

No. 652,421.

Patented June 26, 1900.

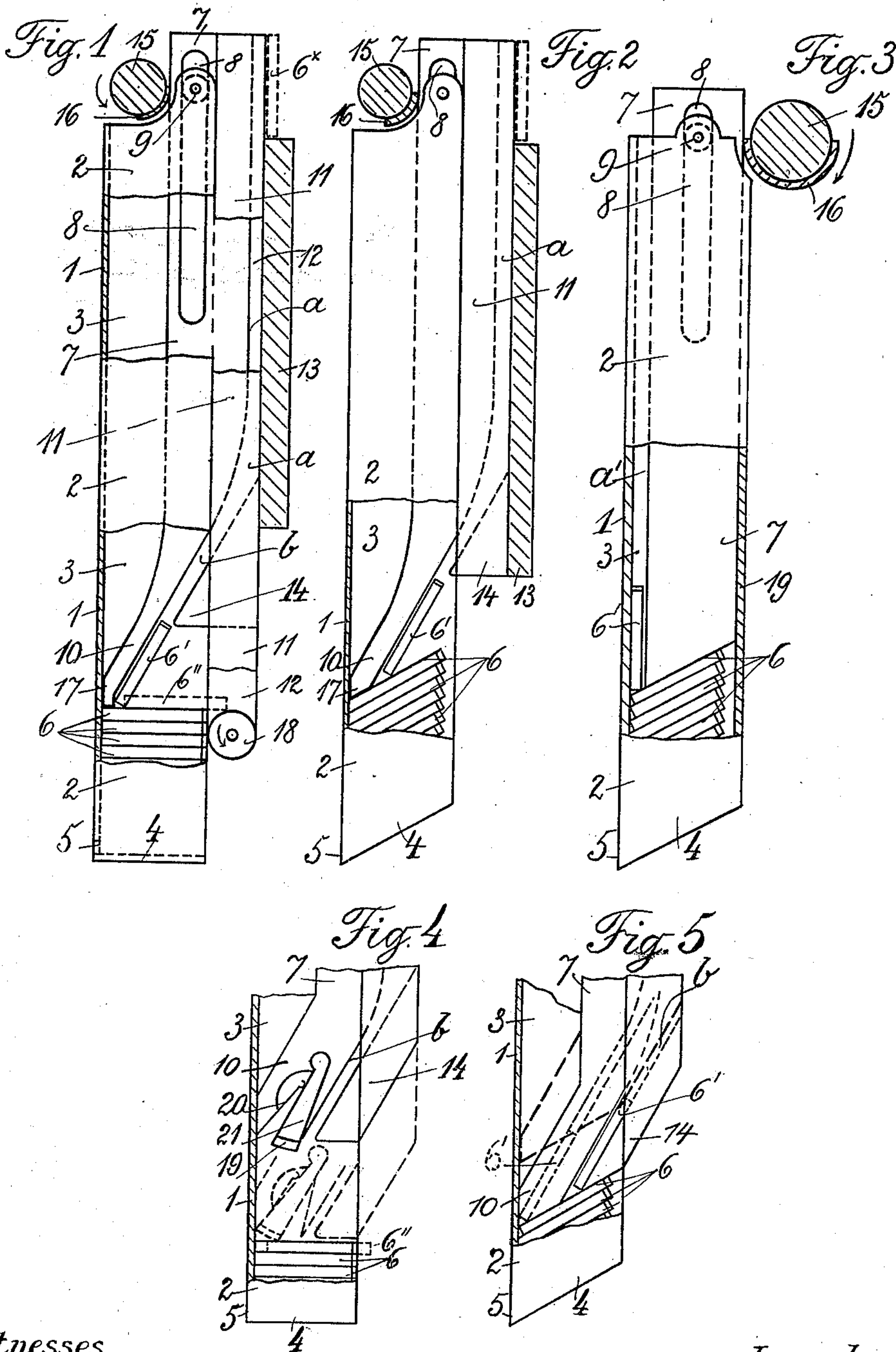
H. BURG.

CHARACTER SUPPLYING APPARATUS FOR TYPE OR MATRIX SETTING MACHINES.

(No Model.)

(Application filed Dec. 31, 1897.)

2 Sheets—Sheet 1.



Witnesses
J. Hinkel
William E. Neff

Inventor
Hubert Burg
By J. Hinkel
Atty

No. 652,421.

Patented June 26, 1900.

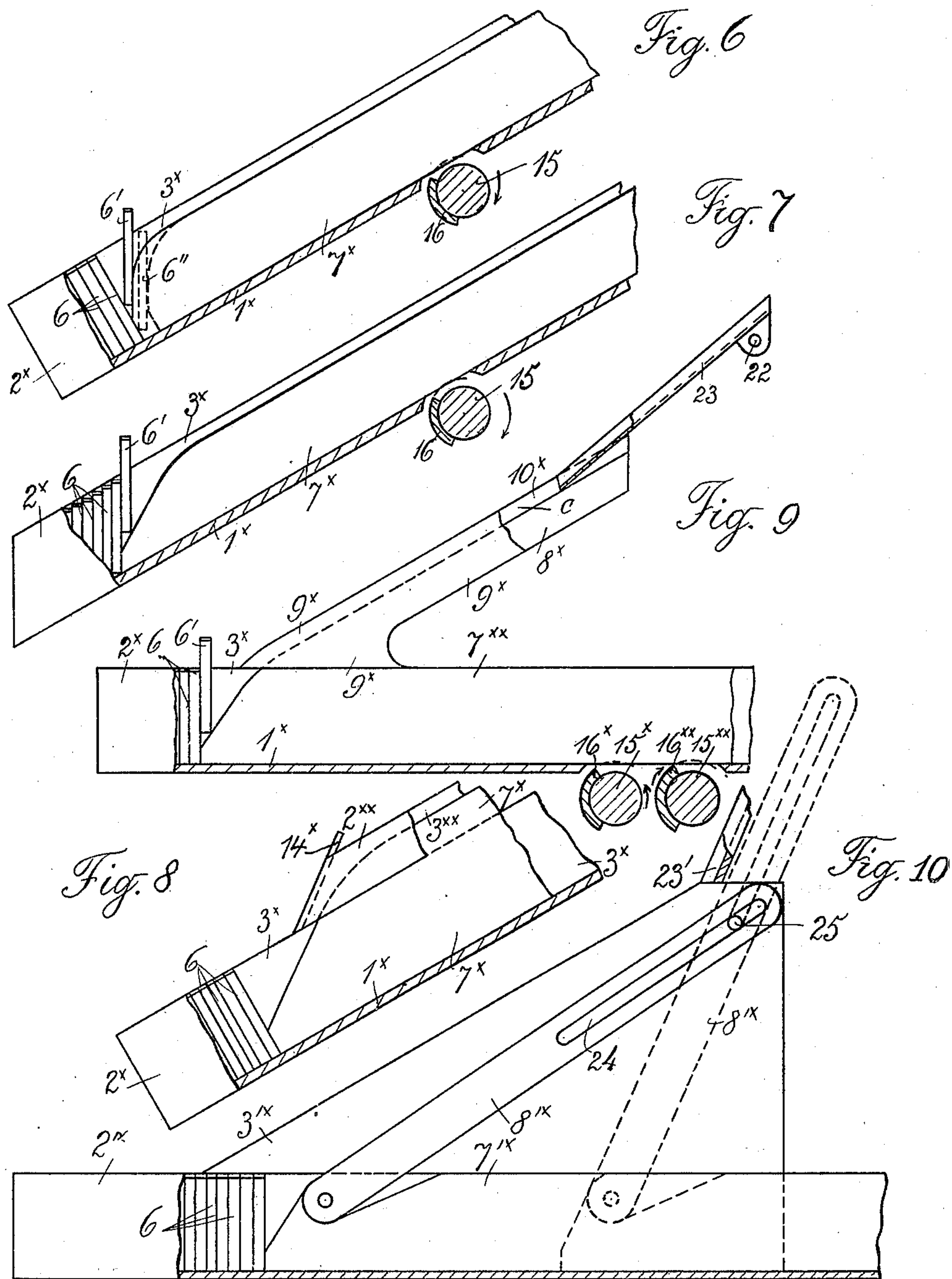
H. BURG.

CHARACTER SUPPLYING APPARATUS FOR TYPE OR MATRIX SETTING MACHINES.

(No Model.)

(Application filed Dec. 31, 1897.)

2 Sheets—Sheet 2.



Witnesses
J. Hinkel
William E. Steff

Inventor
Hubert Burg
By J. Watson
Atty.

UNITED STATES PATENT OFFICE.

HUBERT BURG, OF MOLLKIRCH, GERMANY.

CHARACTER-SUPPLYING APPARATUS FOR TYPE OR MATRIX SETTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 652,421, dated June 26, 1900.

Application filed December 31, 1897. Serial No. 665,020. (No model.)

To all whom it may concern:

Be it known that I, HUBERT BURG, a subject of the German Emperor, residing at Mollkirch, near Rosheim, in the Province of Alsace-Lorraine, Germany, have invented a new and useful Improvement in Type or Matrix Setting Machines, of which the following is a specification.

In the following description I shall use the term "type" as indicating both type and matrices.

My invention relates to setting-machines the type-containing channels of which are to be continuously filled up with type during the setting, so as to be never empty, and to allow of a continuous setting, no matter whether the type are supplied by a distributing apparatus, as commonly, or by a type-casting device, as in machines lately suggested; and the objects of my improvements are, first, to provide a guide-piece connecting the channels of the setting apparatus with the delivery-points of the distributing or casting device by which the type are surely guided without tilting on their way, so as to reach their place in right position; second, to arrange the said guide-piece in such manner that its working is independent as well of the level the type are delivered by the one and supplied to the other apparatus as of the relative position of both apparatus; third, to provide a simple and yet reliable apparatus. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of one embodiment of my invention. Fig. 2 is a similar view of a slightly-modified form. Figs. 3, 4, and 5 each illustrate another modification of the same general class of devices as that shown in Fig. 1, the type-channel being arranged vertically. Figs. 6, 7, and 8 are longitudinal sectional views illustrating two slightly-different forms of an embodiment of my invention as applied to type-channels, which are arranged in an inclined position. Figs. 9 and 10 are elevations, partly in section, illustrating two embodiments of my invention applied to horizontally-arranged type-channels.

Similar letters and figures refer to similar parts throughout the several views.

Referring first to Figs. 1 to 5, inclusive, 1 is

the front and 2 and 3 are the side walls, and 4 the bottom, of the type-channel of a setting-machine. The channel is open at the top and may be open or closed at the rear side opposite to the front wall 1, and provided with a discharging-opening 5 in the front wall near the bottom, through which the type are to be ejected in setting. The column of type 6 contained in the channels rests on the bottom 4, which is inclined in the channels (represented in Figs. 2, 3, and 5) and the type are placed upon each other, resting on their flat sides or their edges, as the case may be. A plate 7 is guided between the channel-walls 2 3 and by a slot 8 on a roller 9, journaled in the said walls, the bent end piece 10 of plate 7, Figs. 1 and 2, bearing against the inside of the front wall 1. The plate projects from the rear side of the channel and has secured to and is covered on its projecting portion by brass strips 11 12, being flush with the side walls 2 3, and projecting on their part beyond the outer edge of plate 7, thus forming a channel *a* turning its open side toward the frame-plate 13 of the setting-machine. (Represented in cross-section.) The size of channel *a* corresponds to the body of the type to be guided by it, so as to allow of its descending by gravity, but prevent the same from turning on its longitudinal axis and tilting. Strips 11 12 project downward, carrying an intermediate triangular plate 14 and a roller 18 between their lower ends, Fig. 1. Plate 14 partially enters channel-walls 2 3, thus forming, together with end piece 10, an inclined continuation *b* of channel *a*, by passing of which the descending type will be deflected so as to reach the column in an inclined position, as shown by the type 6'. The type then tilts over by gravity into the position 6'', (represented in dotted lines,) a wrong turning movement on its longitudinal axis being prevented by walls 2 and 3. From the position 6'' the type is to be shifted to its definite position in close contact with the front wall 1. To this purpose plate 7 is reciprocated by a revolving shaft 15, partially provided with a rubbing-surface 16, and raising the foot 17 of piece 10 so as to clear the type, which in the same time is shifted toward the left by roller 18. The latter preferably consists of a rubbing material, and when raising the type the

roller will be caused to turn as indicated by the arrow and pull the type to the left until it reaches wall 1. The working of the roller may be improved by enlarging the same, so as to bear against the edges of channel-walls 2 3 and releasing end piece 10 of plate 7 from the contact with the channel-wall 1. The roller will then be positively turned at each stroke of plate 7, forming in the same time a convenient under guide for the plate. The rubbing-surface 16 of shaft 15 having passed by the edge of plate 7, the latter descends again by gravity; but as in the meanwhile the type has been brought in contact with wall 1 foot 17 is intercepted by the type and plate 7 arrested in a higher position. If, therefore, the channel is continuously supplied with type, no type being withdrawn by setting, plates 7, performing their successive strokes, will be raised step by step; but when type are being withdrawn from the channels the plates 7, performing their strokes, will descend a step each time a type has been withdrawn from the channel, a fresh type not having been supplied. In general, plate 7 will therefore perform its successive strokes, rising or descending by steps, as the case may be, and continuously following the level oscillations of the column of type. The type are delivered to the upper end of the guide-channel, as represented in the drawings by the type 6^x, and as the apparatus cannot work except when the delivery-point is placed above the deflecting-plate 14 plate 7 must be made of a sufficient length. When using channels with a sufficiently-inclined bottom plate 4, as represented, Fig. 2, roller 18 can be dispensed with, the descending type 6' assuming its definitive position by gravity only.

Fig. 3 is a modification of Fig. 2, the guide-channel *a'* for the descending type 6' being straight and essentially formed by the type-containing channel itself, plate 7 only closing the channel *a'* at the right-hand side. In order to enable the type 6' to tilt over by gravity into its definitive position, the channel is to be slightly inclined toward the right, or it may be periodically shaken from the left by any convenient means after each rising of plate 7. In the present instance the type-containing channel is closed at the rear wall 19.

Figs. 4 and 5 show modifications of Figs. 1 and 2, respectively, in which deflecting-plate 14 extends to the base of the bent end piece 10, so that the descending type cannot leave the guide-channel part *b* and tilt over into its final position except when the plate 7 is in its elevated position. (Indicated in Fig. 4 by full lines and by heavy dotted lines in Fig. 5.) A pawl 21 is pivoted to the end piece 10, Fig. 4, actuated by a spring 20 and provided with a rubbing-cover 19. Pawl 21, assuming the position represented by full lines when plate 7 performs its rising stroke, reaches the type 6'' in the said position and stops the descend-

ing stroke of plate 7, the bases of deflecting-plate 14 and of end piece 10 thus being held out of contact with the type. In consequence thereof pawl 21 is swung to the left by eccentric pressure and by frictional engagement moves the latter into its proper position in the channel. In the modification, Fig. 5, plate 7 assumes its lower position, (represented by full lines,) containing a descending type 6' in the guide-channel part *b*. As now plate 7 is raised, as indicated by heavy dotted lines, the type 6' will be released and take its final position by gravity only.

Figs. 6 and 7 show features of my invention applied to inclined type-containing channels, in which case my device is of the most simple form, consisting only of a plate 7^x, reciprocated in the containing-channel 1^x 2^x 3^x by the means 15 16, heretofore described. Channel-walls 2^x 3^x project beyond the upper edge of plate 7, forming, together with the latter, a guide channel or way for the descending type, which are tilted to their final position by the curved or tapered end of plate 7^x, and finally adjusted by its reciprocating movement, as will clearly appear from an inspection of the drawings.

Fig. 8 represents a modification of Fig. 6, showing the construction described with reference to Figs. 1 and 2. Reciprocating plate 7^x is guided between the channel-walls 1^x 2^x 3^x, projecting beyond walls 2^x 3^x, and laterally covered with projecting brass strips 2^{xx} 3^{xx}, a deflecting-plate 14^x being provided between the end of the strips. The use of deflecting-plate 14^x allows of a heavy inclination of the channels, which is preferable with respect to the final adjustment of the type by gravity only.

Figs. 9 and 10 show my invention combined to horizontal or nearly horizontal type-containing channels. A plate 7^{xx} is guided between the channel-walls 1^x 2^x 3^x, Fig. 9, and reciprocated by shafts 15^x and 15^{xx}, provided with rubbing-covers 16^x and 16^{xx}, respectively, the shafts revolving in opposite directions, as in the present instance the gravity of the plate cannot be made use of. Plate 7^{xx} is provided with a projecting arm 8^x, laterally covered with projecting brass strips 9^x 10^x, so as to form a guide-channel *c*. The type are delivered to the latter by a channel 23, pivoted at 22 to the supplying apparatus, channel 23 entering the guide-channel *c* and performing corresponding oscillations as plate 7^{xx} is reciprocated. In the modification represented in Fig. 10 plate 7^x is guided and reciprocated as described with reference to Fig. 9, and a rail 8^x is pivoted to its tapered end, passing with a slot 24 on a fixed pin 25. The type are supplied by a channel 23', fixed to the supplying apparatus. Channel-walls 2^x 3^x are enlarged, so as to project beyond rail 8^x in its differently-inclined positions, including the outmost right-hand position represented in dotted lines. The type descend in the guide-channel thus formed by

rail 8'× and the enlarged side walls 2'× 3'×, and will be adjusted and set up by the successive reciprocations of plate 7'×.

Although in general the delivery-point of the type will be stationary, the receiving-level in the type-containing channel only performing oscillations, it may be observed that the invention is not restricted thereto, for it will be clear from the drawings and the above description of my invention that the type can be delivered at any point of the guide-channel. My invention is therefore likewise applicable to a supplying apparatus with an oscillating delivery-level. It may be likewise observed that the reciprocating guide-plate for adjusting the descending type is not restricted thereto, but serves in the same time the purpose of controlling the working of the setting-machine. As the said plate is reciprocated the column of type in the containing-channel will be continuously shaken and compressed, so as to prevent clamping or obstructing of type, as sometimes occurs in type-setting machines, and cause the column to uniformly descend to the discharging end.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A device for continuously supplying the type-containing channels of setting-machines, consisting of a movable guide-piece arranged to receive type from a supplying apparatus and extending to the last-inserted member of the series of type in the type-containing channel, and means for reciprocating the said guide-piece, substantially as and for the purposes described.

2. A device for continuously supplying the type-containing channels of setting-machines, consisting of a movable guide-piece extending from the delivery-point of the supplying apparatus to the type-column in the type-containing channel, and guided in the latter, and means for reciprocating the said guide-piece, substantially as and for the purposes described.

3. A device for continuously supplying the type-containing channels of setting-machines, consisting of a movable piece extending from the delivery-point of the supplying apparatus to the type-column in the type-channel, and forming part of a guide-channel, and means for reciprocating the said guide-piece, substantially as and for the purposes described.

4. A device for continuously supplying the type-containing channels of setting-machines, consisting of a movable guide-piece extending from the delivery-point of the supplying apparatus to the end of the type-column in the containing-channel, and having its end within the type-containing channel reduced, and means for reciprocating the said guide-piece, substantially as and for the purposes described.

5. A device for continuously supplying the type-containing channels of setting-machines, consisting of a movable guide-piece guided in the type-containing channel and an arm projecting from the said channel to receive type from the supplying apparatus, a guide-channel provided by the guide-piece, and means for reciprocating said guide-piece, substantially as and for the purposes described.

6. In a device for continuously supplying the type-containing channels of setting-machines, the combination with a type-containing channel, of a guide arranged to conduct type to the type-containing channel, and two oppositely-rotating power-shafts adapted to alternately move said guide in opposite directions.

7. In a device for continuously supplying the type-containing channels of setting-machines, the combination of a horizontally-arranged type-containing channel, a guide-piece fitted in said channel and having an arm or member extending therefrom and adapted to receive and guide type into the type-containing channel, and means for reciprocating said guide.

8. In a device for supplying the type-containing channels of setting-machines, the combination of a type-containing channel, a guide-piece extending into and having an arm or member projecting from said channel, a pivotally-mounted supply-channel arranged to supply type to said guide, and means for reciprocating said guide.

9. In a device for supplying the type-containing channels of setting-machines, the combination of a horizontally-arranged type-containing channel, a guide fitted in and having a member projecting beyond the open side of said channel, flanges on the channel extending across opposite sides of said projecting member of the guide, a pivotally-mounted type-supplying channel arranged to deliver type to said guide between said flanges, and means for reciprocating said guide in the type-containing channel.

10. In a device for supplying the type-containing channels of setting-machines, the combination of a horizontally-arranged type-containing channel, a guide having a portion fitted in said channel and a pivotally-mounted section extending beyond the open side of said channel, flanges on the type-containing channel extending on opposite sides of said pivoted section of the guide, means for reciprocating the guide, and means on one of said flanges for engaging the pivoted section of the guide.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HUBERT BURG.

Witnesses:

CHARLES VOLTZ,
PAUL SELDEN.