No. 753,190. PATENTED FEB. 23, 1904.

G. W. DONNING.
ADJUSTABLE PLATEN.
APPLICATION FILED FEB. 10, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

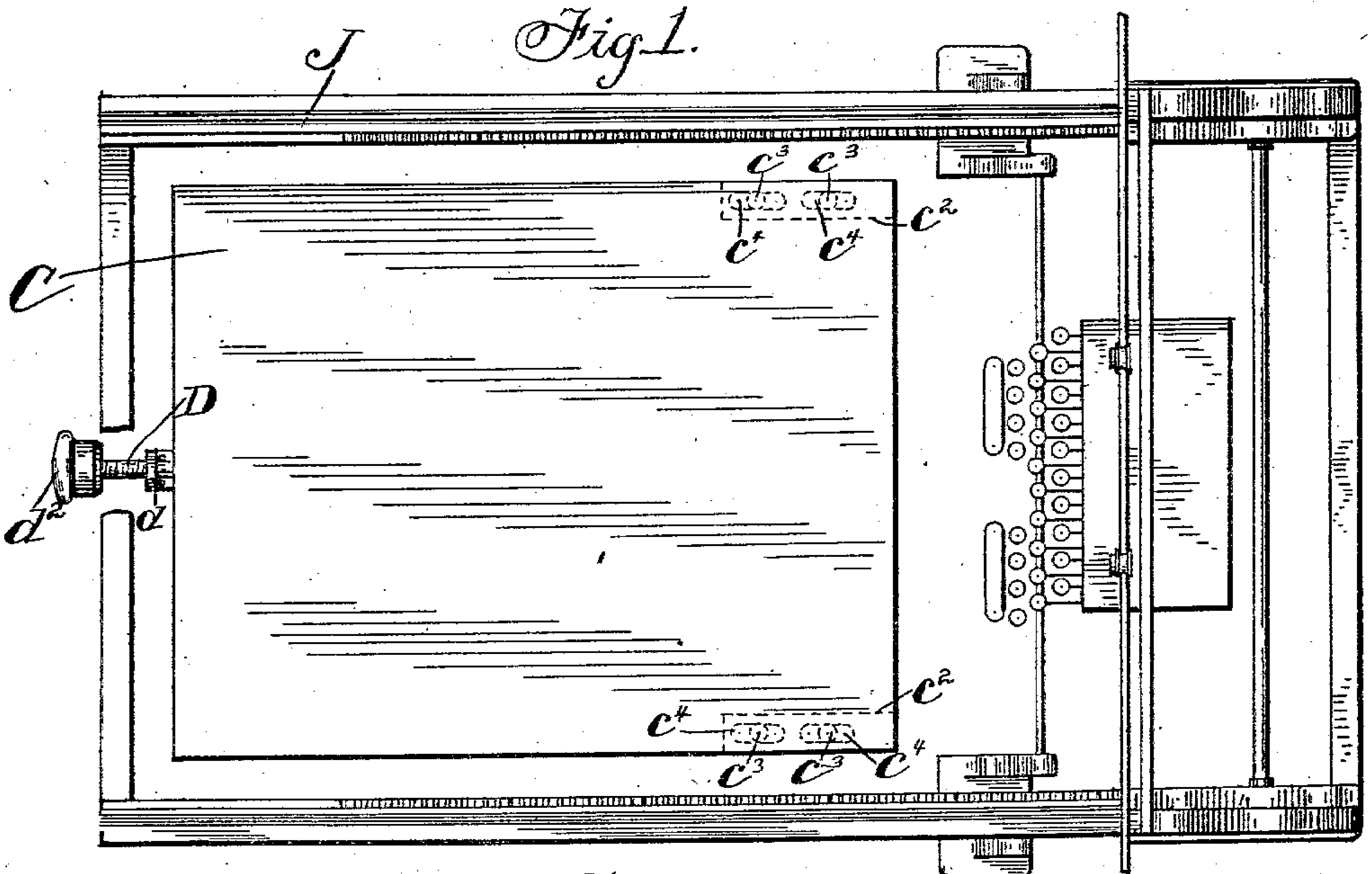


Fig. 2.

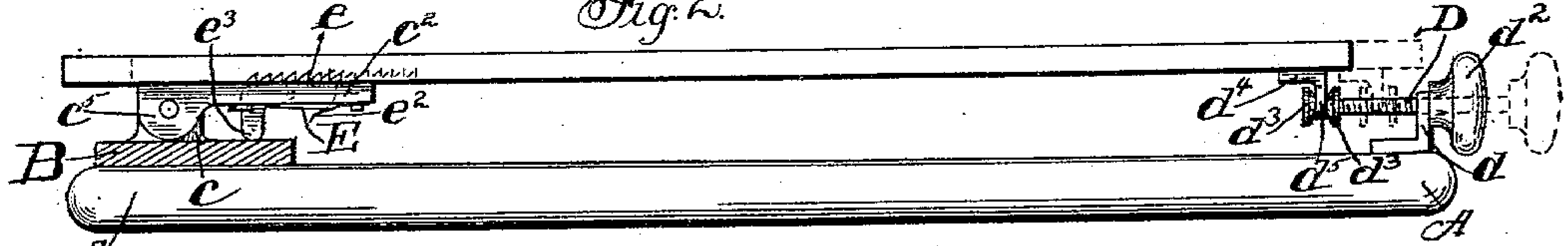


Fig. 3.

Fig. 5.

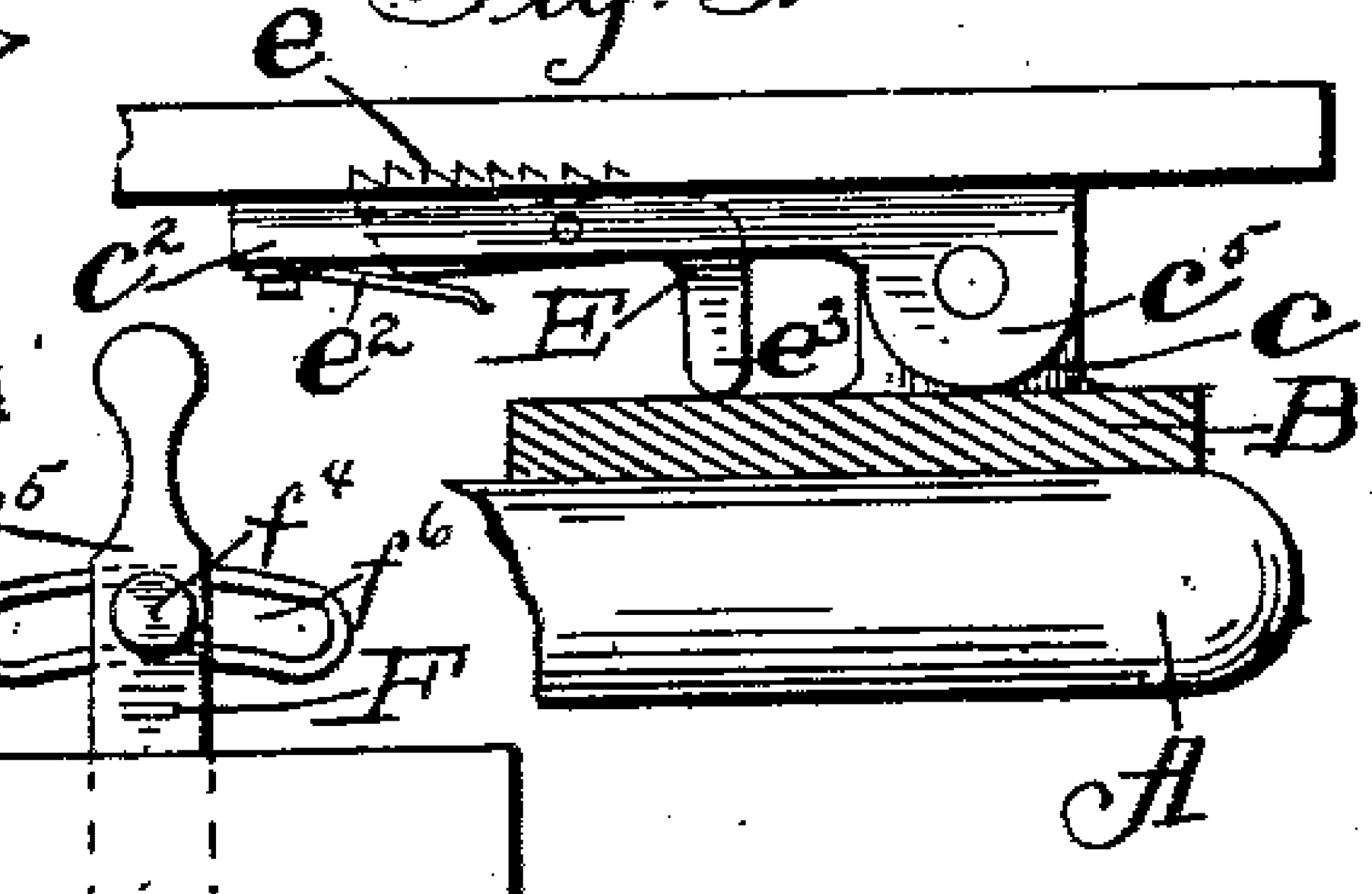


Fig. 4.

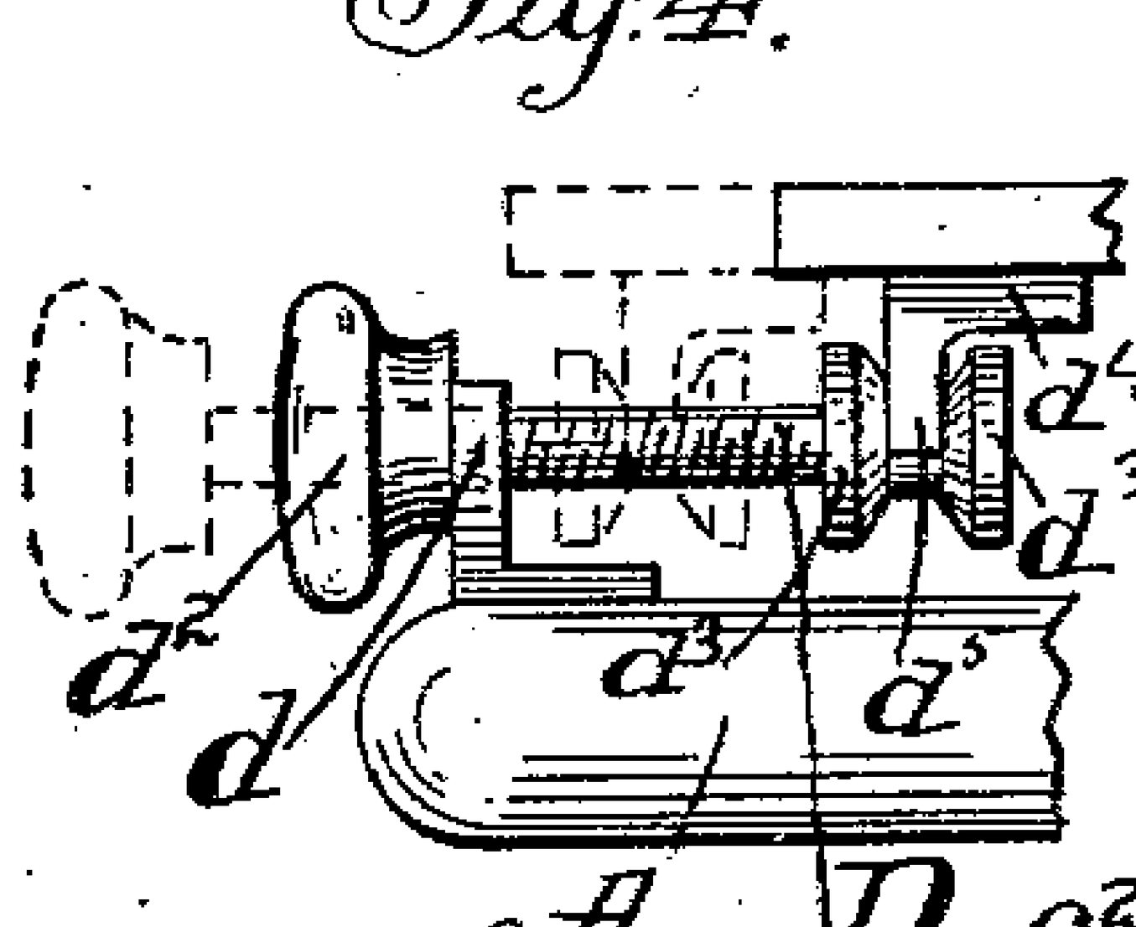
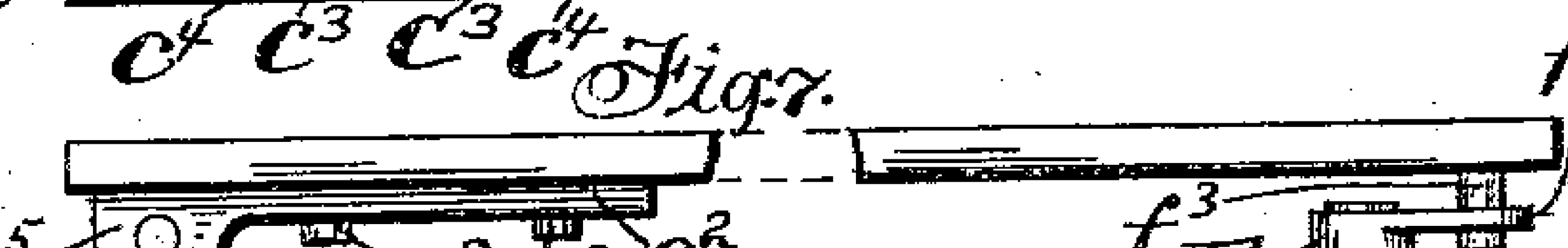


Fig. 6.

Fig. 7.



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ADJUSTABLE PLATEN.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 8.

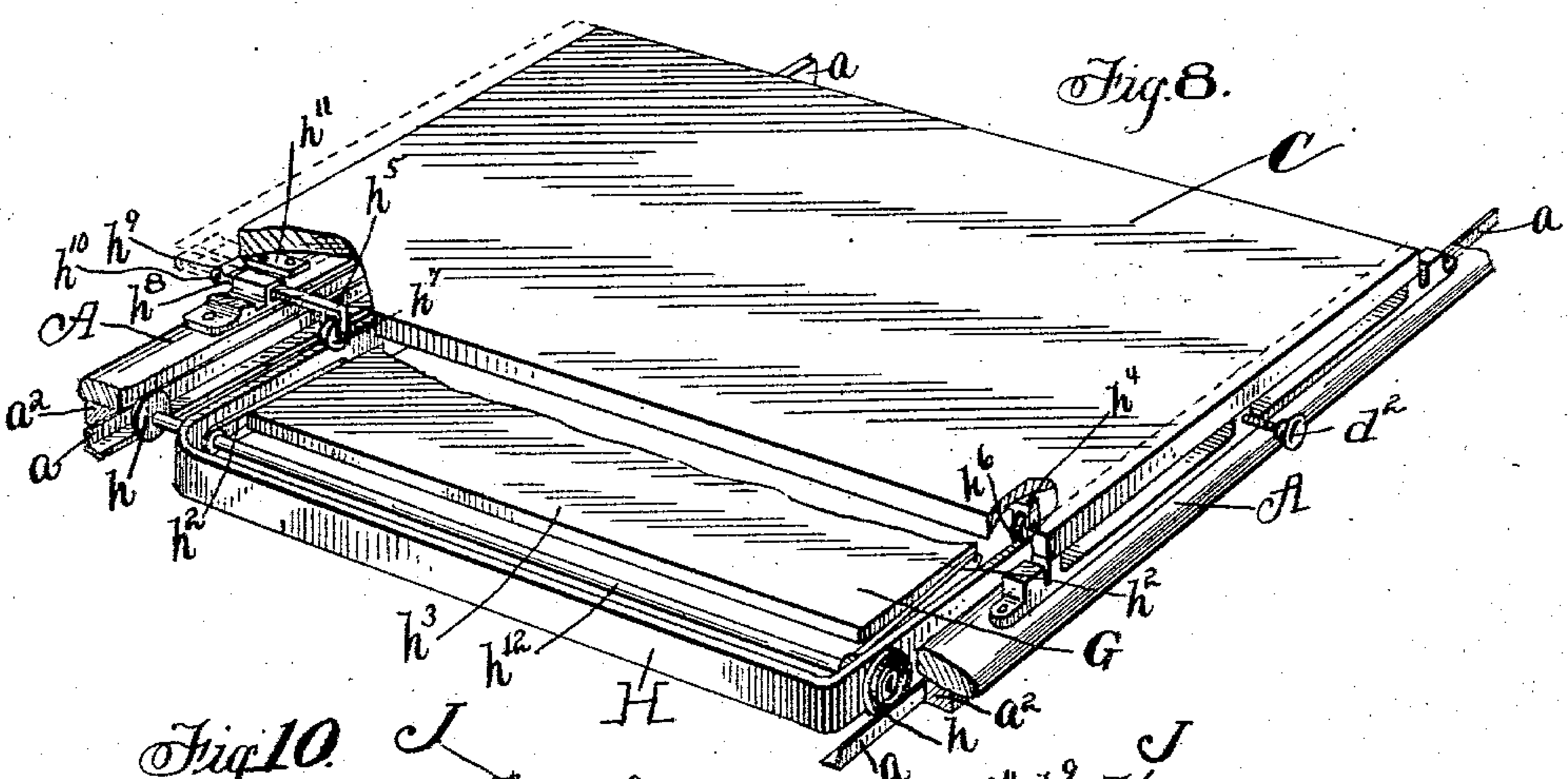


Fig 10.

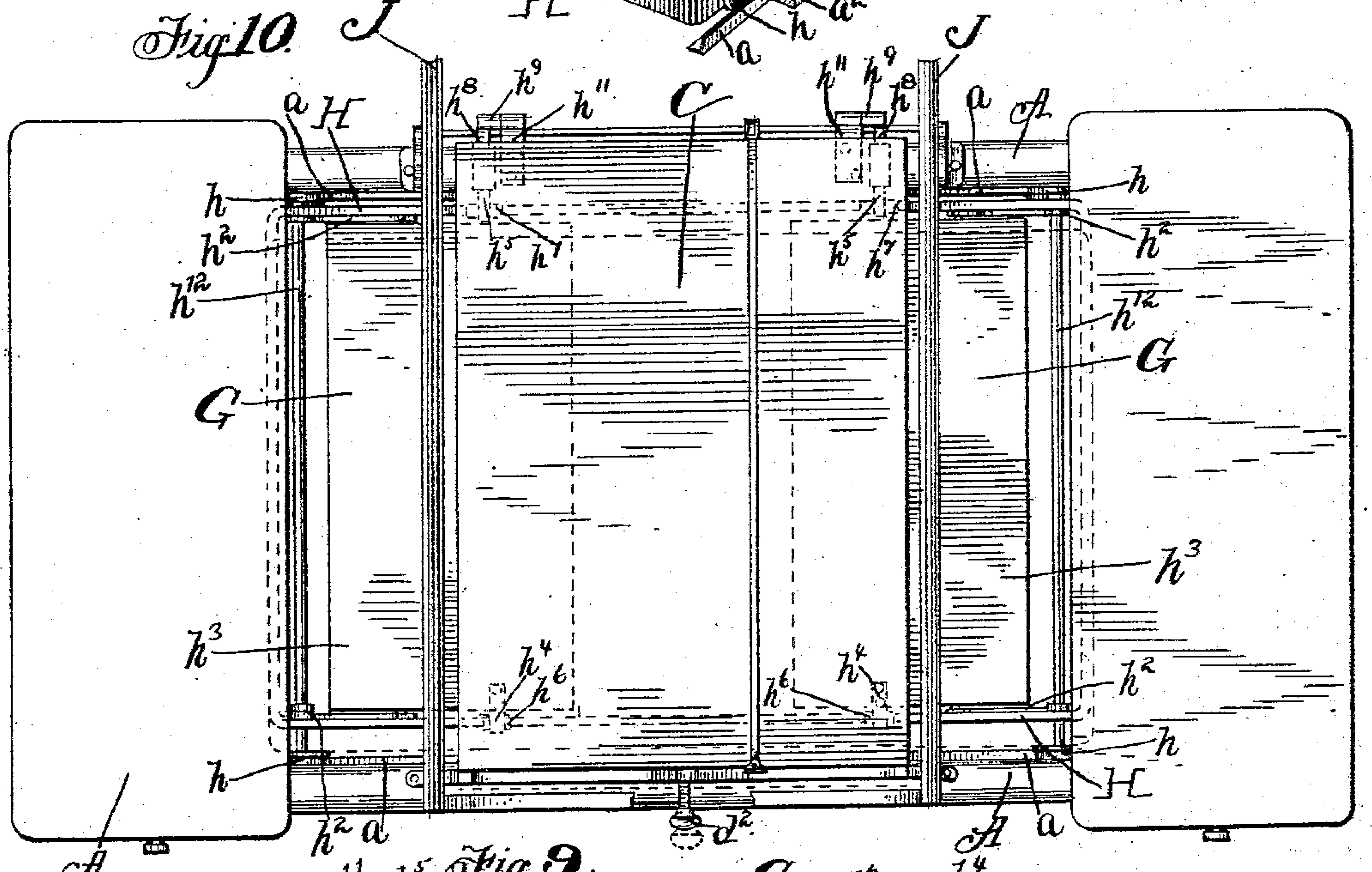
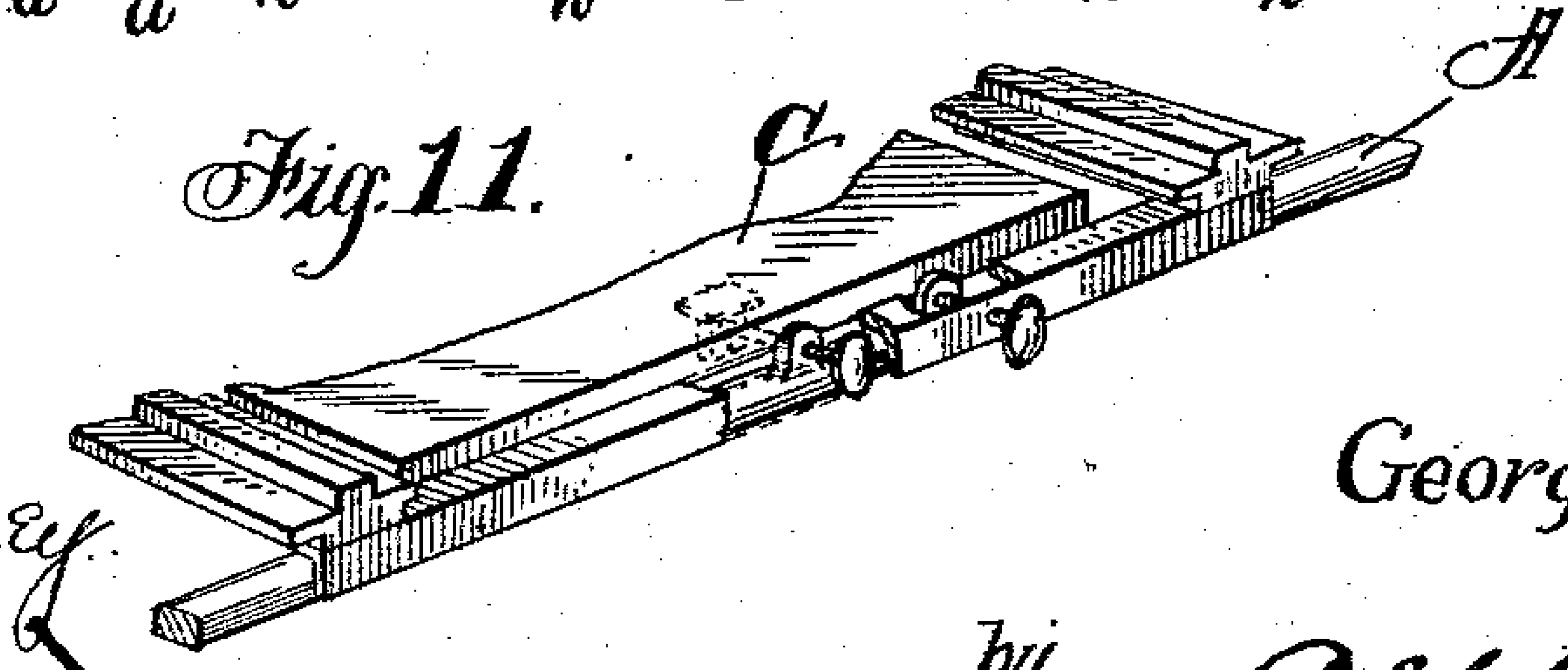


Fig. 9.

Fig. 11.



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No. 753,190. Patented February 23, 1904.

UNITED STATES PATENT OFFICE.

GEORGE W. DONNING, OF EAST ORANGE, NEW JERSEY, ASSIGNOR OF ONE-HALF TO HARRY T. AMBROSE, OF ORANGE, NEW JERSEY.

ADJUSTABLE PLATEN.

SPECIFICATION forming part of Letters Patent No. 753,190, dated February 23, 1904.

Application filed February 10, 1903. Serial No. 142,790. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DONNING, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Adjustable Platens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the present invention is to provide in a type-writer a longitudinally-adjustable work-support, such as a flat platen, or a movable or transversely-slidable book-rest, and also means to effect such longitudinal adjustment, whereby intermediate line-spacing is facilitated.

Another object is to provide in a type-writer arranged to write on a flat sheet or page a platen which can be reciprocated on the base in a direction to cause what is termed "line adjustment," while the writing mechanism is held stationary in this respect on the table or base.

A further object is to provide in a flat-platen type-writer an intermediate line-adjusting device which is operable independent of the regular line adjustment effected by the line-spacing mechanism carried by said type-writer.

A further object is to provide in a flat-platen type-writing machine an intermediate line-adjusting device for positioning the writing mechanism of the machine to any predetermined point intermediate of the regular line-spacing and yet permit the regular full line-spacing without readjustment of the intermediate line-spacing device.

A further object is to provide in a flat-platen book type-writer means for adjusting a book-rest and platen longitudinally to effect intermediate line-spacing without affecting the regular full line-spacing of the machine.

A further object of the invention is to provide means for automatically retaining the platen in its normal or adjusted position when it is tilted, which means will automatically release the platen when it is lowered to its normal position to permit the sliding adjustment.

With these objects in view and others my invention comprehends the details of construction, arrangement, and combination, as hereinafter set forth, and pointed out in the claims.

In the drawings, representing, of many embodiments of my invention, preferred forms thereof, Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 shows the hinge construction with the platen tilted. Fig. 4 shows a detail of one form of adjusting means. Fig. 5 shows the hinge in detail. Fig. 6 is a plan of a modified form of adjustment. Fig. 7 is a side elevation of the form shown in Fig. 6. Fig. 8 is a view in perspective of the adjusting device disposed to effect longitudinal movement of the platen and book-rest together. Fig. 9 is a view in side elevation, showing the device applied for effecting adjustment of a slidable book-rest disposed under the platen. Fig. 10 is a view in plan of same, and Fig. 11 is a detail perspective thereof.

The characters of reference designate the same parts in the several views.

To a suitable base A is secured a hinge-plate B. The platen is connected with the hinge-plate, so as to have a longitudinal sliding movement with relation thereto. I provide a pair of hinges, one at each side of the platen, each of which comprises a lug c, secured to the hinge-plate B, and a plate c^2, slidably secured to the platen C by means of bolts c^3 c^3, that are rigidly secured to the platen and which pass through slots c^4 c^4 in the plate c^2. The plates c^2 have lugs c^5, that are pivoted to the lugs c, thus forming a hinge connection between the platen and the hinge-plate c^2. At the other end of the platen, which is adjacent the operator, I provide means for moving the platen on the supporting hinge-plates c^2. In Figs. 2 and 4 I have shown a screw adjustment that will also serve to retain the platen in its adjusted position. A screw D is carried in a threaded aperture in a lug d. The screw has a suitable operating-head d^2 at one end, and at the other end are secured a pair of collars d^3 d^3, with their opposing edges rounded off, as shown. A lug d^4 is secured

to the front end of the platen underneath and has a forked portion d^5, that snugly fits between the collars d^3 d^3 and straddles the shank of the screw D. By turning the head d^2 in one direction the collars d^3, engaging the forked lug d^4, will draw it and the platen forward toward the front of the machine, as indicated in dotted lines in Fig. 4, and the reverse turning of the head will cause the platen to slide in the opposite direction. When the platen is raised and the lug d^4 is free from the screw and collars, it would have a tendency to slide on the hinge members c^2 c^2. To prevent this movement, I have provided a dog or lever E, pivoted on one or both of the hinge-plates c^2. The beveled extremity of the dog is arranged to engage a suitable rack e on the under side of the platen. When the platen is raised and disengaged from the screw adjustment, the dog is retained in engagment with the rack by a suitable spring e^2; but when the platen is lowered an arm e^3 on the dog E strikes the hinge-plate and trips the dog, causing it to disengage the rack, and thus leaving the platen free to be reciprocated by the adjusting means.

In Figs. 6 and 7 is shown another means for moving the platen back and forth on the base, in which I have a lever F, pivotally mounted on the base, which has an arm f, containing a cam-slot f^2. A pin f^3 is secured to the under side of the platen and engages the lever at the slotted portion, thus causing the platen to be advanced or retracted when the lever is moved forward or back. A clamp-screw f^4, passing through the lever f^5 and engaging the table at its slotted portion f^6, serves to clamp the lever f^5 in its positions of adjustment.

In Figs. 8, 9, and 10 I have illustrated my invention disposed for effecting intermediate adjustment of the platen C, and a slidable book-rest G, disposed under and connecting with the platen C and with which the platen cooperates. The book-rest G consists generally of a frame H, carrying rollers h, which travel upon tracks a, disposed upon the side walls a^2 of a lateral depression in the top of the table or base A. Pivotally mounted at the four corners of the frame H are inclined arms h^2, upon which are disposed two leaves h^3, one on each side, as shown. This constitutes generally my slidable book-rest for use in connection with my typewriter for writing in books or the like. The platen in this instance has preferably secured to its under side depending brackets h^4, which are provided with rollers h^6 of the flanged-periphery type and which are designed to travel upon the upper edge of the rectangular frame H, encompassing my said book-rest G, as shown. It is to be understood, of course, that the platen C is relatively stationary, while the book-rest is slidable under and laterally with reference to the platen, the rollers on the depending bracket h^4 permitting this lateral movement. The bracket h^5 is somewhat different in its form from bracket h^4, as shown, in that it has an extended portion h^8, at the end of which is provided a boss h^9, in which works a pintle h^{10}, carried by a plate h^{11}, secured to the under side of the platen C. The extending portion h^8 of the bracket h^5 projects far enough beyond the wall a^2 of the depression in the table-top to rest upon the upper face of the table-top at the rear, as clearly shown in Fig. 10. This construction just described constitutes a hinge for the platen to permit of its being tilted. In this tilting the roller h^7 remains upon the track, while the roller h^6 on the bracket h^4, by reason of the latter being secured to the platen, rises with the platen when it is tilted. It is to be understood that there are preferably a pair of each of the brackets h^4 and h^5, one toward each side edge of the platen. At each corner of the frame H and extending longitudinally thereof are rods h^{12}, upon which are pivoted the lower ends of the arms h^2. These rods carry at their ends the rollers h and are of a length somewhat greater than the width of the frame H and are designed to penetrate the front and rear members of said frame.

The adjusting mechanism above described for effecting limited movement of the platen for intermediate line-spacing, as already set forth, is employed in this instance in exactly the same manner as already described and as shown. By reason of the attachment of the platen to the book-rest frame H through the brackets h^4 h^5 movement of the platen by the adjusting mechanism effects shifting of the book-rest frame H upon the rods h^{12}, as is obvious.

I do not limit myself to the precise construction or arrangement of the parts described in connection with this mechanism for effecting longitudinal adjustment of the platen and the book-rest together, as I may utilize any construction and arrangement for this purpose. It is essential to employ a construction for this purpose in book type-writers, since in adjusting the platen it is equally necessary to adjust therewith the book-rest.

This invention has peculiar application in a situation where books with lined pages are being written upon. The lining of the pages varies in different books, and it is desirable generally to write upon the lines. With the device here contemplated when the writing mechanism is brought down to one line it may happen that the ordinary regular line-spacing operating in said writing mechanism may not position the same properly with reference to the next succeeding line, wherefore it becomes necessary to adjust the work to bring the lining to the path of writing, and this may be readily accomplished by the construction described.

It is to be observed that the longitudinal adjustment of the platen will not interfere with

the lateral traveling of the book-rest beneath the same, neither will the tilting of the platen be in any wise hindered in the arrangement described

Contiguous to but preferably independent of the platen are relatively stationary tracks J, upon which the writing mechanism is designed to travel, which writing mechanism carries appropriate mechanism for effecting the regular line-spacing.

It is to be understood that the adjusting device constituting the subject-matter of this case is for effecting adjustment of the parts carrying the work (whether they be the platen C, the book-rest G, or other like part) to bring the printing-point of the work to a position intermediate of where the regular-line-spacing mechanism or the writing mechanism would position it relative to that point. Appropriate means for maintaining the parts in proper position may of course be utilized.

It is to be understood that, if desired, I may, in combination with the platen intermediate line-adjusting device, provide the track-frame (disposed contiguous to the platen) with similar longitudinal adjusting means in order to effect by the double adjustment (in opposite directions) a quicker operation for intermediate line-spacing.

It is obvious that this adjusting device may be employed for adjusting the forward end of the platen vertically to a slight degree.

It is obvious that the construction and arrangement shown may be varied without departing from the spirit of the invention, the object of which is to provide means for effecting an adjustment of the parts to bring them into a different position to present the work at a point intermediate of the regular line-spacing effected by the ordinary operation of the line-spacing mechanism carried by the writing mechanism.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a flat-platen type-writer having the usual writing-mechanism carriage and line-spacing mechanism, the combination of a tiltable flat-surfaced work-support disposed for longitudinal movement independent of the longitudinal movement or position of the writing-mechanism carriage to permit longitudinal positioning of the work without movement of the carriage, a base for sustaining the work-support, and an adjusting device comprising a plurality of members independently disposed, one on the base and another on the work-support, and constructed for coaction to effect longitudinal movement of the work-support and for separation to permit tilting of the work-support away from its base, substantially as described.

2. In a flat-platen type-writer having the usual writing-mechanism carriage and line-spacing mechanism, the combination of a flat-surfaced hinged work-support constructed and arranged for longitudinal movement independent of the carriage and without movement thereof, a base, a hinge member on which one end of the work-support is movably connected for longitudinal adjustment thereon, and an adjusting device connecting with the opposite end of the work-support and constructed to adjust the same longitudinally on the hinge member without movement of the carriage, to present the work in positions intermediate of the regular spacing effected by the line-spacing mechanism, substantially as described.

3. In a flat-platen type-writer provided with the usual writing-mechanism carriage and line-spacing mechanism, the combination of a flat-surfaced, tiltable platen, a base, a hinge member on which one end of said platen is slidably supported for longitudinal adjustment thereon, a locking device for securing said platen to the hinge member against sliding thereon when the platen is tilted, and an adjusting device connecting with the opposite end of the platen and constructed to adjust the same longitudinally on said hinge member independent of the movement or position of the carriage to present work in positions intermediate of the regular line-spacing, substantially as described.

4. In a flat-platen type-writer provided with the usual writing-mechanism carriage and line-spacing mechanism, the combination of a flat-surfaced, tiltable platen, a base, a hinge member on which one end of said platen is slidably supported for longitudinal adjustment thereon, an automatic locking device for securing said platen to the hinge member against sliding thereon when the platen is tilted, and an adjusting device connecting with the opposite end of the platen and constructed to adjust the same longitudinally on said hinge member independent of the movement or position of the carriage to present work in positions intermediate of the regular line-spacing, substantially as described.

5. In a flat-platen type-writer having the usual writing-mechanism carriage and line-spacing mechanism, the combination of a flat-surfaced work-support disposed for longitudinal movement independent of the longitudinal movement or position of the writing-mechanism carriage to permit longitudinal positioning of the work without movement of the carriage, and means constructed to lock said work-support in its several positions, substantially as described.

6. In a flat-platen type-writer having the usual writing-mechanism carriage and line-spacing mechanism, the combination of a flat-surfaced work-support disposed for longitudinal movement independent of the longitudinal movement or position of the writing-mechanism carriage to permit longitudinal positioning of the work without movement of the carriage, and independent means constructed

to lock said work-support in its several positions, substantially as described.

7. In a flat-platen type-writer having the usual writing and line-spacing mechanisms, the combination with a support for the writing mechanism, of a longitudinally-movable flat platen disposed independent of said support, an actuating-screw engaging said platen and constructed to adjust it in a direction transverse to the line of writing and intermediate of the regular line-spacing, without disturbing the position of the writing mechanism, substantially as described.

8. In a type-writer having the usual writing and line-spacing mechanisms, the combination of a platen, and an actuating-screw engaging said platen and constructed to adjust it in a direction transverse to the line of writing, and independent means constructed to lock said platen in its adjusted positions, substantially as described.

9. In a type-writer having the usual writing and line-spacing mechanisms, the combination of a base, a track-frame supported on said base, a longitudinally-movable platen also hinged upon said base, but having movement independent of the track-frame, and means carried by said base and coöperating with said platen and constructed to adjust said platen to position any particular point thereof independent of the movement of and without disturbing the track-frame, whereby to present the work in positions intermediate of the regular line-spacing, substantially as described.

10. In a type-writer, having the usual writing and line-spacing mechanisms, the combination of a base, a track-frame pivotally supported on said base, a longitudinally-movable platen supported on said base, means constructed to adjust said platen to present the work thereon in positions intermediate of two transverse lines of writing, and means constructed to lock the said platen in its adjusted positions, substantially as described.

11. In a type-writer having the usual writing and line-spacing mechanisms, the combination of a base, a track-frame supported on said base, a longitudinally-movable platen supported on said base, means constructed to adjust the platen intermediate of two transverse lines of writing, and means constructed to lock the platen in its adjusted positions from movement relative to said track-frame when the former is swung from its normal operative position, and to release the platen from movement upon return to its normal operative position, substantially as described.

12. In a type-writer having the usual writing and line-spacing mechanisms, the combination of a base, a member pivotally supported on said base, a platen slidably connected to said member, means constructed to adjust the platen on said member, and means, coacting with the base, and constructed to lock the platen in its adjusted positions from movement relative to said member when the former is swung from its normal, operative position, and to release the platen for movement upon return to its normal operative position, substantially as described.

13. In a type-writer, the combination with a track frame or rails, of a book-rest, a longitudinally-movable platen, means connecting said book-rest and the platen and constructed to permit relative movement thereof, and means constructed simultaneously to adjust said book-rest and platen without movement of the track-frame, substantially as described.

14. In a type-writer, the combination of a track-frame, a book-rest disposed contiguous thereto, a platen overlying the book-rest, means connecting said book-rest and platen and constructed to permit relative movement thereof in one direction, and means constructed simultaneously to adjust said book-rest and platen in a direction normal to their relative motion independent of the normal position of the track-frame, substantially as described.

15. In a type-writer, the combination of a stationary base, a book-rest movably supported thereon, a track-frame overlying the book-rest, a platen also overlying the book-rest, means connecting said book-rest and platen and constructed to permit relative movement thereof, and means constructed simultaneously to adjust said book-rest and platen without disturbing the position of the track-frame, whereby the positioning of the printing-point on the work is permitted intermediate of the regular transverse lines of writing on the work, substantially as described.

16. In a type-writer having the usual writing and line-spacing mechanisms, the combination of a base, a member pivotally supported on said base, a platen slidably connected to said member, means constructed to adjust the platen on said member, and means coacting with the base and constructed to lock the platen in its adjusted positions from movement relative to said member when the former is swung from its normal operative position and to release the platen for movement upon return to its normal operative position, the said locking means comprising a dog pivoted upon said pivotal member, a rack on the under side of the platen with which the dog coöperates, whereby, when the platen is raised, the dog is retained in engagement with the rack, and, when the platen is lowered, the dog contacts with the pivotal member and disengages itself from the rack on the platen, and means for maintaining the dog in contact with the rack, substantially as described.

17. The combination with the base, and the writing mechanism, of a platen slidably mounted on the base, a lug on said platen, and a screw mounted on the base and arranged to engage said lug and thereby traverse the platen in a direction transverse to the line of writing, substantially as described.

18. The combination with the base, and the writing mechanism, of a pair of slotted plates hinged to the base, a platen mounted on the plates, and bolts secured to the platen and engaging the plates at their slotted portions, thereby permitting the platen to slide in a direction transverse to the line of writing, substantially as described.

19. The combination with the base, and the writing mechanism, of a platen slidably mounted on the base, a lug on the platen having an extension, a lug on the base having a threaded aperture, a screw engaging the threads in said latter lug, and a pair of collars on the screw arranged to engage said extension between them and thereby traverse the platen when the screw is rotated, substantially as described.

20. The combination with the base, and the writing mechanism, of a platen slidably and tiltably mounted on the base, a lug secured to the platen and having a forked extension projecting downward, a lug on the base having a threaded aperture, a screw engaging the threads in said latter lug and a pair of collars on the screw arranged to engage the said forked extension between them and thereby traverse the platen when the screw is rotated, substantially as described.

21. The combination with the base, and the writing mechanism, of a member hinged to the base, a platen slidably mounted on the said member, and means for locking the platen to the hinged member, substantially as described.

22. The combination with the base and the writing mechanism, of a member hinged to the base, a platen slidably mounted on the hinge member, means arranged automatically to lock the platen to the hinge-plate when being tilted, and means arranged automatically to release the said locking means when the platen is in the position for writing, substantially as described.

23. The combination with the base and the writing mechanism, of a pair of plates hinged to the base, a platen slidably mounted on the said plates, a dog on one of said plates, a rack on the platen arranged to be engaged by the dog, a spring tending to retain the dog in engagement with the rack, an arm on said dog arranged to engage the base when the platen is in position for writing, and means for adjusting the platen in a direction transverse to the line of writing, substantially as described.

24. In a type-writer, a stationary base, a platen, a book-rest supported beneath the platen, connections between the platen and book-rest permitting lateral movement of the book-rest independent of the platen, and simultaneous longitudinal movement thereof with the platen, and means for effecting such longitudinal movement of the platen and book-rest, substantially as described.

In testimony whereof I affix my signature in the presence of two subscribing witnesses.

GEORGE W. DONNING.

Witnesses:

ANDREW W. STEIGER,

JOHN R. WILTSIE.