No. 614,661. Patented Nov. 22, 1898.

E. F. LINKE.

TYPE CHANNEL FOLLOWER.

(Application filed Sept. 4, 1897.)

(No Model.)

Fig. 6

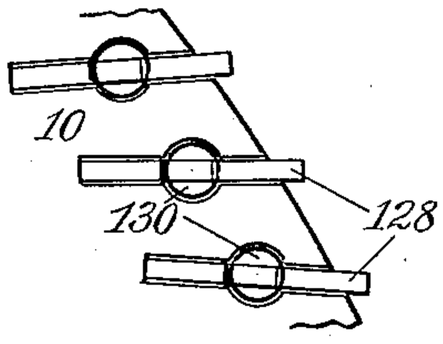

Fig. 1

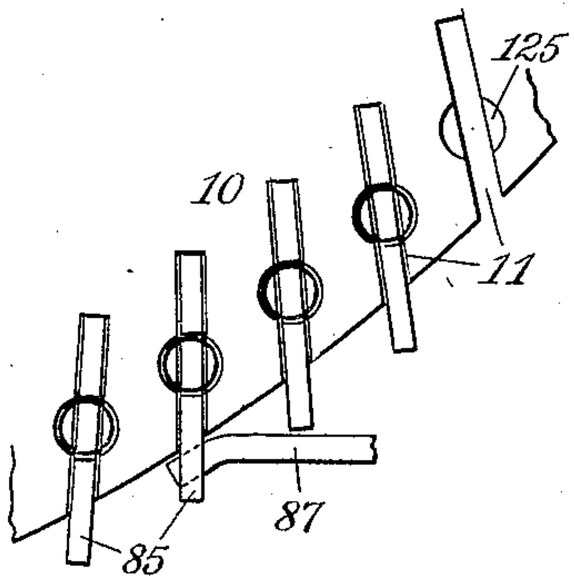

Fig. 7

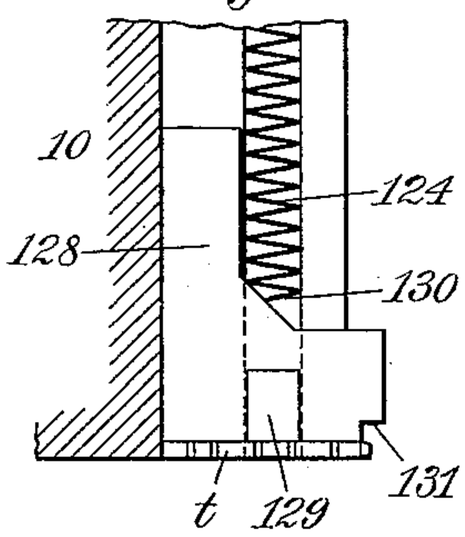

Fig. 8

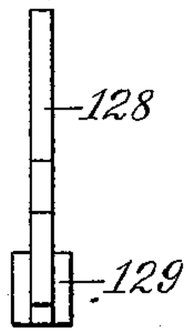

Fig. 4

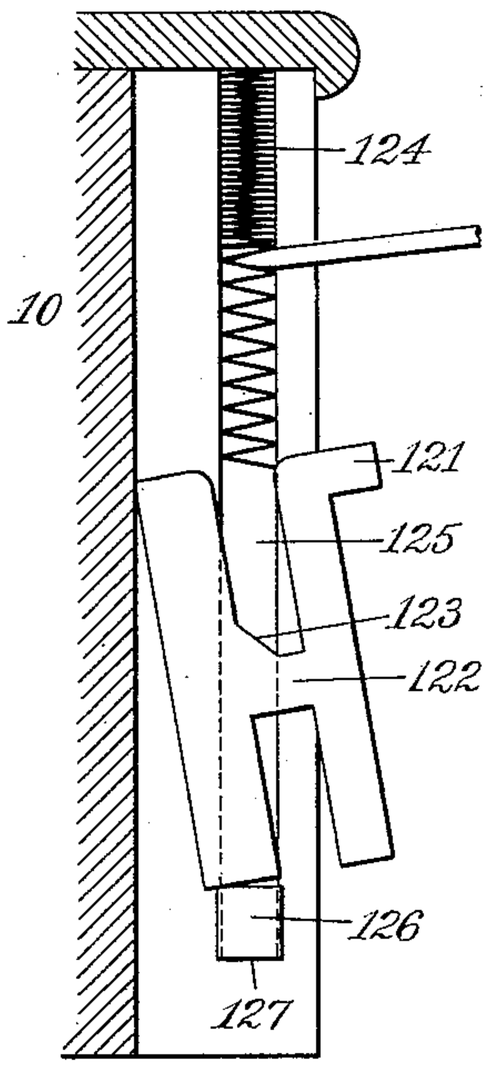

Fig. 3

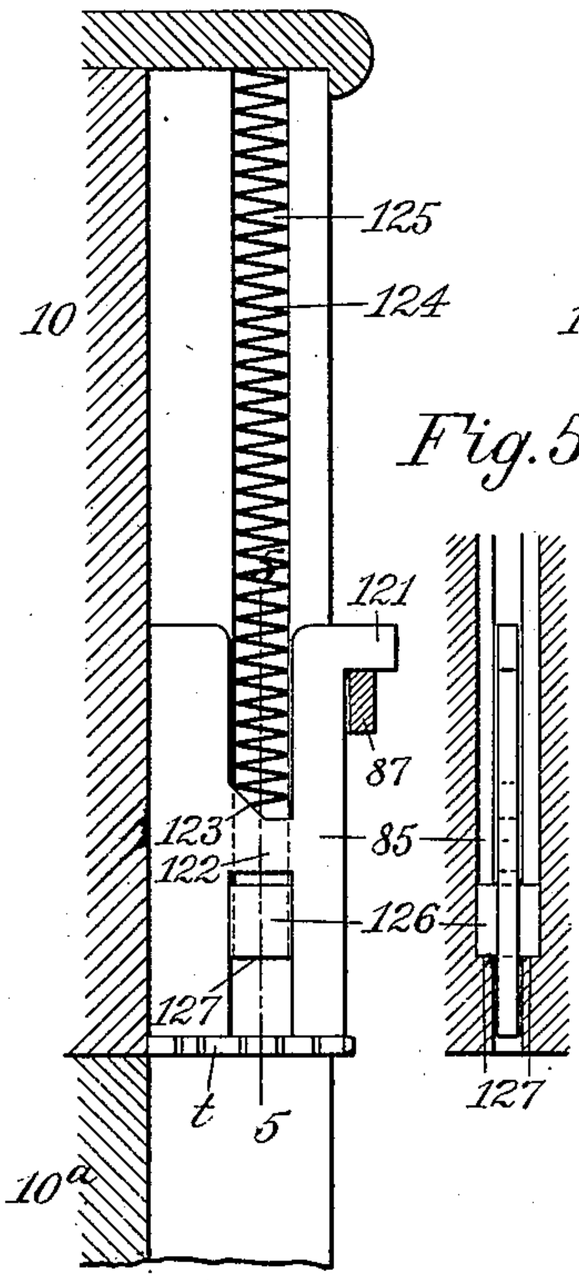

Fig. 5

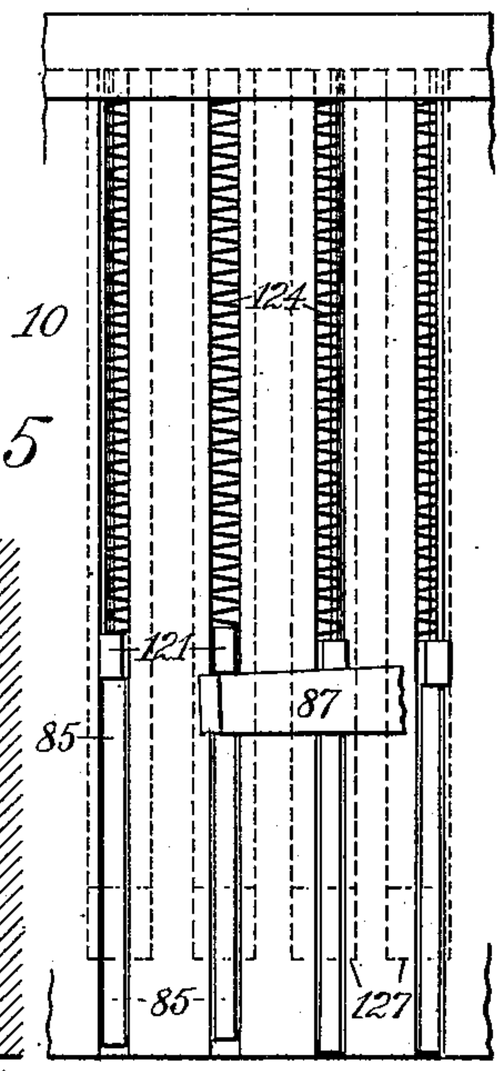

Fig. 2

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UNITED STATES PATENT OFFICE.

EMIL F. LINKE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE THORNE TYPESETTING MACHINE COMPANY, OF NEW JERSEY.

TYPE-CHANNEL FOLLOWER.

SPECIFICATION forming part of Letters Patent No. 614,661, dated November 22, 1898.

Application filed September 4, 1897. Serial No. 650,680. (No model.)

To all whom it may concern:

Be it known that I, EMIL F. LINKE, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Channel Followers, of which the following is a full, clear, and exact specification.

This invention relates to improved means for holding or pressing downwardly the type contained in the channels of machines for distributing, composing, or otherwise manipulating that type. It is herein shown and described as being applied to the channels of the distributing-cylinder of a type-composing machine of the class shown and described in the United States patent to J. Thorne, No. 372,187, of October 25, 1887.

The present invention may also in a general way be considered as being in the nature of an improvement upon devices shown in the United States patents to R. W. Nelson, No. 417,074, of December 10, 1889, and to Andrews, No. 567,212, of September 8, 1896, being adapted to perform the function of those devices in a more satisfactory manner, besides performing additional functions not contemplated for those devices.

An important object of this invention is to provide an improved form of follower for the type which may be readily removed from and replaced in the channels and which may be readily manipulated from the outside of the cylinder by mechanical means adapted to automatically raise the follower and to insert additional type in the channel.

A further object of the invention is to so shape those followers at the point of engagement with their respective springs as to press those followers backwardly against the bottoms of their channels, thereby holding the bottom surfaces of the followers, and consequently of the type engaged by them, in a parallel relation to the plane of separation between the cylinders, so as to present the type squarely to the selecting-wards of the lower cylinder.

An additional object of the invention is to provide means for imposing a stop to the downward movement of these followers when their respective channels are emptied of type, whereby the followers are prevented from resting upon and wearing away the lower or composing cylinder, and especially from wearing the type-selecting wards of the channels of that cylinder, such wearing action tending to more quickly impair the efficiency of those wards for the exercise of their function.

Figure 1 of the drawings is a view of a portion of the upper or distributing cylinder of a machine of the class shown in the patents above referred to. Fig. 2 is a side elevation projected from Fig. 1, showing the channels of the aforesaid cylinder with my improved followers contained therein. Fig. 3 is a side view in section, taken longitudinally through one of the channels of Fig. 2, showing one of my improved followers with a single piece of type beneath it. Fig. 4 is a sectional side view similar to that of Fig. 3, illustrating the method of removing one of my improved followers from the channel. Fig. 5 is a side elevation in section, taken across the channel along the line 5 of Fig. 3, showing my improved stop for the follower and the shouldered recess therefor in the cylinder. Figs. 6, 7, and 8 represent a modified form of my improved follower, Fig. 6 being a plan view similar to that of Fig. 1, and Fig. 7 is a side view similar to that of Fig. 3. Fig. 8 is an edge view of the follower shown in Fig. 7, being a view projected therefrom.

The preferred form of my improved follower 85 is best shown in Figs. 3, 4, and 5, and consists of a piece of flat metal having substantially the form of a capital letter H and having a projection 121, which extends beyond the channel 11, as shown in Fig. 3, so as to be readily engaged by means of the lifter 87, which is actuated at a suitable time to raise the follower momentarily and allow of the insertion of additional type beneath it, this means, however, forming no part of the present invention. The middle connecting portion 122 of the follower, corresponding to the cross of the letter H, is made with an inclined portion 123, against which rests the lower end of the spring 124. That spring rests in a recess 125, made in each of the walls of the channel and corresponding to the recess 6 of the Nelson patent, above referred to. The recess 125 does not, however, in my

preferred embodiment continue to the bottom of the channel, but terminates in shoulders 127, as best shown in Fig. 5, upon which rests the stop 126, the upper side of the stop supporting the cross portion 122 of the H-shaped follower at such a position that the lower bifurcated ends of the latter, which extend downwardly upon both sides of the stop into engagement with the type, are prevented from coming in contact with the top surface of the lower or composing cylinder of the machine. Therefore when the type-channel is empty the weight of the follower 85 and the pressure of its spring 124 are sustained by means of this stop instead of allowing the lower end of the follower to rest upon and wear, as heretofore, against the upper surface of the stationary or composing cylinder 10^a and the type-channel wards thereof.

The followers 85 may readily be removed from the channel in the manner illustrated in Fig. 4 by inserting a bodkin between the coils of the spring at the upper end of the follower and lifting it to the position shown in that figure, so as to compress the spring and withdraw its lower end from between the upper members of the follower, when the latter may be lifted, so as to bring its lower end out over the stop 126, thereby readily removing it. In replacing the follower the bodkin should be inserted beneath the lower end of the spring, which can readily be done in the absence of the follower.

The modified form of follower 128 shown in Fig. 8 differs from that previously described chiefly in the respect that the upwardly-extending right-hand member of the H-shaped follower 85 is omitted, the lower portion being extended so as to form a shoulder 131 for engaging with the lifter 87. It also differs in the respect that its stop 129 is attached to or made integral with the follower and in the further respect that the recess 130 for that stop and for the spring 124 extends to the bottom of the channel, thereby permitting the lower end of the follower and its stop to rest upon the lower or composing cylinder of the machine when its channel is empty of type; but inasmuch as the lower surface of the stop projects considerably on both sides of the channel it is obvious that the follower can neither drop into the channels of the lower cylinder nor appreciably wear the wards thereof. I, however, prefer the form of follower shown in Figs. 1 to 5, inclusive, inasmuch as by its use all wear of the follower upon the lower cylinder or its wards is obviated, and I am also enabled to apply the lifter 87 thereto at a point considerably above the lower end of the cylinder 10, thereby giving more room for the insertion of the type into the channel. The action of the springs against the inclined portions of the followers 85 and 128 serves to press those followers inwardly against the bottoms of their respective channels, thereby keeping the lower surfaces of the followers in a right-angular relation to the channels. The utility of this feature resides in the fact that the type are thereby held more closely at right angles to the selecting-wards of the lower cylinder, so that the distributing-nicks of the type will coincide with greater exactness with the wards of the respective channels into which the type are destined to fall, thus insuring greater certainty in the distributing operation. Furthermore, the type upon arriving at its destined channel, being thus held in a parallel relation to the plane of separation of the cylinders, has but to fall a distance equal to its own thickness to pass entirely below the aforesaid plane, thus correspondingly shortening the required intermissions in the rotation of the cylinder as compared with the interval required for the safe distribution of type, which may become tilted or inclined with relation to the plane of separation of the cylinders.

The recesses 125 and 130 and their respective stops 126 and 129 are herein shown to be of segmental cylindrical form, because that form may easily be cut out with a drill or similar tool. It is obvious, however, that this is not an essential feature, inasmuch as the recess and the stop would serve their purposes equally well if made square or of any other available form.

Although the embodiment of my invention herein shown is adapted to be employed with mechanism for automatically inserting single pieces of type *l* in the channels of the distributing-cylinder as that cylinder is intermittently rotated, it will be seen that it is equally well adapted for the insertion by hand of lines of type in the ordinary methods of distribution, it being only necessary to insert a bodkin below the follower 85 in order to lift its stop 126 with it to the desired height for the insertion of the line of type. In the similar use of the modified form of follower shown in Figs. 6, 7, and 8 it is not necessary to thus insert a bodkin, inasmuch as the stop 129, being integral with or attached to the follower, is raised with it by the application of the finger or of any convenient tool to the shoulder 128 of that follower.

I claim as my invention—

1. In a machine of the class specified, in combination with the type-containing channel thereof, provided with a longitudinal recess, a follower adapted to slide in the channel, and a spring located in the recess above the follower, and engaging with an inclined portion thereof so as to press the follower downwardly and also backwardly against the bottom of the channel, substantially as described.

2. In a machine of the class specified, in combination with the type-containing channels thereof, provided with a longitudinal recess, a follower therefor adapted to slide in the channel, provided with a projection ex-

tending beyond the channel and forming a shoulder for engagement with lifting means, and a spring located in the recess above the follower and engaging with an inclined portion thereof so as to press the follower downwardly, and also backwardly, against the bottom of the channel, thereby opposing the tendency of the lifting movement to displace the lower end of the follower.

3. A follower for type-containing channels, having substantially the form of a letter H, the upper side of the connecting member forming the cross of the H, having an outwardly-inclined seat for a spring, substantially as described.

4. A follower for type-containing channels, made in substantially the form of a letter H, having a projecting portion extending beyond the channel to form a lifting-shoulder, and having an outwardly-inclined seat for a spring.

5. In a machine of the class specified, in combination with a type-containing channel having a longitudinal recess terminating in a supporting-shoulder near the lower end of the channel, a separable stop and follower, the stop being located in a recess and resting upon the shoulder thereof, and the follower extending downwardly past the stop into engagement with the type, and having a shoulder for engaging with the stop when the channel is empty.

6. A type-containing channel, having a longitudinal recess terminating near the lower end of the channel in a supporting-shoulder, a stop adapted to rest in the recess upon the supporting-shoulder thereof, and a follower provided with bifurcations which extend downwardly on both sides of the stop into engagement with the type, and provided with a shoulder which engages with the stop when the bifurcations of the follower reach the lower end of the channel.

7. A type-containing channel, provided with segmental cylindrical recesses in each of its side walls terminating in supporting-shoulders near its lower end, a cylindrical stop fitted to slide in the recesses and to rest upon the shoulders thereof, and a follower resting upon the stop and provided with bifurcations which extend on both sides of the stop downwardly to a desired distance from the end of the channel, substantially as described.

8. In combination with a type-containing channel having segmental cylindrical recesses extending along each of its walls, and terminating near the bottom of the channel in supporting-shoulders, a cylindrical stop fitted to slide in the recesses and to rest upon the shoulders thereof, a follower having substantially the form of a letter H, the cross of which rests upon the stop with its lower member extending downwardly past the sides of the stop in a suitable relation to the end of the channel, and a spring located in the recess and extending between the upper members of the H into engagement with the cross member thereof.

9. In combination with a type-containing channel having segmental cylindrical recesses extending along each of its walls, and terminating near the bottom of the channel in supporting-shoulders, a cylindrical stop fitted to slide in the recesses and to rest upon the shoulders thereof, a follower having substantially the form of a letter H, the cross member of which rests upon the stop with the lower members extending downwardly past the sides of the stop in a suitable relation to the end of the channel, and a spring located in the recess and extending between the upper members of the H into engagement with the cross member thereof, the upper surface of that cross member being inclined forwardly so that the spring imparts a backward pressure to it, substantially as described.

EMIL F. LINKE.

Witnesses:
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W. H. HONISS.