

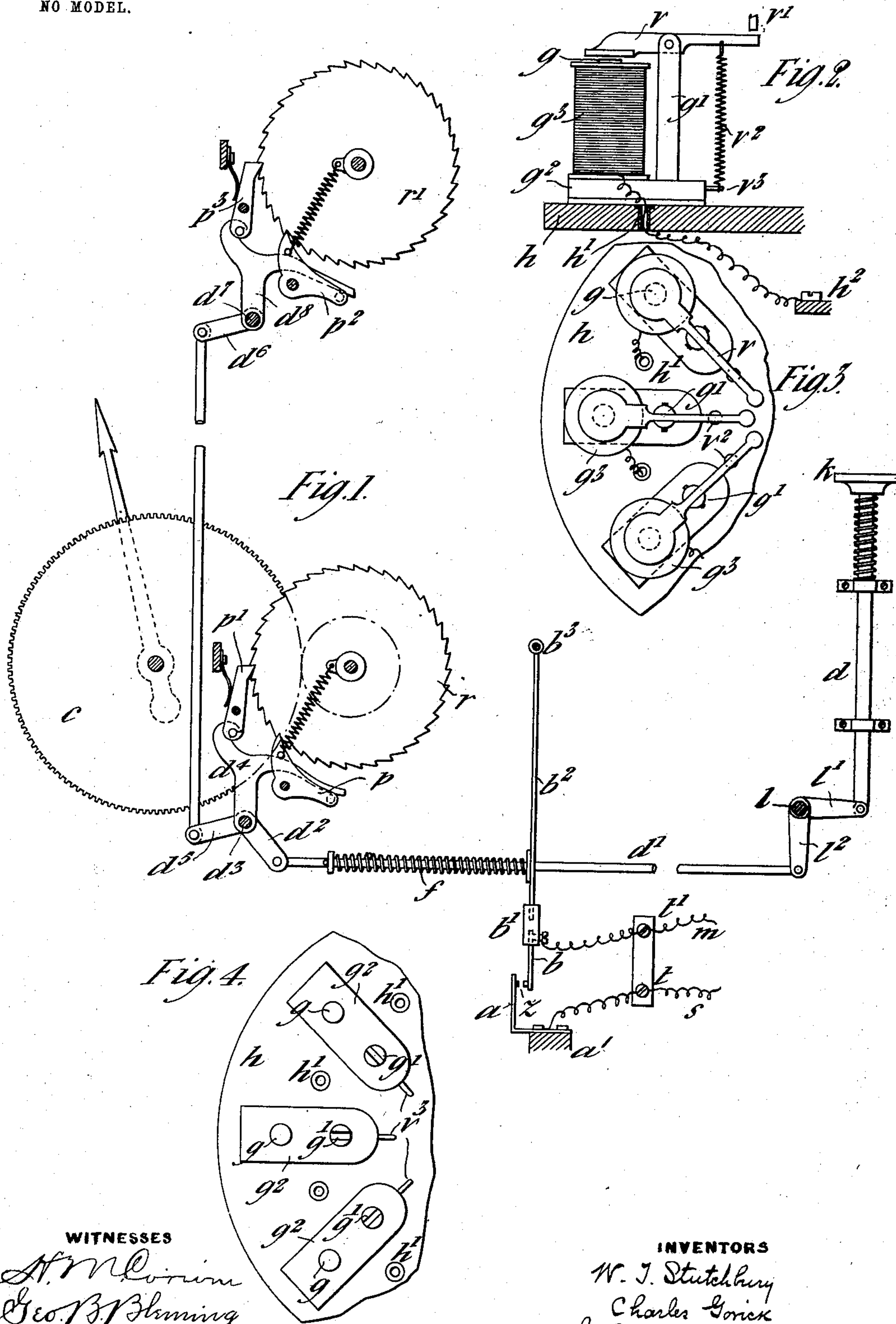
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PERFORATOR MECHANISM FOR PREPARING THE COMPOSING STRIPS
OF TYPE SETTING AND CASTING MACHINES.

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NO MODEL.



WITNESSES

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PERFORATOR MECHANISM FOR PREPARING THE COMPOSING-STRIP OF TYPE SETTING AND CASTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 751,421, dated February 2, 1904.

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To all whom it may concern:

Be it known that we, WILLIAM THOMAS STUTCHBURY, residing at the Castle Works, Northfleet, and CHARLES GORICK, residing at 42 Pelham road south, Gravesend, in the county of Kent, England, citizens of England, have invented certain new and useful Improvements in Perforator Mechanism for Preparing the Composing-Strip of Type Setting and Casting Machines, of which the following is a specification.

This invention relates to the perforator mechanism of type setting and casting machines, this mechanism being arranged to prepare the composing-strip. The first operation in such machines is the production of a perforated strip which is afterward to control the casting and setting mechanisms. The perforations are made by punches actuated by electromagnets of which the circuits are closed by striking the keys of a type-writer. At the end of each line of perforations corresponding with the line of type to be cast a special hole, called the "trip-hole," has to be made, together with a hole called the "feed-hole," used in feeding forward the strip in the casting-machine. At the same time the counting mechanism, which has been moving during the typing of the line to show by how many units of width of type have been used, and the justification-indicator, if there be one, must be brought back to zero. In the only satisfactory devices used hitherto for these purposes—namely, those described in the United States Specification No. 606,007—the necessary electromagnets for operating the trip and feed hole punches were energized by two special keys on the type-writer, used only at the end of each line. In such an arrangement a finger of each hand must be used to operate these two keys, and great care is requisite to press them down correctly and at the right time after the line is composed and justified, so that the holes may afterward pass under the index of the casting-machine simultaneously. The electromagnets in these machines are numerous and must be packed closely together if the machine is to be of reasonable dimensions. With the ordinary two-

bobbin magnet this is scarcely possible without continual breaking of the wires, particularly when angular anchor-plates are used.

Our invention relates to improvements by which the foregoing defects are obviated or minimized.

In the accompanying drawings, Figure 1 is a diagram showing our improved device for enabling the operator by a single movement to punch the trip-hole and the feed-hole and to release the counting mechanism and the justification-indicator mechanism where this is used. Fig. 2 is a sectional elevation of our improved magnet on the magnet-stand. Fig. 3 is a plan of three such magnets on their stand; and Fig. 4 is a similar plan, the magnet-cores and bobbins having been removed.

For the purpose of operating the perforator-magnets simultaneously with the release of the counting mechanism we provide an electric switch on a suitable part of the system of levers transmitting the pressure of the releasing-key to the lever which raises the pawls from the counting-mechanism ratchet. This switch closes the circuit for energizing the two magnets for making the trip-hole and the feed-hole.

Fig. 1 is an example of a suitable arrangement. The stem d of the releasing-key k is pivoted to the arm l' on the rocking shaft l , a second arm l'' on which is pivoted to the rod d' . When the key is depressed, the latter is pushed forward and the shaft d^3 is rocked by the arm d^2 . The arm d^4 on this shaft is then rocked forward and lifts the driving-pawl p and the detent p' from their engagement with the ratchet-wheel r on the spring-barrel of the counting mechanism c , thus releasing the latter and allowing it to return to zero. The switch in this case consists of two brass springs a and b , the former mounted in an insulating-block a' on the frame of the machine and the latter in a similar block b' on a rod b^2 , pivoted to the frame at b^3 . These springs carry platinum contacts z . When the rod d' is pushed forward it carries with it the spring f , attached to the rod b^2 . Thus contact is made at z , and current from the source passes over wire s , terminals t and t' , and wire m to

the magnets. To release the justification-indicator so that it may return to zero by the same movement, it is only necessary that the rocking shaft should carry a third arm d^5 ,
 5 linked to a similar arm d^6 on a rocking shaft d^7 , which carries a second arm d^8 to lift the pawls $p^2 p^3$ from their engagement with the ratchet r' on the spring-barrel of the justification-indicator. It is obvious that the switch
 10 may be moved by some other part of this system of rods and levers. Thus it may be on the rocking shaft 1.

Our improvement in the arrangement of the magnets in machines of this kind, whether
 15 they be for controlling the perforator, the justifier, or the matrix-selecting mechanism, is illustrated in Figs. 2, 3, and 4. In order to retain the efficient horseshoe magnet, while saving the room occupied by two bobbins, the
 20 magnet is constructed with two cores, only one of which is wound, the other being attached to the same anchor-plate as the wound core, so that it is in the same magnetic circuit. At the same time this bare core forms the sup-
 25 port for the armature-lever, which is also of magnetically-susceptible material.

In Fig. 2, g and g' are the soft-iron cores, g^2 the anchor-plate, and g^3 the bobbin of fine wire. The soft-iron armature-lever v is piv-
 30 oted to the bare core g' , so that a short and well-closed magnetic circuit is obtained. Since the core g' can be brought very close to the bobbin g^3 , the fulcrum of the lever v can be close to the armature, leaving a long arm with
 35 a considerable striking distance to lift the stop or perforator v' of the particular part of the machine which the magnet is operating and also allowing the armature to be very close to the core g . The spring v^2 is attached to
 40 a pin v^3 in the anchor-plate g^2 . The latter is rounded at the inner end, as shown in Fig. 4, and several of them are placed as radii of a circle or arc of a circle on the magnet-stand h . The wires from each magnet are brought
 45 down through a hole in the stand, lined with insulating material h' , to a central terminal plate h^2 .

Having thus described the nature of this invention and the best means we know of carrying the same into practical effect, we claim—

1. In a perforator mechanism for preparing the composing-strip of a type setting and casting machine in which a composing type-writer is used for closing the magnetic circuit of a
 55 perforator, the combination with the key that releases the counting mechanism of such type-writer to permit it to return to zero, of an electrical switch which closes a magnetic circuit of the perforator when the said key is
 60 depressed, in such manner that the circuit is closed and the counting mechanism released by one movement of the operator, substantially as described.

2. In a perforator mechanism for preparing
 65 the composing-strip of a type setting and cast-

ing machine in which a composing type-writer is used for closing the magnetic circuits of a perforator, the combination with the key that releases the counting mechanism of such type-writer to permit it to return to zero, of an
 70 electrical switch which closes a magnetic circuit of the perforator when the said key is depressed, and of a series of levers mechanically connecting the said key with the justification-indicator in such manner that when
 75 the operator depresses the said key the counting mechanism and justification-indicator are both released so that they return to zero and the magnetic circuit is closed, substantially as described.

3. In a perforator mechanism for preparing the composing-strip of a type setting and casting machine, having the movements of the parts controlled by electromagnets, the combination with punches or stops, of an electro-
 85 magnet having one core wound with an energizing-coil, a second core mounted on the same anchor-plate as the first and adjacent to the magnetizing-coil, but itself free from the coil, an armature consisting of a two-armed lever
 90 pivoted on the second core, and a spring extending between the long arm of the lever and a projection from the anchor-plate; substantially as described.

4. In a perforator mechanism for preparing
 95 the composing-strip of a type setting and casting machine, in which the movements of parts are controlled by electromagnets, the combination with punches or stops, of electromagnets each having two cores on the same an-
 100 chor-plate only one of which cores is wound to permit the magnet to be energized while the other forms the fulcrum of the armature-lever, the said anchor-plate being rounded at its interior end and a number of such plates being
 105 arranged as radii of a circular arc, substantially as described.

5. In a perforator mechanism for preparing the composing-strip of a type setting and casting machine in which the movements of parts
 110 are controlled by electromagnets, the combination with punches or stops, of electromagnets each having two cores on the same anchor-plate only one of which cores is wound to permit the magnet to be energized while
 115 the other forms the fulcrum of the armature-lever, the said anchor-plate being rounded at its interior end, a number of such plates being arranged as radii of a circular arc on a stand having insulated holes through which the
 120 wires from the magnet-bobbins pass to a contact-plate, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

WM. T. STUTCHBURY.
 CHAS. GORICK.

Witnesses:

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