





# UNITED STATES PATENT OFFICE.

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## WORK-GUARD FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 747,953, dated December 29, 1903.

Application filed December 5, 1900. Serial No. 38,806. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN F. ECKERT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Work-Guard for Type-Writing Machines, of which the following is a specification.

This invention relates to type-writing machines, and has special reference to means for protecting and also for assisting in the holding of a card, sheet, page, or other piece of work in the printing position.

To this end the invention primarily contemplates a work-guard for type-writing machines adapted to engage with the top or bottom edge or other portion of the work to serve as a protector therefor during the printing operation, as well as an auxiliary holder to assist in holding the work in the printing position.

A further object of the invention is to provide a work-guard of the character specified possessing special utility with book and loose-sheet work in connection with book type-writing machines of that type embodying a flat platen and a traveling printing mechanism working thereover. With machines of this character the invention may serve to clamp or grip the top edge or other portion of the sheet or other piece of work to prevent shifting or slipping thereof, besides serving chiefly to protect the edge of the work from contact with the traveling frame of the machine or any of its mechanism.

Another object of the invention is to provide a novel arrangement and mounting of the work-guard for the top edge or other portion of the work which shall be movable or shiftable in the direction of line-spacing, thus permitting of the sheet, page, or other work being protected and held by the guard at any point on the platen within the printing area.

The invention also contemplates an arrangement of work-guard possessing special value in billing or indexing work where the bills or cards are being printed and duplicate impressions transferred to an underlying page or sheet and the bills, cards, or other pieces of work are variously positioned with respect to said underlying page or sheet.

In a broad aspect the invention has for its

object to provide, in connection with suitable holding means, a work-guard cooperating with said means and adjustable to any position within the printing area; also, to provide a work-guard of any form which shall be adjustable in the direction of line-spacing, while at the same time providing for protecting, as well as holding, an edge or other portion of the work. In a restricted application the invention has for its object to provide a work-guard associated with the flat platen and guide-rails of a book type-writing machine and shiftable to any position over the platen in the direction of line-spacing, but principally designed for engagement with the top edge of the work.

With these and many other objects in view, which will be readily apparent to those familiar with the art as the nature of the invention is better understood, the same consists in the novel construction, combination, and relation of parts hereinafter more fully described, illustrated, and claimed.

While the work-guard attachment is necessarily capable of general application and is susceptible to a variety of modifications both as to the form thereof and its relation to the other parts of the type-writing machine, still for illustrative purposes there is shown a practical embodiment of the invention in the drawings, in which—

Figure 1 is a plan view of the platen and guide-rails of a book type-writing machine, showing the work-guard associated therewith in the manner contemplated by the present invention. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail in perspective of one form of work-engaging member or clamp which has been found useful in carrying out the invention. Fig. 4 is a cross-sectional view of the same. Fig. 5 is a detail in perspective of a modification, showing the work-engaging member or clamp fitted with auxiliary bearing-springs to provide a positive grip for the work.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

The present invention contemplates the idea of utilizing, in connection with a type-writing machine, a work-guard adjustable in



the direction of line-spacing and arranged to protect, as well as to assist in holding, the sheet or other work at any point within the printing area. This idea may be embodied  
 5 in a variety of structures and utilized in connection with different types of machines, although the same possesses special utility in connection with the flat platen of a book  
 10 type-writing machine. Hence for illustrative purposes one embodiment of the invention is shown in the drawings in connection with the flat platen and guide-rails of a book  
 15 type-writing machine, said platen and guide-rails being designated, respectively, by the numerals 1 and 2. No claim is made in the present application to the mounting and arrangement of the platen and guide-rails, although there is preferably shown the same  
 20 construction and relation of parts utilized in connection with the Fisher book type-writing machines such as are now upon the market.

In adapting the invention to a flat-platen type-writing machine there is employed a work-engaging member 3, which is arranged  
 25 for adjustment over the platen 1 in the direction of line-spacing. This work-engaging member may be of any desirable form and constructed of any suitable material; but for illustrative purposes it is shown in the draw-  
 30 ings as consisting of a web or plate, preferably of a sufficient length to extend across the interval between its oppositely-located guide-rails 2, upon which the printing mechanism is mounted to travel in the usual man-  
 35 ner. The said web or plate 3, (shown in the drawings,) may be mounted for adjustment in connection with any suitable holding means or both holding and guiding means therefor without departing from the spirit  
 40 of the invention. Various mechanical expedients for securing these results will naturally suggest themselves to a mechanic; but a construction which may be resorted to is shown in the drawings and consists in provid-  
 45 ing the guide-rails 2, at the inner sides thereof, with longitudinally-extending grooves 4, which slidably receive the opposite end edges of the work-engaging member or web 3, and therefore constitute both holding and guid-  
 50 ing means for the same. The slidable engagement of the end edges of the work-engaging member or web 3 within the grooves 4 can be made sufficiently snug to provide for the frictional retaining of said member or  
 55 web in an adjusted position, while at the same time not interfering with a shiftable or sliding movement to any desired point within the printing area of the platen.

In the form of work-engaging member or  
 60 clamp 3 shown in the drawings the same is made sufficiently thin, so as to have no interfering projection above or below the plane of the guide-rails, and therefore presents no obstruction to the operation of the machine  
 65 and the movement thereof over the guide-rails 2. If found desirable, thin clamping edges may be provided upon opposite sides of

the member or web by forming longitudinal edge bevels 5, although this and other expedients in the structural details will be left  
 70 to the judgment of the manufacturer. However, in the form of the invention being described it may be found desirable to provide the work-engaging member or web 3, at the opposite ends thereof, with slide arm exten-  
 75 sions 6, which provide an extended bearing for the member or web and the holding and guiding grooves 4 therefor.

Under some circumstances it may be found sufficient to provide the work-engaging mem-  
 80 ber or web 3 with a flat gripping or contact surface at the under side thereof, while under other conditions it may be found desirable to mill or roughen such surface, so as to engage with the sheet or other work with  
 85 sufficient firmness to materially assist in holding the same against slipping. It may also be found desirable to resort to such devices as auxiliary bearing-springs 7, fitted to the under side of the engaging member or web,  
 90 contiguous to the edge thereof, and adapted to provide a positive grip for the work when the member or web is engaged therewith.

Various other modifications along the lines indicated will readily suggest themselves  
 95 without further elaboration thereof and without illustration of other modifications, as it will be understood from the foregoing that the essential feature of the invention resides in the mounting of the work-guard in such a  
 100 way as to permit of the same being adjustable in the direction of line-spacing and adapted to be arranged upon the work at any point within the printing area of the platen. Furthermore, in the construction described  
 105 the work-engaging member is carried by the guide-rails, so that when these rails are lifted from the platen or work the said member or web will be carried therewith to a position out of the way, thus permitting a sheet or  
 110 other piece of work to be readily removed from the platen or placed in position thereon—that is to say, the work-engaging member is mounted to be operated by the rails in the movement of the latter toward and from the  
 115 platen, it being obvious that these rails, connected at their front ends by a bar and hinged at their rear ends, as shown in the drawings, constitute a supporting-frame for the writing mechanism. The work holder or guard is  
 120 therefore arranged to automatically engage and hold the sheet upon the platen and is capable of being shifted in the direction of line-spacing.

It will be observed that the use of the work-  
 125 guard herein described in connection with the flat platen of a book type-writing machine possesses many advantages by reason of its adjustable or shiftable mounting and, as already indicated, is of special value in work  
 130 where bills or cards are being printed and duplicate impressions transferred to an underlying page or sheet upon which the work elements are successively disposed in differ-



ent positions. Various other kinds of book and loose-sheet work can be carried out with better facility, accuracy, and neatness by the employment of a work-guard embodying the novel features of the present invention. In some cases the work-guard is chiefly designed for engagement with the top edge of the bill, sheet, or other piece of work, so as to not only assist in holding the same, but principally to act in the capacity of protector for such work from contact with the traveling machine-frame or any of its mechanism. It will be obvious, however, that the said guard could be shifted to serve as a protector for the bottom edge of the work, or by the employment of a pair of the guards both the bottom and top edges of the work may be protected and held in the manner explained. It will also be obvious that should the conditions of the work require it the guard could be shifted to any point thereover within the printing area.

From the foregoing it is thought that the construction, use, and many advantages of the herein-described work-guard will be readily apparent without further illustration or description, as it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a type-writing machine, the combination with a flat platen, of an open supporting-frame, a flat transverse plate movable lengthwise of the frame in close proximity to the platen, and a machine supported by the frame and mounted to travel freely over the platen from end to end thereof without interference with the plate.

2. In a type-writing machine, the combination with a flat platen, and longitudinal holding means, of a flat transverse plate slidably engaging the holding means and freely movable over the platen in the direction of line-spacing, and a machine mounted to travel freely over the platen from end to end thereof without interference with the plate.

3. In a type-writing machine, the combination with the platen and the main tracks or guides, of a work-guard coöperating with the tracks or guides and extending entirely across the interval between the same, said work-guard being shiftable over the platen in the direction of line-spacing.

4. In a type-writing machine, the combination with the flat platen and the main tracks or guides for the traveling machine, of a work-engaging member having sliding connection with and held in position over the platen by said tracks or guides and disposed to rest upon the work to clamp the same against the upper surface of the platen.

5. In a type-writing machine, the combina-

tion with the flat platen and the main tracks or guides for the traveling machine, of a work-guard arranged over the platen and engaging with and movable along said tracks or guides in the direction of line-spacing.

6. In a type-writing machine, the combination with the flat platen and the main tracks or guides for the traveling machine, of a guard comprising a transverse work-engaging member slidably engaging the tracks or guides and movable away from the platen therewith, said guard being movable over the platen in the direction of line spacing.

7. In a type-writing machine, the flat platen, the guide-rails provided with guiding-grooves, and an engaging web for the work extending transversely across the interval between the rails, over the platen and slidably engaging at its opposite ends in said guiding-grooves.

8. In a type-writing machine, the combination with the flat platen and the tracks or guides, of a work-guard for the sheet consisting of a clamping web or plate disposed between the tracks or guides and provided with a bearing-spring upon the under surface thereof.

9. In a type-writing machine, the combination with the flat platen and the tracks or guides, of a work-guard for the sheet consisting of a clamping web or plate disposed between the tracks or guides and provided with a plurality of bearing-springs upon the under surface thereof.

10. In a type-writing machine, the combination with the stationary platen and a movable supporting-frame for the writing mechanism, of a work-guard for the sheet consisting of a clamp web or plate provided with a yielding contact-surface and carried by the frame.

11. The combination with a flat platen to support the sheet, of a frame supporting the writing mechanism and arranged for separation from the platen, and a work-holder mounted on and bodily movable with said frame and arranged to automatically engage and hold the sheet upon the platen.

12. The combination with a flat platen to support the sheet, of a frame supporting the writing mechanism and arranged for separation from the platen, and a work-holder shiftable with respect to said frame and operated thereby, said work-holder being arranged to automatically engage and hold the sheet upon the platen and capable of being advanced over the platen in the direction of line-spacing.

13. In a type-writing machine, the combination with the flat platen to support the sheet, of a frame supporting the writing mechanism and capable of movement away from the platen, and a work-clamp mounted on and bodily movable with said frame and arranged to automatically engage and hold the sheet upon the platen.

14. In a type-writing machine, the combination with the flat platen to hold the sheet, of



a frame supporting the writing mechanism and arranged for separation from the platen, and a work-holder operated by said frame and having a yielding work-engaging portion, 5 said work-holder being arranged to automatically engage and hold the sheet upon the platen.

15. In a type-writing machine, the combination with the flat platen to support the sheet, 10 of a frame supporting the writing mechanism and arranged for separation from the platen, and a work-holder shiftable over the platen in the direction of line-spacing and operated by the frame to automatically engage and 15 hold said sheet upon the platen.

16. In a type-writing machine, the combination with a flat platen, and longitudinal guiding means, of a transverse work-guard engag-

ing said means and movable toward and from the platen and over the writing-surface of the 20 platen in the direction of line-spacing when in its normal position.

17. In a type-writing machine, the combination with a flat platen, and guiding means mounted thereon, of a transverse work-guard 25 engaging the guiding means and shiftable over the platen in the direction of line-spacing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 30 the presence of two witnesses.

HERMAN F. ECKERT.

Witnesses:

VICTOR C. LYNCH,  
L. J. HALLE.