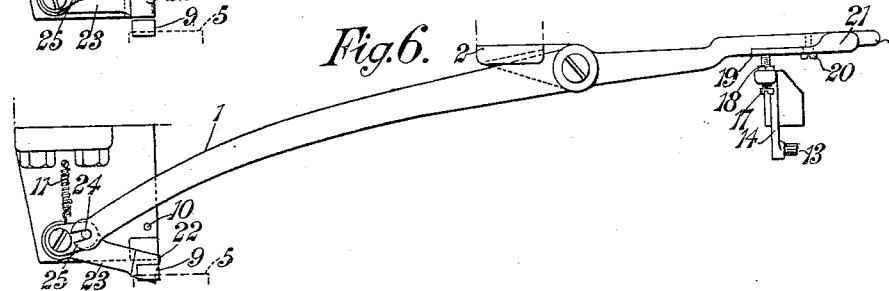
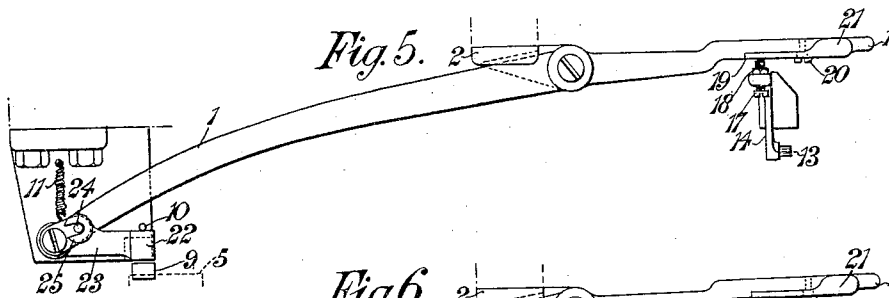
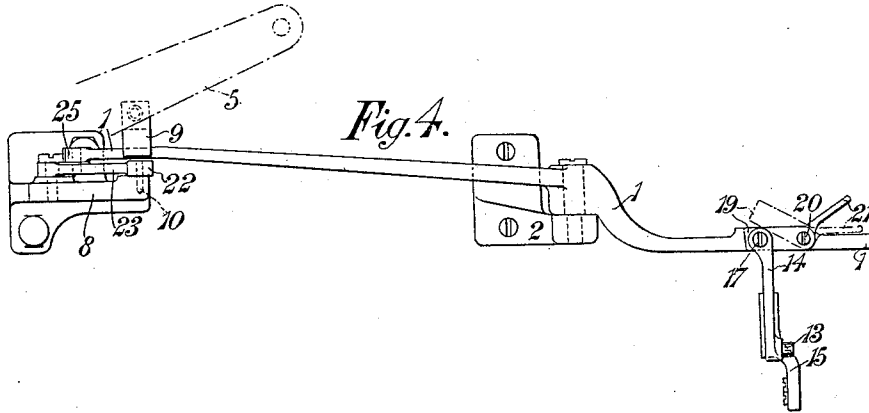
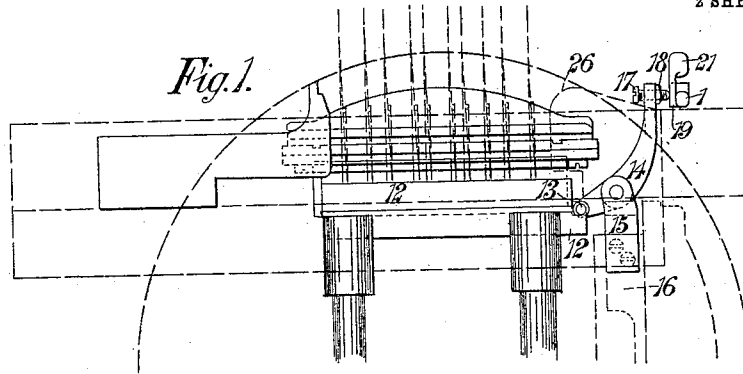


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 AUTOMATIC PUMP STOP MECHANISM FOR LINOTYPE MACHINES.
 APPLICATION FILED JUNE 26, 1909.

959,961.

Patented May 31, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS-SHEET 2.



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AUTOMATIC PUMP STOP MECHANISM FOR LINOTYPE-MACHINES.

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Specification of Letters Patent.

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Application filed June 26, 1909. Serial No. 504,614.

To all whom it may concern:

Be it known that we, HERBERT PEARCE and JOHN ERNEST BILLINGTON, subjects of the King of the United Kingdom of Great Britain and Ireland, and both residing at The Linotype and Machinery Works, Broadheath, in the county of Chester, England, have invented new and useful Improvements in Automatic Pump Stop Mechanism for Linotype-Machines, of which the following is a specification.

This invention consists of improvements in automatic pump stop mechanism for linotype machines, and the object of it is to provide for the pump being stopped without relying in any way upon the right hand vise jaw, and, at the same time, without preventing the pump stop mechanism stopping blank slugs being cast.

In the accompanying drawings which are to be taken as part of this specification and read therewith:—Figure 1 is a front elevation of sufficient of a linotype machine to show the application of the present invention thereto; Fig. 2 is an elevation as seen from the left hand side of Fig. 1; Fig. 3 is a plan of Fig. 2; Fig. 4 is a left-hand side elevation of a modification of the arrangement represented in Figs. 1, 2 and 3 and Figs. 5 and 6 are plans of the devices represented in Fig. 4 but showing them in respectively different positions.

Throughout the different figures of the drawings like reference numerals are used to indicate like or corresponding parts and certain known portions of the linotype machine, which constitute no separate part of this invention, are represented in dash lines.

Referring first to the arrangement shown in Figs. 1, 2 and 3, 1 is the pump stop lever pivoted to a stationary bracket 2 fast to the frame of the machine and the front end of which is situated at the front of the machine in a position convenient for manual operation by the operator; 3 is the metal pot, 4 the pump piston, 5 a portion of the pump lever, and 6 a portion of the spring by which the piston 4 is depressed for squirting metal into the mold 7. 8 is the fixed bracket over which the rear end of the pump stop lever 1 is free to move as indicated by the full and dot-and-dash lines in which the said lever is represented in Fig. 3. 9 is a block fast to the pump lever 5 and which, during the normal working of the machine (*i. e.* when the pump stop lever 1 occupies the full-line

position of Fig. 3) passes unobstructedly down and up at the left-hand side of the rear end of the pump stop lever 1, but which, when the said pump stop lever is in the dot-and-dash line position of Fig. 3, has its descent prevented by the interposition of the rear end of the lever 1 between the bracket 8 and the block 9. 10 is a stop pin fast to the bracket 8, and 11 is a spring which normally holds the lever 1 in contact with the stop pin 10, and which returns the said lever to the full-line position after it has been moved therefrom into the dot-and-dash line position. All the devices previously described in this paragraph are of ordinary construction and fulfill their respective functions in ordinary well known manner.

The act of justification in the linotype machine, as is well known, consists in longitudinally expanding the composed line of matrices by forcing upward the longer wedges of double wedge space bars assembled, along with the matrices, in the said composed line. This raising of the space-bar wedges is effected by the raising of a so-called justification bar or table pivotally attached to two vertical rods known as justification rods, these rods, at different parts of the justification operation, being raised successively and simultaneously respectively. In the event of the space bars in any composed line being insufficient to fully expand the line between the two vise jaws between which it is then situated, no material resistance is presented to the ascent of the justification bar, which, as a consequence thereof, is caused to ascend to its highest position that is to say a position above its normal justifying position. As already explained, the two justification rods are operated successively and that being the case the justification bar or table receives a motion which is that of neither of them but practically a compound of both, and, as the space bars are expanded by the direct action thereon of the justification bar or table, it follows that it is from this said bar that the pump-stopping motion can best be obtained.

According to the present invention the pump stop lever 1 derives its automatic piston locking motion from the aforesaid excessive ascent of the justification bar or table 12, for which purpose the right-hand end of the said bar or table, as shown in Fig. 1, acts upon a pin 13 in one end or arm

of a bell-crank or equivalent double armed lever 14 pivoted to a stationary bracket 15 secured to one of the trimming knives 16 as shown best in Fig. 2, or to some other relatively fixed part of the machine. At its upper end the bell-crank lever 14 is provided with a set screw 17 having a lock nut 18, this set screw being free to impinge upon an abutment 19 pivoted by a screw 20 to the forward end of the pump stop lever 1. The abutment is provided with a forwardly projecting thumb piece or equivalent 21 by means of which it may be readily turned from the operative position in which it is shown in full lines in Fig. 2 to the inoperative position in which it is shown in dot-and-dash lines in the same figure. The thickness of the abutment 19 is such that only when the said abutment is side by side with the pump stop lever 1 (which is the full-line position of Fig. 2) can the said lever be operated by the set screw 17, and when the abutment is turned into its inoperative position (which is the dot-and-dash line position of Fig. 2) the set screw 17 cannot reach, and consequently cannot actuate the pump stop lever 1, this latter condition being that which obtains when the machine is required for casting blank slugs.

The actual pump stop, instead of forming a part of the lever 1, as in the before described example, may, as shown at 22 in Figs. 4, 5 and 6, be fast to an independent lever 23 pivoted to the bracket 8, this lever receiving its motion from the pump stop lever 1 through a pin 24 fast to the lever 23, engaging with a fork 25 formed on the rear end of the said pump stop lever. This last described arrangement, as compared with that shown in Figs. 1, 2 and 3 provides for the pump stop 22 receiving a greater motion for a given motion of the bell crank lever 14, but the first described example is preferable where a sufficient proportion of the upward motion of the justification table 12 is available for the purpose, and the later described arrangement is preferable under other circumstances.

Inasmuch as the before described pump stop apparatus is actuated by the justification bar 12 and therefore quite independently of the right-hand vise jaw 26, the said apparatus, in no way, interferes with, or is affected by the movement of this vise jaw when quadding a short line.

We claim—

1. In a linotype machine the combination with the justification bar or table, the pump piston and the pump stop lever thereof, of means adapted to normally retain said stop lever out of its piston arresting position, and an independent secondary double armed lever having one arm in the path of said bar or table and the other arm in the path of the free end of said stop lever.

2. In a linotype machine, the combination of the justifier mechanism, a pump piston, and a pump stop lever adapted to prevent the piston making its metal-ejecting stroke, the front end of this lever being situated conveniently for manual operation by the operator when stationed at the front of the machine, means adapted to normally retain the said lever out of its piston-arresting position, a secondary lever independent of the pump stop lever adapted to receive its motion from the justifier and to act on the front end of the pump stop lever to move it into its pump stopping position, and a device adapted to be interposed and withdrawn from between the contacting parts of the two levers for rendering the pump stop lever operative and inoperative respectively.

3. In a linotype machine, the combination of the justifier mechanism, a pump piston, and a pump stop lever adapted to prevent the piston making its metal-ejecting stroke, the front end of this lever being situated conveniently for manual operation by the operator when stationed at the front of the machine, means adapted to normally retain the said lever out of its piston-arresting position, a secondary lever independent of the pump stop lever adapted to receive its motion from the justifier and to act on the front end of the pump stop lever to move it into its pump stopping position, and an abutment pivoted to the pump stop lever and adapted to be interposed and withdrawn from between the said lever and the part of the secondary lever contacting therewith, for rendering the pump stop lever operative and inoperative respectively.

4. In a linotype machine, the combination with the justification bar, a pump piston, and a pump stop lever adapted to prevent the piston making its metal-ejecting stroke, means adapted to normally retain the said lever out of its piston-arresting position, a secondary lever independent of the pump stop lever and one end of which is adapted to be acted upon by the justification bar, a set screw adjustable in the other end of the secondary lever, adapted to operatively contact with the pump stop lever for moving it into its pump stopping position, and an abutment pivoted to the pump stop lever and adapted to be interposed and withdrawn from between the said lever and the set screw for rendering the pump stop lever operative and inoperative respectively.

5. In a linotype machine the combination of the justification bar or table, the pump piston, an independent lever, a pump stop fast to the independent lever, means adapted to normally retain said independent lever out of its piston-arresting position, a pump stop lever at one end in operative connection with the independent lever and with

- its other end situated conveniently for manual operation by the operator when stationed at the front of the machine, and a double armed lever having one arm in the
- 5 path of the free end of the pump stop lever and its other arm in the path of the justification bar or table, the latter in rising, being adapted to operate the said levers to cause the stoppage of the pump.
- 10 6. In a linotype machine, the combination with the justification bar, a pump piston, a bell-crank lever adapted to be operated directly by the justification bar, a pump stop lever adapted to be operated by the
- bell-crank lever, an independent lever oper- 15
atively-connected with the pump stop lever, of an abutment pivoted to the pump stop lever and adapted to be interposed and withdrawn from between the said lever, for rendering the independent lever capable of 20
effecting the stoppage of the pump.
- In witness whereof we have hereunto set our hands in the presence of two witnesses.
- HERBERT PEARCE.
JOHN ERNEST BILLINGTON.
- Witnesses:
J. ARNOLD HANCOCK,
EDWIN H. KERSLEY.