

No. 747,534.

PATENTED DEC. 22, 1903.

J. BURGER.

AUTOMATIC SIGNALING DEVICE FOR LINOTYPE MACHINES.

APPLICATION FILED MAR. 20, 1903.

NO MODEL.

Fig. 1.

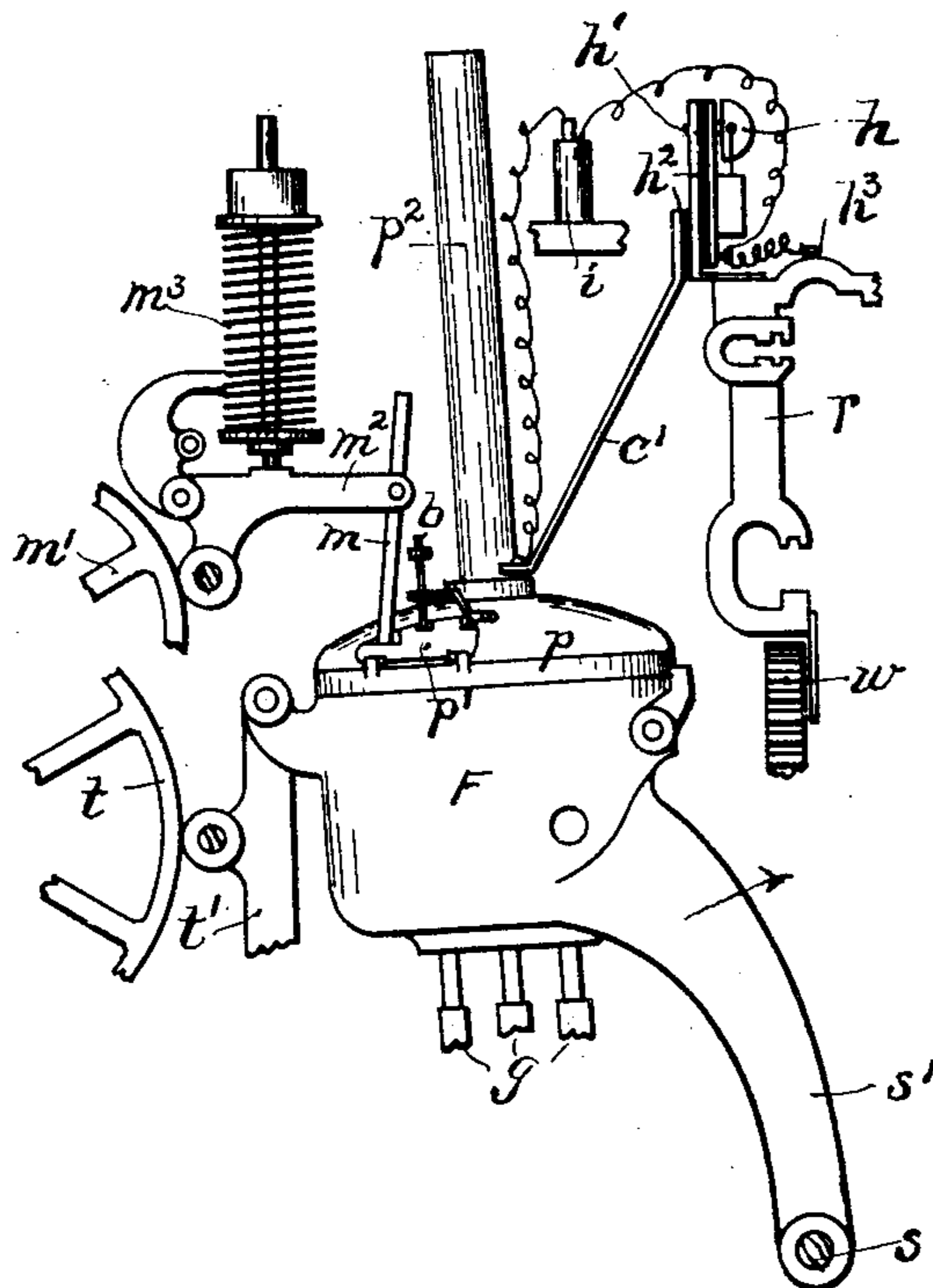


Fig. 3.

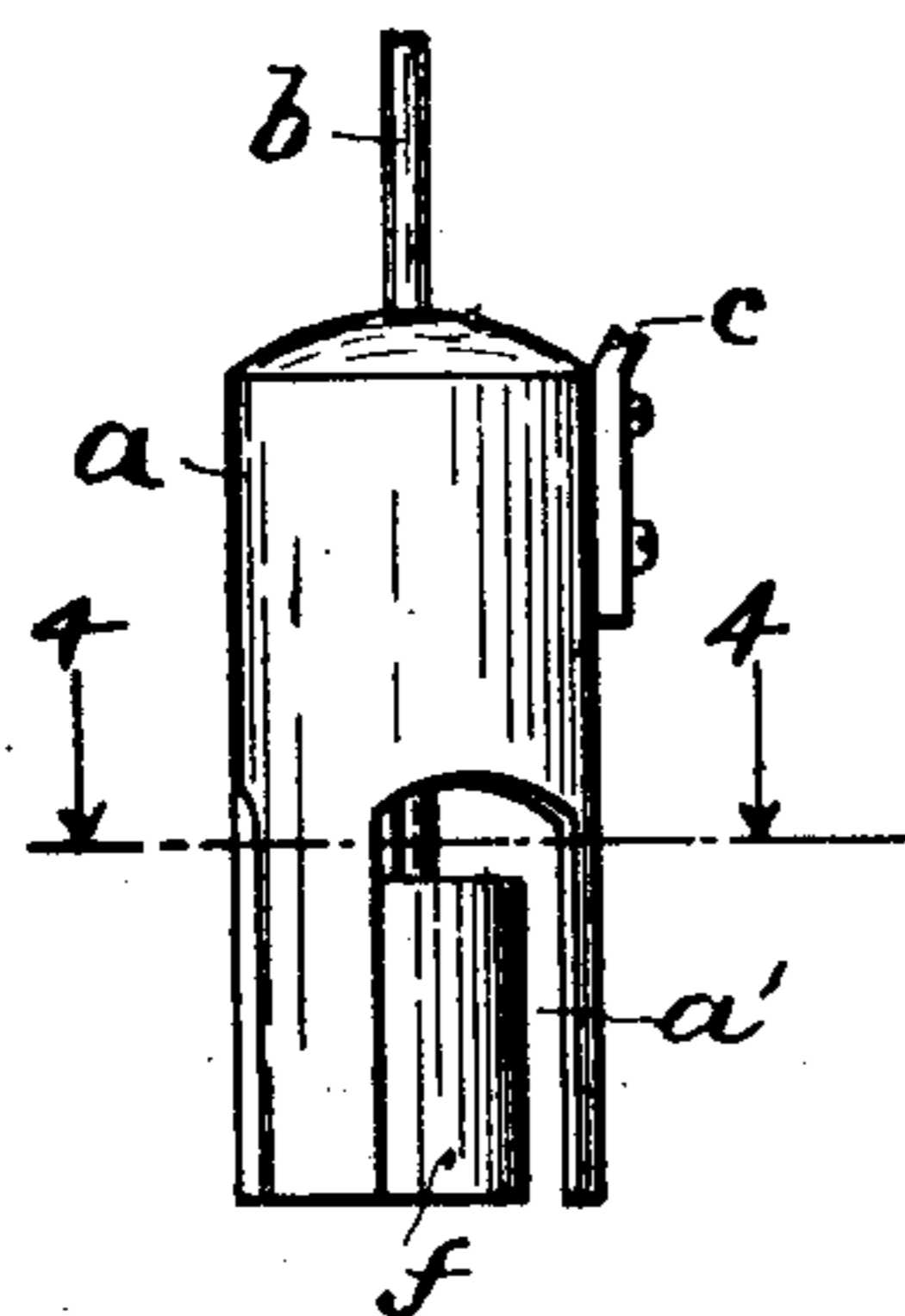


Fig. 2.

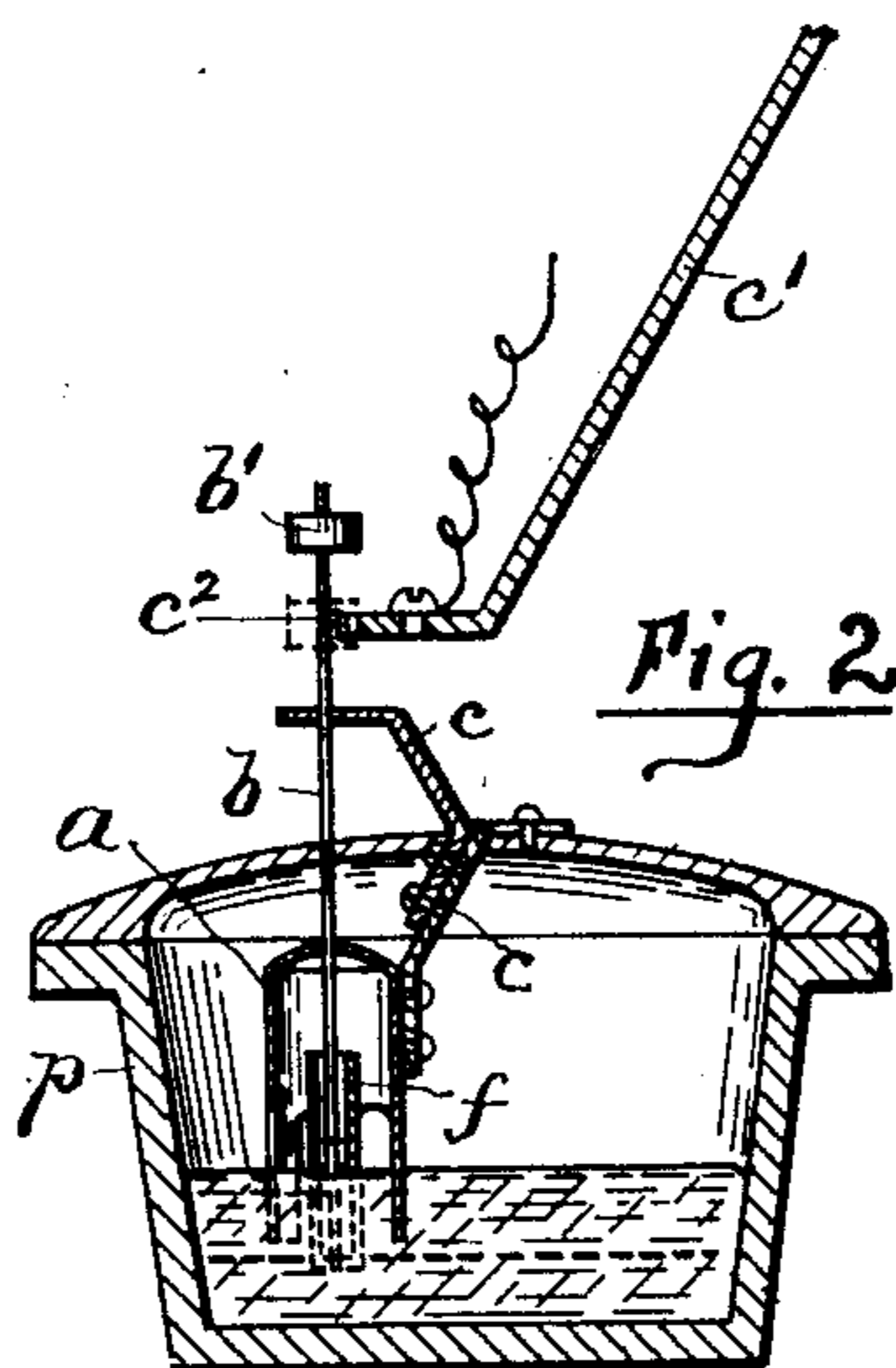
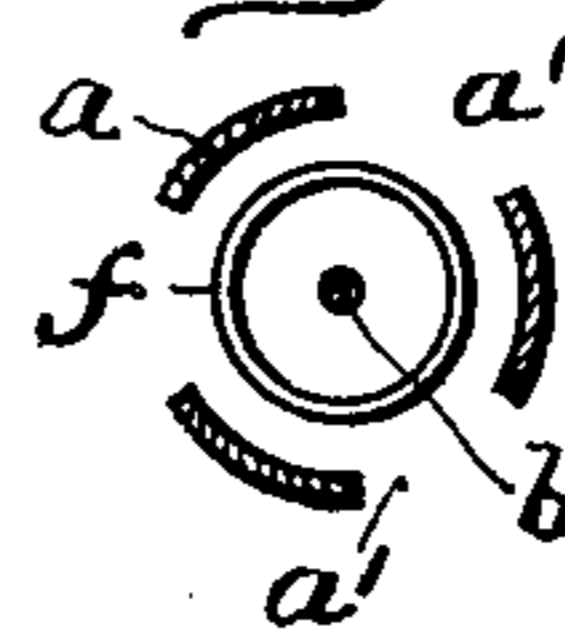


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN BURGER, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC SIGNALING DEVICE FOR LINOTYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 747,534, dated December 22, 1903.

Application filed March 20, 1903. Serial No. 148,747. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURGER, a citizen of the United States of America, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Automatic Signaling Devices for Linotype-Machines, of which the following is a specification.

My invention relates to certain novel improvements in automatic signaling or indicating devices arranged to warn the attendant or operator when the level of a fluid has reached a predetermined point in the machine or apparatus with which it is combined.

The present invention, however, has for its object the production of simple inexpensive mechanism adapted more particularly to be employed in "linotype-machines," so-called, the device in this case being secured to and oscillating or moving with the metal-pot or furnace containing the molten lead or type-metal; and it consists of an apertured case or housing secured to the pot, a vertically-movable float member located in said housing having a stem or rod extending upwardly therethrough and carrying an adjustable contact nut or member and an electric bell or signal capable of being energized by said nut when the level of molten metal in the pot has sunk or fallen to a predetermined or fixed point, all as hereinafter set forth and claimed.

In linotype or other analogous machines as usually constructed and having a heated reservoir of molten metal from which the "slugs" are formed the operator necessarily makes an inspection of the pot's interior from time to time in order to ascertain the level of the fused metal therein and to replenish the reservoir with new metal, it being understood that the variations of the working level should not extend below a certain point. Such interruptions obviously tend to detract the operator's attention from the work or "copy" on which he is engaged. To this should be added the loss of time consumed in making such inspection, &c.

By means of my improvement the operator need not give any thought whatever to the contents of the supply-reservoir or metal-pot until warned by an alarm from the previously-adjusted device that the level of the

molten metal has been reached and that refilling or replenishing of the pot is necessary.

In the accompanying sheet of drawings, Figure 1 is a side elevation of the metal-pot of a linotype-machine provided with my improvement and also showing portions of the mechanism which operates the pot. Fig. 2 is a transverse sectional view taken substantially through the center of the pot and the float mechanism. Fig. 3 is a side view of the latter, in enlarged scale; and Fig. 4 is a horizontal sectional view taken on line 4-4 of Fig. 3.

Again referring to the drawings, F indicates a furnace provided with a pot *p*, containing the molten lead or type-metal used in casting the slugs. In machines of this class the member *F* is adapted to oscillate back and forth during the process of forming or casting each slug. To one side of the furnace member is jointed a lever *t'* in engagement with a suitable operating-cam *t*. The furnace is further provided with a downwardly-extending arm *s'*, a shaft *s* passing therethrough and forming a fulcrum on which the furnace swings. Within the latter are suitable burners fed by gas introduced through the small bottom tubes *g*.

The metal-pot *p* is suitably mounted in the furnace. It is provided with a plunger *m*, extending downwardly through the top, a cam *m'*, lever *m''*, jointed to the plunger, and a spring *m'''*, &c., being employed as usual to impart the necessary movements to the plunger, while at the same time cooperating with the swinging furnace in order to force metal from the pot into the slug-wheel *w* and the matrix to form the slugs, all as usual and to which I make no claim.

My invention resides in providing the machine with a signal or indicating device substantially as follows: To the top of the metal-pot *p* is secured a two-arm bracket *c*, Fig. 2. The lower arm extends into the pot-chamber and rigidly supports the casing or shell *a*. The lower portion of the casing is provided with side openings *a'* and is adapted to extend into the molten metal. Within the casing is located a small vertically-movable float member *f*, directly supported by the fluid metal. The float has a central stem *b* secured thereto, which passes through the top of said casing and through the upper arm of said

bracket *c*, thus forming a guide for the float.
 The upper portion of the stem is provided
 with a contact-collar *b'*, adjustably secured
 thereto, all as clearly shown. I would state
 5 that the pot has a hinged cover *p'*, as common.
 This latter, however, is cut away to permit
 the passage of the members *c* and *b*, as well
 as for the plunger *m*, as indicated in Fig. 1.
 An electric bell or signal *h* is secured to a
 10 bracket *h'*, in turn secured to a portion *r* of
 the frame of the machine. (See Fig. 1.) The
 bell as well as a fixed contact-rod *c'* are in-
 sulated from each other and from the bracket
 by means of interposed non-conducting ma-
 15 terial *h²*. The lower part of said rod *c'* is
 bent, its free end being cut away or recessed
 at *c²*, Fig. 2, so as to contact with the collar
b' of the float-stem whenever the level of the
 metal in the pot has been lowered to any pre-
 20 determined point. (See dotted-line position in
 Fig. 2.) A battery *i* (or other suitable means)
 may be employed to furnish an electric cur-
 rent to the bell, the latter being connected
 therewith and with the rod *c'* by suitable con-
 25 ductors, a short conductor uniting the bell
 and the frame at *h³*, thus completing the
 electric circuit.

It will be apparent that as the furnace is
 mechanically oscillated to and fro the normal
 30 level of the surface of the molten metal is
 necessarily changed, thus agitating or im-
 parting a wave-like action to it. This latter
 effect is neutralized to some extent by means
 of the apertured casing *a*, surrounding the
 35 float, thereby serving to maintain a practi-
 cally uniform pressure upon the float and a
 minimum degree of fluctuation within the
 casing while the furnace is being actuated.

The normal or rearward position of the fur-
 40 nace, &c., is indicated in Fig. 1, the forward
 or operative position being attained when the
 furnace is swung into temporary engagement
 with the rear side of the slug-wheel *w*. Thus
 it will be evident that as drawn the electric
 45 circuit cannot become closed to sound an
 alarm unless the float-rod is in the position
 represented in Fig. 2, (corresponding to said

operative position,) nor even then unless the
 level of the molten metal has fallen suffi-
 50 ciently to permit the correspondingly-lowered
 float to bring the collar *b'* into engagement
 with the end *c²* of the stationary rod *c'*. (See
 dotted lines.) When the electric circuit is
 thus closed, the alarm sent out from the bell
 reminds the operator that the metal-pot needs
 55 replenishing with new metal. This latter op-
 eration is readily accomplished by opening
 the pot and dropping therein a quantity of
 metal, the result being to correspondingly
 elevate the float and its contact-collar. 60

I am aware, as hereinbefore stated, that
 various thermostats, automatic signaling de-
 vices, low-water alarms, &c., have been de-
 vised prior to my present invention. There-
 65 fore I do not claim such former construction
 broadly; but a linotype-machine having means
 connected with the metal-pot to automatically
 indicate or sound an alarm whenever the mol-
 ten metal has been depleted or lowered to a
 certain extent is, I believe, both new and 70
 useful.

Therefore I claim as my invention and de-
 sire to secure by United States Letters Pat-
 ent—

In a linotype-machine having a metal-carry- 75
 ing reservoir capable of oscillatory move-
 ment, the combination therewith of a suit-
 ably-mounted vertically-movable float mem-
 ber adapted to be supported by the metal in
 the reservoir and oscillating in unison with 80
 it, an apertured casing inclosing the float, a
 nut or contact member mounted on an exten-
 sion of the float, and an electrically-connected
 bell or signal device provided with a pole or
 85 contact capable of being made operative by
 the engagement therewith of said contact
 member of the float.

Signed at Providence, Rhode Island, this
 19th day of March, 1903.

JOHN BURGER.

Witnesses:

GEO. H. REMINGTON,
 REMINGTON SHERMAN.