

(No Model.)

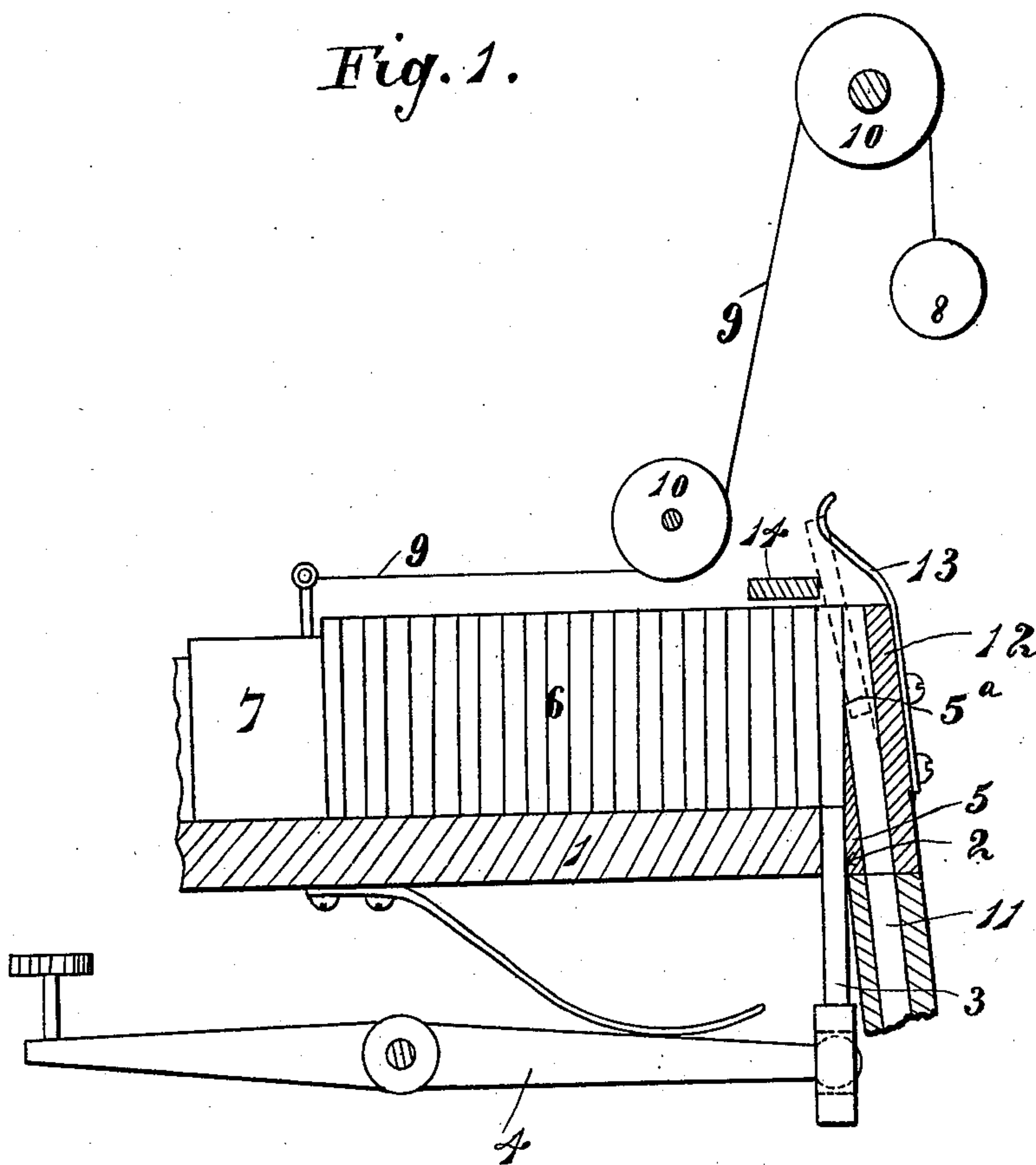
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S. H. & P. E. HODGKIN.
TYPE SETTING MACHINE.

No. 602,327.

Patented Apr. 12, 1898.

Fig. 1.



Witnesses.
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Hubert D. Peck

Inventors
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(No Model.)

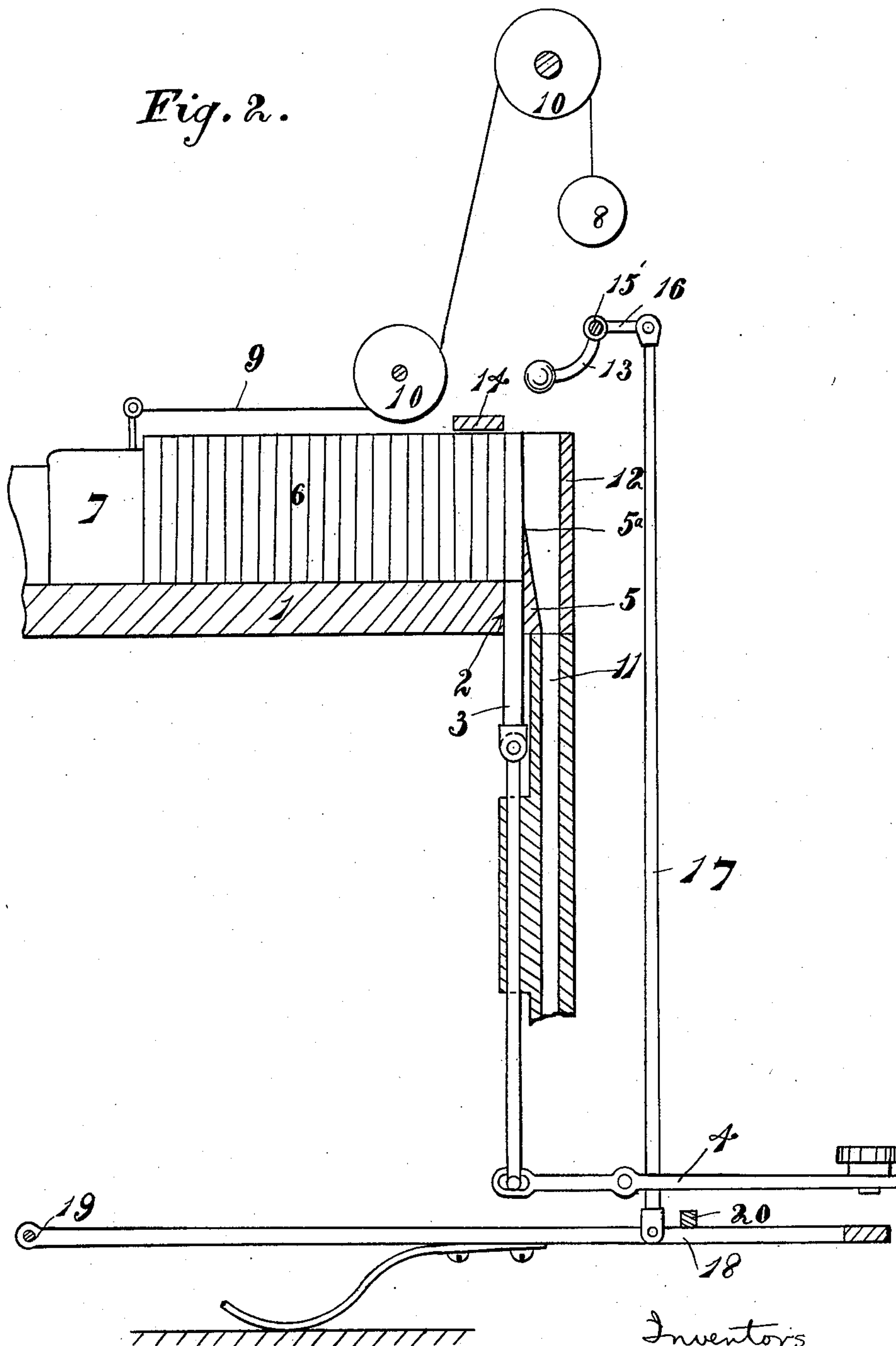
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Patented Apr. 12, 1898.

Fig. 2.



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UNITED STATES PATENT OFFICE.

STANLEY HOWARD HODGKIN AND PHILIP ELIOT HODGKIN, OF LONDON,
ENGLAND.

TYPE-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 602,327, dated April 12, 1898.

Application filed April 17, 1897. Serial No. 632,616. (No model.) Patented in England March 28, 1896, No. 6,845.

To all whom it may concern:

Be it known that we, STANLEY HOWARD HODGKIN and PHILIP ELIOT HODGKIN, subjects of the Queen of Great Britain and Ireland, residing at Richmond, London, in the county of Surrey, England, have invented Improvements in Type Setting or Composing Machines, of which the following is a specification, and for which a patent has been granted in Great Britain, dated March 28, 1896, and bearing No. 6,845.

This invention has reference more particularly to type setting or composing machines of the kind in which the type characters are arranged in rows in horizontal or approximately horizontal troughs, against the forward ends of which, forming fixed stops, the foremost types in the several rows are pressed by followers under the action of suitable means, such as weights or springs; and it has for its object to enable the end type in each row to be displaced by a pusher without liability of damaging the face of the type. For this purpose each pusher according to this invention is arranged to work vertically through an opening in the floor of the front end of the corresponding type-trough, and the passage through which the displaced type passes downward by gravity to a packing device and thence to a composing-stick or receptacle is located in front of the fixed stop, which terminates at the top in a knife-edge, and there is provided above the passage a deflecting device, the arrangement being such that when the pusher is operated by any suitable key-actuated mechanism it will act against the lower side of the foremost type and press the same upward above the top edge of the stop, whereupon the type will cant backward either automatically or under the action of the deflecting device, with the result that it will escape past the top edge of the stop and fall freely down through the discharge-passage with its face end uppermost.

Figure 1 of the accompanying drawings is a longitudinal sectional elevation showing, diagrammatically, part of a type-setting machine constructed according to this invention. Fig. 2 is a similar view to Fig. 1, showing a modified arrangement.

Referring to Fig. 1, 1 is a horizontal type-

trough having in the floor thereof at its front end an opening 2, below which is a pusher 3, arranged to be worked vertically by any suitable arrangement of key-operated lever 4. 55

5 is a fixed stop arranged at the forward end of the type-trough and in proximity to the opening 2. Against it the foremost end type for the time being of a row of type 6 is forced by any suitable arrangement of feeding mechanism—as, for example, by a follower 7, that is connected to a weight 8 by a cord 9, passing around a guide-pulley 10. In such an arrangement, which is of known kind, the fixed stop 5 at the forward end of the trough is according to this invention made wedge shape in cross-section, its upper knife-edge 5^a extending, preferably, to a height about equal to half that of the types 6. The stop forms the rear side of a discharge-passage 11, which is inclined and is or may be common to all the type-troughs. The front side of the discharge-passage is formed by a wall 12, to which is fixed a curved spring blade or arm 13, that extends above and over the discharge-passage and acts as a deflector to insure the canting back, as shown in dotted lines, of the upper end of each type as it is displaced vertically from the trough by the pusher 3 below. To facilitate the canting action, a cross-piece 14 is fixed above the trough immediately to the rear of the foremost type, so that while such type is being raised and canted back the cross-piece will act as a fulcrum thereto. A single cross-piece common to all the troughs may be used. 70 80 85

Fig. 2 shows an arrangement in which each deflector 13, in the form of a curved arm, is fixed upon a rock-shaft 15, to the ends of which are fixed lever-arms 16, connected by rods 17 to two levers 18, that are arranged at the sides of the machine, are pivoted at 19, and are connected by a cross-piece 20, which is located below the key-operated levers 4. As will be seen, the arrangement is such that when a type 6 has been sufficiently displaced from its trough by the corresponding pusher 3 the depressed key-lever 4 will operate the deflector 13 through the mechanism described, so as to cause the free end of the deflector, which may be of soft or yielding material, to abut against the front side of the type and 95 100

cant the type backward, if it has not already become so canted, and thereby insure its falling freely through the discharge-passage 11 and thence in the ordinary way to a packing device and composing-stick or receptacle.

What we claim is—

1. In a type setting or composing machine, the combination of a type-trough having an opening near one end thereof, a fixed stop adjacent to said opening, a pusher adapted to work through said opening and act against the foremost type in said trough, a discharge-passage in front of said stop, and a movable deflecting device adapted to act against and tilt the forward end of said type so as to bring its other end over said discharge-passage.

2. In a type setting or composing machine, a horizontal or approximately horizontal type-trough having an opening in its lower side and a stop adjacent to said opening, a vertical discharge-passage external to said stop, a pusher arranged to work vertically or approximately so through said opening and act against the bottom of the type above the same, and a deflecting device adapted to cant backward the upper end of a type that is being displaced by said pusher, substantially as described.

3. In a type setting or composing machine, a horizontal or approximately horizontal trough having an opening in its lower side at one end and, adjacent to said opening, a fixed stop terminating at the top in a knife-edge, feeding mechanism whereby a row of type can be fed forward against said stop, a pusher arranged to work vertically through said opening in said trough, a downwardly-extending discharge-passage in front of said stop, and a deflecting device adapted to tilt backward the upper end of a type when the same is being discharged, substantially as described.

4. In a type setting or composing machine, a horizontal or approximately horizontal trough having an opening in its lower side at one end and, adjacent to said opening, a fixed stop terminating at the top in a knife-edge,

feeding mechanism whereby a row of type can be fed forward against said stop, a pusher arranged to work vertically through said opening in said trough, a downwardly-extending discharge-passage in front of said stop, a cross-piece fixed above said trough immediately in rear of the foremost type, and a deflecting device adapted to tilt backward the upper end of said type when it is being removed from said trough, substantially as described.

5. In a type setting or composing machine, the combination of a type-trough having an opening in its lower side at one end, a stop adjacent to said opening, feeding mechanism whereby a row of type can be fed forward against said stop, a pusher adapted to work through said opening and displace type from said trough, a movable deflecting device adapted to tilt each type backward when displaced by said pusher, and key-operated mechanism whereby said pusher and deflecting device are operated.

6. In a type setting or composing machine, the combination of a type-trough 1 having an opening 2 and stop 5 with upper knife-edge 5^a, a vertically-movable pusher 3, arranged to work through said opening, feeding mechanism adapted to feed a row of type along said trough toward said stop, a discharge-passage 11 located in front of said stop, a deflecting device mounted to work over said discharge-passage and act against the upper end of a type when the same is being ejected, and key-operated mechanism adapted to operate said pusher and deflecting device in succession, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

STANLEY HOWARD HODGKIN.
PHILIP ELIOT HODGKIN.

Witnesses:

PERCY E. MATTOCKS,
EDMUND S. SNEWIN.