

No. 704,479.

Patented July 8, 1902.

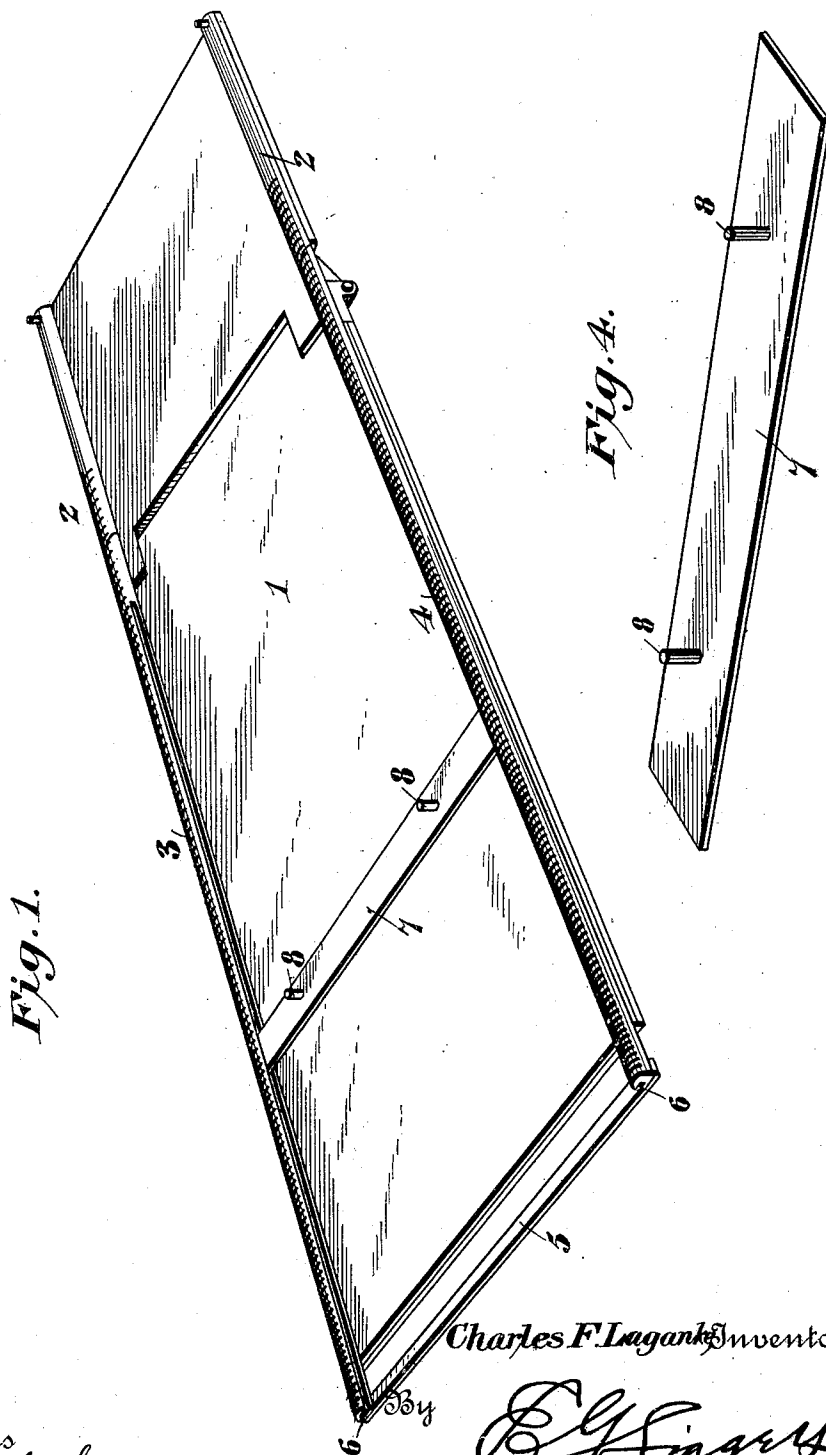
C. F. LAGANKE.

FOLLOWER PLATE FOR TYPE WRITING MACHINE PLATENS.

(Application filed June 21, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
Jas. H. McLaughlin
Louis E. Juhn

Charles F. Laganke Inventor

E. G. Siggers
Attorney

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4 Sheets—Sheet 2.

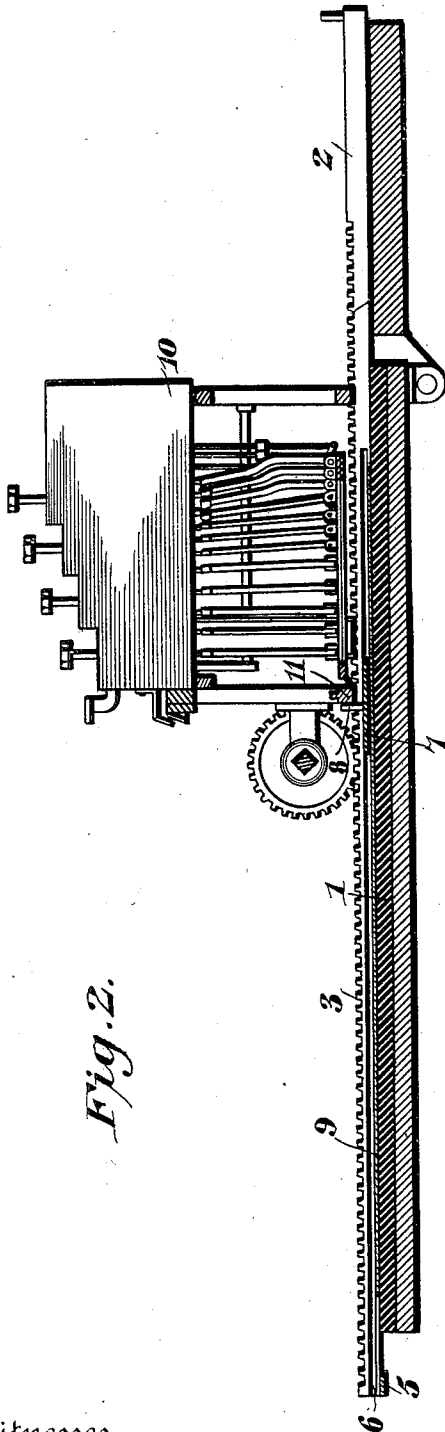


Fig. 2.

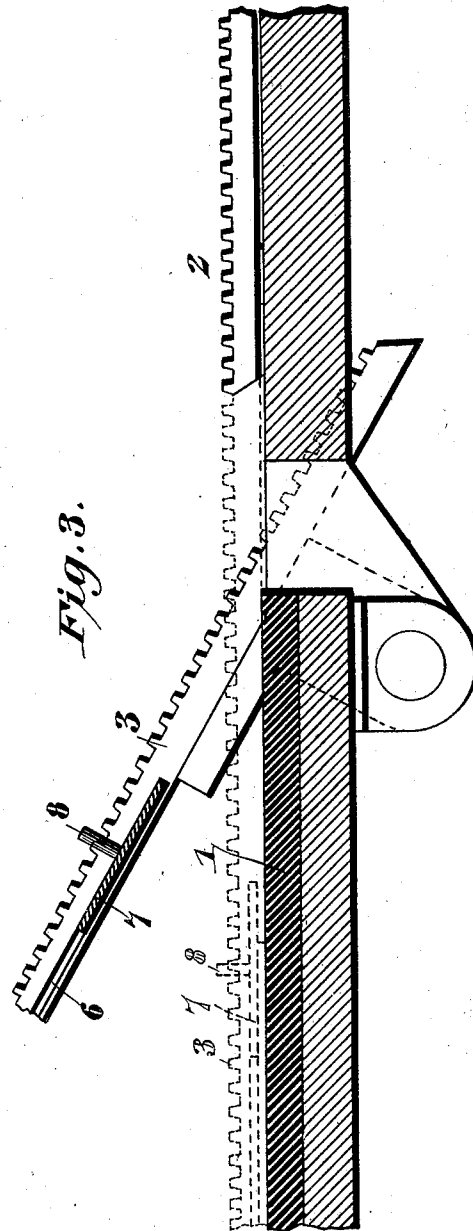


Fig. 3.

Witnesses
Jas. E. McCathran
Louis G. Juelahn

Charles F. Laganke, Inventor

By

E. G. Siggers

Attorney

C. F. LAGANKE.

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4 Sheets—Sheet 3.

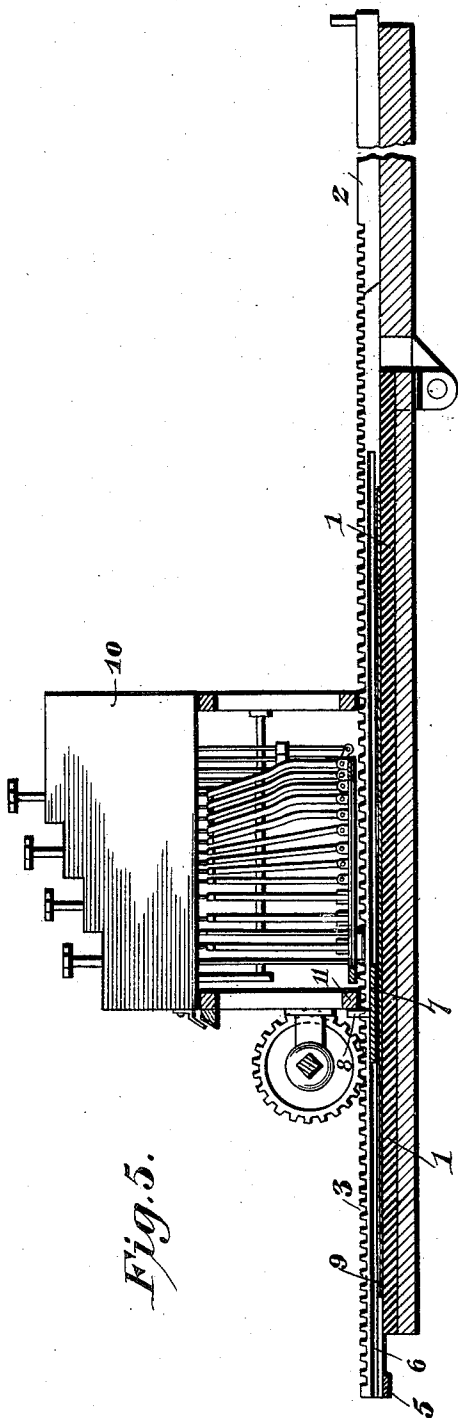


Fig. 5.

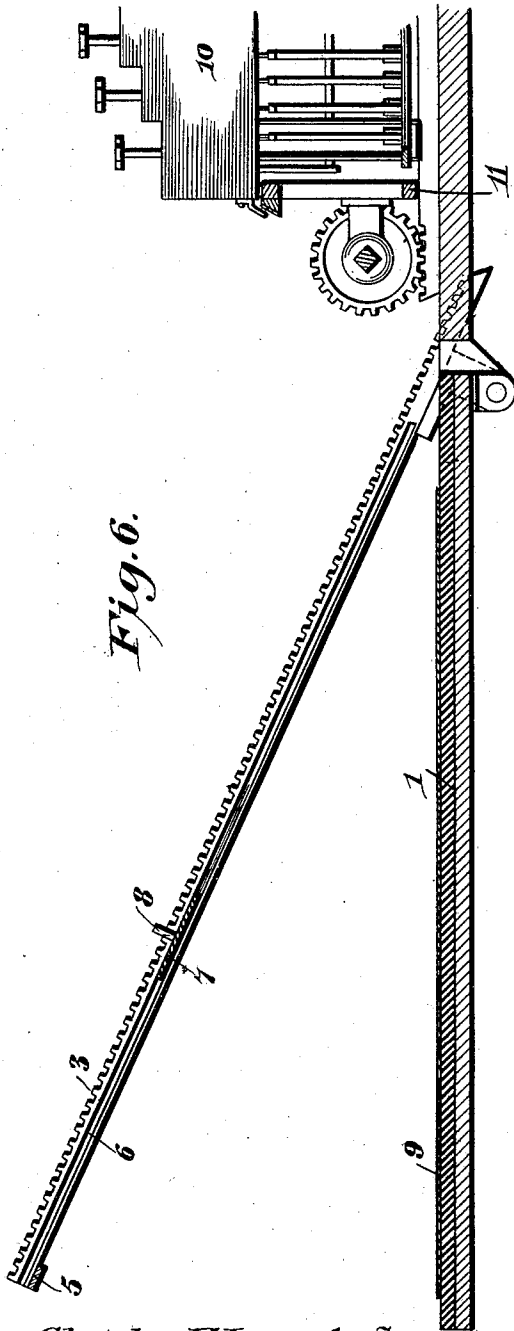


Fig. 6.

Charles F. Laganke, Inventor

By

E. G. Siggers

Attorney

Witnesses
Jas. E. McCathran
Louis E. Julihn

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4 Sheets—Sheet 4.

Fig. 1.

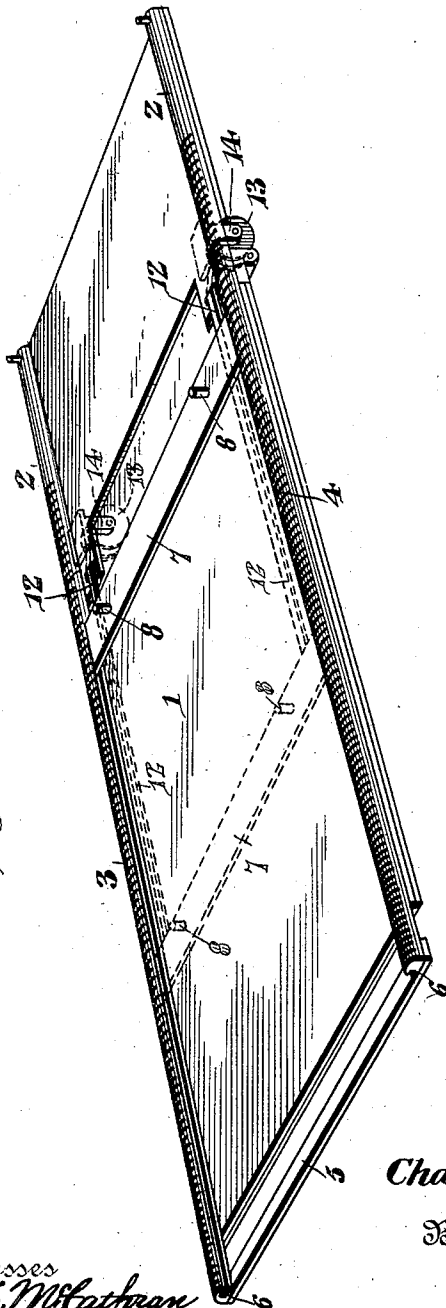
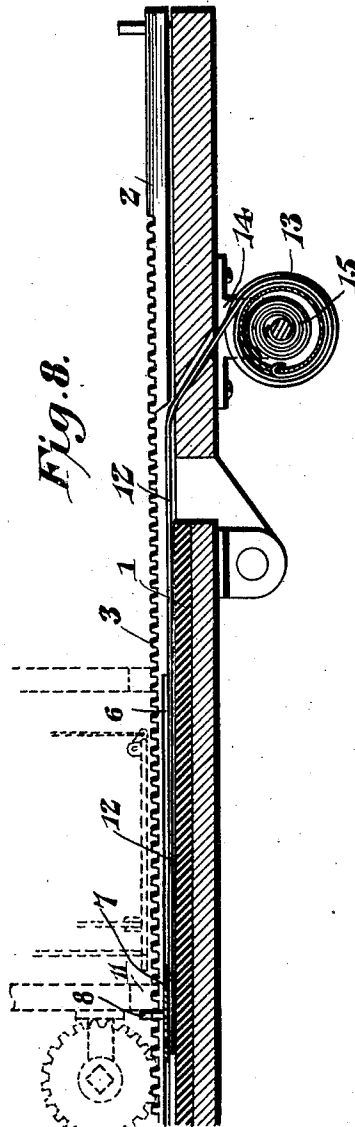


Fig. 8.



Charles F. Laganke, Inventor

By

E. G. Siggers

Attorney

Witnesses
Jas. E. McArthur
Louis G. Julihn

UNITED STATES PATENT OFFICE.

CHARLES FREDERICK LAGANKE, OF CLEVELAND, OHIO, ASSIGNOR TO THE FISHER BOOK TYPEWRITER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF DELAWARE.

FOLLOWER-PLATE FOR TYPE-WRITING-MACHINE PLATENS.

SPECIFICATION forming part of Letters Patent No. 704,479, dated July 8, 1902.

Application filed June 21, 1901. Serial No. 65,495. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FREDERICK LAGANKE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Follower-Plate for Type-Writing-Machine Platens, of which the following is a specification.

This invention relates to improvements in type-writing machines, and has special reference to the equipment of a flat platen with an improved follower-plate designed to hold the work-sheet in a smoothly-spread-out condition by bearing thereon contiguous to the printing-point.

To this end the invention contemplates the equipment of a flat platen with a follower-plate arranged to bear upon a leaf of a book or a loose sheet supported upon the platen, said plate being arranged for movement over the platen in the direction of line-spacing as the work progresses. In this broad aspect the subject-matter of the present application bears a more or less close resemblance to the follower-plate described and claimed in Patent No. 573,868 to R. J. Fisher, wherein is disclosed a loose follower-plate resting upon the platen and having at its front edge an upstanding flange designed to be engaged by the frame of the traveling printing mechanism, so that the plate will be advanced with the machine as the latter is intermittently moved by the actuation of its line-spacing mechanism. The Fisher follower-plate, however, is a mere detached element, having no positive engagement with either the platen or the machine except such as is afforded by the contact of the machine-frame with the upstanding flange and is therefore necessarily incapable of being restored to its initial position except by being lifted from the front end of the platen and replaced at the upper or rear end thereof after the printing mechanism has been moved rearwardly subsequent to the completion of the printing operation.

The object of my invention, therefore, as distinguished from the disclosure in the Fisher patent is to provide a platen with a follower-plate of the character specified having sliding engagement with the main tracks

or guides for the traveling printing mechanism, the engagement being such as to properly retain the plate over the platen in position to be fed forward by the movement of the printing mechanism. This arrangement insures the retention of the follower-plate in position for use at any time, as its engagement with the tracks constitutes it a permanent though movable part of the platen equipment.

In the concurrent application of Herman F. Eckert is disclosed a transverse web or guard-plate engaging the main tracks or guides and shiftable over the platen in the direction of line-spacing; but said plate is designed to be moved manually by the operator, and its engagement with the main tracks or guides is purposely effected in a manner to preclude the possibility of movement of the plate except when urged positively in the manner specified. In other words, the Eckert web or work-guard is frictionally held at all times against casual displacement, even when the rails are elevated. The web or plate shown in the Eckert application is not designed to be advanced by the machine or automatically, and hence the follower-plate of the present application is distinguished from Eckert by the provision of means for advancing said plate by means of the machine and is distinguished from Fisher, inasmuch as it engages the tracks or guides, and is therefore a permanent part of the platen equipment instead of being a mere detached element. In this aspect of my invention it is immaterial whether or not the follower-plate is frictionally held, as in the Eckert construction. In a further development of the invention, however, it is contemplated to provide for the automatic return of the follower-plate to its initial position, to accomplish which result said plate is disposed in loose sliding engagement with the vertically movable or swinging sections of the main tracks or guides, so as to permit the gravitation of the follower-plate to its initial position when the machine-frame has been moved to the rear end of the platen and the tracks or guides elevated to facilitate the positioning of a fresh sheet in the printing position. In this aspect of the invention,

therefore, it contemplates not only a follower-plate shiftable over the platen in the direction of line-spacing, but also the provision of means for automatically restoring the follower-plate to its initial position at the upper or rear end of the work-sheet.

The invention further consists in certain details of construction and arrangement to be hereinafter more fully described, illustrated in the accompanying drawings, and succinctly defined in the appended claims.

In said drawings, Figure 1 is a perspective view of a flat platen equipped with a follower-plate constructed and mounted in accordance with my invention. Fig. 2 is a longitudinal sectional view through a platen equipped with my invention and supporting the traveling printing mechanism, the frame of which is shown in engagement with the follower-plate. Fig. 3 is a sectional view, on a somewhat enlarged scale, of a portion of the platen, showing the main tracks or guides swung upwardly to effect the automatic return of the follower-plate; and Fig. 4 is a detail perspective view of the follower-plate detached. Fig. 5 is a view similar to Fig. 2, showing the follower-plate frictionally retained in any position to which it is moved by the forward travel of the machine-frame. Fig. 6 is a sectional view showing the subject-matter of Fig. 5 with the machine moved back and the rails elevated, the follower-plate being frictionally retained against rearward gravitation. Fig. 7 is a perspective view of a platen equipped with a follower-plate and another form of means for effecting the return of the follower-plate to its initial position, and Fig. 8 is a sectional view illustrating more in detail the structure shown in Fig. 7.

It is evident that the invention may be applied with equal facility to any type of type-writing machines embodying a flat platen over which the printing mechanism is designed to travel; but for illustrative purposes the preferred embodiment of the invention is shown in the accompanying drawings in connection with a flat plate 1 and the guide-rails 2, such as are commonly employed in connection with the Fisher book-type-writing machine now in extensive commercial use.

In carrying out the invention the swinging sections 3 and 4 of the main tracks or guides, which are usually connected at their front ends by a transverse connecting-bar 5, are provided in their inner faces with longitudinally-disposed grooves or channels 6, which receive the opposite ends of a comparatively thin follower-plate 7, disposed transversely over the platen and provided, preferably at the longitudinal center thereof, with one or more upstanding machine-engaging projections 8, preferably in the form of a plurality of short pins or studs, as shown.

It is of course understood that the work-sheet 9, which may be either the leaf of a book or a loose sheet or card, is supported

upon the platen in a flat or spread-out condition, and the traveling printing mechanism 10 is supported by the main tracks or guides in a manner to permit its travel over the platen for presentation to the work-sheet. Under ordinary conditions there is some slight tendency of the leaf or sheet to twist or bulge away from the platen, and it is for the purpose of insuring the smooth flat condition of the sheet at the printing-point that my improved follower-plate is provided. While the opposite ends of the plate are engaged with the swinging sections of the main tracks or guides, still the plate proper is substantially in contact with the writing-surface and is therefore capable of being disposed upon the work-sheet in a manner to hold the latter perfectly flat and smooth at the printing-point, adjacent to which point the rear edge of the plate is located when the lower front bar 11 of the traveling machine-frame is in contact with the machine-engaging projections 8, as shown in Fig. 2. Therefore as the machine is advanced in the direction of line-spacing the follower-plate is moved over the platen in the same direction and constantly maintains a position in advance of the printing-point.

When the printing operation has been completed, the traveling printing mechanism is moved to the rear end of the platen, and the swinging rails or guides are raised for the purpose of removing the printed sheet and replacing the same with a blank sheet or card. In that embodiment of the invention illustrated in the first four figures of the drawings the engagement of the plate with the tracks or guides is such as to present little or no frictional resistance to the movement of the plate, and the latter will automatically slide back or gravitate to its initial position as soon as the tracks or guides have been sufficiently elevated. The follower-plate will thus be repositioned without special attention thereto on the part of the operator. Obviously, however, the return of the follower-plate to its initial position after the printing operation might be effected in a variety of ways—as, for instance, by the employment of a spring to positively return the plate, as shown in Figs. 7 and 8, instead of permitting it to gravitate, as in that embodiment of the invention illustrated in the first four figures of the drawings, or where gravity is depended upon the vertically-movable frame composed of the main tracks or guides or other supporting members for the plate might be automatically elevated, in either of which events the same result—to wit, the automatic return of the follower-plate—would be effected.

I have not illustrated mechanism for elevating the main tracks or guides automatically, because such is the invention of Charles F. Iaganke and Ralph D. Stackpole and is described and illustrated in their concurrent application, Serial No. 52,213, filed March 21, 1900.

In Figs. 5 and 6 of the drawings I have illustrated the follower-plate as being frictionally retained by the rails—that is to say, the plate is fitted in the grooves in a manner which will insure the frictional retention of said plate at any point to which it is moved by the forward travel of the machine-frame. This arrangement is particularly advantageous when it is desired to employ the leaf of a book as a copy-sheet over which the carbon element or web is led. In certain classes of work it is desirable to employ comparatively small work-sheets—as, for instance, bills—and instead of making separate copies for each bill the leaf of a book is employed as a copy element for a number of such work-sheets. In this class of work a small work-sheet—as, for instance, a bill—is imposed upon a carbon element and the several items are entered. As the machine progresses in the direction of line-spacing the follower-plate is automatically advanced. Thus when a bill has been completed a carbon copy thereof will have been entered upon the page and the follower-plate will indicate the location of the next line of writing without necessitating the lifting of the carbon element to facilitate the accurate positioning of the next work-sheet. In other words, when a bill is completed the follower-plate, frictionally retained by the rails, will indicate the location of the last line of the carbon entry on the book, and the operator may therefore elevate the rails and insert a new sheet, the upper edge of which is accurately positioned with the aid of the follower-plate, as it is evident that the position of the follower-plate will not be changed when the rails are moved away from the platen. Another use of the follower-plate in this connection is to facilitate the drawing of a line under each carbon copy when entered on the page—that is to say, when a bill has been type-written and a copy made on the page of the book the follower-plate may be used as a straight-edge to guide a pencil or other blunt instrument drawn across the carbon element to transfer a line to the page of the book. These lines are entered to avoid confusion in reading the sales-records and constitute a convenient division for the entries, so that the latter will stand out prominently and without confusion with relation to each other on the page of the book.

In Figs. 7 and 8 I have illustrated that form of my invention which contemplates the automatic retraction of the follower-plate through the medium of a spring or springs. In this construction the plate 7 is provided with the machine-engaging projections 8 and is loosely guided by the machine-rails, as in that form of the invention illustrated in Figs. 1 to 4, inclusive. Instead, however, of depending upon the rearward gravitation of the plate the latter is attached in any suitable manner to a retracting device or mechanism, the illustrated form of which comprehends a pair of tapes 12, secured to the plate 7 and wound

upon rotary drums 13, supported in suitable brackets 14, pendent from the under side of the platen. Within these drums, which are of hollow form, are mounted springs 15, having their opposite ends attached to the drums and to fixed parts, respectively, and arranged to be wound by the advance of the follower-plate as the printing mechanism is moved over the platen in the direction of line-spacing. The power thus stored is exerted to rotate the drums in the direction of the arrow in Fig. 8 when the plate is released by the rearward movement of the machine, and thus while the advance of the follower-plate is effected automatically by the machine as the latter is advanced over the work-sheet the retraction of said plate will be automatically effected by means of the retracting mechanism described. It should be noted that when, as in that form of the invention last described, positive means are employed for drawing the plate back to its initial position the swinging rail-sections are no longer essential to the retraction of the plate, and the plate supporting and guiding means may therefore be rigidly associated with the platen.

In drawing the claims I shall recite “means for effecting the return of said member to its initial position,” in combination with the shiftable work-engaging member, and also “means independent of the printing mechanism for effecting the automatic movement of said member.” The term “means” as thus defined is intended to comprehend any means for effecting the movement of the plate 7, whether said means be comprehended by a spring for positively urging the plate automatically when the machine is moved back or by the movable tracks 3 and 4, which when elevated to the position shown in Fig. 3 effect the automatic gravitation of the follower-plate to its initial position.

Therefore, while the present embodiment of the invention is believed at this time to be preferable, I desire to reserve the right to make such changes, modifications, and variations thereof as may be necessary in adapting the device for use in various connections or may be suggested by experience and experiment, provided such variations are embraced within the scope of the protection prayed.

What I claim is—

1. In a type-writing machine, the combination with a flat platen for the support of a work-sheet, of a work-engaging member shiftable over the platen, and means for effecting the return of said member to its initial position.

2. In a type-writing machine, the combination with a flat platen to support the work-sheet, of a work-engaging member shiftable over the platen in the direction of line-spacing, and means for effecting the return of said member to its initial position at the rear end of the platen.

3. In a type-writing machine, the combination with a flat platen to support the work-

sheet, and designed to support traveling printing mechanism, of a work-engaging member shiftable over the platen, and means, independent of the printing mechanism, for effecting the automatic movement of said member.

4. In a type-writing machine, the combination with a flat platen to support the worksheet, of a work-engaging member shiftable over the platen, and means for effecting the automatic return of said member to its initial position.

5. In a type-writing machine, the combination with a flat platen to support the worksheet, and traveling printing mechanism movable over the platen, of a follower-plate disposed over the platen for advance with the printing mechanism, and means independent of the printing mechanism for effecting the return of the follower-plate to its initial position.

6. In a type-writing machine, the combination with a flat platen, and the tracks or guides for the traveling printing mechanism, of a follower-plate slidably engaging said tracks or guides, and having means disposed for engagement with the traveling printing mechanism to effect the movement of the follower-plate through the movement of said printing mechanism.

7. In a type-writing machine, the combination with a flat platen, and the swinging tracks or guides for the traveling machine-frame, of a follower-plate having loose sliding engagement with said tracks or guides, whereby said plate will gravitate to its initial position when the tracks or guides are raised, and machine-

engaging means carried by said follower-plate and disposed in the path of movement of the traveling machine-frame.

8. In a type-writing machine, the combination with the flat platen, and the swinging tracks or guides for the traveling printing mechanism, of a follower-plate having loose sliding engagement with said tracks or guides, whereby said plate will gravitate to its initial position when the tracks or guides are raised, and machine-engaging projections located above the top surface of the follower-plate.

9. In a type-writing machine, the combination with a flat platen, and the swinging tracks or guides for the traveling machine-frame, of a follower-plate having loose sliding engagement with said tracks or guides, whereby said plate will gravitate to its initial position when the tracks or guides are raised.

10. In a type-writing machine, the combination with a flat platen, and the tracks or guides for the traveling printing mechanism, of a follower-plate slidably engaging said tracks or guides and movable away from the writing-surface when said tracks or guides are elevated, and means for effecting an engagement of the follower-plate with the traveling printing mechanism to insure the advance of the follower-plate in the direction of line-spacing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES FREDERICK LAGANKE.

Witnesses:

R. J. FISHER,

A. R. WARNER.