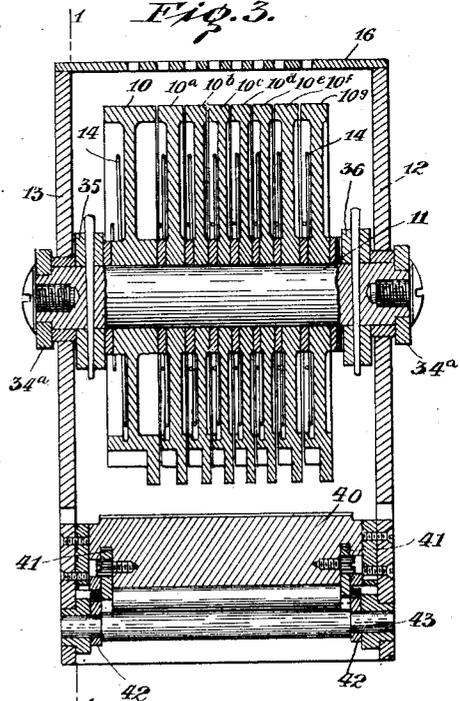
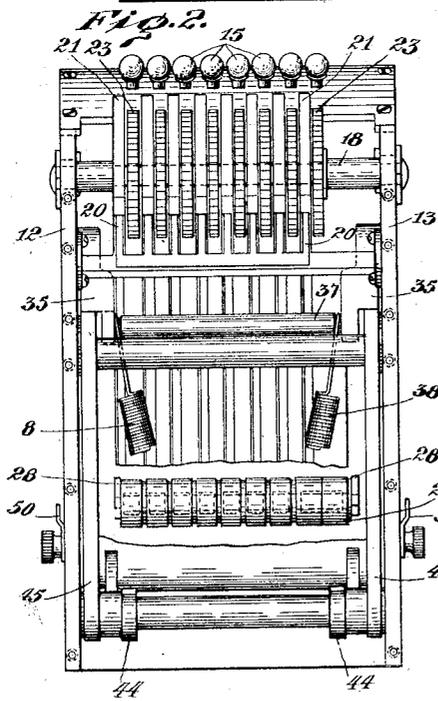
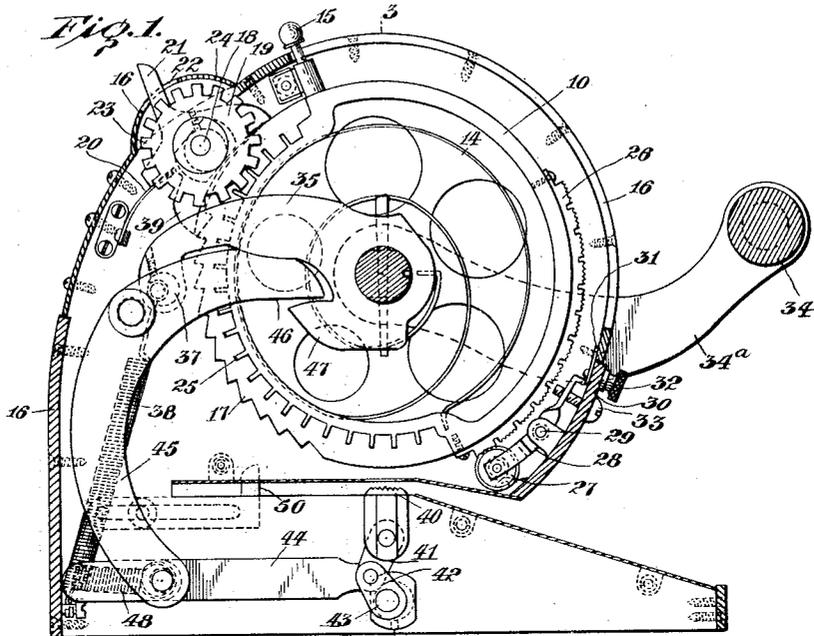


B. F. JOLINE.  
 PRINTING MECHANISM.  
 APPLICATION FILED NOV. 4, 1912.

1,195,992.

Patented Aug. 29, 1916.



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# UNITED STATES PATENT OFFICE.

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## PRINTING MECHANISM.

1,195,992.

Specification of Letters Patent.

Patented Aug. 29, 1916.

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*To all whom it may concern:*

Be it known that I, BENJAMIN F. JOLINE, a citizen of the United States, residing at Tottenville, in the county of Richmond, State of New York, have invented certain new and useful Improvements in Printing Mechanism; and I do declare the following to be a full, true, and exact description of the said invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to printing devices in which a number of printing wheels are arranged so that the printing characters on them may be grouped at the will of the operator so as to print any selected combination of words and figures in a given line. Such devices are particularly useful in check protecting machines, laundry marking machines, and the like.

One of the objects of my present invention is to provide a simple mechanism by which the types on the wheels may be grouped by the operator in any desired position, and by which such wheels shall be returned to their non-operative position preparatory to a second operation without any thought on the part of the operator but as a result of the operation of the printing mechanism.

A further object of my invention is to provide an indexing device by which the operator may readily ascertain what figures or characters are set up in the machine to be printed.

A further object of my invention is to arrange my printing wheels in such a manner that any one of them may be released to be returned to non-printing position in the event of an erroneous setting of the wheel, this action taking place without interfering with the setting of any of the other wheels.

With these and other objects in view, my invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation in section of my novel mechanism, the section being taken on the line 1—1, Fig. 3. Fig. 2 is a rear elevation of my novel mechanism with the back cover plates, shown in

Fig. 1, removed. Fig. 3 is a sectional elevation taken on the line 3—3 of Fig. 1, and looking from the front or the handle side of the machine.

The corresponding parts are referred to both in the drawings and following description by similar reference characters.

In the drawings, 10 represents one of a plurality of type wheels, the others being marked 10<sup>a</sup>, 10<sup>b</sup>, 10<sup>c</sup>, 10<sup>d</sup>, 10<sup>e</sup>, 10<sup>f</sup>, and 10<sup>g</sup>, it being understood that each of these wheels is substantially like all of the others, except that each of them may have different figures mounted thereon for printing purposes. These printing wheels are rotatably mounted on a shaft 11 rotatably supported in the side frames 12—13 of the machine.

Each of the printing wheels is connected to the shaft 11, or to washers fastened thereto, by a spiral spring 14. Each of the wheels is also provided with a handle 15 projecting through a slot in the casing 16 which surrounds the printing wheels and other mechanism. When the handle 15 is moved in the slots 16 from the position shown in Fig. 1, the shaft 11, being relatively stationary, acts as an abutment for the spring 14, which is tightened by the movement of the handle 15 to the right of Fig. 1. If this handle were now released, the wheel would be drawn back by the spring 14, to the position shown in Fig. 1. On the periphery of each of the printing wheels, I provide a series of ratchet teeth 17, and on a shaft 18 I mount a series of pawls 19, each pawl being arranged to engage one of the series of ratchet teeth 17 on the printing wheels. Each of the pawls 19 is controlled by a flat spring 20, which tends to throw the pawl into engagement with the ratchet teeth 17. With this arrangement, it will be understood that when the handle 15 is moved to the right of Fig. 1, the pawl 19 is moved into engagement with one of the ratchet teeth 17 by the spring 20, thus holding the wheel in the position into which it is moved.

Each of the pawls 19 is provided with a member 21 projecting through an opening 22 in the casing 16. If the operator should inadvertently move one of the handles 15 too far to the right or the portion of the wheel, which he wishes to bring into printing position, past the printing point, he may release

the pawl of such wheel by pressing backward on the end 21, thus allowing the spring 14 of that wheel to return it to its normal position, when it may be reset.

5 In order to show directly to the operator what portion of each wheel is in printing position without being obliged to rely on the respective positions of the several handles 15 in the slots in the casing 16, I provide a series of rotatable indexing devices, each 10 geared directly to one of the wheels, and in my preferred form I arrange this indexing device as a gear wheel 23 having teeth so shaped that they are relatively broad on their ends. On these broadened ends I provide 15 index marks and I also provide an opening 24 in the casing 16, the index marks on the index wheel and the opening 24 being so set that the proper mark will show through the opening 24 to indicate what portion of 20 each printing wheel is in printing position. As a convenient way to operate the rotatable indexing devices, I provide the periphery of each printing wheel with a series of gear 25 teeth 25 meshing directly with the teeth of the wheel 23. In the form which I have illustrated, these teeth are cast alongside of the ratchet teeth 17 though, of course, they may be arranged in any other convenient 30 manner.

The printing wheels 10 to 10<sup>s</sup> may be provided in any convenient manner with printing surfaces, and in the form which I have illustrated, these surfaces comprise strips 26 35 bearing separate letters or figures having serrated surfaces, these strips being attached directly to the wheels.

In order to ink the printing surfaces, I provide an inking roller 27 mounted in a 40 yoke 28 pivoted at 29 to a hinged portion of the casing 16, which I have marked 30, such portion of the casing being held in the position shown in Fig. 1 by a latch 31 controlled by a handle 32. The hinged casing 30 is 45 pivoted at its lower end, as shown, and the release of the latch 31 permits the casing 30, together with the pivot 29 carrying the inking roller 27, to be moved downward to apply fresh ink to the roller. The position of 50 the roller 27 against the type wheels is controlled by the screw 33 acting on the yoke 28.

Attached to the shaft 11 by the arms 34<sup>a</sup> is a handle 34. Attached to the shaft 11 at 55 either end and inside of the end members 12—13, are a pair of arms 35—36, these arms having extended between them a rod 37. To this rod is attached a pair of springs 38 which normally hold the handle 34 in the position shown in Fig. 1.

60 Each of the pawls 19 is provided with an extension end member 39, and these end members and the rod 37 are arranged so that, as the handle 34 is moved downward, the rod 37 will engage with the members 39 and 65 move them toward the center of the print-

ing wheels, and thus move the opposite ends of the pawls out of the teeth 17, thus permitting the springs 14 to return the several wheels in the position shown in Fig. 1.

70 Arranged to cooperate with the printing wheels at the printing point is a platen 40, slidably mounted on the members 12—13, and also, in the form illustrated, provided with a serrated surface to engage with the serrations of the printing strip 26. Up-and- 75 down motion is given to the platen 40 by a pair of toggles 41—42 at either end of the platen 40, the lower end of each of these pairs of toggles being mounted on a shaft 43 extending between the members 12—13, the 80 shaft 43 being mounted in eccentric bushings for the purpose of adjustment. At either end of the machine, the toggle links 41—42 are connected to a connecting rod 44 pivotally connected to one end of a lever 45, 85 pivotally mounted on the members 12—13 and having an end member 46 arranged to engage with a member 47 of the levers 35—36. The connecting rod 44 is extended, as shown in Fig. 1, so that it abuts against 90 the casing 16 to limit the rearward motion of the toggles 41—42, and is held in this rearward position by a spring 48. When the connecting rod 44 is moved forward, it will be seen that the toggles 41—42 operate first 95 to move the platen 40 upward and then as the rod 44 continues its motion to the right, to break the toggle and permit the platen 40 to drop. The rearward action of the connecting rod 44 gives the same motions to the 100 platen 40 but in the reverse sequence. An adjustable side gage 50 is provided to locate the paper at the printing point.

105 Assuming now that the several parts on the machine are in the position shown in Fig. 1, the operator, desiring to print a given amount on a check, will move each of the handles 15, one by one, to the right of Fig. 1 until each indexing wheel shows at 110 the opening 24 the marking which the operator wishes the corresponding printing wheel to print. The printing wheel is held in this position against the action of the spring 14 by the pawl 19. After each of the 115 wheels has been moved to its correct position, the check is placed on the support of the machine over the platen 40, and under the printing wheels and the handle 34 is moved downward. The first motion of the handle 34 serves to engage the members 47 120 with the levers 46 to move the platen 40 upward to contact the paper with the type which is in printing position. Further motion of the handle causes the toggles to pass over their center and to allow the platen to 125 drop. About this time, the rod 37 engages with the ends 39 of the pawls 19, releasing them all simultaneously, and permitting the springs 14 to return the several wheels to their non-printing positions, the platen be- 130

ing at this time out of printing position to permit this return of the wheels. On the release or upward motion of the handle 34, the connecting rod 44 moves to the left, 5 bringing the platen 40 to the position shown and, although this operation serves to move the platen into printing position, it is non-effective because the printing wheels have been previously returned to non-printing 10 position. It will be understood that in the original setting of the printing wheels, if the operator should by mistake move the handle 15 too far to the right, he may correct such setting by pressing on the end 21 of the appropriate pawl without disturbing the setting of any of the wheels.

While I have illustrated a preferred form of my invention, it will be understood that there are many variations of the particular 20 structure disclosed, which may be made without departing from my invention. Particularly this is true of the various forms which my indexing device may take although the one which I have illustrated is 25 extremely simple and effective. The means for locking the wheels in printing position also may be widely varied and the wheels may be returned to their non-printing position by any other suitable means.

30 Having now described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. A shaft, a printing wheel rotatably mounted thereon and yieldingly connected 35 thereto, means by which said wheel may be rotated to move it from non-printing to printing position, means to lock said wheel in printing position, a platen arranged to be moved into printing relation with said 40 wheel, a lever to move said platen and means to release said locking means to permit said wheel to return to non-printing position, said releasing means being arranged to be 45 operated by said lever on the completion of its printing stroke.

2. A shaft, a plurality of printing wheels rotatably mounted thereon, and yieldingly and independently connected thereto, means by which each of said wheels may be ro-

tated to move it from non-printing to print- 50 ing position, means to locate each of said wheels in printing position, a platen arranged to be moved into printing relation with said wheels, a lever to move said platen and means to release all of said locking 55 means simultaneously to permit each of said wheels to return to non-printing position, said releasing means being arranged to be operated by said lever on the completion of its printing stroke. 60

3. A rotatably mounted printing wheel, means by which said wheel may be moved from non-printing to printing position, locking means to hold said wheel in printing 65 position, a platen arranged to be moved into printing relation to said wheel, toggle links constructed and arranged to move said platen into and out of printing relation with said wheel while said links are mov- 70 ing in one direction and means to release said locking means while said platen is being moved out of printing position.

4. A plurality of rotatably mounted printing wheels, means by which each of said 75 wheels may be moved from non-printing to printing position, locking means to hold each of said wheels in printing position, a platen arranged to be moved into printing relation to said wheels, toggle links con- 80 structed and arranged to move said platen into and out of printing relation with said wheels while said links are moving in one direction, and means to release said locking means while said platen is being moved out 85 of printing position.

5. A plurality of rotatably mounted printing wheels, means by which each of said 90 wheels may be moved to printing position, locking means for each wheel for holding it in printing position, means by which each wheel may be reset without affecting the other wheels already in printing position, and means to release all of said locking means simultaneously.

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