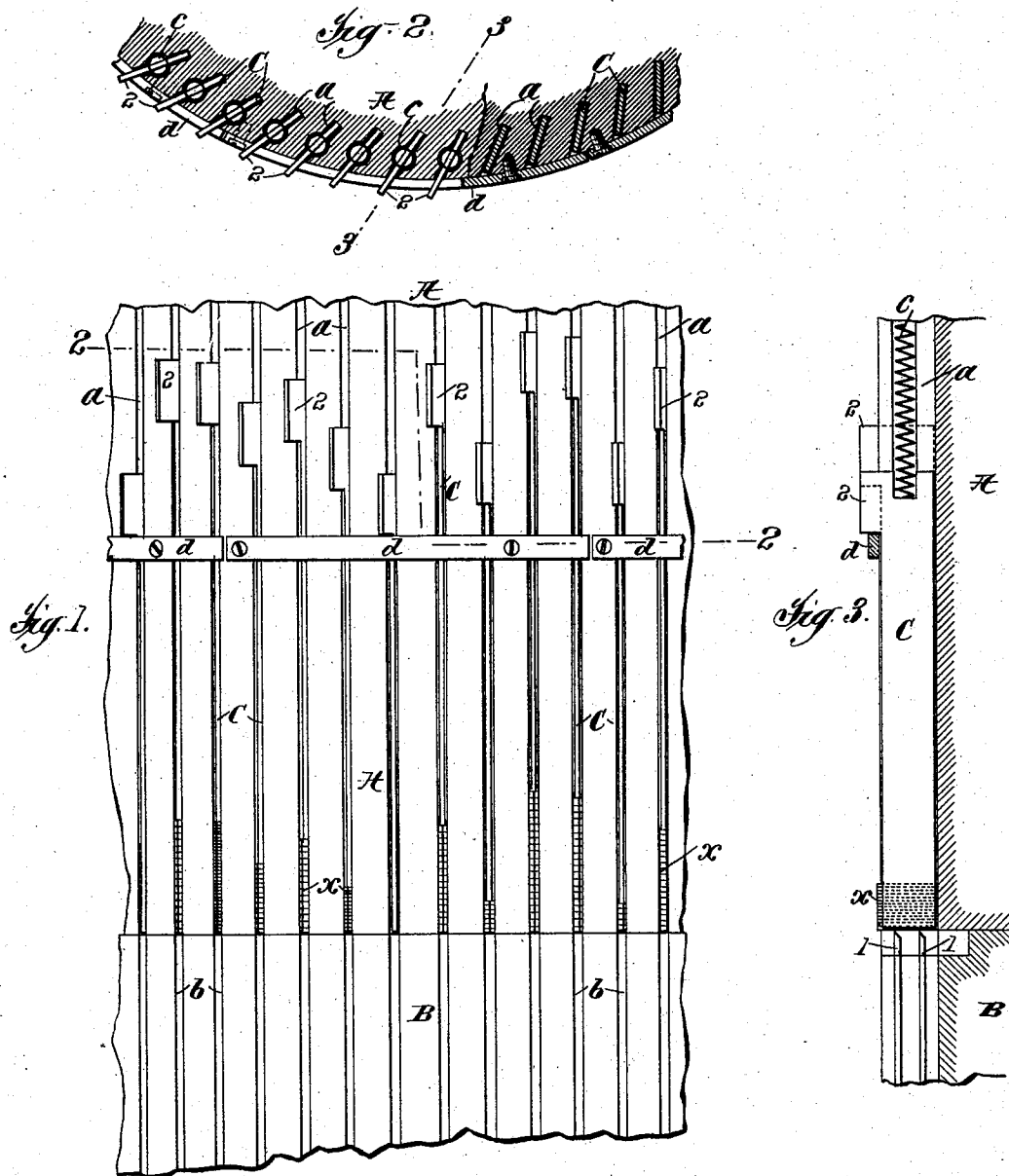


(No Model.)

E. J. ANDREWS.
TYPE SETTING AND DISTRIBUTING MACHINE.

No. 567,212.

Patented Sept. 8, 1896.



Attest:
Geo H. Botts.
C. J. Sawyer

Inventor:
Elliott J. Andrews.
Philip Munson Phelps
Atty

UNITED STATES PATENT OFFICE.

ELBERT J. ANDREWS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE THORNE TYPE SETTING MACHINE COMPANY, OF JERSEY CITY, NEW JERSEY.

TYPE SETTING AND DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 567,212, dated September 8, 1896.

Application filed September 16, 1893. Serial No. 485,677. (No model.)

To all whom it may concern:

Be it known that I, ELBERT J. ANDREWS, a citizen of the United States, residing at Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Type Setting and Distributing Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to type setting and distributing machines, and especially to machines employing a channel or series of channels from which the type are forced out by a weight or spring-impelled pusher into a receiver or series of receivers, which may be the composing-case of a type-distributing machine, or the composing stick or channel of certain classes of type-setting machines. While the improvements are applicable to machines of other construction, and to machines employing horizontal channels, and are broadly claimed, they are of special value in connection with the distributing portions of machines of the class shown and described in United States Letters Patent Nos. 232,157, 283,934, 372,186, 372,187, and 417,074, in which the distributing portion consists of two superimposed cylinders having vertical type-channels, the type being placed in the channels of the rotating upper or distributing cylinder and distributed vertically, under pressure of weight or spring-impelled pushers, past selecting-wards into the channels of the stationary lower or composing cylinder; and the invention consists in part of constructions in such a machine.

The especial object of the present invention is to provide a construction by which wear of the lower cylinder and wards by contact of the pushers, when the type in the upper channel are exhausted, is prevented, and, further, to provide means for this purpose which shall also serve to hold the pushers in the channel while permitting their convenient manipulation for the insertion of type.

A further object is to provide a construction in which the wear incident to stopping the pushers shall be limited to parts which

are placed outside of the space to be occupied by the type, so that the type-channels may be kept uniform and smooth, as is essential for the free and correct movement of the type.

For a full understanding of the invention a detailed description of a construction embodying the same in the preferred form, as applied to a type setting and distributing machine of the special class above referred to, will be given in connection with the accompanying drawings, showing such parts of a machine as are necessary to illustrate the invention, and the features forming the invention then pointed out in the claims.

In the drawings, Figure 1 is a broken side elevation of a portion of the distributing and composing cylinders of the machine. Fig. 2 is a horizontal section on the line 2 of Fig. 1. Fig. 3 is a vertical section on the line 3 of Fig. 2.

The organization and operation of the parts of the machine in connection with which the construction of the present invention is used are fully set forth in the above-named Letters Patent, and reference is made thereto for a full showing and description of the machine.

In the drawings, A is the distributing-cylinder; B, the composing-cylinder, the distributing-cylinder being provided with vertical channels *a*, in which the lines of type *x* to be distributed are placed, and the composing-cylinder B being provided with channels *b*, into registry with which channels *a* are successively brought by the movement of the cylinder A, the type being nicked on their sides and the channels *b* provided with selecting-wards 1, all as in the patents above referred to. Above the lines of type in the distributing-channels *a* are the pushers C, which may be pressed downward only by gravity, but preferably are acted upon by springs *c*, pressing upon the tops of the pushers, the sides of the channels being grooved to receive and hold the springs in position. The pushers C are provided at their upper ends with an outward projection 2, extending outside the channels, and upon the face of the cylinder are secured narrow bars *d*, forming stops which engage the projections 2 upon the pushers when the latter have reached the

lowest point in their movement. As shown in the drawings, these stops *d* are so located that the lower ends of the pushers *C* never engage the lower cylinder, and the weight of the pushers and pressure of springs *c* is entirely supported by the stops *d*. It will be understood that the type are inserted in the channels *a*, in the same manner as described in the patents above referred to, by raising the pushers *C* against the tension of springs *c* by engagement with the projections 2 and pushing the lines of type into the channels below the pushers, which are then released, the channels being of such length that a line of type can be introduced below the pusher without raising the lower part of the pusher above the bar *d*. It will be seen that by this construction all wear of the pushers upon the composing-cylinder and wards is avoided, and all hammering and consequent wear in stopping the pushers is brought upon the bars *d* and outside of the space to be occupied by the type, so that this wear affects in no way the channel or any part traversed by the type, and as the stops are rearward of the type-space they interfere in no way with the insertion of the lines of type below them. The bars serve also to hold the pushers back in the channels, thus aiding in holding the lines of type, and the projections 2 afford a convenient means for raising the pushers to insert the type, and as the bars are rearward of or above the channel type-space the pushers need not be raised above the bars, so that there is no danger of pulling the bars out of the grooves in raising them, and the groove and rib within the channel usually employed for holding the pushers in the channels are not required.

It will be understood that the term "rearward," used above and in the claims to define the position of the stops or bars *d*, refers to the direction of movement of the type, these stops or bars being rearward of or behind the type in all positions of the latter, and consequently rearward of that part of the channel which receives the type and forms the type-space. In the construction shown, in which the stops extend over the open side or in front of the channels, so as to hold the pushers in the latter, as is preferable, the pushers have a length greater than the type movement and projections at their outer ends which engage the stops, so that the latter may be placed rearward of the channel type-space, and the pushers consist of a single plate running under the stop, so as to be held in the channel thereby and still uncover the entire type-space when withdrawn for loading the type without being released from the stop, but still held in the channel thereby.

It will be understood that type setting and distributing machines having horizontal channels are also subject to injurious wear of the pushers on the receiver, and that the pushers and type are liable to rise out of the channels, so that the features of preventing

this wear and holding the pushers down in the channels are applicable to such machines, for instance, to machines such as are shown in United States Letters Patent No. 306,283.

What I claim is—

1. The combination with a type-channel and type-pusher therein, and a receiver into which the type pass from the channel, of a stop located rearward of the channel type-space and arresting the movement of the pusher in position to prevent contact of the pusher with the receiver, substantially as described.

2. The combination with a type-channel and type-pusher therein, and a receiver into which the type pass from the channel, of a stop located rearward of the channel type-space and arresting the movement of the pusher in position to prevent contact of the pusher with the receiver, and acting to hold the pusher in the channel during its movement, substantially as described.

3. The combination with a series of type-channels and type-pushers therein, of a series of type-channels receiving type from the first-mentioned channels, one of said series of channels moving along the other, and stops located rearward of the channel type-space and arresting the movement of the type-pushers in position to prevent contact of the pushers with the other series of channels, substantially as described.

4. The combination with a series of type-channels, of a series of type-channels receiving type from said first-mentioned channels, one of said series of channels moving along the other, pushers in said first-mentioned channels having a length greater than the type movement and having projections at their outer ends, and stops in front of the channels and rearward of the type-space engaging the pushers to hold them in the channels during movement and engaging the projections to arrest the pushers in position to prevent their contact with the receiving-channels, substantially as described.

5. The combination with a series of type-receiving channels having selecting-wards, of a series of type-distributing channels, one of said series of channels moving along the other to bring the channels into registry successively, pushers *C* in said type-distributing channels having a length greater than the type movement and having projections at their outer ends, and stops *d* in front of the channels and rearward of the type-space engaging the pushers to hold them in the channels during movement and engaging the projections to arrest the pushers in position to prevent their contact with the receiving-channels, substantially as described.

6. The combination with the composing-cylinder *B* having vertical type-channels *b* and selecting-wards 1, of the distributing-cylinder *A* having vertical type-channels *a*, pushers *C* in said distributing-channels having a length greater than the type movement and having projections at their upper ends,

and stops *d* above the channel type-space engaging the pushers to hold them in the channels during movement and engaging the projections to arrest the pushers in position to prevent their contact with the receiving-channels, substantially as described.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing witnesses.

ELBERT J. ANDREWS.

Witnesses:

K. E. DRESSER,
E. F. LINKE.