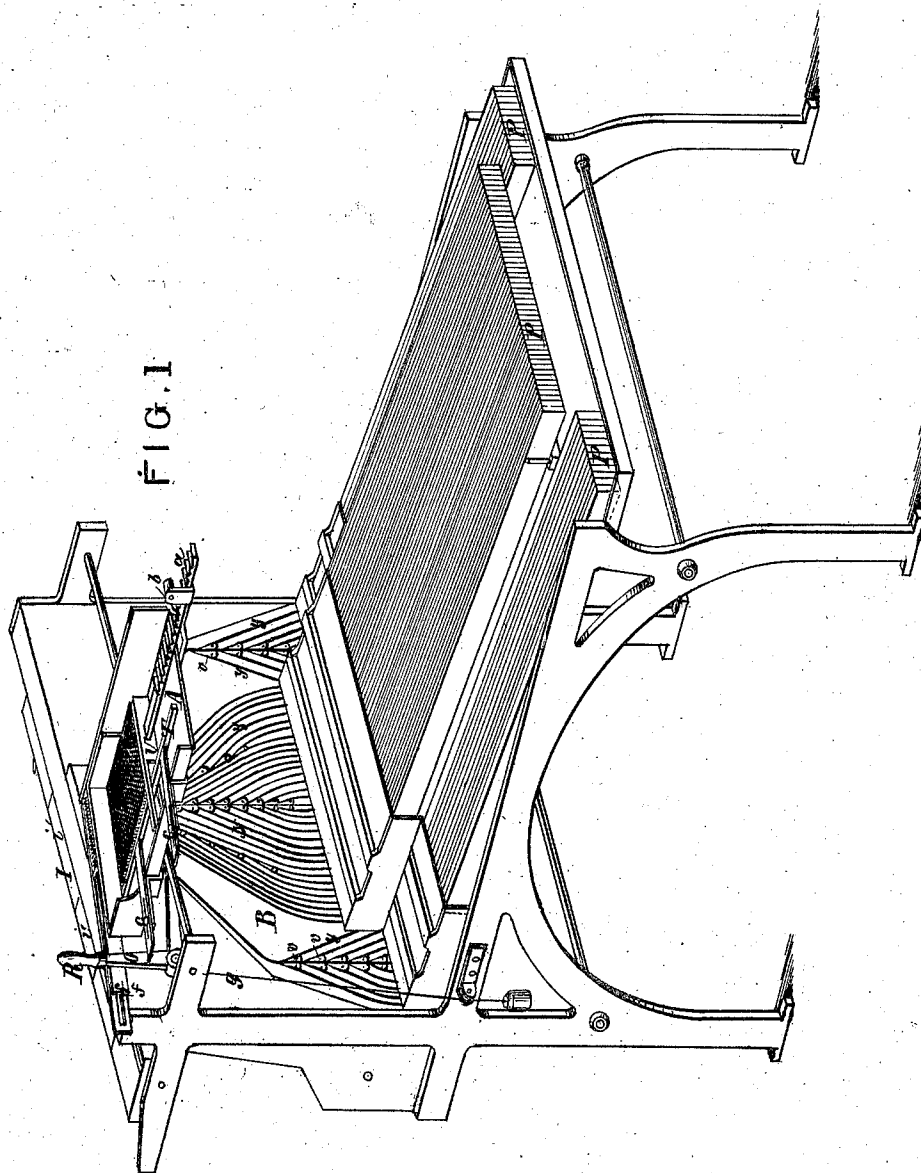


C. KASTENBEIN.

Machines for Distributing Type.

No. 140,278.

Patented June 24, 1873.



Witnesses

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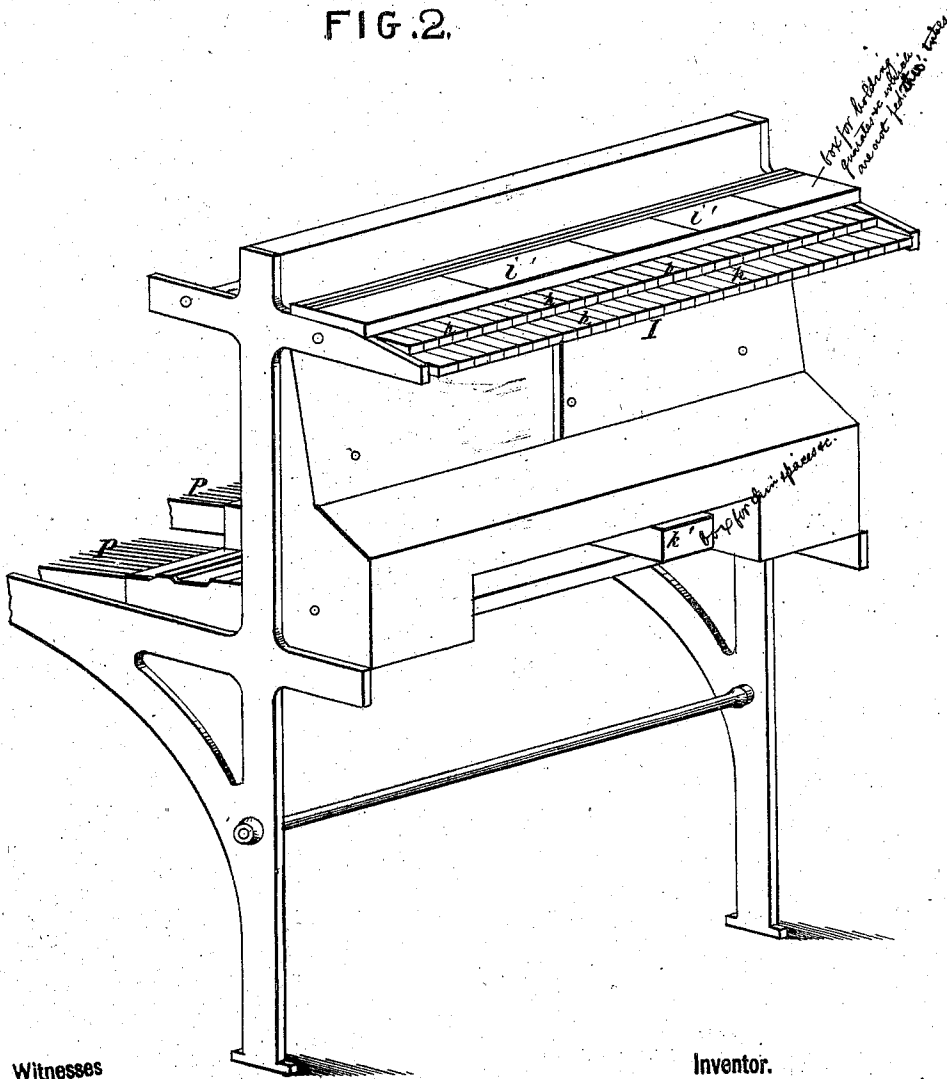
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FIG. 2.



Witnesses

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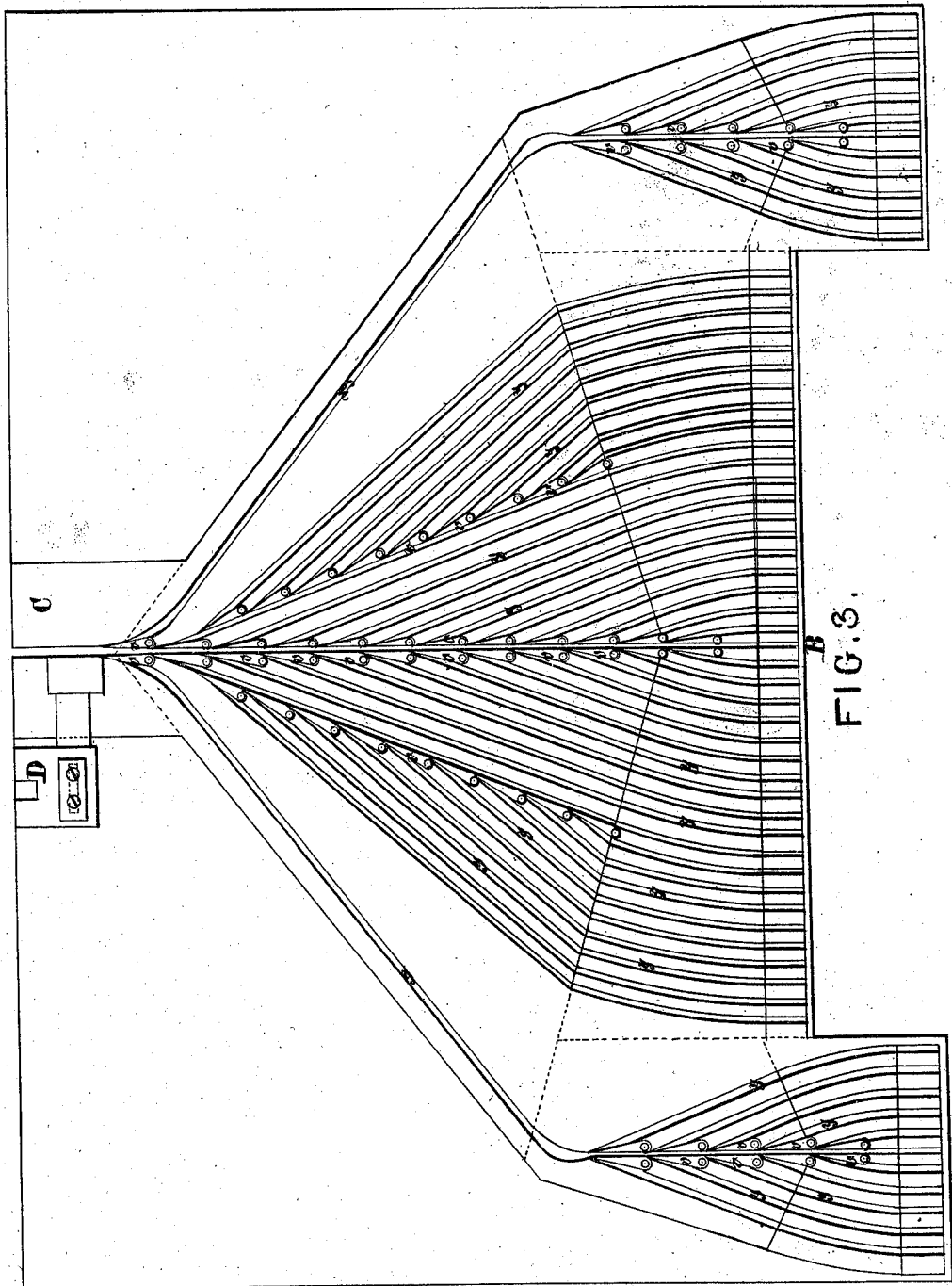
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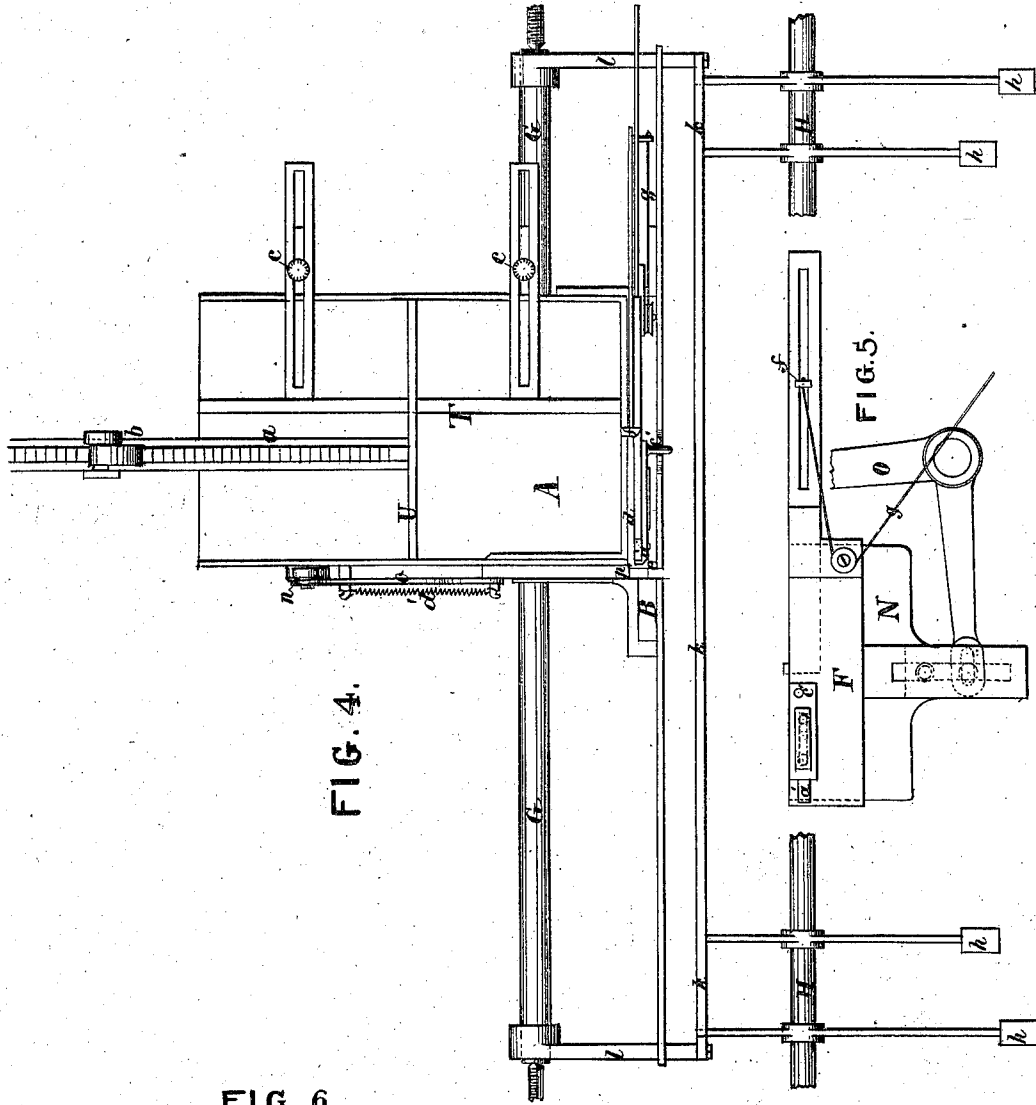


FIG. 4.

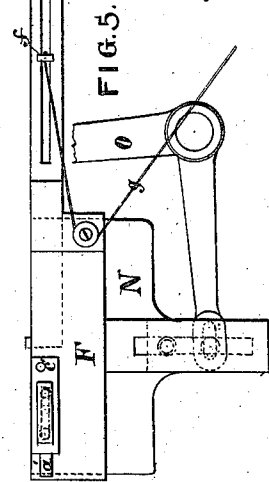


FIG. 5.

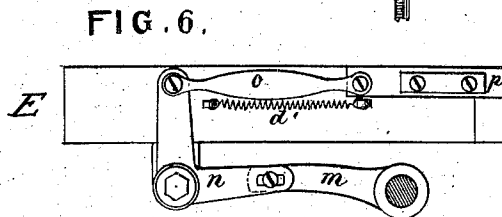


FIG. 6.

Witnesses

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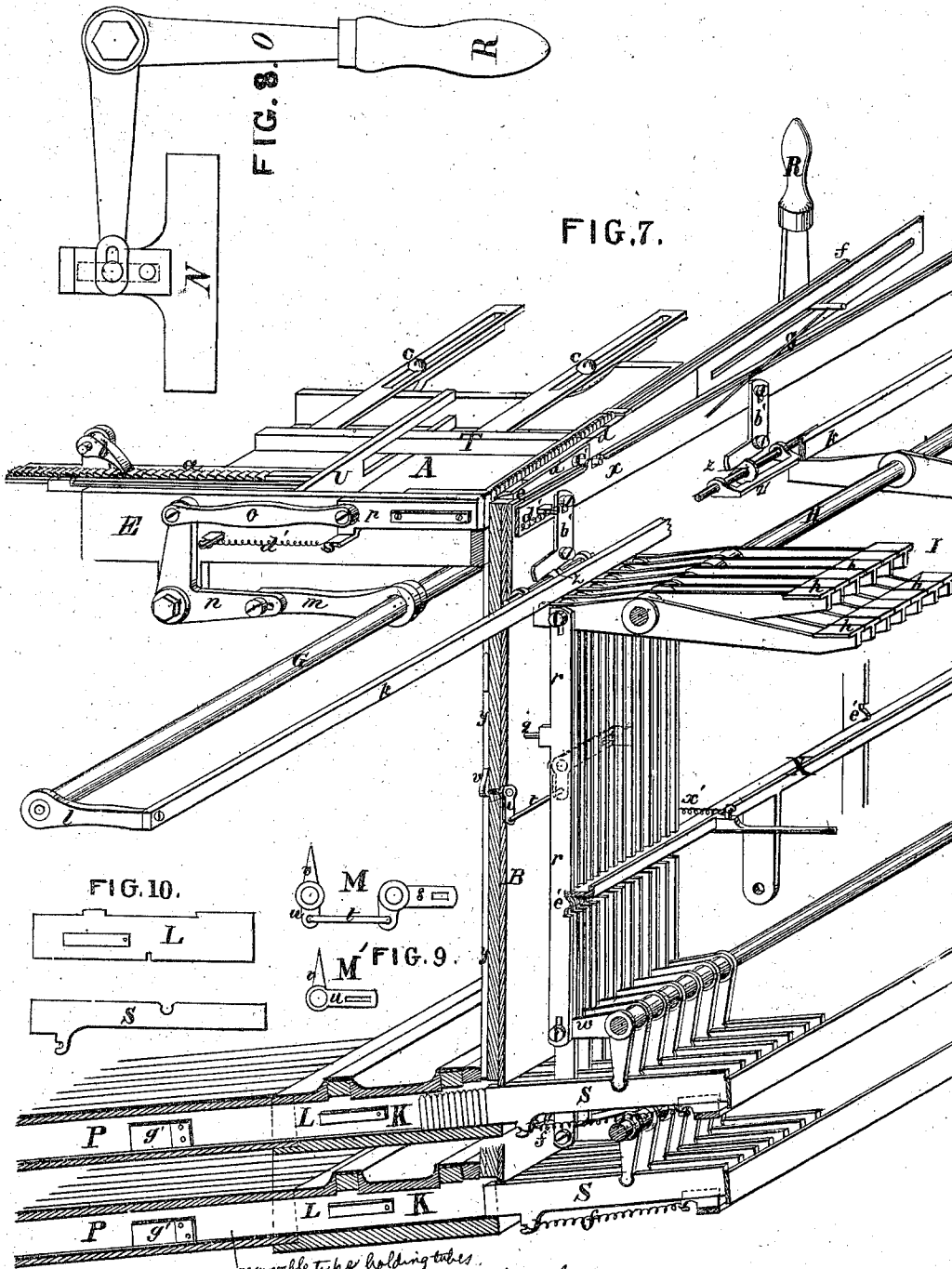
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UNITED STATES PATENT OFFICE.

CHARLES KASTENBEIN, OF CLAPHAM ROAD, ENGLAND, ASSIGNOR TO
EDWARD L. FORD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR DISTRIBUTING TYPE.

Specification forming part of Letters Patent No. 140,278, dated June 24, 1873; application filed
January 8, 1873.

To all whom it may concern:

Be it known that I, CHARLES KASTENBEIN, of Clapham Road, in the county of Surrey, England, have invented an Improved Machine for Distributing Type, of which the following is a specification.

My machine consists essentially of the following parts, to wit: First, a frame, adjustable in dimensions, in which a form of type is held for distribution, and retained in proper shape after the removal of its lines in succession until all the type are distributed. Second, a device for cutting out the lines of type in succession, and holding them in position for distribution. Third, a device for taking the type singly and successively from the line. Fourth, regulating mechanism to graduate the size of the passages through which the types are passed to correspond with their varying size. Fifth, a shield arranged to take the types through a common throat, and distribute them through separate channels under control of doors operated by finger-keys. Sixth, appliances for taking the types from the shield and depositing them in proper position in their respective tubes, from which they may be fed to a type setting or composing machine. And the invention further consists in certain details of construction, hereinafter described.

Figure 1 is a perspective view of the machine as seen from the rear. Fig. 2 is a perspective view thereof from the front. Fig. 3 is an elevation of the distributing-shield. Fig. 4 is a plan of the upper frame. Fig. 5 is an elevation of the device employed for cutting out successive lines from the form for distribution. Fig. 6 is an elevation of the device for removing successive types from the separated line. Fig. 7 is a perspective view of some of the principal operating parts of the machine. Fig. 8 is a rear elevation of the parts shown in Fig. 5. Figs. 9 and 10 represent details, hereinafter described.

A represents a galley, in which the dead matter to be distributed is placed. B is a vertical shield formed with grooves or channels *y*, one for each letter or character, which are opened or closed at will by doors *z*. This shield may be made from a thick plate of brass or other metal, with the channels *y* planed out. Its front is covered by a glass plate. C is the

throat through which the type falls into the shield. D is an adjustable slide, by which the size of the throat is regulated to correspond with that of the type. G is a rock-shaft having arms *l l* projecting forward from its ends, and an arm, *m*, projecting rearward from its central part. The arms *l* are connected by a bar, *k*, resting on the rear ends of keys *h*, which are pivoted on a stationary shaft, H, and constitute the key-board I. The part F of the frame, which is shown detached in Fig. 5, contains or guides the vertical slide N, by which the successive lines are cut out of the form and elevated in position for the action of the pusher *p*. The vertical slide N is actuated by the bell-crank O, which is furnished with a handle, R. The bell-crank lever R O and slide N are shown detached in Fig. 8. *d* is a channel to receive the elevated line of type. The bar E, which also forms a part of the stationary frame A, and is shown detached in Fig. 6, contains a slide, *p*, by which the successive types are pushed from the separated line and dropped into the shield. The forward movement of this pusher *p* is imparted by a bell-crank, *n*, actuated by the arm *m*, and connected to the pusher by a rod, *o*. A spring, *d'*, retracts the pusher, and restores the parts to their normal position when they are released. *a'* is a gage to regulate the width of the aperture *e*, into which the types are successively pressed by the pusher *p*, and through which they pass to the throat C. *f* is a slide, drawn forward by a weighted cord, *g*, so as to constantly press the line forward, and cause a new type to pass in front of the pusher each time it recedes. For regulating the width of the aperture *e* to correspond with the letter to be passed, the gage *a'* is connected by a pin, *c'*, slide *x*, and bell-cranks *b' b'* with eccentrics *z*, one of which eccentrics may be connected with all of the keys *h*, which belong to letters of equal width. One eccentric is employed for each width of type, and to move the gage *a'* as required they are turned to the necessary extent by bars *z'* resting on the tails of the keys *h*. The form to be distributed is held within the galley A by side and end sticks T and U, the stick T, which requires adjustment but once for each form or piece of composed matter, being secured by screws *c*, clamping

its slotted shanks *tt*. The stick *U*, which requires adjustment for each line, is held by a rack, *a*, and pawl *b*. *KK* represent compartments in the lower frame, separated by metallic plates *L*, one of which is shown detached in Fig. 10. One of these compartments, *K*, is provided for each channel in the shield, and they communicate with tubes *P*, which retain the type and feed it to my type-setting machine, which forms the subject of a separate application for Letters Patent. *g'* are springs applied within the tubes *P* to prevent the endmost or forward types falling from their proper upright position. *SS* are slides, operated by bell-cranks *w* and pitmen *r*, and employed to push the successive types from the channels *y* into the compartments *K*. The pitmen *r* are pivoted to the rear ends of the keys *h*, as shown. *X* is a bar, which is drawn to its backward position by springs *x'*, and fits in notches in the pitman *k*. The said pitmen are formed with shoulders *e'*, causing each of them, when elevated, to rest on the bar *X*, as illustrated by a detached fragment of a pitman in Fig. 7. Each pitman rests in this position until another is raised, which, pressing forward the bar *X*, permits the pitman previously elevated to fall. The pivoted doors or valves *v* are provided with shanks *u*, in either form shown at *M* and *M'* in Fig. 9, according to the position they occupy in the shield. *M* shows the shank, connected by rod *t* with a bell-crank, *s*, slotted to engage with the stud *q* on the pitmen *r*, which belongs to such valve. When the valve is sufficiently near its shank may project laterally and be slotted, as shown at *M'*, adapting it to fit directly over the stud *q*. *v'*, Fig. 2, are boxes in which to put quadrates or other matters out of hand. *h'* is a box to receive thin spaces which pass through the machine, but are not passed into tubes.

In pushing the handle *R*, Fig. 7, from the right to the left, the pusher *N* descends; then the bar *u* is pushed forward, which causes the first line to be put on the pusher *N*. By pushing the handle *R* from left to right the first line is raised by the pusher *N* into the passage *d*. In this passage the operator reads the line of which the last letter to the left falls into the aperture *e*.

By pressing on one of the finger-keys *h* the following movements take place: First, the bar *k*, which extends over all the ends of the keys, pushes (by means of the levers *l*, the rock-shaft *G*, the lever *m*, the angle *n*, and the connecting-rod *o*) the pusher *p* against the first type, which causes such type to fall through the aperture *e* into the shield *B*. Second, the angle *w* turns at the lifting of the connecting-rod *r*, pushes the pusher *S* forward, and causes the type in the compartment *K* to pass into the tubes *P*. Third, the connecting-rod *r* is lifted up, and, by means of the stud *q* attached to it and the connections above described, opens the door *v*, which

corresponds with the key pressed upon, and allows the type to descend along its proper channel *y* of the shield *B* into the fixed type-compartment *K* on the end of the corresponding pusher *S*. Fourth, an eccentric, *z*, is lifted by the tail end of the finger-key *h*, which, by turning the angle *b'* a little, draws the catch *a'*, in connection with *x* and *c'*, back to open the aperture *e*, according to the size of the type which is to fall, every thickness of type having a proper eccentric.

All the four movements just described are effected instantaneously and simultaneously by the operator pressing the finger upon the key, and when the same is released the parts are moved back again into their original position by springs *d'*, with the exception of connecting-rod *r*, door *v*, angle *w*, and pusher *S*, which remain, because the hook *e'* of connecting-rod *r* rests on the cross-bar *X*, which goes back only when another key is pressed upon, and allows hook *e'* to pass, when spring *f'* will draw the pusher *S*, angle *w*, door *v*, and connecting-rod *r* back, and the type falls from pusher into its place. In each type-tube is a spring, *g'*, which prevents the last type from falling; it is pushed forward by the type, and is, when seen at the end of the tube, a sign that the tube is full, and requires to be replaced by an empty one.

The advance of the pusher *p* to separate the end type from the line, and the advance of the corresponding pusher *S* to press types of same character further into tube *K*, are, as above stated, simultaneous. The pusher *S* rests in its advanced position until the spring-bar *X* is again retracted by the depression of another of the keys *h*. It is immaterial whether the retraction of the pusher *S* precedes the descent of the type or not. If not, the type will rest upon it until it does retire, and will then descend into the mouth of the tube.

The following is claimed as new:

1. The combination of the finger-keys *h*, pitmen *r*, bell-cranks *w*, and slides *S*, constructed and arranged to operate as set forth.
2. The pusher *p*, operated from the keys *h* through the medium of the bar *k*, rock-shaft *G*, arms *l m n*, and rod *o*, substantially as described.
3. The eccentrics *z*, gage-plate *a'*, rod *x*, keys *h*, and the described or equivalent connections for regulating the size of aperture for the passage of the type.
4. The spring-bar *X*, operating in connection with the pitmen *r*, in manner substantially as and for the purposes set forth.
5. The pitmen *r*, bell-cranks *w*, pushers *S*, springs *f*, and compartments *K*, operating in combination with the conduits and keys, substantially as described.

CHARLES KASTENBEIN.

Witnesses:

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