A. L. DAY.

PERFORATING MACHINE.

APPLICATION FILED FEB. 5, 1920.

1,391,099. Patented Sept. 20, 1921.

Fig. 1.

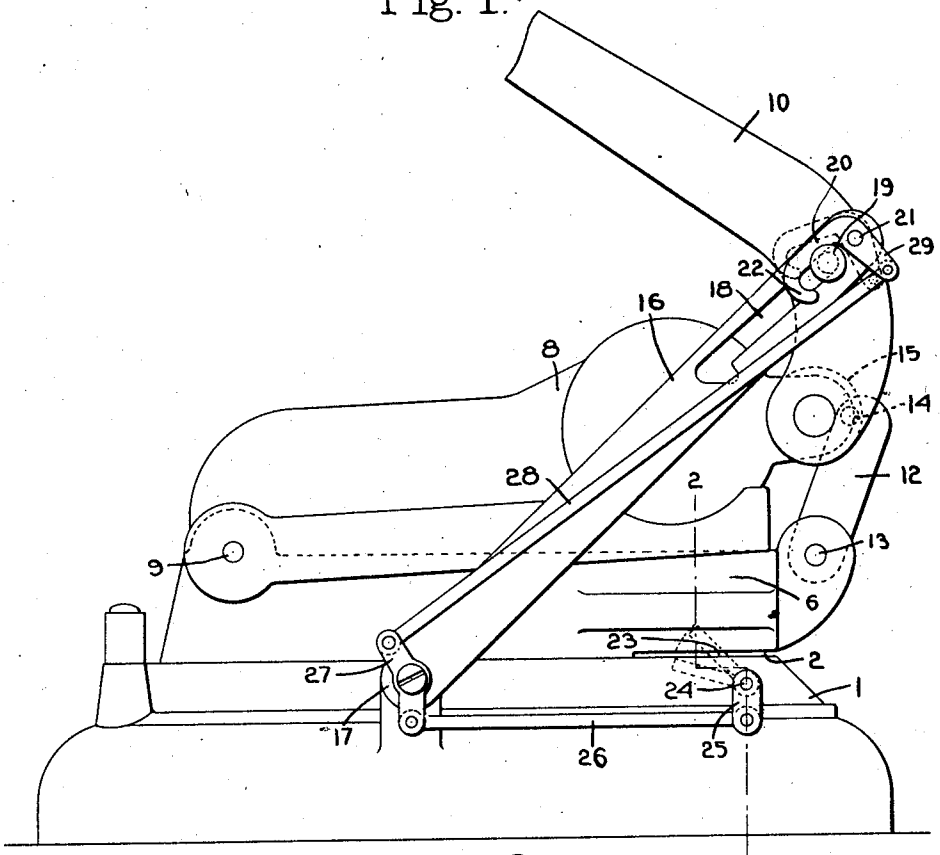
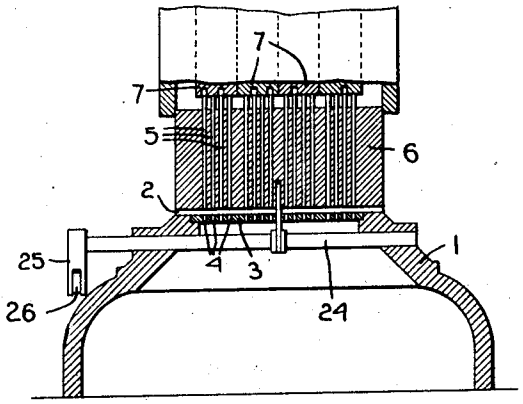


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PERFORATING-MACHINE.

1,391,099. Specification of Letters Patent. **Patented Sept. 20, 1921.**

Application filed February 5, 1920. Serial No. 356,472.

To all whom it may concern:

Be it known that I, ALFRED L. DAY, a citizen of the United States, residing at Brookline, county of Norfolk, State of Massachusetts, have invented an Improvement in Perforating-Machines, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to perforating machines of the type used to perforate characters, such as numbers or letters in paid checks, sales slips, or other sheets of paper, and has for its object to provide an improved perforating machine which is constructed so that the actuating mechanism thereof will be locked against operation except when a sheet or sheets of paper have been introduced into the machine in position to be perforated. This object is attained by providing a lock for the actuating mechanism and lock-releasing means which is controlled or actuated by the sheet or sheets of paper which are introduced into the machine into perforating position. The lock will preferably be so arranged that the withdrawal of the sheet or sheets from the machine will permit the lock to automatically become operative. With my improvement a person cannot actuate the machine until he has first inserted a sheet or sheets of paper in the machine in position to be perforated.

In order to give an understanding of my invention. I have illustrated in the drawings a selected embodiment thereof which will now be described, after which the novel features will be pointed out in the appended claims.

In the drawings, Figure 1 is a side view of a perforating machine having my improvements applied thereto;

Fig. 2 is a section on substantially the line 2—2, Fig. 1.

My invention may be applied to different types of perforating machines and will assume different forms in its different applications. Merely for the purpose of illustrating the principle of the invention, I have chosen to show it as it would be used in connection with a familiar type of perforating machine which is more or less commonly used in banks for perforating paid checks and indicating by the perforations the date of payment. I wish it to be understood, however, that the invention may be applied to other types of perforating machines.

The perforating machine herein shown is in some respects somewhat similar to that illustrated in United States Patent No. 475,400, May 24, 1892. It comprises a base or main frame 1 having in its front end a horizontal slot or mouth 2 into which the sheet or sheets of paper to be perforated are introduced. The under wall of this slot or mouth 2 is formed by a die-plate 3 having apertures 4 therein. Situated above these apertures are punches 5 which are vertically movable in the portion 6 of the frame. The punches are depressed for perforating the paper by means of matrix members 7 which are carried in a swinging head 8 that is pivoted to the frame at 9. The punches will preferably be arranged in groups, each group being capable of forming perforations indicative of one character, and there is a matrix member 7 for each group. These matrix members may be in the form of rolls, as shown in said patent, each of which has groups of recesses formed in its periphery. The recesses of each group are so arranged that the blank spaces between the recesses correspond to the outline of some particular character, and when any matrix is depressed, the punches opposite the recesses will enter the recesses, while those punches which are opposite blank spaces between recesses will be depressed into the corresponding apertures 4 in the plate 3 thereby perforating the paper.

The matrix members 7 which are in the form of rolls can be adjusted to bring different character-forming groups of recesses into position to act on the punches. The actuating movement of the matrix is accomplished by moving the head 8 downwardly about its pivot 9, and to accomplish this the machine herein shown is provided with an actuating lever 10 which is pivoted to the head and which is connected to the base by a link 12, said link being pivoted to the base at 13 and pivotally connected at 14 to a crank disk 15 rigid with the lever 10. The downward movement of the lever 10 will thus force the head 8 downwardly thereby bringing the blank spaces in the matrix 7

against the punches and actuating them to produce the required perforations.

The machine herein shown is provided with a strap 16 which is pivoted to the base at 17 and at its upper end has a slot 18 in which operates a stud 19 extending from the lever 10.

The parts thus far described are or may be all as usual in perforating machines of this type and, therefore, it is not necessary to further describe them.

My invention contemplates means for locking the actuating member of the perforating machine and means for releasing the lock to permit said member to be actuated by the insertion of a sheet or sheets of paper into the paper-receiving slot 2. The particular form of the lock for the actuating member may vary, depending on the character of said actuating member. One simple form of lock is herein illustrated, and it comprises a locking member 20 in the form of a hook-shaped lever pivoted at 21 to the strap 16, said lever having the hook portion 22 which crosses the slot 18 and normally prevents downward movement of the stud 19 in the slot. This will prevent the actuation of the lever 10. Means are provided for throwing this lever into its inoperative position shown in dotted lines by the insertion of a sheet or sheets of paper in the slot 2. One way in which this may be done is by means of a finger 23 which normally extends across the slot and is engaged by the sheet or sheets of paper as they are introduced into the slot, and by providing suitable connections between this finger and the locking lever 20. This finger 23 is shown as fast on a rock shaft 24 which is pivoted in the frame beneath the bed plate 3, and it operates in a suitable opening or recess through the bed plate and in the portion 6 of the frame between the groups of punches. The rock-shaft 24 has an arm 25 thereon at one end which is connected by a link 26 to a lever 27 pivoted at 17, and said lever in turn is connected by a link 28 to an arm 29 extending from the locking lever 20. With this arrangement the depression of the lever 23 by the insertion of a sheet or sheets of paper in the slot 2 will operate through the connections 26, 27, 28 to swing the locking lever into its inoperative position. With this construction, therefore, so long as there is nothing in the slot 2 to be perforated, the lever 10 will be locked, but the introduction of a sheet or sheets of paper into the slot 2 into position to be perforated will depress the finger 23 and thereby throw the locking lever into its inoperative position. The connections between the finger 23 and the locking lever will preferably be of light weight, so that relatively little force is required to actuate the lever, and the parts will preferably be so balanced that when the paper is withdrawn the locking lever 20 will return to its operative position by the action of gravity.

While I have shown herein one embodiment of the invention adapted to be used in connection with an actuating member in the form of a lever 10, yet I wish it understood that the construction of the locking member may vary dependent on the character of the actuating member without in any way departing from the invention.

A device for locking the actuating member from operation except when the material to be perforated is introduced into the machine has special advantages when used in connection with a perforating machine that is equipped with a counting device for recording each actuation of the machine or with a numbering attachment by which the successive actuations are numbered. In perforating machines having a counter or numbering attachment it is, of course, important that the machine should not be actuated by unauthorized persons because in such case, the unauthorized actuations will advance the numbering or counting mechanism and will, therefore, cause such attachments to make imperfect records.

My invention is, however, capable of general use in connection with perforating machines wherever it is desired to prevent any unauthorized operation thereof.

I claim:

1. In a perforating machine, the combination with perforating punches, of a pivoted head carrying a matrix member to actuate the punches, a lever for moving the head, means normally locking the lever from operation, and lock-releasing means actuated by the material to be perforated as it is introduced into the machine.

2. In a perforating machine, the combination with a plurality of perforating punches, of a pivoted head carrying a matrix member to actuate the punches, a lever for moving the head, a pivoted latch normally locking the lever from movement, and means actuated by the material to be perforated as it is introduced into the machine to swing the latch into inoperative position.

3. In a perforating machine, the combination with a plurality of perforating punches, of a pivoted head carrying a matrix member by which the punches are actuated, a lever for moving the head, a pivoted latch normally locking the lever from movement, a lock-releasing finger separate from the latch and situated to be engaged and moved by the material to be perforated as it is introduced into the machine, and connections between said finger and said latch whereby movement of the finger will release the latch.

In testimony whereof, I have signed my name to this specification.

ALFRED L. DAY.