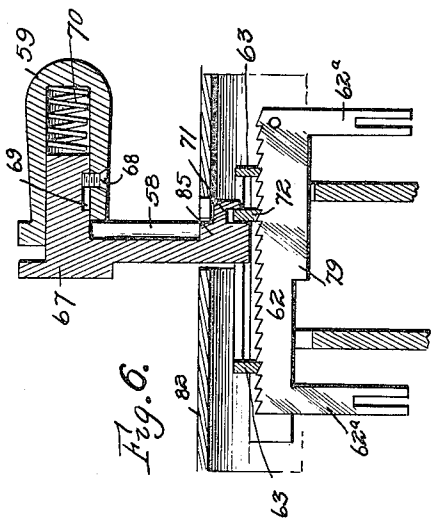


Fig. 6.

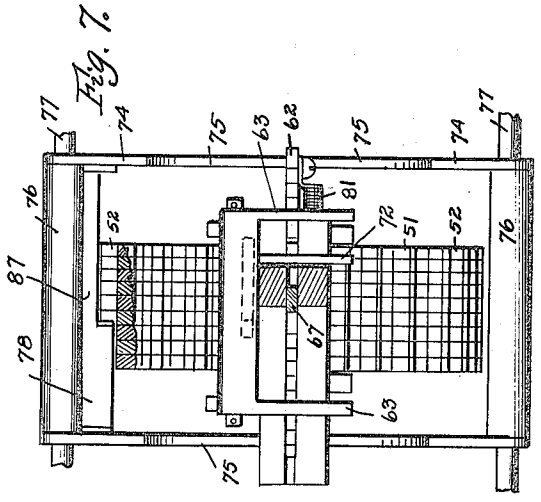


Fig. 7.

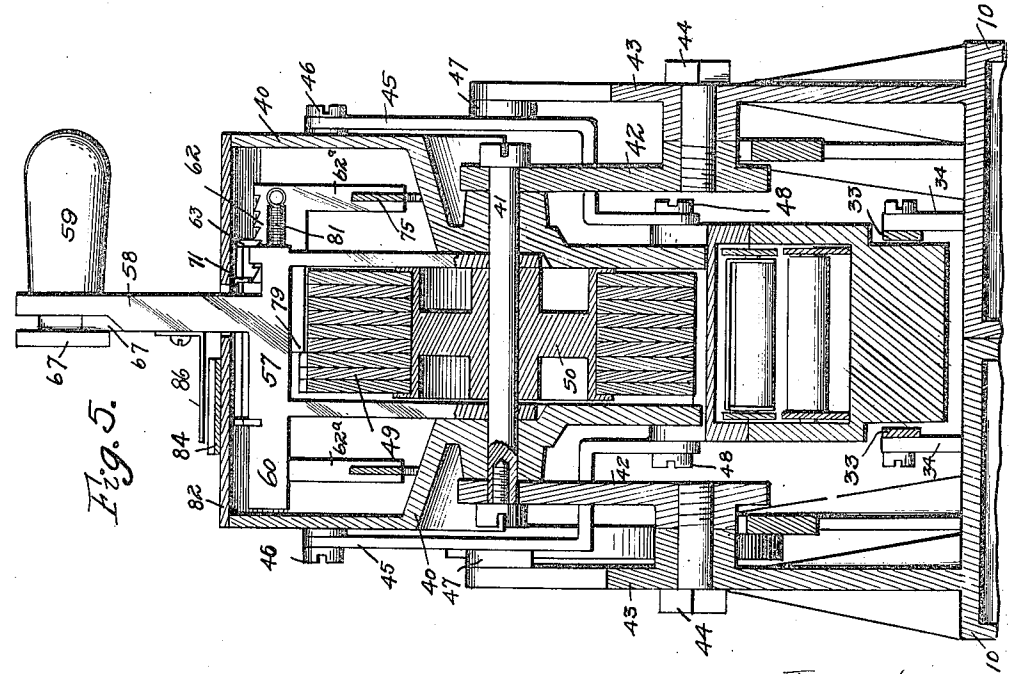


Fig. 5.

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5 SHEETS—SHEET 5.

Fig. 11.

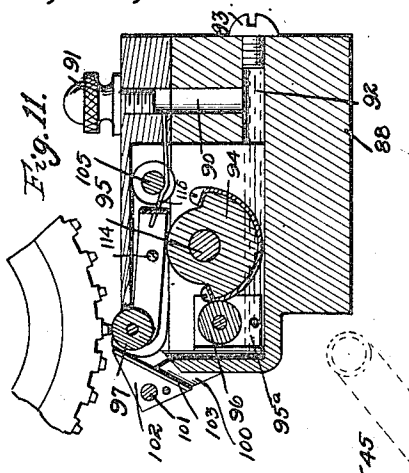


Fig. 10.

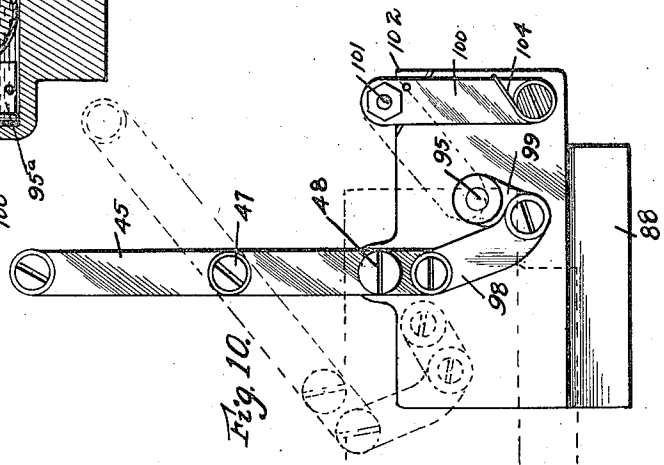


Fig. 9.

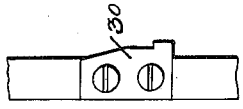
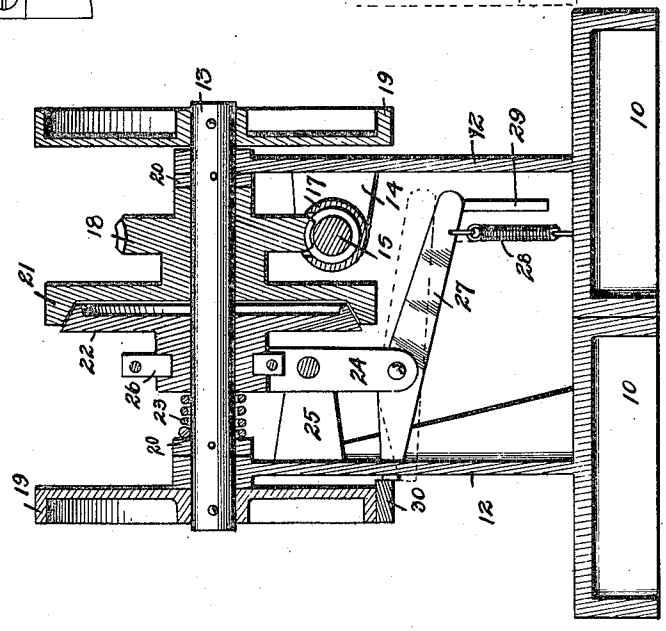


Fig. 8.



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Witness

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Patented Nov. 14, 1922. 1,435,378

UNITED STATES PATENT OFFICE.

CHESTER W. CANINE, OF CINCINNATI, OHIO.

LAUNDRY-MARKING MACHINE.

Application filed January 24, 1920. Serial No. 353,302.

To all whom it may concern:

Be it known that I, CHESTER W. CANINE, a citizen of the United States, and resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Laundry-Marking Machine, of which the following is a specification.

My invention relates to that class of laundry marking machines in which after the type have been set in groups to be printed from, the type bearing wheels or discs are moved to and from printing position by mechanical power (such for instance, as an electric motor).

The object of my invention is to provide a machine of this character of simple and durable construction and of compact form.

Another object of my invention is to provide a machine of this character in which the selected type may be moved to their properly grouped positions for printing quickly and easily, and there stopped and locked in such position without any shocks or jars to the machine, to thereby produce a machine of great durability.

A further object is to provide a machine of this character in which any desired number of type characters may be used, and all of the type selected moved to their grouped position for printing and there locked, by the use of a single lever which may be grasped in the operator's one hand, and there held until all of the selections are made and the type properly grouped and locked, to thereby operate with convenience for the operator and speed in selecting and locking the type.

A further object is to provide a machine of this class in which the type are formed upon the peripheries of a series of type bearing wheels, with means whereby all of the type wheels are positively held against independent movement relative to each other during the type selecting and setting up process, for the purpose of avoiding the possibility of such independent movement as might result in the failure of one or more of the type carrying wheels to properly register with the type selecting and moving levers.

A further object is to provide a machine of this class in which the selected group of type to be printed from have their printing faces parallel at all times with the surface of the article to be printed upon, both during the instant of printing and in their movement to and from printing position, to thereby avoid the blurring of the printing such as is sometimes occasioned in machines of this character in which the type move toward or from printing position in directions other than with the type faces parallel with the article to be printed upon, and also for adapting the device to work equally well on very thin or very thick stock to be printed upon.

A further object is to provide means in a machine of this kind, in which the type wheels are moved to and from printing position by mechanical power, of a combined stockholder and handle so arranged that the operator may grasp the article to be marked in both hands and also grasp the stockholder in both hands, securely hold and stretch the article to be marked in its position for printing, which combined stockholder and handle also constitutes the means for actuating the clutch for throwing the power operating mechanism into operation, whereby the manual operations incident to printing upon articles of varying characteristics is greatly simplified, and whereby it is not necessary for the operator to coordinate the various hand and foot movements during the act of printing, but need only progressively with both hands grasp the article to be printed, then grasp the two handles and then press the handles.

A further object is to provide an improved stock-holder, type shield and finger guard of simple construction and so arranged that it may be readily grasped and held by the operator, which will protect the article to be printed upon from coming in contact with the type adjacent to the selected group being printed from, and will also prevent the operator's fingers from coming between the type and the platen.

A further object is to provide an improved inking device for a machine of this character, so arranged and constructed that it will be exposed to the air only during the instant of inking, and will be securely sealed at all other times.

A further object is to provide an improved clutch device for at times operatively con-

necting the constantly moving power shaft with the intermittently moving type wheels, which clutch device is so arranged that both during the time it is in operation and the time it is out of operation, there will be no lateral strains on the bearings such as might tend to cause undue friction and wear.

A further object is to provide a machine of this character in which a movement of the type wheels from their position at rest to printing position will be relatively slow at the commencement and ending of such movement, and rapid at the central part of said movement, whereby shocks and jars to the machine can be avoided.

A further object is to provide a machine of this character constructed, arranged and assembled in such manner that the number of type wheels may be readily, quickly and easily either increased or diminished to suit the requirements for different kinds of work.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a side elevation of a machine embodying my invention, with the adjacent side of the frame removed and parts broken away to show certain structural details.

Figure 2 shows a front elevation of my improved machine.

Figure 3 shows a rear elevation of same.

Figure 4 shows a vertical, central, longitudinal, sectional view of same.

Figure 5 shows a vertical, transverse, sectional view of same, taken on a line through the center of the type wheels.

Figure 6 shows a detail, sectional view of the type selecting and moving lever and adjacent parts.

Figure 7 shows a top or plan view of the type wheels and the means for locking them in their properly grouped positions after the type have been selected and moved to such positions. In this figure the type selecting and moving handle is shown in section.

Figure 8 shows a vertical, transverse, sectional view, taken on a line through the clutch shaft to illustrate the clutch actuating mechanism.

Figure 9 shows a detail view illustrating the cam and stop device carried by one of the driving wheels on the clutch shaft.

Figure 10 shows a detail, side view illustrating the supporting means for the inking device. The dotted lines show the position of the parts when moved to position for inking.

Figure 11 shows a vertical, longitudinal, sectional view through the inking device, with the inking roller in position for inking the selected group of type.

Figure 12 shows a detail, rear elevation of the pawl devices for successively moving the type carrying means laterally and for holding them in such positions, and

Figure 13 shows a detail view of the pawl for moving the type carrying wheels laterally, and the spring for holding it in position in engagement with the rack.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the base of the frame. It will be noted that this base is made of two parts divided along the longitudinal center, the parts being connected by bolts 11, as shown in Figure 1. The various standards and supports for the operative parts of the machine are preferably formed integral with and extending upwardly from these base members, and they are all arranged in pairs, one member of each pair being on one base member. This feature is of material advantage in a machine of this character, because it makes for ease in assembling and at the same time the base members may be readily and easily separated and held suitably spaced apart to thereby make a machine of varying widths so that more or less type wheels may be provided in the machine, to suit the requirements of use.

Near the rear end of the machine frame are the standards 12, in which the clutch shaft 13 is rotatably mounted. On one of these standards is a bearing 14 for the power shaft 15, which power shaft has at its rear end a pulley 16 and on its forward end a worm gear 17, the latter being in mesh with a worm pinion 18 loosely mounted on the clutch shaft 13. On the ends of the clutch shaft 13 outside of the standards 12 are the drive wheels 19 hereinafter more fully described, which drive wheels are pinned to the shaft. Adjacent to the inner ends of the standards 12 are the collars 20 which are pinned to the shaft 13. Between these two collars the clutch mechanism is arranged. One of the clutch members, indicated by the numeral 21, is preferably formed integral with the worm pinion 18 and is loose upon the shaft 13, and the other or coacting clutch member 22 is keyed to the shaft 13 so that it has a limited sliding movement thereon and is held against rotation relative to the shaft. An extensible coil spring 23 is inserted between the clutch member 22 and the adjacent collar 20.

For sliding the movable clutch member 22 I have provided a lever 24 pivoted to the bracket 25 and provided with suitable fingers 26 entering the groove in the hub of the clutch member 22. Fulcrumed to the lever 24 is a trigger device 27 supplied at one end with a spring 28 to normally hold said end downwardly, and having its other end pro-

jected through the standard 12 toward the adjacent driving wheel 19. A lever 29, which will be hereinafter more fully described, is arranged adjacent to the trigger device 27, and when the lever 29 is moved upwardly the end of the trigger adjacent the drive wheel 19 is moved downwardly, as shown by dotted lines in Figure 8. The said drive wheel 19 is provided on its periphery with a cam and stop device 30. This cam and stop device coacts with the trigger device 27, and when the lever 29 is moved upwardly and then released, the following operations take place:

First, the left end of the trigger 27 (as seen in Figure 8) moves downwardly out of engagement with the cam 30 on the drive wheel 19. This permits the spring 23 to move the clutch member 22 into operative engagement with the clutch member 21, and the clutch shaft 13 is then rotated, thus causing the drive wheel 19 to turn one revolution. The spring 28 returns the trigger device to the position shown by the solid lines in Figure 8, and when the cam 30 again comes around to a point adjacent to the trigger 27, its cam surface will engage said trigger and move it bodily toward the right (as shown in Figure 8), thus causing the lever 24 to compress the spring 23 and release the clutch members from each other. So long as the trigger 27 is held in the position shown by dotted lines in Figure 8, the drive wheels will continue to rotate, but when the trigger device is released the drive wheels will be stopped and held at that point of their movement where the cam 30 engages the trigger. In this connection, attention is called to the fact that by arranging the clutch members 21 and 22, including the spring 23, between the fixed collars on the shaft 13, all lateral strain upon the shaft bearings is avoided, because when the clutches are out of engagement the shaft 13 is stationary and there is no friction. However, when the clutch members are in engagement, then all lateral pressure caused by the spring is thrown upon the two collars 20 which are pinned to the shaft and rotate with the shaft.

Connected with the two drive wheels 19 are two pitmans 31 through which motion is transmitted to the type wheels to actuate them for printing purposes. Attention is called to the fact that these pitmans are connected to the drive wheels 19 at points substantially at right angles to the cam 30, as shown in Figure 8, so that when the drive wheels 19 are at rest the pitmans will be substantially on dead center so that the initial part of the longitudinal movement of the pitmans will be very slow, for purposes hereinafter made clear.

At the forward end of the machine base is the printing platen 32, and adjacent to it is the combined stockholder, handle and finger guard which comprises two parallel arms 33 fulcrumed on the supports 34, one of them having the rearwardly extending member or lever 29, which is the lever that actuates the trigger device 27 before described. Secured to the ends of these arms 33 is a plate 35 having a slotted opening 36 therein, designed to receive the platen 32, which platen when the parts are in printing position, projects through the slot 36. At the sides of the plate 35 are the upwardly extending finger guards 37, and on the outer surfaces thereof are the handles 38. On the base below the handles 38 are two guide plates 39 for holding the stock to be printed in position above the platen so as to prevent the stock from coming into frictional contact with and sticking upon the platen. These plates have a limited vertical movement which is attained by having the screws 39^a extended through the slots 39^b. The upper ends of the plates 39 are connected by pins 39^c with the rubber platen, thus permitting the plates to yield downwardly when the platen is compressed. The combined stockholder, handle and finger guard is normally held yieldingly in a position slightly elevated above the platen by means of the spring 28.

In practical use with this part of the device, the operator first grasps the article to be marked in both hands, one hand being adjacent to each side of the part of the article on which the mark is to be made. Then the operator moves the article, while still being held in both hands, to position for projecting part of the article to be marked between the stockholder and platen, and he then grasps the handles 38 in both hands without releasing the grip upon the article to be marked. Then while still grasping both the article and the handles in both hands, he simply presses downwardly upon the handles, thus bringing the platen up through the slot in the stockholder and tripping the power operated printing mechanism. Obviously all of this operation may be done very quickly and easily, and at all times the operator retains very accurate control of that part of the article to be marked so that he may readily keep it stretched across the platen. In practice an operator very readily and quickly learns to mark laundry articles very rapidly and accurately because of the fact that all of the various somewhat intricate movements that are required to place the garment in position to be marked and to trip the power device, are done by the operator's both hands working in unison and close to each other, and no movement by the operator's foot for tripping the printing mechanism or the like is necessary. In machines in which the operator must at any time shift his grip

upon the article to be marked in order to throw a trip lever by hand, errors and delays can easily occur. This is also true where in order to trip the printing mechanism it is necessary for the operator to do part of the work with his hands and part with his feet. With my improvement an operator very quickly learns to coordinate these various movements in such a manner as to do perfect printing and without loss of time.

The type wheel carrying frame and the inking mechanism are both supported upon the forward end of the machine and their movement is actuated by the pitmans 31 connected with the drive wheels 19. The type wheel carrying frame is indicated generally by the reference numeral 40, best shown in Figure 5, and is rotatably mounted upon a shaft 41. This shaft is supported between the upper ends of the levers 42, which levers in turn are pivoted to the upright standards 43 on the machine base by means of the pivot bolts 44. In order to keep the frame 40 exactly in the same plane throughout all parts of its movement, I have provided the levers 45 pivoted at their upper ends to the rear part of the frame 40 by the pivot bolts 46, and their central portions to the tops of the standards 43 at 47, and the lower ends to the inking device by the pivot bolts 48. The two levers on each side of the frame that supports the type bearing frame, are parallel, as clearly shown in Figure 1, and by this arrangement the bottom of the frame 40 is maintained in a horizontal position throughout its entire movement, so that the printing faces of the type will at all times stand parallel with the top surface of the platen, as hereinafter more fully pointed out.

The type wheels proper are each preferably composed of a disc 49 having a large opening in the center, and these discs are rotatably mounted upon the hub 50 which is mounted on the bolt 41. Each type bearing wheel is independently movable upon its hub, and it contains upon its periphery a series of type 51 with notches 52 between the type. On the periphery of each type bearing wheel is a raised portion 53, shown in Figure 4, and having a shoulder at 54, a cam at 55 and a notch at 56.

In order to provide for selecting types to be printed from and move them into grouped position for printing purposes and locking them in printing position, I have provided the following mechanism.

Rotatably mounted upon the pivot bolt 41 is a forked lever 57 having a handle extension 58 on which the handle 59 is formed. This lever is provided near its central portion with a horizontally arranged body portion 60, in which is slidingly mounted a rack bar 62. This rack bar has two downwardly extended arms 62^a, for purposes hereinafter made clear. Mounted on the said body portion 60 is a spring actuated detent or holder 63 designed to engage the rack 62 and hold it against movement in one direction. This detent 63 is provided at its forward end with an inclined or cam face 64 designed when the lever 58 is moved to its forward limit to engage a stationary cross piece 65 on the frame 40, with the result of throwing the detent 63 out of engagement with its rack 62. The spring for holding the detent against the pawl is indicated by the numeral 66.

For advancing the rack bar 62 laterally, I have provided a thumb pressed bar 67 slidingly mounted in the handle 59, its movement being limited by the screw 68 in the slot 69. A spring 70 is provided in the handle 56 to normally hold the thumb pressed bar to its limit of movement away from the handle 59. On the lower end of the bar 67 is a hook 71, designed to slidingly receive a pawl 72. This pawl is fulcrumed in line with the detent 63 and is normally held downwardly in engagement with the rack by a spring 73, shown in Figures 12 and 13, which spring is connected to the detent 63 as shown in Figure 12. By this arrangement it is obvious that when the thumb pressed bar 67 is moved toward the handle 56, the pawl 72 moves the rack 62 one tooth space toward the right, as shown in Figure 6, and then as the bar 67 moves toward the left the said pawl 72 will ride over the adjacent tooth of the rack bar and engage another tooth. Obviously by this arrangement the operator may grasp the handle 56 in his hand and place his thumb upon the bar 67, and then by moving the thumb the rack bar 62 may be advanced one tooth space at a time toward the right, as shown in Figure 6, and the rack bar will be there held in each position as it is advanced, by the spring actuated detent 63.

In a device of this character it is important that each of the type bearing wheels be capable of independent movement so that the types thereon may be grouped as desired, and at the same time it is important that these separate type bearing wheels be at all times held and locked against movement relative to each other except during the time that the selected type is being moved to grouped position. For this purpose I have provided a sliding frame or yoke, most clearly shown in Figure 7. This yoke comprises two sides 74 arched upwardly at their central portions at 75, and two tubular end pieces 76, the latter being slidingly mounted on suitable rods 77 in the ends of the frame 40, the entire yoke being capable of free lateral movement on the rods 77. Fixed to the end of this yoke is a key 78 designed to enter the notches 52 between the types, and carried by the rack bar 62 is a corresponding

key 79. The key 78, as will be seen in Figure 7, extends from the left side of the yoke toward the right, and the key 79, as will be seen in Figure 6, extends from the right side of the rack toward the left. The relative arrangement of these two keys is such that as the key 79 is moved out of the notch 52 of one type wheel, the coacting key 78 is moved into one of the notches of the same type bearing wheel, the rack 62 and the said yoke being moved laterally in unison because of the fact that the rack bar 62 is provided with slotted downwardly projecting arms 62^a that receive the sides of the yoke in their slots. By this arrangement it will be readily seen that all of the type bearing wheels are at all times locked either to the key 79 or the key 78, and hence independent movement of the type wheels relative to each other, except as moved by the key 79, is positively prevented. A spring 81 is provided for normally holding the rack 62 to its limit of movement toward the left, as shown in Figure 5.

Mounted on top of the frame 40 is a curved plate 82 having a slot therein through which the lever 58 projects, and having at the right of the slot, as shown in Figure 2, a plate 84 containing characters such, for instance as alphabetical letters and numerals. These characters are arranged in rows circumferentially of the plate, and also laterally. The first row of characters to the left, as shown in Figure 2, contains the same characters as are found upon the first type wheel to the left. The second row of characters on the plate contains the characters found upon the second type wheel, and the third contains the numerals corresponding to the numerals contained on the third type wheel. In the structure shown there are only three of these rows of characters on the plate 84, whereas there are seven type wheels shown. It is to be understood that the remaining four of the type wheels at the right of the group of type wheels all contain the same characters arranged in the same way as are contained on the third type wheel from the left, as shown in Figure 2.

The notches 83 are arranged adjacent to a lug 85 on the bar 67, and the arrangement of the notches is such that each notch is directly opposite one of the laterally arranged rows of characters on the plate 84.

The operation of this part of the mechanism is as follows:

Assume that the character to be set up and printed is as follows: AW2, and assuming further that the yoke 74 is at the left end of its movement. When in this position the key 78 will be out of engagement with all of the type wheels. The rack bar 62 will also be at the left end of its movement, and its key 79 will be in engagement with all of the type wheels. The operator then grasps the handle 59 and the bar 67 and moves them until the pointer 86 on the part 58 stands adjacent to the letter A, on the plate 84.

Assuming that all of the type wheels are in their normal position, then obviously the key 79 of the rack bar will be released from the first type wheel to the left, and the key 78 of the yoke will be locked to the first type wheel to the left. The operator then moves the handle to position with its pointer adjacent to the letter W on the type plate 84, and again presses the bar 67 with his thumb. During this movement it will be observed that the key 79 of the rack bar has been all of the time in engagement with the slots 56 of all of the type wheels except the first one to the left, from which it had been withdrawn when the first type wheel to the left had been fixed to printing position. However, when the bar 67 was pressed, then the second wheel from the left was released from its engagement with the key 79 and was locked in its grouped printing position relative to the first type wheel to the left, by means of the key 78. Then the operator moves the part 58 to position with its pointer adjacent to the numeral 2 and again presses the bar 67, thus releasing the key 79 from its engagement with the notch 56 and throwing the key 78 into engagement with the notch in the third type wheel from the left. This operation has brought the first three type wheels from the left in such position that the characters A—W—2 are arranged on these three type wheels in line with each other at the bottom of the type wheels, and there locked in this position. If the handle 59 is then moved to its rearward limit, all of the remaining type wheels are moved to position thereby, with the blank spaces thereon adjacent to the three selected and locked type, and the device is then ready for printing.

As soon as the printing has been done from these selected type as many times as may be desired, then the operator moves the lever 59 forwardly and downwardly to its limit, thus causing the cam faces 64 of the detent 63 and also the cam face of the pawl 72, to engage the bar 65 and thus throw both the detents and the pawl out of engagement with the rack bar, whereupon the spring 81 moves the rack bar 62, together with the yoke 74, to its limit of movement to the left, and then when the handle 59 is being moved to the rear, the key 79 of the rack bar 62 will enter the notches 56 of all of the type wheels and move them all back to position in line with each other, with the shoulders 54 of the type wheels in engagement with a stop 87 to the right of the key 78 (as shown in Figure 7), whereupon the device is again ready for setting up a new set of characters.

It is to be understood in this connection

that the selected group of type may be taken from any one or more of the type wheels in the device, and it is not necessary to secure any type from either the first or any other specified one of the type wheels.

My improved inking device comprises a combined body and ink container, indicated generally by the reference numeral 88. It is supported at its rear end upon the levers 45 connected with pivot pins 48, as heretofore described, and it is also supported at its forward end upon the levers 42 by being connected with the pivot pins 89 on the lower ends of said levers 42. The connection between the frame that carries the type bearing wheels and the ink receptacle, is arranged to operate on the parallel ruler principle, so that both the frame of the type bearing wheels and the body of the ink receptacle are kept in parallel planes throughout their entire movement. In this connection, I have formed the ink receptacle of somewhat thick and heavy material for the purpose of having it exactly counterbalance the weight of the type wheel device. One of the advantageous features of this part of my improved machine is that when the type bearing frame is in one position, as shown in Figure 1, it is bodily withdrawn upwardly and rearwardly through a considerable extent, from the printing platen, so that the platen and the adjacent parts are clearly exposed to the operator's view, and when the type bearing wheels move to printing position they move forwardly and downwardly to the position shown in Figure 11.

The ink well is provided with the filler opening 90 covered by a plug 91, and with a clean-out opening 92 closed by the screw 93. On the interior of the ink receptacle is a rocking ink feeding pad 94, fixed to the shaft 95. Pivotally supported within the ink receptacle is the roller frame 95ª containing a roller 96. This roller 96 is adjustably held in engagement with the ink feeding pad 94 by means of the set screw 96ª.

I provide for rocking the ink feeding pad as follows: Pivoted to the lower end of one of the levers 45 is a link 98 connected to an arm 99 on the shaft 95 of the ink feeding pad, as clearly shown in Figure 10. In this figure the movement of the ink receptacle is shown by dotted lines, and these dotted lines indicate how the shaft 95 is rocked during its movement. In Figure 4 the ink feeding pad is shown at one limit of its movement when in its position for transmitting ink to the type inking roller, and in Figure 11 it is shown at its opposite limit of movement in position with its inking pad substantially submerged in the ink.

The practical operation of this ink device is as follows: During the printing operation the ink feeding pad is rocked backwardly and forwardly, and when its forward end is moved upwardly the excessive ink will be squeezed from the pad by the roller 96. Then the inking pad with the proper amount of ink on its surface, will engage the type inking roller and rotate it and transmit the proper quantity of ink to its surface.

I have provided for sealing the ink receptacle at all times except during the instant when the inking roller is in contact with the type to be inked, as follows: Pivoted to the sides of the ink receptacle near the forward end thereof, are the arms 100, which arms connect at their upper ends with a rod 101. On this rod 101 I have mounted an ink sealing cover 102, preferably having a rubber face 103 on its upper surface, designed to fit tightly against the edges surrounding the opening in the upper forward corner of the ink receptacle. A spring 104 is provided for normally holding the cover in its closed position.

I have provided for opening this cover and also for moving the inking roller 97 from its normal position to position for inking the type, as follows: Referring to Figure 1 of the drawings, it will be seen that there is a shaft 105 mounted in the ink receptacle and having mounted thereon a trip lever 106. This lever has a limited pivotal movement on its shaft. This is accomplished by having a pin 107 passed through the shaft and through a slot 108 in the lever 106. This lever is provided near its rear end with an outwardly projecting pin 109, which pin is designed to be engaged by and to cooperate with a pin 110 on the adjacent pitman 31. Fixed to the shaft 105 on the interior of the ink receptacle are two arms 111, and these arms extend forwardly and are provided with rounded forward ends 112 designed to engage the sealing cover 102, so that when the arms are moved forwardly and upwardly the sealing cover is raised. Carried by these arms 111 are two levers 113 pivoted to the arms 111 at 114. These levers 113 carry at their forward ends the inking roller 97. At the rear end of the levers 113 is a spring 115 fixed at its rear end and extended forwardly through an opening in the rear of the lever 113. When the arms 111 are moved upwardly, as shown in Figure 11, this spring 115 tends to yieldingly hold the inking roller 97 upwardly into engagement with the type.

The arrangement of the two pins 109 and 110 is best illustrated in Figure 1, and its operation is as follows: During that part of the movement when the inking device is moving downwardly and forwardly, the pin 110 on the pitman 31 will engage the pin 109 on the lever 106, but on account of the limited pivotal movement of the lever 106 on the shaft 105, this lever is moved up-

wardly to permit the pin 109 to pass under it without rocking the shaft 105. However during the movement of the ink receptacle rearwardly, the pin 110 strikes the top of the pin 109 and forces the lever 106 downwardly, thus rocking the shaft 105 and opening the sealing cover and at the same time raising the inking roller 97. This is done at the instant when the inking device commences its rearward and upward movement.

Carried by the frame 40 are two downwardly extending arms 116 arranged adjacent to the opposte sides of the type wheels. These arms are provided at their lower ends with rounded notches 117, and the said arms are shaped and designed to perform two functions.

First. When the type bearing wheels have been moved to position just prior to the printing operation, these arms engage the upper surface of the plate 35 and press said plate downwardly firmly into contact with the plates 39, so that in the event that the article being printed on is relatively stiff, such for instance as a starched collar, the part thereof being printed upon will be forced upwardly by the platen through the slot 36, and it also serves to hold both the plate 35 and the stock being printed on firmly in position in the event that the operator's fingers should not firmly hold it during the instant of printing, to thereby prevent the possibility of blurring the mark during the instant of printing in the event that the goods should not be firmly and immovably held by the operator.

The second function for these arms 116 is accomplished during the instant of inking the type. The inking roller during the operation enters the notches 117, and the lower ends of the arms on opposite sides of said notches hold the inking roller in a positive way against any possible engagement with the two rows of type adjacent to the row being inked.

In practical operation the power shaft is being constantly operated by an electric motor or other source of power. This does not bring any excessive wear or strain upon any part of my improved machine, because the clutch and associated parts are so arranged and combined that there will be no in-thrust upon the bearings during such movement. The operator first selects and sets up the particular group of type desired to be printed from. This selecting and setting up process is accomplished by the operator with one hand only while grasping a single lever, and, as heretofore explained, the movements of the type wheels in selecting and setting them in printing position, while rapid is not such a movement as will cause shocks and jars to the type wheels such as is sometimes occasioned where large type bearing wheels or segments are necessarily moved rapidly to their selected positions and there abruptly stopped. During this setting up and selecting process all of the independent type bearing wheels are at all times locked and held against independent movement; that is to say, they are not released from their engagement with the lever 58 until they are locked to the key 78. After the type have thus been selected and set up, they are securely locked in position and may be printed from any desired number of times without any possibility of their being moved from their properly grouped positions.

The operator then grasps successively the various articles to be marked. Both hands are free to do this, and the article is stretched between the hands and then, without changing the operator's grip upon the article, he also grips both of the handles 38 and passes the article to be marked directly over the platen. Then while still retaining his grasp upon the article and the handles, he simply presses downwardly on the handles, thus tripping the mechanism which starts the power plant and effects the printing operation.

As soon as the printing is completed, the operator releases the handles and also releases the marked article and grasps another article to be marked. The power plant instantly stops when the type wheels are in their rearward elevated position, and is there held until the handles are again pressed downwardly. The printing is effected on the articles to be marked without any such blurring as is sometimes occasioned on marking machines in which the movement of the type relative to the platen is not at exactly right angles to the surface of the platen, for in such machines when relatively thick articles are being marked there is a sort of a wiping movement of the type toward or from the article, tending to blur the mark, whereas with my improved device it makes no difference how thick the article is, because the movement of the type toward and from it is exactly at right angles to the platen. During the movement of the type toward printing position and back, there are no shocks or jars to the machine, because such movements start with the pitmans on dead center and when the impression is being made the pitmans are again on dead center, so that the movement of the type is very slow at the start and also at the moment of making the impression and is rapid at other times. The entire structure has comparatively few parts and all of its operations are made without shock or jar to the working parts, thereby providing a machine of great durability.

I claim as my invention:

1. In a printing device, the combination

of a frame, a series of type bearing wheels mounted in said frame, a lever, means associated with and carried by the lever, for engaging the type wheels and moving them in unison with the lever to printing position relative to the frame, and means associated with and carried by the same lever for successively releasing the type wheels from the lever so that the lever may be operated without moving the last released type wheel.

2. In a printing device, the combination of a frame, a series of type bearing wheels mounted in said frame, a lever, means associated with and carried by the lever, for engaging the type wheels and moving them in unison with the lever to printing position relative to the frame, means associated with and carried by the same lever for successively releasing the type wheels from the lever so that the lever may be operated without moving the last released type wheel, and means operated by the said type wheel releasing means for locking the last released type wheel to the frame.

3. In a printing device, the combination of a frame, a series of type bearing wheels mounted in said frame, a lever, means associated with and carried by the lever, for engaging the type wheels and moving them in unison with the lever to printing position relative to the frame, means associated with and carried by the same lever for successively releasing the type wheels from the lever so that the lever may be operated without moving the last released type wheel, means operated by the said type wheel releasing means for locking the last released type wheel to the frame, and means for automatically releasing all of the type wheels from the means for locking them to the frame, said means being automatically actuated by a movement of said lever to one limit of its movement.

4. In a printing device, the combination of a frame, a series of type wheels mounted for rotation within the frame, each type wheel being provided with an extension outwardly from its periphery, and each extension being provided with a notch, a lever, a releasing bar associated with the lever and movable in unison with it, said releasing bar being capable of entering the notches in said extensions, means for moving said releasing bar progressively through said notches to release one type wheel at a time, and means for locking the type wheels to the frame, said means being progressively moved to lock each type wheel to the frame as it is released by the releasing mechanism.

5. The combination of a series of type bearing wheels capable of independent rotation relative to each other, whereby selected type on the various wheels may be grouped in position for printing, a lever, means carried by the lever for engaging every type wheel, whereby they may be rotated in unison with the lever, means for releasing said engaging means from the type wheels, said means being carried by the lever and so shaped and disposed relative to the lever that both the lever and said means may be grasped in an operator's one hand and the said means operated independently of the lever, and means actuated upon a movement of said lever in one direction for withdrawing said engaging means from all of the type wheels to permit the free rotation of the type wheels.

6. The combination of a series of type bearing wheels capable of independent rotation relative to each other, whereby selected type on the various wheels may be grouped in position for printing, a lever, means carried by the lever for engaging every type wheel, whereby they may be rotated in unison with the lever, means for releasing said engaging means from the type wheels, and for simultaneously locking the released type wheels to a fixed support, means actuated upon a movement of said lever in one direction for withdrawing said locking means from all of the type wheels to permit the free rotation of the type wheels, and means for returning all of the type wheels to normal position after they have been released, said means being operated by a movement of the said lever in one direction.

7. The combination of a series of type bearing wheels capable of independent rotation relative to each other, whereby selected type on the various wheels may be grouped in position for printing, a lever, means carried by the lever for engaging every type wheel, whereby they may be rotated in unison with the lever, means for releasing said engaging means from the type wheels, said means being carried by the lever and so shaped and disposed relative to the lever that both the lever and said means may be grasped in an operator's one hand and the said means operated independently of the lever, means actuated upon a movement of said lever in one direction for withdrawing said engaging means from all of the type wheels to permit the free rotation of the type wheels, and means for returning all of the type wheels to normal position after they have been released, said latter means being operated by a movement of the said lever in one direction.

8. The combination of a frame, a series of type bearing wheels in the frame, arranged side by side and capable of independent rotation relative to each other, whereby selected type on the various wheels may be grouped in position for printing, a lever, a locking and releasing bar carried by the lever, means associated with the locking and releasing bar for locking a type wheel in

the frame and releasing it at the same time from the lever, said locking and releasing device being capable of movement successively from a type wheel on one side toward the type wheel on the opposite side, means associated with and actuated upon a movement of said lever in one direction for withdrawing said locking means from all of the type wheels to permit the free rotation of the type wheels, means for returning all of the type wheels to normal position after they have been released, said means being operated by a movement of the said lever in one direction, and a stop device for limiting the movement of all of the type wheels when they have reached normal position.

9. The combination of a series of type wheels capable of independent rotation relative to each other, a lever, means for operatively connecting the lever with any one of the type wheels to rotate them one at a time, some of the type wheels being provided with similar type characters and others with different type characters, a character plate adjacent to said lever and provided with rows of characters arranged paralled with the path of travel of the lever, and also arranged in rows transversely thereof, there being on said character plate a complete longitudinal row of characters for every type wheel having characters different from the others, and only a single row of characters for all of the type wheels having similar characters thereon.

10. The combination of a base, a platen on the base, a type bearing frame, a pair of parallel levers on each side, connecting the frame and the base for maintaining the type with their printing faces parallel with the platen at all times throughout their movement, and an inking device for the type, carried by the same levers on opposite sides of their fulcrums to counter-balance weight and to move the ink box toward and from the type.

11. The combination of a base, a platen on the base, a frame, type wheels carried by the frame, a pair of parallel levers on each side of the frame, pivotally connected to the frame and to the base, a drive wheel, and a pitman connected to the drive wheel and to one of said parallel levers.

12. The combination of a base, a platen on the base, a frame, type wheels carried by the frame, a pair of parallel levers on each side of the frame, pivotally connected to the frame and to the base, a drive wheel, and a pitman connected to the drive wheel and to one of said parallel levers, said pitman being arranged so that it will pass a line drawn through it and through the center of the drive wheel when the type are in engagement with the platen and also when they are at their opposite limit of movement.

13. The combination of a base, a platen on the base, type capable of movement toward and from the platen, and power-operated means for moving the type, comprising a clutch, a combined stockholder and lever adjacent to the platen, and means connected with the stockholder and lever for actuating the clutch to start the printing movement of the type.

14. The combination of a base, a platen on the base, type capable of movement toward and from the platen, power-operated means for moving the type, comprising a clutch, a combined stockholder and lever adjacent to the platen, and means connected with the stockholder and lever for actuating the clutch to start the printing movement of the type, and means for automatically stopping the printing movement when the combined stockholder and lever is released.

15. The combination of a platen, type capable of movement toward and from the platen, power-operated means for moving the type, including a drive wheel for operating the type, a shaft for the drive wheel, a clutch device associated with said shaft, power-operated means for constantly driving one of the clutch members, the other clutch member being keyed to the shaft and capable of movement toward and from its fellow, a combined stockholder and lever associated with the platen, and means connected with said stockholder and lever for operatively throwing the clutch into engagement when the combined stockholder and lever is depressed, and for automatically throwing it out and stopping the drive wheel after a printing operation after the release of said stockholder and lever, said means comprising a trip lever to be engaged by the stockholder and lever, a clutch lever fulcrumed to the machine frame and connected with the trip lever, and a cam on the drive wheel to engage the trip lever, said parts being so arranged that when the trip lever is actuated it will disengage the power from the drive wheel cam and throw the clutch into engagement, and then move to position where it will be engaged by the drive wheel cam after a complete rotation thereof, and also said parts being so arranged that when the trip lever is thus engaged by the drive wheel cam it will move the clutch device out of engagement for stopping the printing operation.

16. The combination of a platen, a combined stockholder and handle having a slot therein to receive the platen, a type carrying frame capable of movement toward and from the platen, and presser arms carried thereby, designed to engage the combined stockholder and handle and force it downwardly toward the platen during a printing operation.

17. The combination of a platen, a com-

bined stockholder and handle having a slot therein to receive the platen, a type carrying frame capable of movement toward and from the platen, presser arms carried thereby, designed to engage the combined stockholder and handle and force it downwardly toward the platen during a printing operation, an inking roller for the type, and means for moving the inking roller toward position for inking the type, said presser arms being formed with notches to guide said inking roller and to prevent it from engaging any of the adjacent type to the one being printed from, for the purposes stated.

18. The combination of a base, a yielding platen thereon, and stock guiding plates at the sides of the platen, slidingly connected with the base and secured to the ends of the yielding platen.

19. The combination of a base, a platen on the base, a type bearing frame capable of movement toward and from the platen, an inking device capable of movement toward and from the type, said inking device including an inking roller capable of movement out of the inking device into engagement with the type to be inked, and means for actuating the type toward and from printing position, said means including a pitman, a trip lever for actuating the inking roller, and cooperating pins carried by the trip lever and the said pitman for actuating the inking roller during that period of the movement of the parts when the pin on the pitman engages the pin on the trip arm, for the purposes stated.

Des Moines, Iowa, October 26, 1917.

CHESTER W. CANINE.