

(No Model.)

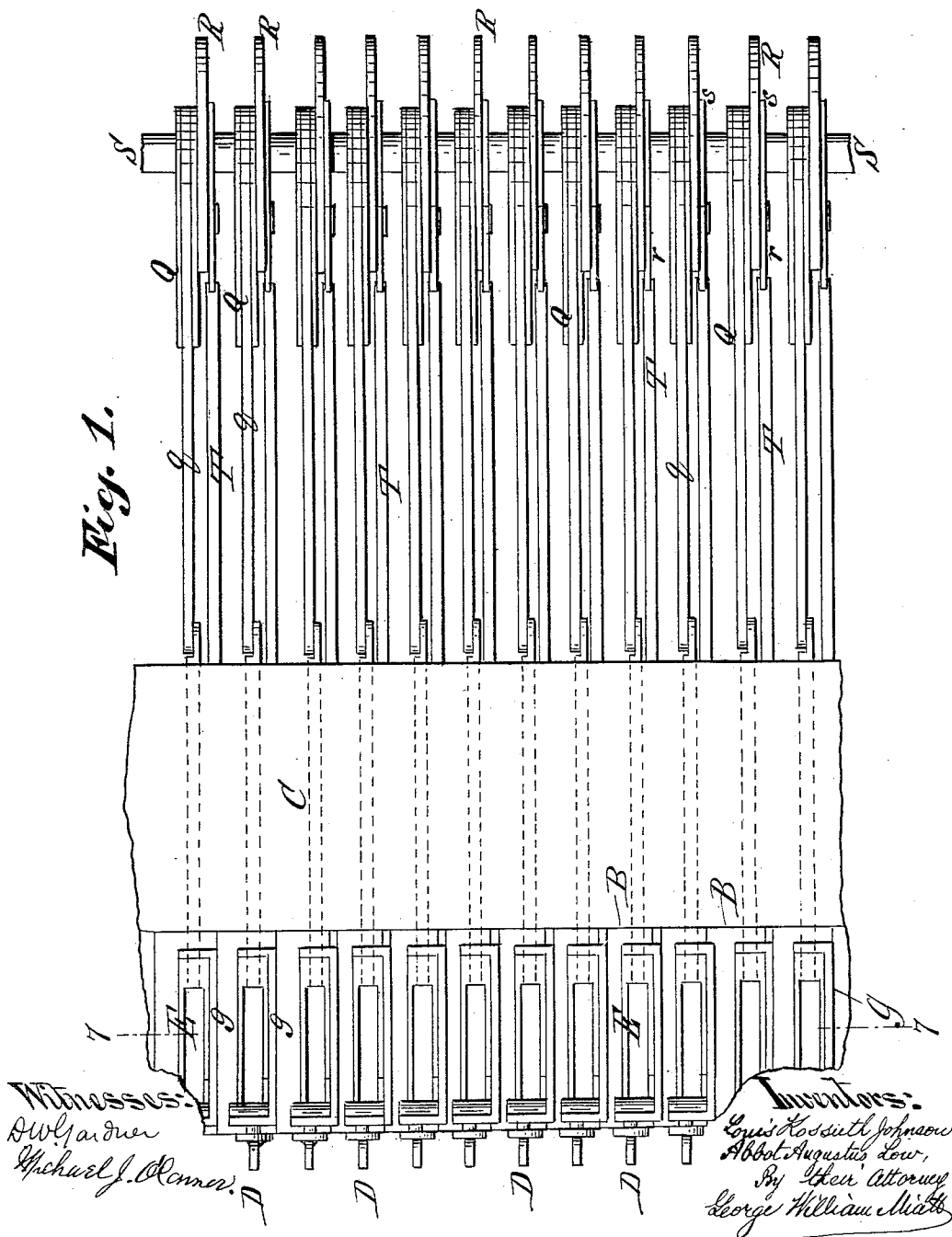
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L. K. JOHNSON & A. A. LOW.
TYPE SETTING APPLIANCE.

No. 569,337.

Patented Oct. 13, 1896.

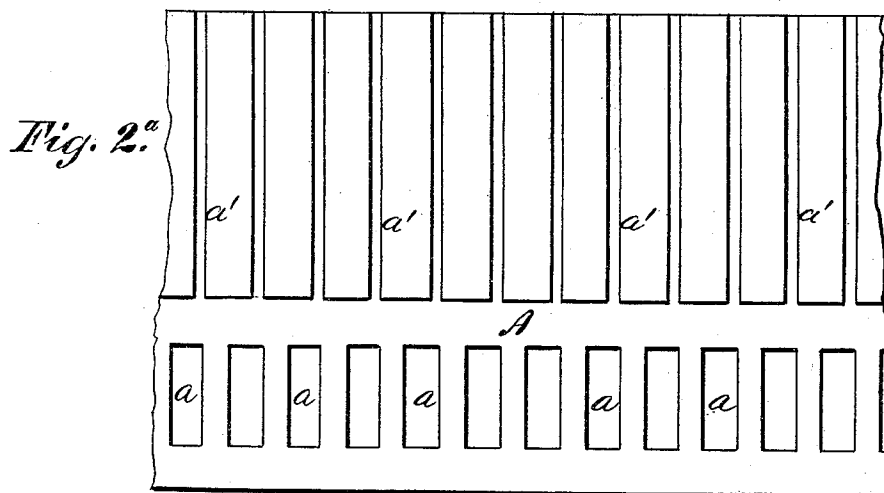
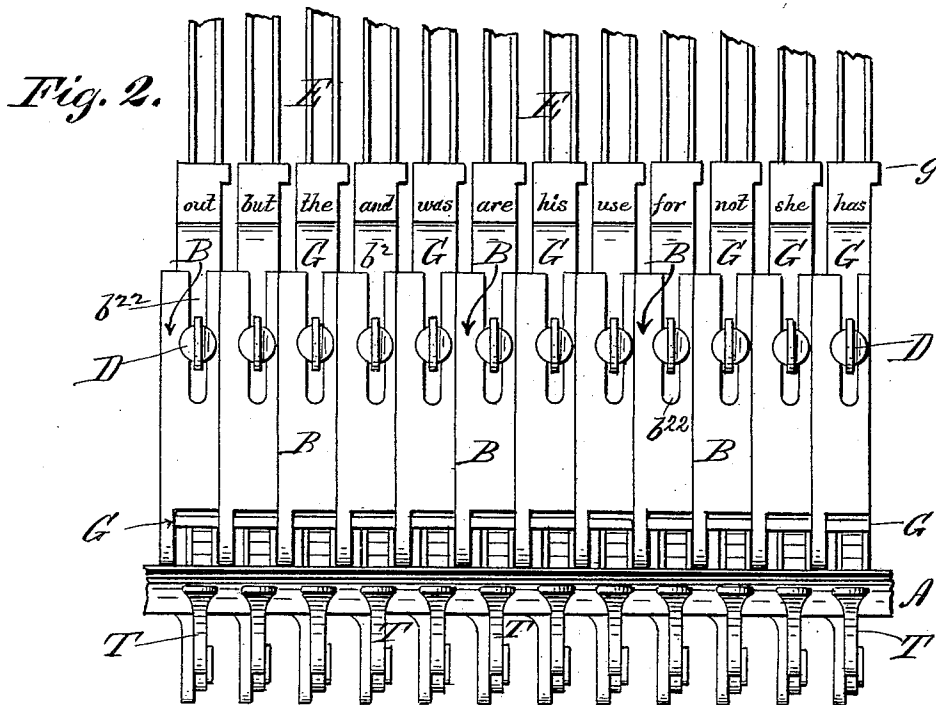
Fig. 1.



L. K. JOHNSON & A. A. LOW.
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Patented Oct. 13, 1896.



Witnesses:
Dwight Gardner,
Richard J. Conner

Inventors:
Louis Kossuth Johnson,
Abbot Augustus Low,
By their Attorneys,
George William Smith

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6 Sheets—Sheet 3.

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Fig. 4.

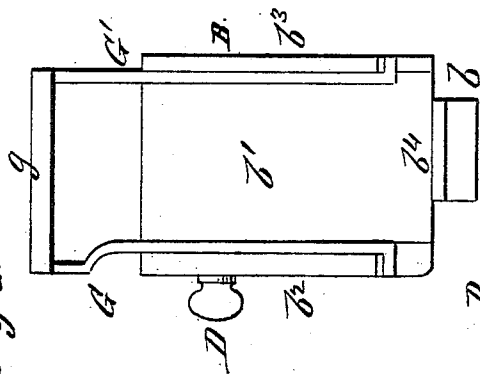
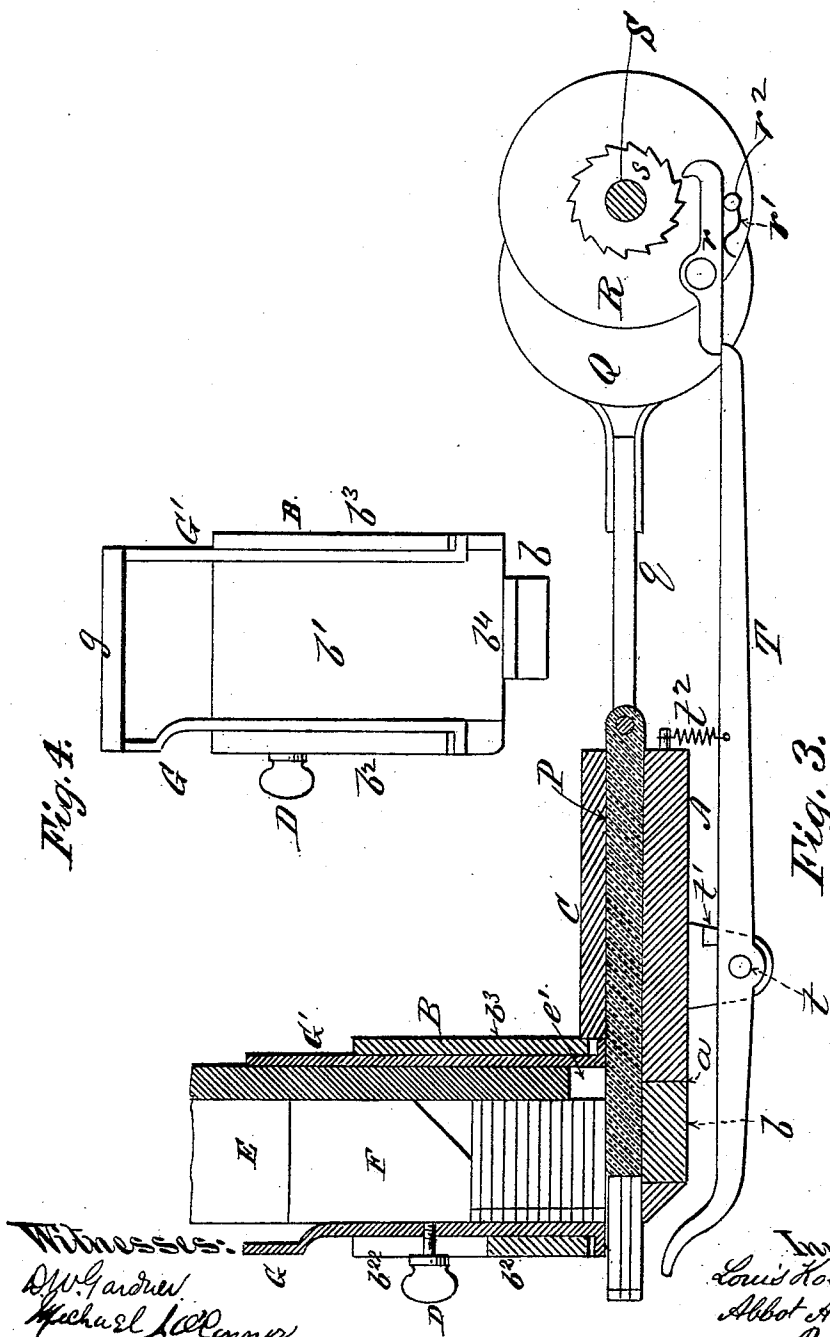


Fig. 3.



Witnesses:

Wm. Gardner
Michael J. Conner

Inventors:

Louis Rossuth Johnson
Abbot Augustus Low
By their Attorney
George William Smith

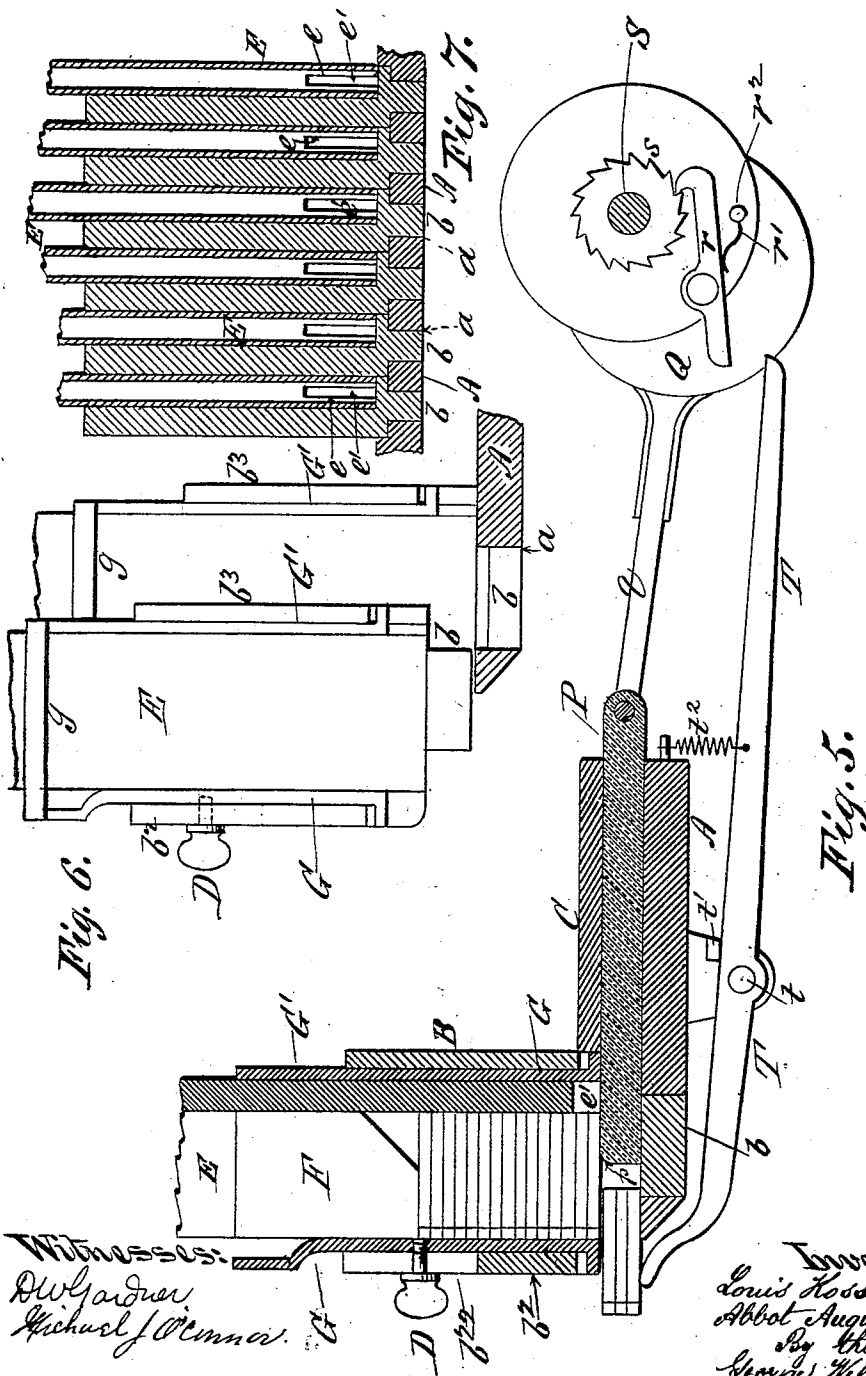
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Witnesses:
D. W. Gardner,
Richard P. Cinner.

Inventors:
Louis Rossalt Johnson,
Abbot Augustus Low,
By their Attorney,
George William Smith.

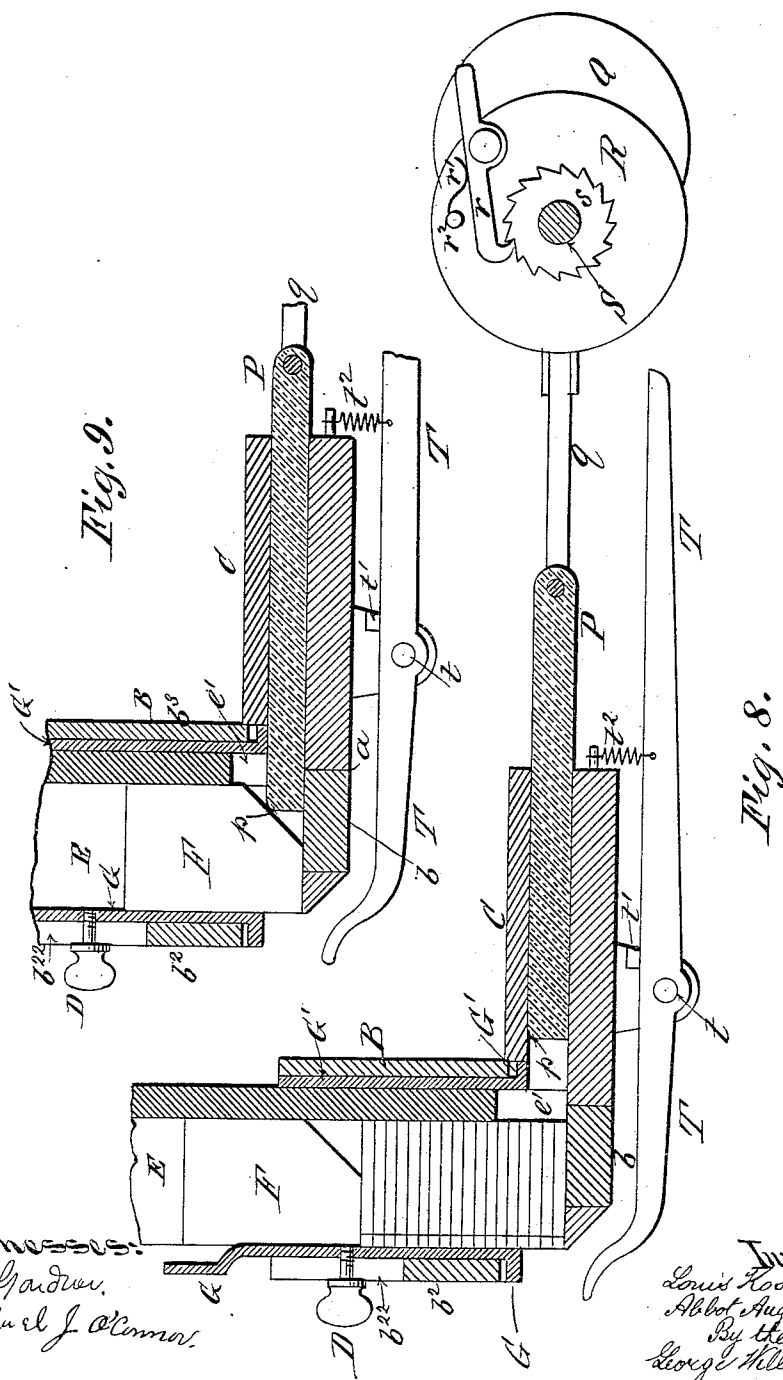
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6 Sheets—Sheet 5.

L. K. JOHNSON & A. A. LOW.
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Patented Oct. 13, 1896.



Witnesses:
D. W. Gardner,
Michael J. Connor.

Inventors:
Louis Rossell Johnson,
Abbot Augustus Low
By their Attorney,
George William Malt.

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Patented Oct. 13, 1896.

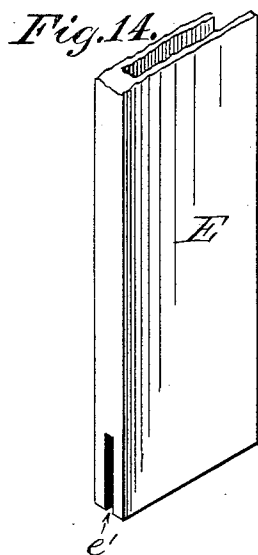
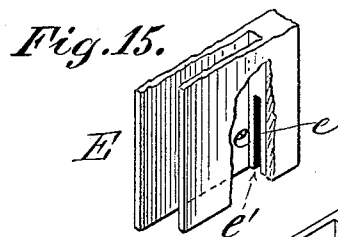


Fig. 13.

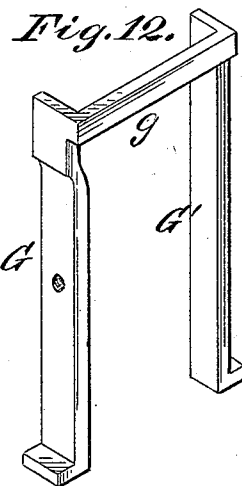
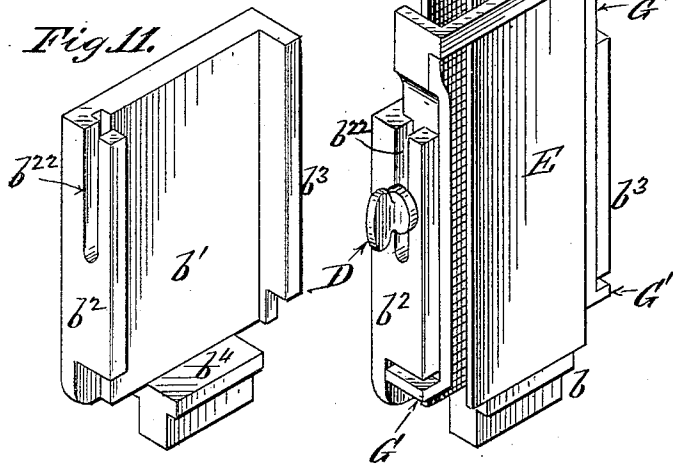
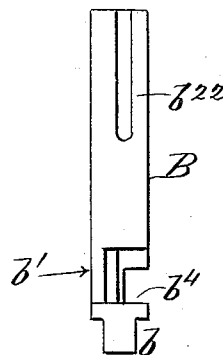


Fig. 10.

Witnesses:
Oluf Gardner
Michael J. O'Connor.

Inventors:
Louis Rossuth Johnson,
Abbot Augustus Low
By their Attorney
George William Munn

UNITED STATES PATENT OFFICE.

LOUIS KOSSUTH JOHNSON AND ABBOT AUGUSTUS LOW, OF BROOKLYN,
NEW YORK, ASSIGNORS TO THE ALDEN TYPE MACHINE COMPANY, OF
NEW YORK, N. Y.

TYPE-SETTING APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 569,337, dated October 13, 1896.

Application filed January 30, 1896. Serial No. 577,440. (No model.)

To all whom it may concern:

Be it known that we, LOUIS KOSSUTH JOHNSON and ABBOT AUGUSTUS LOW, citizens of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Setting Appliances, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

Our improvements, although applicable to type-cases in which the types are arranged in individual containing-channels, are especially designed for use in connection with our system of arranging the types in the containing-channels in words or combinations, the several types forming which are forwarded and removed simultaneously, as in our concurrent application, Serial No. 573,260, filed December 26, 1895, in which the types are upon the "flat" and are forwarded in that position with relation to each other.

One of the main objects of our present invention is to render the word-case more simple, compact, and convenient than heretofore. One of the difficulties in handling types distributed into containing-channels is the inconvenience of supporting them until properly placed and supported in the setter-case, since the channel-holders have heretofore been attached to or formed a part of the framework of the case. We obviate this by the use of a series of channel-holders which are duplicable and interchangeable, fitting into any of a series of sockets formed in a bed-plate or shelf provided with suitable type-forwarding mechanism for each channel when in place, as hereinafter shown and described. We are thus enabled to apply the channel-holder to the channel when in a horizontal or inclined position, instead of lowering the channel and contents into the fixed holder in a vertical or nearly vertical position. The holder, then acting as a support for both types and channel, may be safely and conveniently lowered into position upon the common bed or table, where a tenon on its lower extremity fits snugly into any one of the series of mortises formed in the bed-plate for this purpose.

Since in our new system of assembling the

types in word combinations it is desirable that each channel and holder shall be adapted for use in connection with any word or combination in general use, we form each holder with an adjustable front and rear type-guard, integral in construction, so that a single adjustment controls both the front and the rear ends of the types, limiting the distance between the lower surfaces of the guards and the upper surfaces of the type-supporting platform to the width of the word or combination with which the channel is charged. We are thus enabled to sustain the lower types against the tendency of the pusher to withdraw them backward during the retractile movement of the pusher irrespective of the number of characters forming the combination, the rear wall or spine of the channel being slotted longitudinally for a length sufficient to receive a pusher equal in height to the width of the widest word or combination to be used in the case. A similar result may be attained by making the pusher and the slot in the channel-spine of less width than the width or flat side of the types, so that shoulders are left on the spine of the channel on either side of the pusher-slot, which shoulders sustain the heels of the types against backward strain.

A distinguishing feature of our present channel-holder is that one side is entirely open excepting for the cross-bar which unites the front and rear guards. As this cross-bar, which performs the additional function of a lateral support for the channel on that side of the holder, is above the top of the holder it follows that the opposite side of the next holder may rest directly against the type-containing channel, reducing the distance between centers to the minimum, since the thickness of one side wall in each holder is dispensed with. Another advantage in leaving one side of the holder open is that the front ends of the types are thereby exposed laterally between the front guard and the short wall of the channel, so that their alinement may be perfected, if necessary, before the holder is inserted in position on the bed-plate or table. Each holder being thus reduced to the minimum thickness and fitting snugly in position against the next enables us to arrange

a series of common-words in a comparatively small space horizontally, as illustrated in the accompanying drawings, in which the channels and holders for twelve common words of three letters each are shown in line.

Any particular holder and channel may be removed from the series for the purpose of substitution or duplication without disturbing the other channels and holders, since the distance between the top of one holder and the guard cross-bar on the next holder is greater than the depth or projection of the tenons by which the holders are held in place upon the table or bed-plate, so that a holder may readily be raised vertically a short distance and then withdrawn forward in its own plane.

In our present case we effect the forwarding of succeeding types by a thumb-lever having no bearing upon or relation to the types to be removed, the thumb during the action of grasping the type for removal from the front of the type-platform simply tripping the lever and thereby releasing the type-forwarding mechanism, which is again locked by the thumb-lever at the completion of a single reciprocal movement of the pusher. By thus avoiding the necessity for a bearing upon the advanced types beyond the holder we are enabled to reduce the stroke of the pusher to a little over one-half the length of the type, since the types in the column above will sustain the rear ends of the forwarded types until removed. In order, however, to avoid the necessity for overcoming the frictional resistance of the type-column while withdrawing the forwarded types, we so form the pusher that it raises the column sufficiently to relieve the forwarded types of the weight thereof.

All the parts of our improved case are open and accessible. The removal of the independent, interchangeable holders reveals a simple shelf or bed-plate mortised for the lower ends of the holders and grooved for the pusher-blades, which latter are all held down by a simple flat cap.

In the accompanying drawings, Figure 1 is a plan of a nest of twelve channels, holders, &c., constructed and arranged according to our invention. Fig. 2 is a front elevation of the same; Fig. 2^a, a plan of the bed-plate or support, all the parts above being removed; Fig. 3, a vertical sectional elevation showing the parts at rest; Fig. 4, an elevation of the right-hand side of one of the holders; Fig. 5, a view similar to Fig. 3, showing the action of the thumb-lever in releasing the type-forwarding mechanism; Fig. 6, an elevation illustrating the removal of a single holder from the bank or series; Fig. 7, a vertical section on plane of line 7 7, Fig. 1, through six of the holders, supporting-bed, &c. Fig. 8 is a view similar to Figs. 3 and 5, showing the position of the parts at the end of the retractile movement of the pusher, the types previously forwarded having been withdrawn. Fig. 9 is a sectional elevation illustrating the condition of parts

at the end of the forward stroke of the pusher when the types in the channel are exhausted. Fig. 10 is an isometrical perspective of one of our independent removable holders with type-containing channels in position; Fig. 11, a similar view, the type-channel and double guard being omitted. Fig. 12 is an isometrical perspective of the double guard. Fig. 13 is a front view of the holder without the guard; Fig. 14, an isometrical view of the lower end of a channel; Fig. 15, a similar view showing a part of one wall broken away.

The bed-plate or table A may be of any desired length, according to the number of words or combinations of types to be provided for. Its front portion is formed with a series of equidistant sockets or mortises *aa*, coinciding in size and shape with the tenons *b* on the under sides of the holders B. The rear portion of the table A is formed with parallel grooves *a' a'* for the reception and guidance of the pusher-blades P, the latter being confined therein by a common cap C.

Each pusher-blade P is connected by pitmen *q* with an eccentric Q, having a throw equal to the desired advance of the types, which in the present case need not much exceed one-half the length of a type. The eccentric Q is attached to the disk R, carrying the pawl *r* and spring *r'*, by which latter the pawl *r* is thrown into engagement with the ratchet *s* when the pawl *r* is not held back against the stud *r*² against the resistance of the spring *r'* by the rear end of the thumb-lever T. The ratchet *s* is affixed rigidly to the constantly-rotating shaft S, while the disk R and eccentric Q are loose upon said shaft.

The thumb-lever T is pivotally supported at *t* and is held in its normal position against the stop *t'* by the retractile spring *t*², in which position the inner end of the lever projects into the path of the outer end of the pawl *r*, so that the pawl is rocked out of engagement with the ratchet *s* when the pawl encounters the lever.

The forward end of the lever T is bent upward so as to project under the forwarded types in such manner that in the act of grasping the types for removal the thumb of the compositor will naturally encounter and raise the forward end of the lever T, thereby depressing the inner end of the lever T sufficiently to release the outer end of the pawl *r*, when the latter immediately engages with the ratchet *s*, and the disk R and eccentric Q partake of the motion of the shaft S. Immediately upon the release of the lever as the types are withdrawn it is drawn back into its normal position by the spring *t*² ready to trip the pawl *r* from the ratchet *s* at the completion of one revolution of the disk R and eccentric Q, thereby locking the pusher-blade P in its forward position. In this forward position the pusher P supports the column of type in the channel, it being slightly higher than the combined thickness of the types forwarded, and having its front upper edge *p*

slightly curved or rounded so as to ride under the heel of the next type above. The forwarded types are thus relieved of the weight of the column above, and may be easily removed from the type-platform *a*. The holder B consists of a plate *b'*, formed with front and rear flanges *b² b³*, and with floor *b⁴*, from the lower side of which projects the tenon *b*. The front flange *b²* is formed with the slot *b²³* to accommodate the set-screw *D*, by which the front and rear guards *G G'* are adjusted. These guards fit inside the flanges *b² b³*, and are united at their upper ends by a cross-bar *g*, which also acts as a lateral support for the type-channel *E* when the latter is in the holder.

The guards *G G'* are of such length or height that the cross-bar *g* is always above the top of the plate *b'* a distance greater than the depth of the tenon *b*, so that any holder in the row can be lifted sufficiently to clear the bed *A* without coming in contact with the cross-bar *g* of the next adjoining holder. This is illustrated in Fig. 6.

The rear guard *G'* counteracts the tendency of the pusher to draw back the types during its retractile movement in cases where the pusher-slot in the spine is the full width of the type-channel, as is necessary in the case of the smallest widths of types; but in the case of the larger types the spines of the channels need only be slotted for a part of the width of the types, leaving shoulders *e e* on either side of the pusher-slot *e'*, which effectually hold the heels of the types against backward movement.

The follower *F* has its rear lower edge inclined or curved so as to present an inclined surface to the pusher when the types have been exhausted, as illustrated in Fig. 9, thereby preventing injury to the type-forwarding apparatus.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In type-setting apparatus substantially such as described the combination of the bed-plate formed with a series of mortises, and a

series of interchangeable channel-holders formed with tenons fitting into said mortises, for the purpose described.

2. In type-setting apparatus substantially such as described the bed-plate formed with a series of mortises, and with a series of pusher-grooves, the interchangeable channel-holders formed with the tenons fitting into said mortises, and a series of pusher-blades, and mechanism for reciprocating them, substantially in the manner and for the purpose described.

3. In combination with a type-channel holder an integral front and rear guard arranged substantially as described.

4. In combination with a channel-holder, an integral front and rear guard, and means for adjusting said duplex guard longitudinally with relation to the type-channel substantially in the manner described.

5. In combination with a channel-holder and type-channel, a type-guard formed with a lateral arm for the support of the channel on the open side of the holder substantially in the manner described.

6. In combination with a type-channel holder open on one side, a front and rear type-guard formed with a connecting-bar extending across the open side of the holder and acting as a support for the channel on that side of the holder, substantially in the manner described.

7. In combination with a type-channel holder open on one side and formed with a tenon for insertion in a mortise on the supporting-bed, a bar for supporting the channel on the open side of the holder said supporting-bar being situated above the top of the holder a distance greater than the projection of the tenon by which the holder is held upon the bed, for the purpose and substantially in the manner described.

LOUIS KOSSUTH JOHNSON.

ABBOT AUGUSTUS LOW.

Witnesses:

D. W. GARDNER,

GEORGE WILLIAM MIATT.