975,194.

E. A. ADCOCK.

TYPE SETTING MACHINE.

APPLICATION FILED DEC. 21, 1908.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 1.

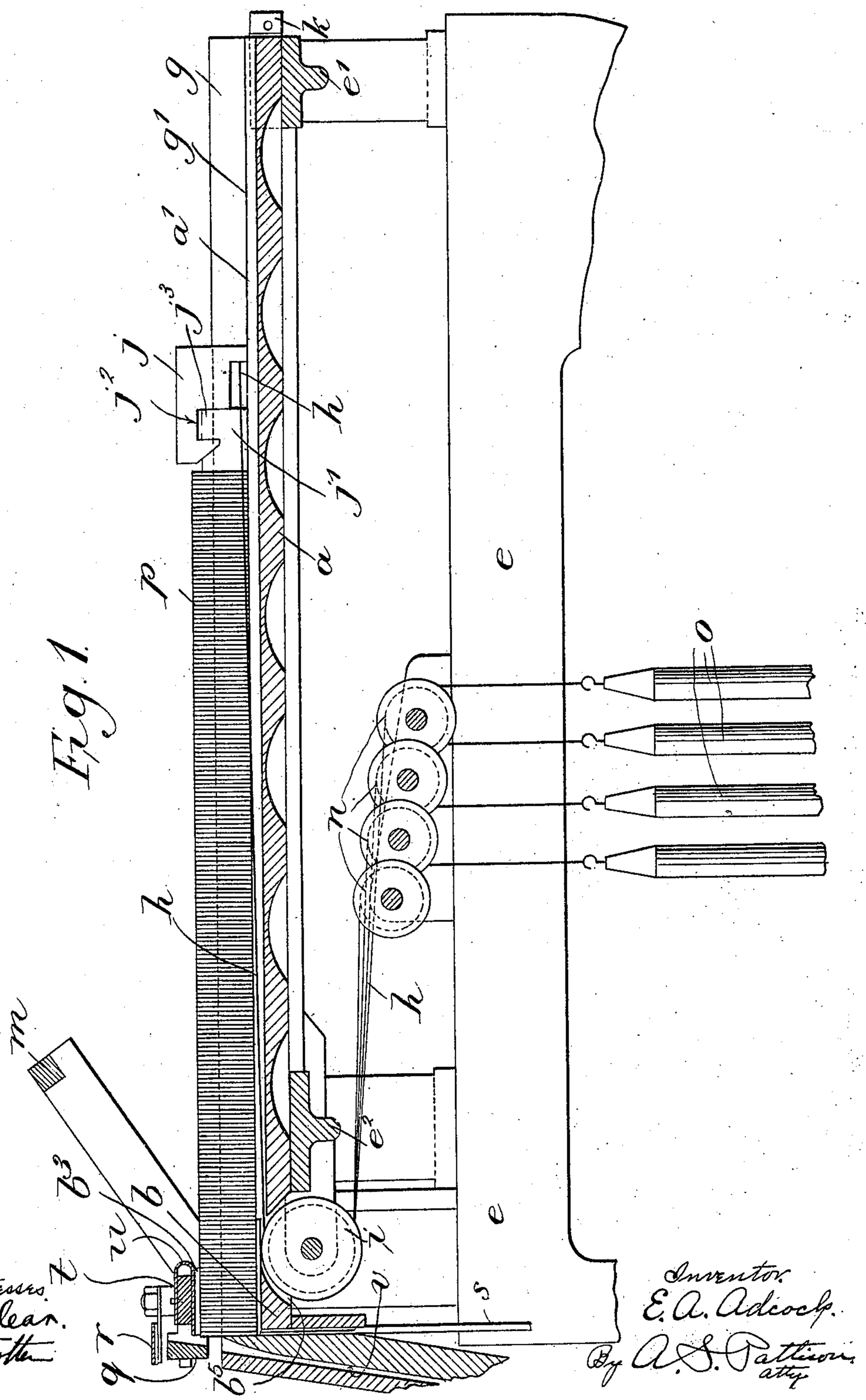


Fig. 1.

THE NORRIS PETERS CO., WASHINGTON, D. C.

975,194.

E. A. ADCOCK.

TYPE SETTING MACHINE.

APPLICATION FILED DEC. 21, 1908.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 2.

Fig. 2.

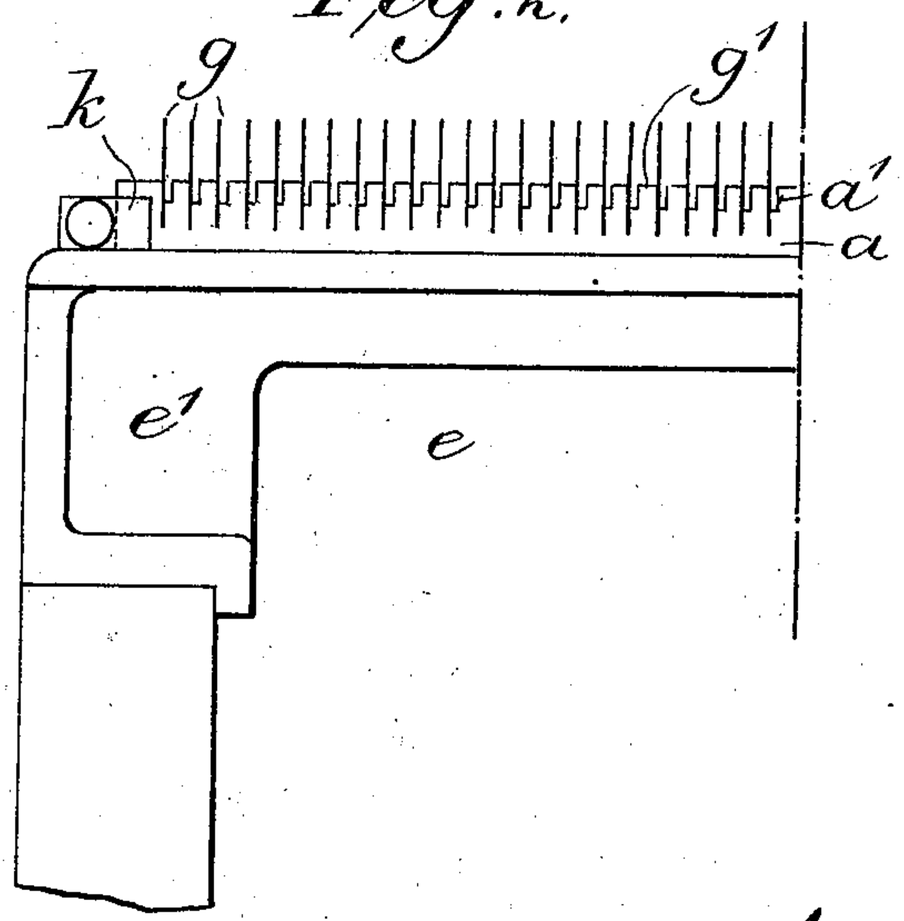


Fig. 5.

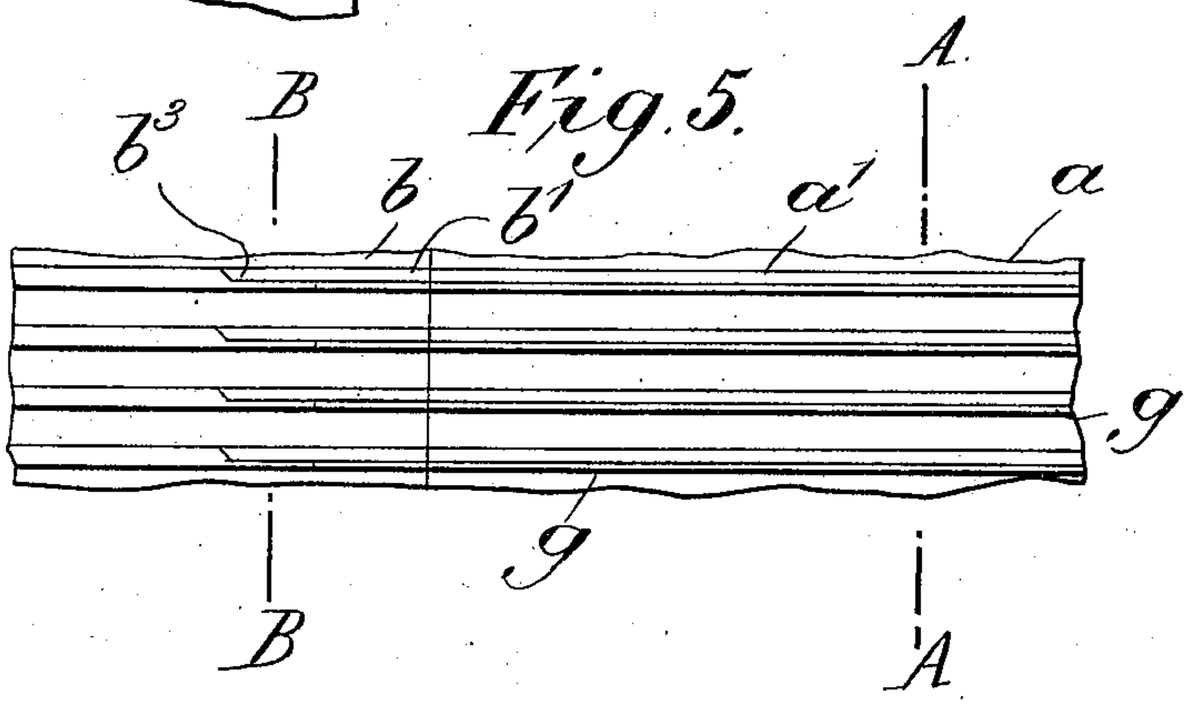


Fig. 6.

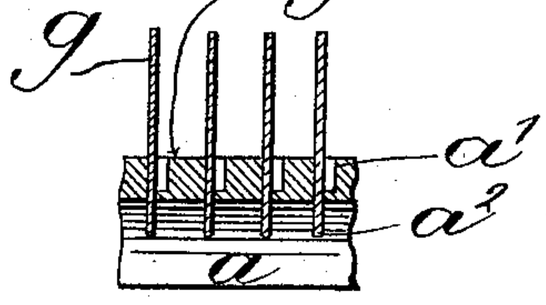
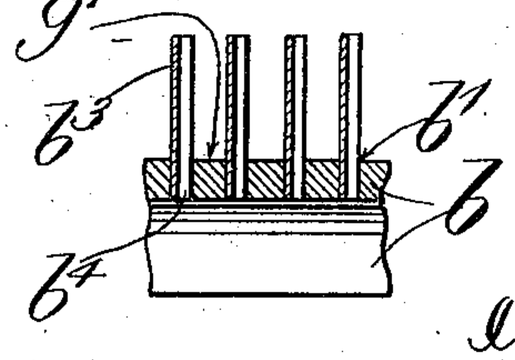


Fig. 4



Witnesses.

G. W. Ehmling

C. P. Wright Jr.

Inventor.

E. A. Adcock

By A. Pattison,

Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

E. A. ADCOCK.

TYPE SETTING MACHINE.

APPLICATION FILED DEC. 21, 1908.

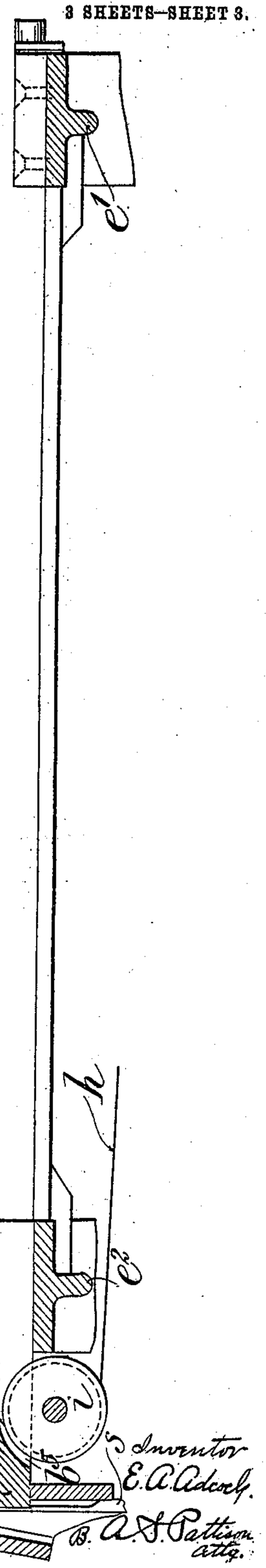
975,194.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 3.

Fig. 3.

Fig. 4.



Witnesses
M. G. Clear
H. F. Totten

Inventor
E. A. Adcock.
B. A. & S. Pattison
attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD AUGUSTUS ADCOCK, OF READING, ENGLAND, ASSIGNOR TO THE PULSOMETER ENGINEERING COMPANY, LTD., OF READING, ENGLAND.

TYPE-SETTING MACHINE.

975,194. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed December 21, 1908. Serial No. 468,653.

To all whom it may concern:

Be it known that I, EDWARD AUGUSTUS ADCOCK, a subject of the King of Great Britain and Ireland, residing at Reading, in the county of Berks, England, have invented Improvements in Type-Setting Machines, of which the following is a specification.

This invention has reference to improvements in type setting machines of the kind wherein lines or rows of vertically arranged type are placed in horizontal and parallel troughs and are forced along the latter by followers, under the action of weights, up to and against a fixed stop that terminates in a knife edge at the top and is provided on the front side with one or more type discharge passages, and the front end of each trough is provided with an opening in its floor through which a vertically movable type ejector works, the arrangement being such that each type ejector when raised will act against the lower end of the foremost type in the corresponding trough and force such type upward above the top edge of the stop whereupon the displaced type will cant backward, either automatically, or under the action of a tilting or deflecting device, and fall into the discharge passage, or the corresponding discharge passage, with its face end uppermost.

The present invention has for object to provide an improved construction of type trough and also improved means for enabling the lines or rows of type to be individually relieved of the action of the weights used to move them along the troughs. For this purpose a type setting machine is constructed in the improved manner that will now be described by the aid of the accompanying illustrative drawings wherein—

Figure 1 is a sectional side elevation and Fig. 2 a partial rear elevation of a type setting machine embodying the invention. Figs. 3 and 4 are views similar to Fig. 1 showing parts in different positions. Figs. 5, 6 and 7 are detail views to an enlarged scale, Fig. 5 being a part plan of the type troughs and Figs. 6 and 7 cross sections on the lines A A and B B respectively of Fig. 5.

In a machine embodying the present invention the horizontal and parallel type troughs are formed in and by juxtaposed plates one of which is fixed and the other readily removable, as heretofore. In the example, *a* and *b* are two juxtaposed plates having upwardly extending longitudinally arranged strips or ribs which, in conjunction with the plates, constitute the type troughs. The plate *a* in which the main portions of the several troughs are formed, is fixed in a readily detachable manner across the upper rear portion e^1 of the frame *e* of the machine, while the other plate *b*, in which the front end portions only of the troughs are formed, is fixed in a permanent manner across the upper front portion e^2 of the frame of the machine.

In order to provide type troughs having smooth and solid floors and along which the type can be readily moved and maintained in the proper upright position, and also channels to accommodate the cords connected to the type followers in such a manner that the followers and adjacent portions of the cords connected thereto can be raised through the troughs without disturbing the type therein, so as to relieve the lines or rows of type of the action of the weights connected to the cords, the upper side of the plate *a*, which is made flat and smooth, is, according to this invention, formed, as by milling, with a number of parallel grooves a^1 extending from the front to the rear of the plate. These grooves are each made of two widths in cross section, as shown in Figs. 5 and 6, the lower and narrower portions a^2 of the grooves having fixed therein longitudinally extending metal strips *g*, extending above the upper surface of the plate so as to form the side walls of the type troughs g^1, and the upper and wider portions a^1 of the grooves forming longitudinal channels for the reception of the portions of the weight cords *h* which extend more or less horizontally from guide pulleys *i* near the front of the machine to the type followers *j* j^1, the floor of each trough g^1 between the wider portion a^1 of the groove at the bottom of such trough and the side wall of the trough farthest from the groove and formed by the metal strip *g* in the next adjacent groove a^2, being smooth and slightly wider than the width of the body of the largest type to be dealt with in the machine.

The removable trough plate *a* is maintained in contact with the fixed trough plate *b*, with the portions of the troughs in one in line with those in the other, by any convenient means, as for example by pivoted

latches or catches k mounted on the rear portion e^1 of the frame of the machine and engaging the rear end of the removable plate a.

Above the removable plate is fixed a cross bar m or support with which the followers j can, when lifted from the troughs g^1 with the attached cords h, be readily engaged so as to support the weights o through the cords independently of the type. Each type follower is preferably made, as heretofore, in two parts one of which is connected to the corresponding weight and is adapted to be removed so that the line of type can be relieved of the action of the weights when it is desired to remove the plate with the type thereon. In the example shown, each type follower is made in two parts j j^1, one of which, namely the rear part j, is attached to the corresponding cord h and formed with a hook-like or recessed portion j^2 adapted to engage with a correspondingly formed portion j^3 of the second or front part j^1 which serves to hold the type p (Fig. 1) vertical when the first mentioned part j is removed, the said hook-like or recessed portion j^2 of the part j serving also as a convenient means for engaging such part with the cross bar or support m, as shown in Figs. 3 and 4.

The fixed front trough plate b is also formed in a similar way with notches or grooves b^1 (see Figs. 5 and 7), in which metal stampings b^3 are arranged to form the front end portions of the side walls of the troughs g^1, portions of the said grooves b^1 extending through the bottom of the plate b at b^4 (see Fig. 7) to allow of the weight cords h passing downward therethrough (Figs. 3 and 4) to the front cord pulleys i below, when the detachable portions j of the type followers are raised and engaged with the cross bar or support m above.

The portions of the troughs g^1 in the fixed plate b (Fig. 5) are or may conveniently be narrower than the portions of the troughs in the removable plate, the width being such as to just allow of the free forward or backward movement of the largest size of type to be dealt with in the machine.

The underside of the removable plate a may be recessed as at a^3, to lighten it, and the underside of the fixed plate b may be recessed, as at b^5, to accommodate the front cord pulleys i, which, as well as the rear cord pulleys n from which the weights o are directly suspended by their cords h, are carried by the framework e of the machine.

To replace type of one kind by type of another kind, the rear portions j of the followers with attached cords h are raised and engaged with the cross bar m above, the lines or rows of type are pushed back out of the portions of the troughs g^1 in the fixed front plate b and into the portions of trough in the rear removable plate a by any suitable means such as a comb-like device p^1 (Fig. 3) adapted to be inserted into the troughs from the front of the machine, the latches k or equivalent are removed from the rear end of the removable plate a, and the latter plate with the type thereon removed and replaced by another similar plate with another kind of type. Fig. 3 shows the type after they have been displaced by the comb p^1 and Fig. 4 shows the machine with the plate a removed.

The fixed front plate b carries the tilting or deflecting device q commonly used to insure the tilting of each type p when displaced from its trough g^1; the horizontal stop or buffer r in the form of a strip of leather stretched across and above the front ends of the troughs to limit upward movement of the type when being displaced by the type ejectors s; and also a bridge piece t that bears across the tops of the aforesaid metal stampings b^3 to keep them in place and carries a number of adjustable stops u to prevent type adjacent to the foremost type being accidentally displaced with the latter through friction. Each stop u may conveniently be made, as shown, in the form of a bent metal strip arranged to embrace the bridge piece t and made slightly narrower than the portion of the corresponding trough g^1, in the fixed plate b. v is the slot down which the displaced type passes with its face end uppermost in the usual way.

The details of construction can be variously modified.

What I claim is:—

1. In a type setting or distributing machine a type trough plate formed with a plurality of grooves each made of two widths in cross section, and strips of rigid material fixed in the narrower portions of said grooves so as to form with the upper surface of said plate a plurality of type troughs, the wider portions of the grooves forming channels for the reception of weight cords pertaining to the type followers for moving lines of type along said troughs.

2. In a type setting machine a normally stationary front type trough plate and a removable rear type trough plate, said rear plate being formed with a plurality of grooves each made of two widths in cross section, and strips of rigid material fixed in the narrower portions of said grooves so as to form with the upper surface of said plate a plurality of type troughs, the wider portions of the grooves forming channels for the reception of weight cords pertaining to the type followers for moving lines of types along said troughs.

3. In a type setting machine, a removable plate provided with a plurality of type troughs each having in its base at one side a longitudinal groove open at one end and adapted to receive a weighted cord attached

to a type line follower for use in the trough and a cross bar fixed to said machine at a higher level than said bed plate and adapted to receive and hold type followers.

4. In a type setting machine, a removable plate provided with a plurality of type troughs each having in its base at one side a longitudinal groove open at one end, type line followers each arranged to work in one of said grooves, cords each extended through one of said grooves and connected at one end to one of said followers, pulleys over which said cords extend, weights attached to the lower ends of said cords, and a cross bar fixed above said trough plate and with which said followers with attached cords and weight can be engaged when it is desired to remove said trough plate.

5. In a type setting machine, a removable plate having therein a plurality of type troughs each formed with a longitudinal groove in its base to accommodate a weighted cord for the corresponding type line follower, a fixed trough plate having the type troughs therein registering with those in the removable trough plate, the sides of said troughs being formed by strips of rigid material, a type tilting device, a stop for limiting upward movement of displaced type, a transverse bridge piece arranged to retain the trough strips in the fixed plate, and adjustable stops fixed to said bridge piece and adapted to prevent accidental frictional displacement of type, said tilting device, stop and bridge piece being carried by said fixed trough plate.

Signed at London, England, this 9th day of December 1908.

EDWARD AUGUSTUS ADCOCK.

Witnesses:
W. Cross,
F. J. Brougham.