

No. 632,681.

Patented Sept. 5, 1899.

R. J. FISHER & C. F. LAGANKE.

TYPE WRITING MACHINE.

(Application filed Mar. 30, 1898.)

(No Model.)

4 Sheets—Sheet 1.

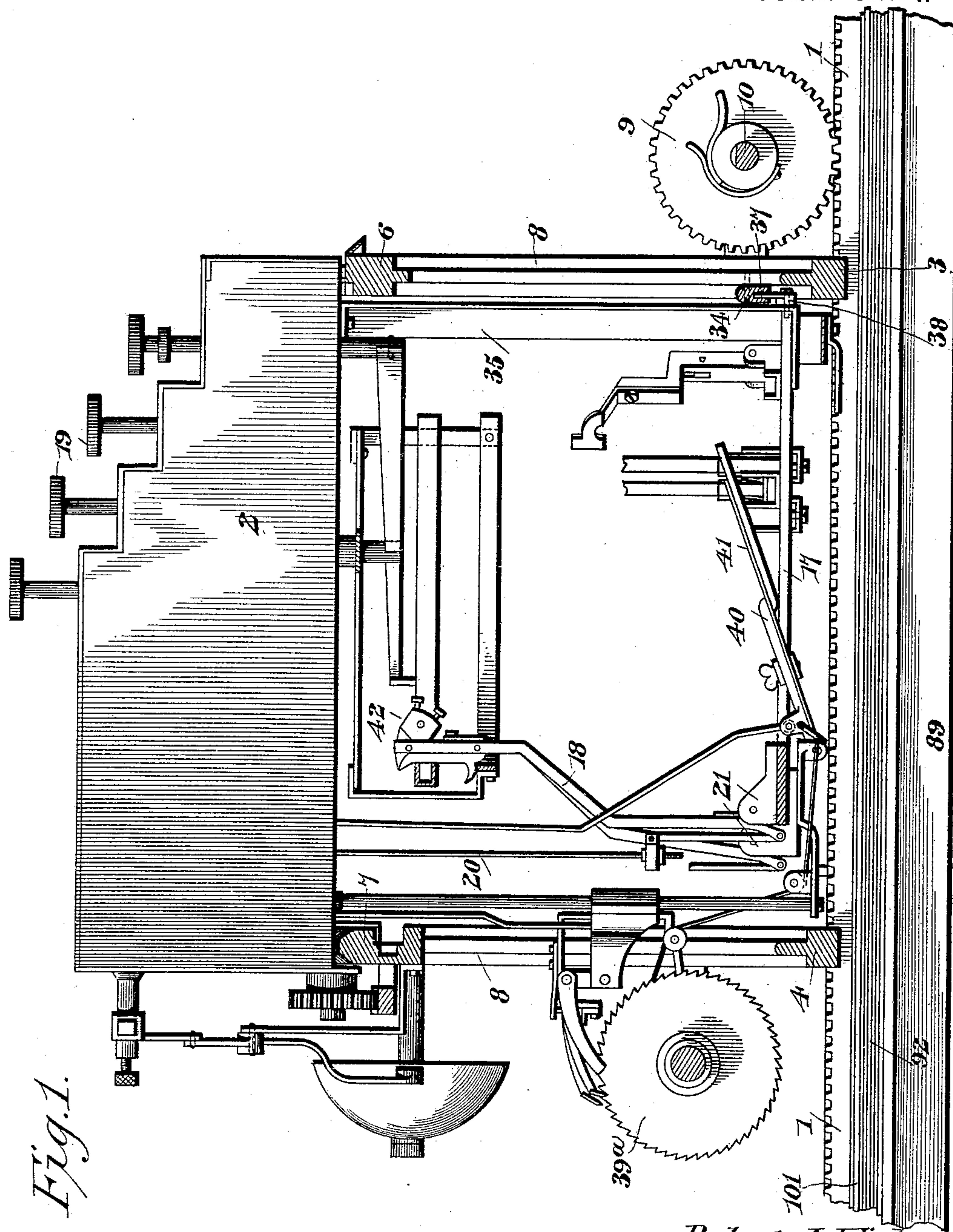


Fig. 1.

Witnesses

Jas. H. McLathran

[Signature]

By their Attorneys,

Chas. Snow & Co.

Robert J. Fisher
Charles F. Laganke
Inventors

No. 632,681.

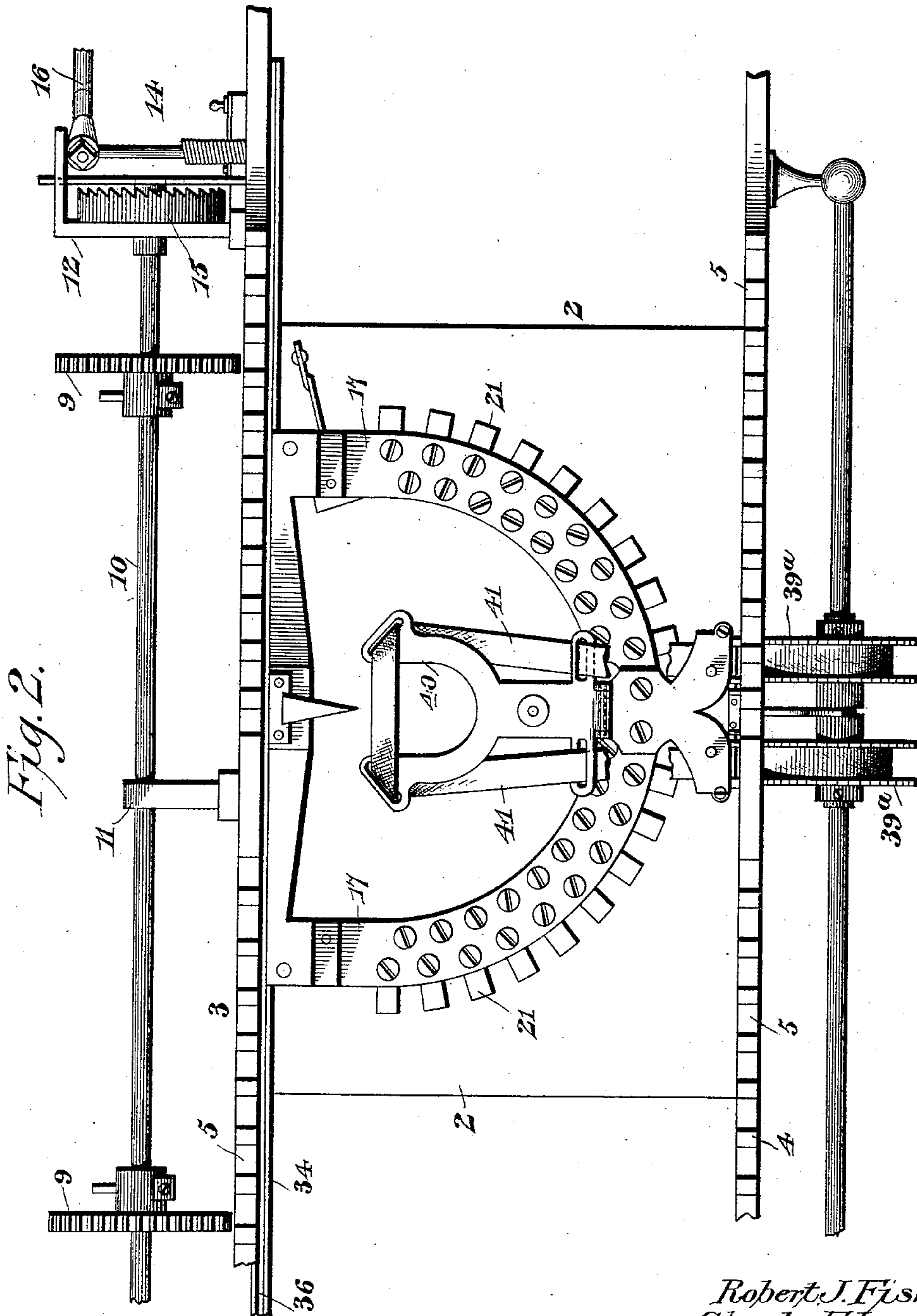
Patented Sept. 5, 1899.

R. J. FISHER & C. F. LAGANKE.
TYPE WRITING MACHINE.

(Application filed Mar. 30, 1898.)

(No Model.)

4 Sheets—Sheet 2.



Witnesses

Wm. H. McLaughlin

By their Attorneys,

Cash & Co.

Robert J. Fisher
Charles F. Laganke
Inventors

No. 632,681.

Patented Sept. 5, 1899.

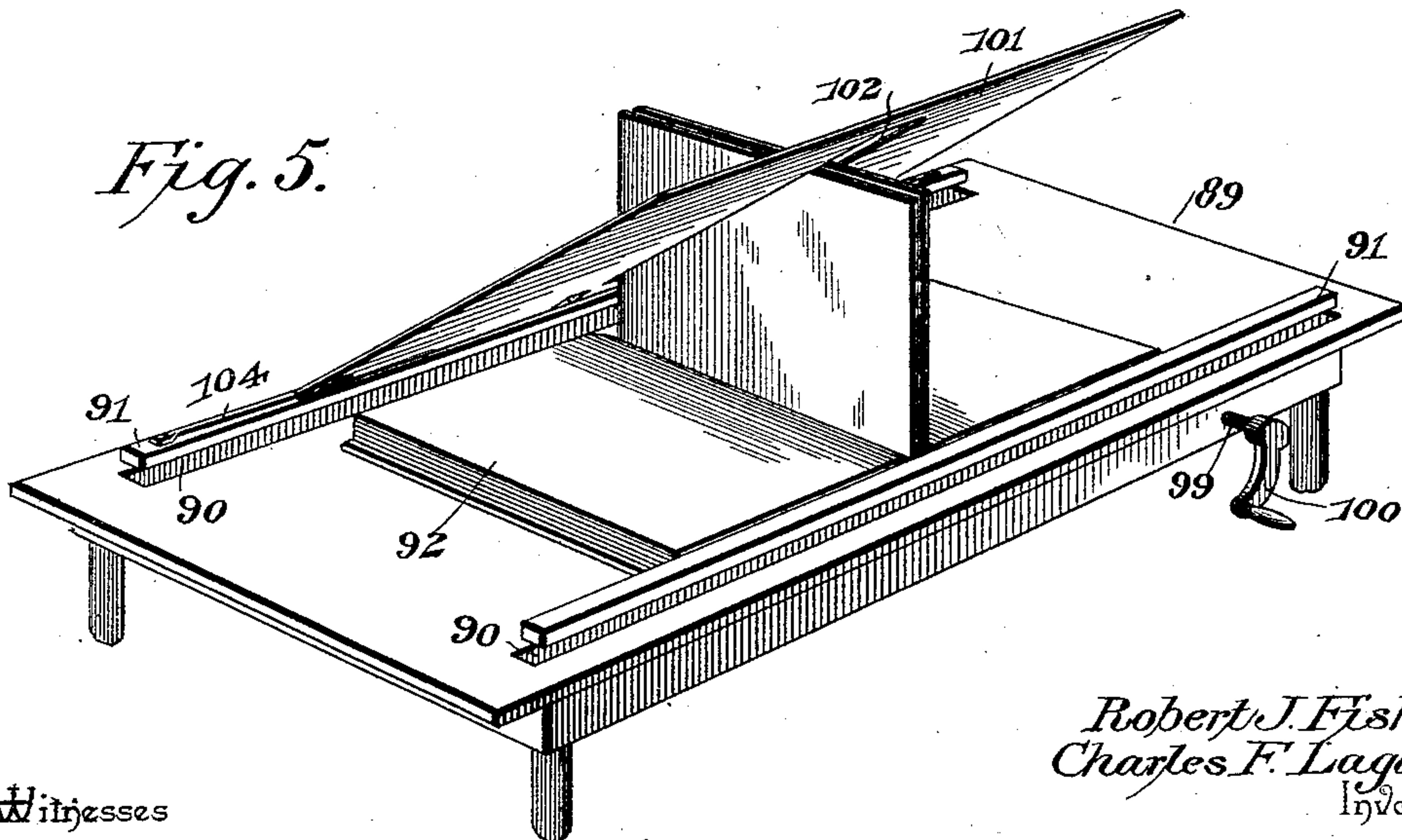
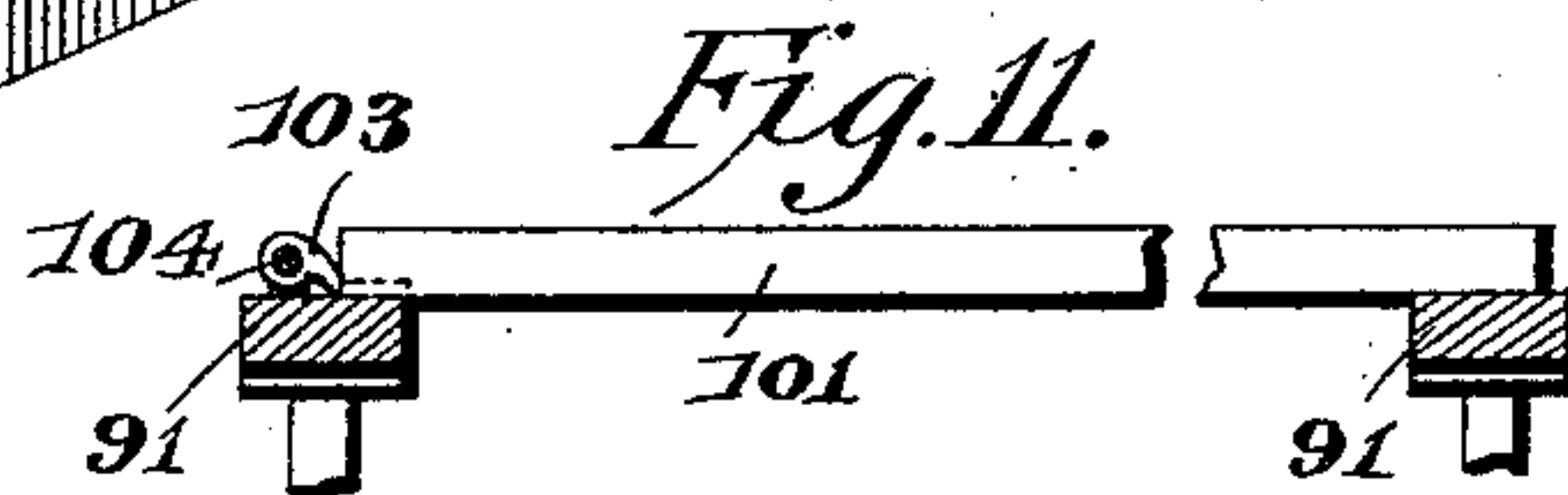
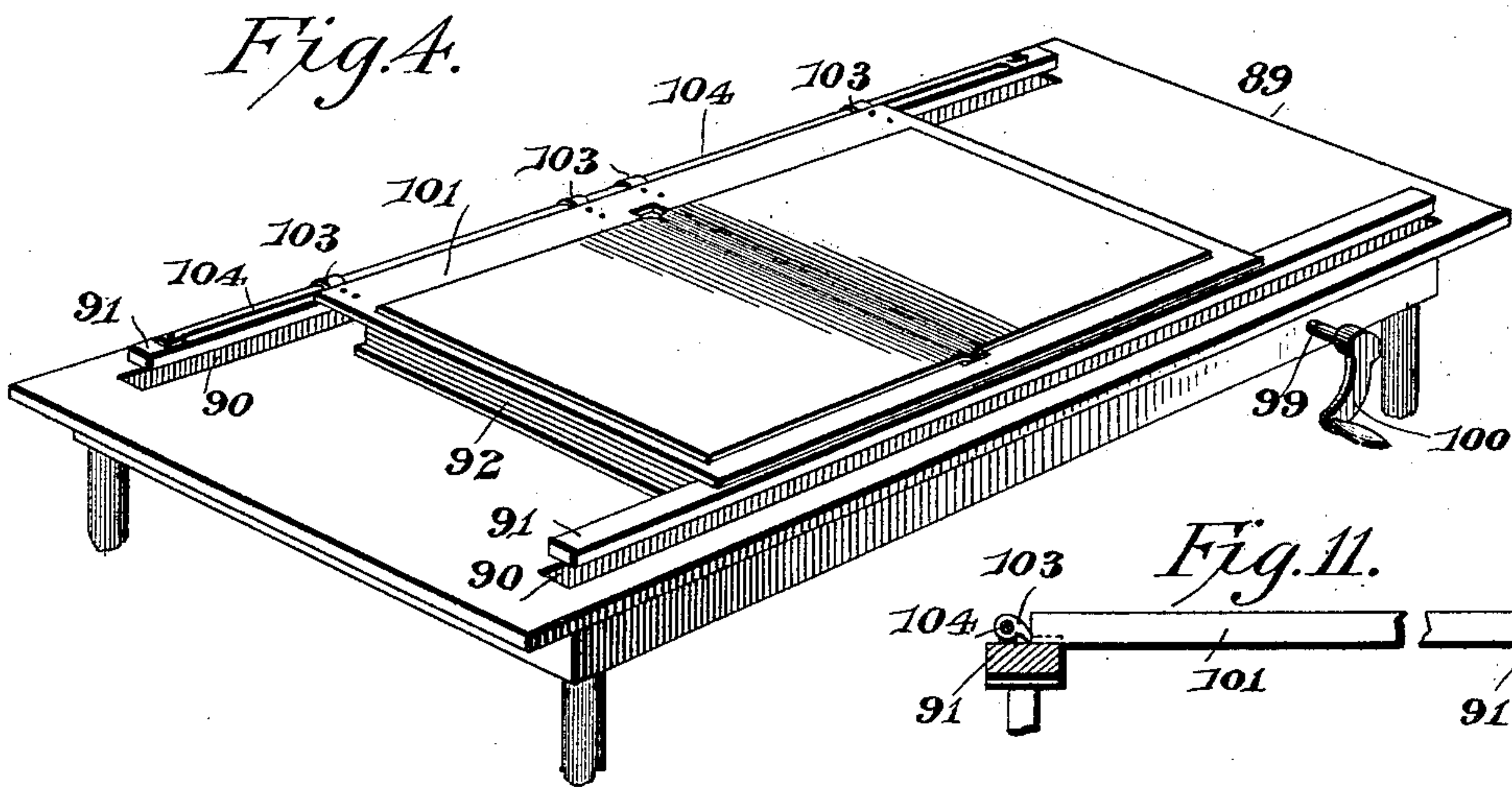
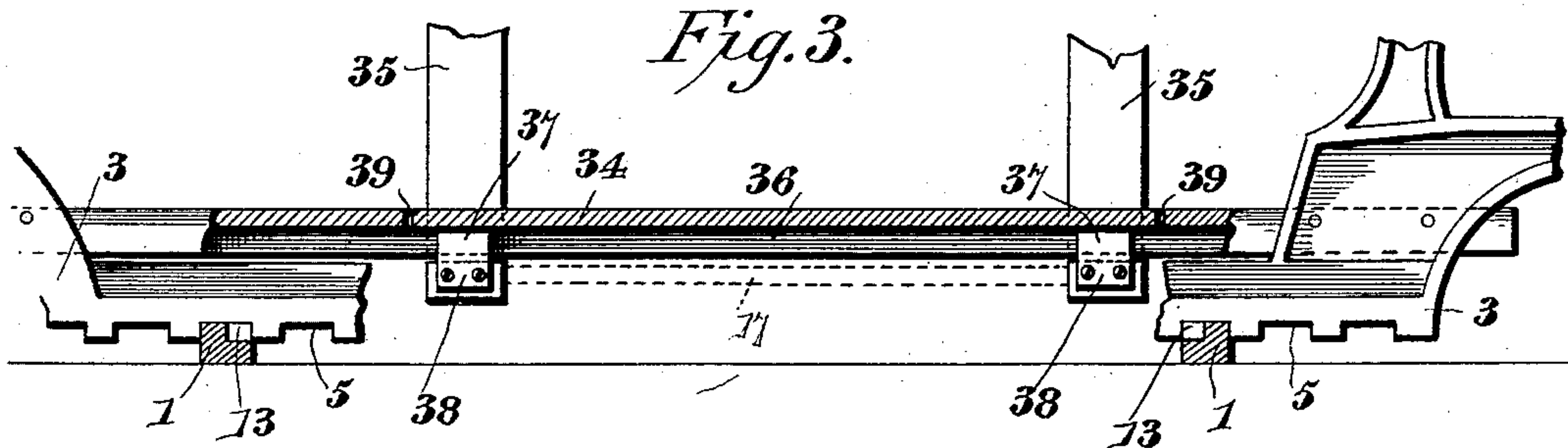
R. J. FISHER & C. F. LAGANKE.

TYPE WRITING MACHINE.

(Application filed Mar. 30, 1898.)

(No Model.)

4 Sheets—Sheet 3.



Witnesses

Jas. K. McLathran

By their Attorneys,

C. A. Snow & Co.

Robert J. Fisher
Charles F. Laganke
Inventors

No. 632,681.

Patented Sept. 5, 1899.

R. J. FISHER & C. F. LAGANKE.
TYPE WRITING MACHINE.

(No Model.)

(Application filed Mar. 30, 1898.)

4 Sheets—Sheet 4.

Fig. 6.

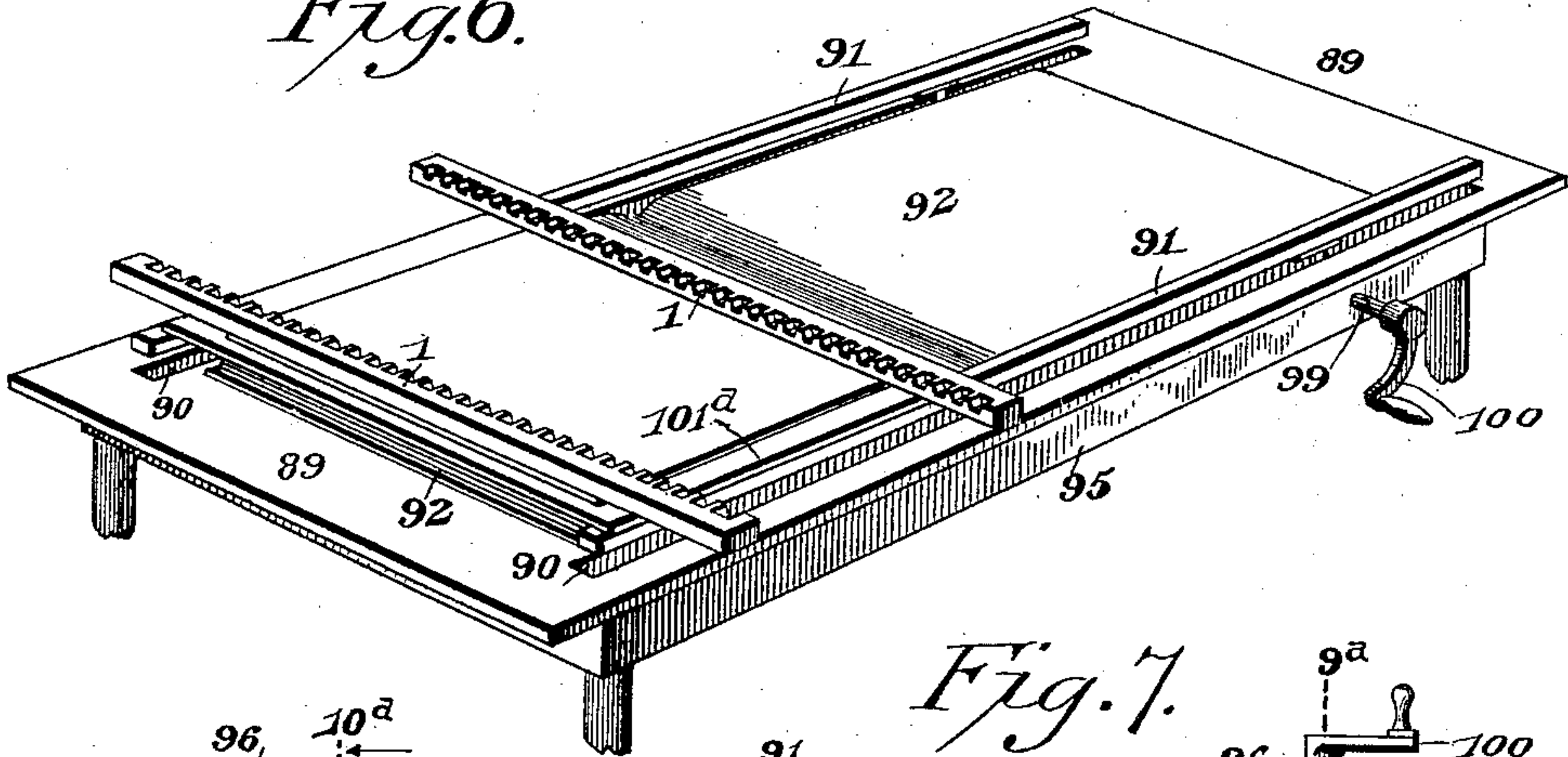


Fig. 7.

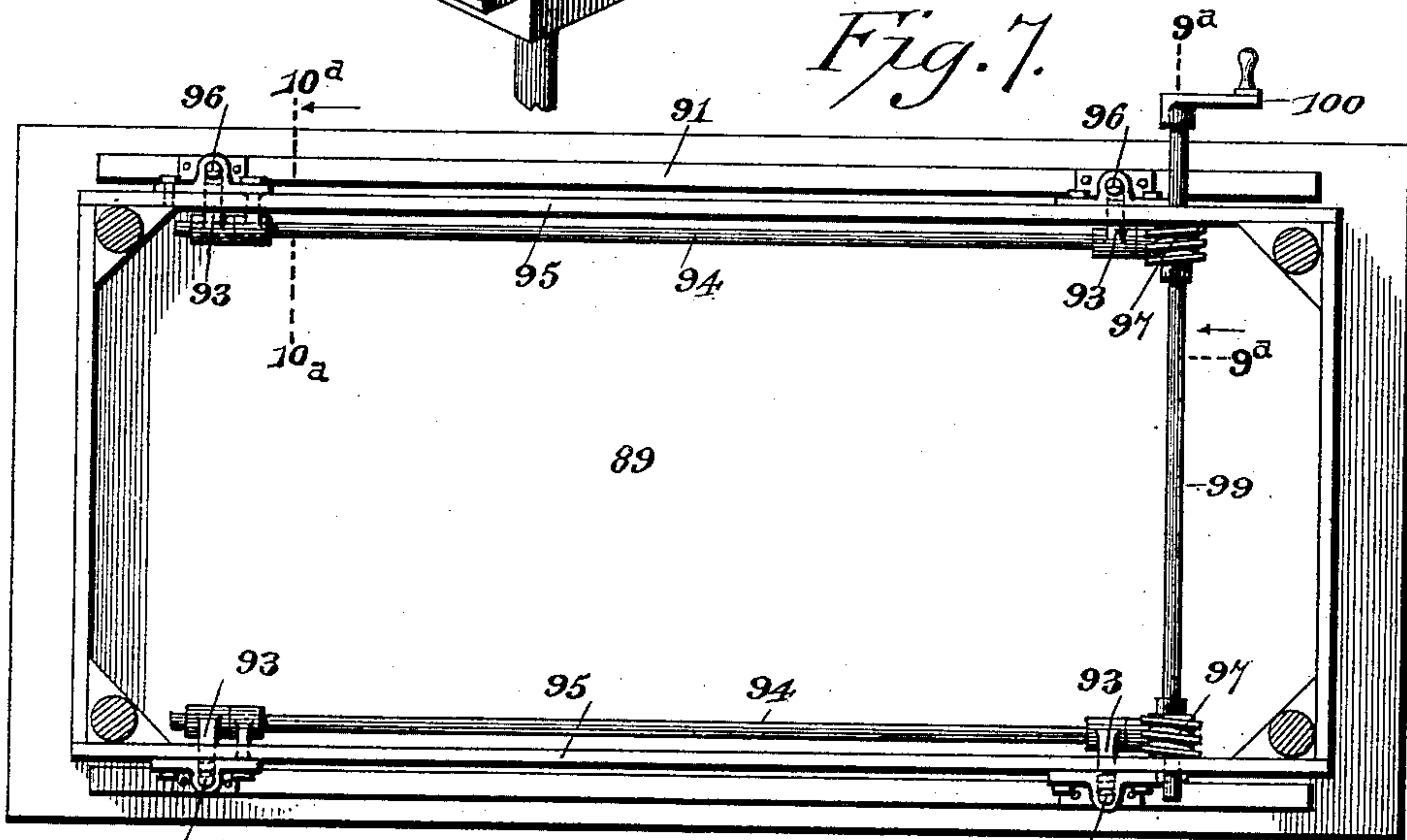


Fig. 8.

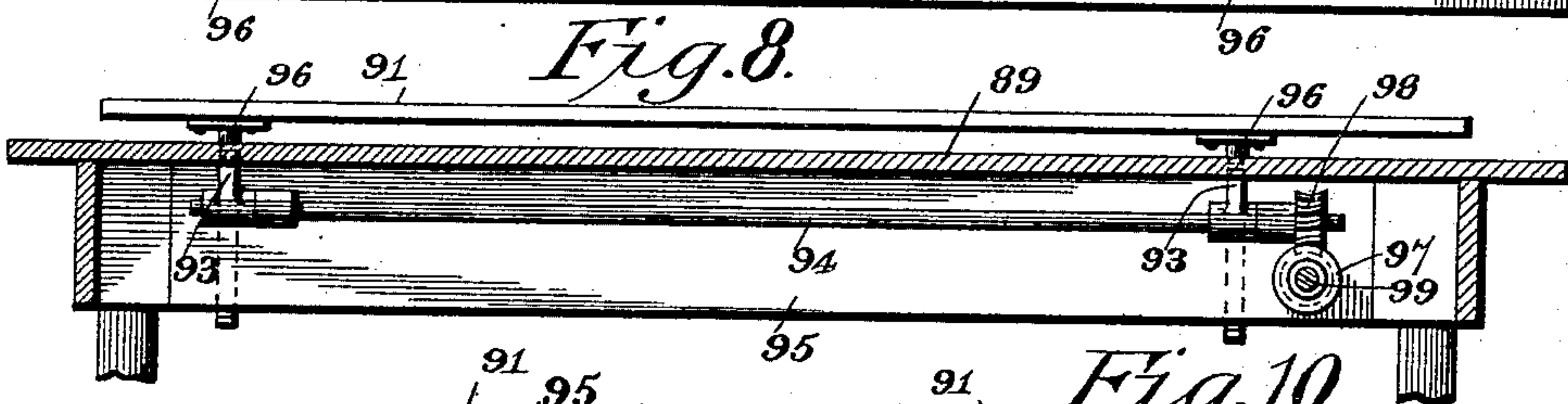


Fig. 9.

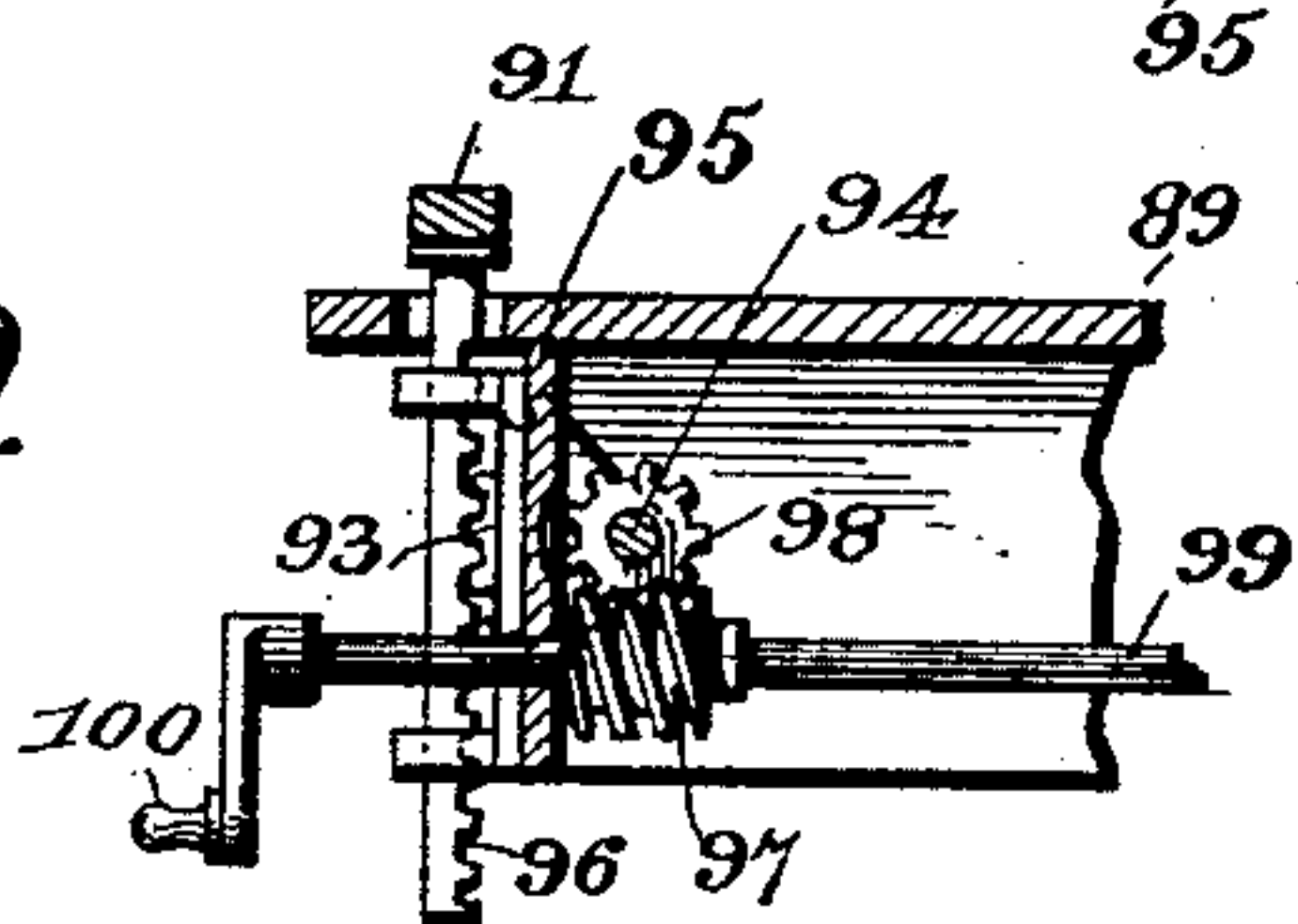
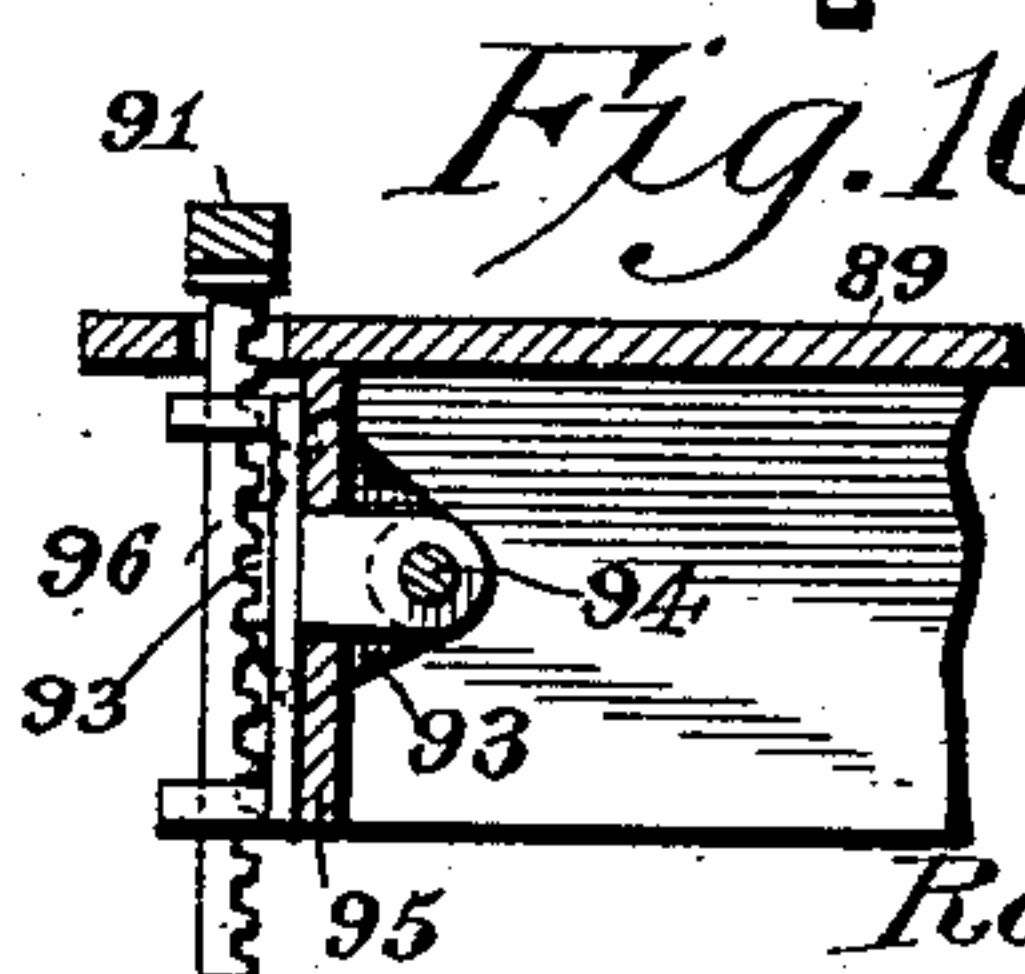


Fig. 10.



Witnesses

James H. McLaughlin

[Signature]

By their Attorneys,

Ca. Snow & Co.

Inventors

Robert J. Fisher
Charles F. Laganke

UNITED STATES PATENT OFFICE.

ROBERT JOSEPH FISHER AND CHARLES F. LAGANKE, OF ATHENS, TENNESSEE, ASSIGNORS TO THE FISHER TYPEWRITER COMPANY, OF TENNESSEE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 632,681, dated September 5, 1899.

Application filed March 30, 1898. Serial No. 675,729. (No model.)

To all whom it may concern:

Be it known that we, ROBERT JOSEPH FISHER and CHARLES F. LAGANKE, citizens of the United States, residing at Athens, in the county of McMinn and State of Tennessee, have invented a new and useful Type-Writing Machine, of which the following is a specification.

Our invention relates to type-writing machines of that class designed for bookwork and having a carriage mounted for longitudinal and transverse movement, respectively, parallel with and at right angles to the lines of writing and carrying printing mechanism; and the object in view is to provide means for eliminating vibration of the type-bar-supporting ring in a direction transverse to the line of writing, and thereby insure an accurate alinement of the impressions made by the printing mechanism.

A further object of the invention is to provide a simple and efficient construction of supporting-table adapted for upholding a book and provided with means for maintaining the tracks in operative position with relation to the surface which is to receive the impression.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of a type-writing machine constructed in accordance with our invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a partial front view in detail, showing the type-ring guide-bar partly in section to illustrate the connection therewith of the type-ring. Fig. 4 is a perspective view of a base or table for supporting a book to receive the impressions. Fig. 5 is a similar view showing the manner of arranging the book with relation to the platen. Fig. 6 is a perspective view of a table, illustrating a book in operative position and showing a slightly-different form of platen with the stationary frame of a type-writing machine in operative position. Fig. 7 is an inverted plan view of the table to show the means for adjusting the supporting-strips

and holding them at the desired adjustment. Fig. 8 is a longitudinal sectional view of the table. Fig. 9 is a detail transverse section of the same on the line 9^a 9^a of Fig. 7. Fig. 10 is a detail transverse section taken on a plane indicated by the line 10^a 10^a of Fig. 7. Fig. 11 is a detail sectional view of the supporting-strips and the superposed platen to show the means whereby the latter is hingedly mounted upon one of the former.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The machine embodying our invention is mounted for movement transverse to the line of writing upon parallel tracks 1, which are adapted to rest upon the sheet or page to receive the impression of the printing mechanism and serve to hold said sheet or page in proper position for receiving the impact of the type-heads. The movable or line-spacing frame upon which the carriage 2 is mounted comprises front and rear base-bars 3 and 4, having seats 5 to receive the upper sides of the tracks 1 and front and rear carriage-guides 6 and 7, together with suitable uprights 8 or their equivalents for connecting the base-bars with the carriage-guides. The line-spacing mechanism employed for moving the line-spacing frame 3 4 6 8 in a direction transverse to the line of writing includes pinions 9, carried by a transverse spindle 10, mounted in bearings 11 and 12 on the front of said frame to engage racks 13 on said tracks 1, together with means for imparting a step-by-step motion to the spindle to advance said frame parallel with the tracks, said means being illustrated in the drawings in Fig. 2 at 14 and consisting, essentially, of a ratchet-wheel 15 and a line-spacing lever 16, all as fully shown and described in the patents of Robert J. Fisher, No. 569,491, dated October 13, 1896; Nos. 569,625, 569,626, and 569,627, dated October 20, 1896; No. 572,535, dated December 8, 1896, and No. 573,868, dated December 29, 1896.

Depending from the carriage 2, which is mounted upon the carriage-guides for movement parallel with the lines of writing, is a type-bar-supporting ring 17 of crescent shape,

as illustrated in Fig. 2, and mounted upon this ring are type-bars 18, actuated by keys 19 through intermediate connections, including draw-rods 20, and particularly shown and described in said former patents of R. J. Fisher. The type-bar-supporting ring consists of a flat bar or plate supporting a plurality of bearing-clips 21.

Arranged parallel with the line of writing, and hence with the front and rear base-bars 3 and 4 of the frame, and in front of the horns or extremities of the crescent supporting-ring is a guide-bar 34, with which the supporting-ring has a sliding connection to prevent forward-and-rearward vibration or movement perpendicular to the lines of writing of said supporting-ring, the straps or standards 35, by which said ring is supported, being liable when the machine is rapidly operated to yield or twist, and thus destroy the accurate alignment of the impressions. In the construction illustrated this guide-bar is provided in its under side with a longitudinal groove 36, in which operate the blades 37 of slides or feathers 38, which are secured to the extremities of the supporting-ring. Said groove is formed in the under side of the guide-bar in order to prevent accumulations of dust therein, and oil-holes 39 are preferably arranged in the bar at suitable points to provide for the introduction of a lubricant. The guide-bar is supported terminally upon the frame slightly above the plane of the front base-bar 3; but it is obvious that any equivalent means of support may be devised without affecting the function of said bar, which resides in preventing vibration of the type-bar-supporting ring in a direction transverse to the line of writing, the use of two slides or feathers 38 also serving to prevent torsional movement of the supporting-ring.

The details of the printing mechanism, feeding mechanism, and inking devices are not illustrated in this application for the reason that they form no part of the present invention, but are fully described and shown in said former patents in connection with an application for patent made by Robert J. Fisher, Serial No. 660,272, filed November 30, 1897. It is simply necessary in this connection to indicate the type-bars, to which reference has heretofore been made, and ribbon mechanism, including ribbon-spools 39^a, a ribbon-guide 40, and a ribbon 41, traversing said guide and reeled upon the spools, an intermediate portion of said ribbon being arranged in the path of the type-heads 42, carried by said type-bars.

In connection with the above-described mechanism we have illustrated an improved construction of support or table for a type-writing machine having the described tracks 1 or an equivalent thereof. Referring to Figs. 4 to 11, inclusive, the table-top 89 is provided parallel with its front and rear edges with slots 90 for the reception of machine-supporting strips 91, whereby said strips may

be wholly let into the table-top to arrange their upper surfaces flush with the surface of said top. These supporting-strips are adapted to maintain the tracks 1 in a horizontal position in contact with the surface of the sheet or page upon which an impression is to be made, as illustrated in Figs. 4 and 6, a book, which is illustrated at 92, being arranged between the supporting-strips. In order to adjust the supporting-strips to a height above the surface of the table-top to suit the thickness of that side of the book upon which an impression is to be made, we employ segment-gears 93, (shown clearly in Figs. 9 and 10,) connected in pairs by spindles 94, which are arranged longitudinally of the table-top, preferably contiguous to the inner surfaces of the front and rear skirting-boards 95. These segment-gears mesh with racks 96, depending from the supporting-strips contiguous to their extremities, and simultaneous rotary motion in opposite directions is communicated to the spindles of the segment-gears by means of worms 97, meshing with worm-gears 98 on said spindles, the worms being carried by a common worm-shaft 99, which is mounted transversely of the table-top and extends beyond the front edge thereof to receive an operating-crank 100. By turning this worm-shaft the strips may be simultaneously raised or lowered to the desired height, and the use of worms meshing with worm-gears provides for retaining said strips at the desired adjustment without the use of auxiliary locking devices. Hence the operation of the supporting-strips is simplified and we are enabled to adjust them instantly to the desired height to suit the book and change such adjustment as often as may be required in the operation of the machine without the loss of time which would be involved by the manipulation of locking devices.

As the horizontal planes of the sides of a book vary according to the point at which the book is opened, it is necessary to provide means for supporting the leaves of the lower side of the book in proper position for receiving the impression of the printing characters. Hence a platen 101 is employed to span the interval between the supporting-strips and rest at its front and rear edges thereon, whereby a leaf which is to receive the impression is brought to and arranged upon the upper surface of this platen and is there held by the superposed tracks 1. In the construction illustrated in Figs. 4 and 5 the platen is double or is of sufficient area to cover both sides of the book or both leaves which are exposed when the book is opened. Upon a transverse line (or a line transverse to the line of writing) between the parts or different leaf members of this platen is formed a slot 102, upwardly through which may be extended a plurality of the book-leaves to arrange them respectively upon the different parts or leaf members of the platen. By this arrangement

it is possible to write on either of the exposed pages of a book without changing the adjustment of the supporting devices or the position of the book, both of the exposed pages being arranged in a common plane upon the upper surface of a continuous platen, which is co-extensive with the combined surfaces of the exposed leaves and is supported by the strips 91. In the construction illustrated this platen is pivotally or hingedly mounted upon one of the supporting-strips, preferably by means of hinge eyes or clips 103, fitted upon a hinge rod or pin 104, secured to said strip, whereby the platen is permanently attached to and forms a part of the table and is adapted to be folded back to expose a book when it is desired to turn a leaf thereof. After opening the book two or more leaves may be raised, as indicated in Fig. 5, and inserted edgewise through the transverse slot of the platen, and thereby extended to the upper surface of the latter for subsequent outward folding to lie in a horizontal position, as shown in Fig. 4.

In the construction illustrated in Fig. 6 the platen 101^a is coextensive with only one leaf of a book and is not attached to either of the supporting-strips, although supported at its front and rear edges thereby. In other words, this modified construction of platen is separate or disconnected from the table and is adapted to be disposed under a leaf at either side of the book, as may be desired.

From the above description it will be seen that, particularly with relation to the double platen, any tendency upon the part of a leaf at the thicker side of the book to bulge, and thus interfere with the proper manipulation of the machine, will be prevented by the weight of the platen and obviously of the superposed machine, whereby the parts will be properly held in operative position.

The construction of the double platen and the means whereby a platen is mounted for longitudinal movement or movement parallel with the lines of writing form the subject-matter of a copending sole application of R. J. Fisher, Serial No. 675,733, filed of even date herewith, and does not form a part of the subject-matter of this application.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described our invention, what we claim is—

1. A type-writing-machine support having a book-supporting base and elevated machine-supporting strips spaced apart to form an interval sufficient to receive a book, and adjustable toward and from the plane of the base, substantially as specified.

2. A type-writing-machine support having machine-supporting strips mounted upon the base for vertical adjustment and spaced apart to form an interval adapted to receive a book, and means for securing said strips at the de-

sired vertical adjustment, substantially as specified.

3. A type-writing-machine support having a base, machine-supporting strips countersunk into the surface of the base and spaced apart to form an interval adapted to receive a book, and means for adjusting and securing said strips at the desired adjustment, substantially as specified.

4. A type-writing-machine support having a base, vertically-adjustable machine-supporting strips mounted upon the base at an interval sufficient to receive a book, and operating devices for said strips, including operatively-connected gears meshing with racks on the strips, substantially as specified.

5. A type-writing-machine support having a base, horizontal machine-supporting strips adjustable toward and from the plane of the base, and arranged at an interval adapted to receive a book, and a leaf-supporting platen supported by said strips, substantially as specified.

6. A type-writing-machine support having a book-supporting base, a horizontal machine-supporting strip adjustable toward and from the plane of the base, and a leaf-supporting platen resting at one edge upon said machine-supporting strip, and extending over that portion of the base which is adapted to be occupied by a book, to bear upon a book positioned upon the base, substantially as specified.

7. A type-writing-machine support having a book-supporting base, a horizontal machine-supporting strip adjustable toward and from the plane of the base, and a leaf-supporting platen hinged at one edge upon said strip, to span that portion of the base which is adapted to be occupied by a book, substantially as specified.

8. A type-writing-machine support having a base, supporting-strips arranged above the plane of the base at an interval adapted to receive a book, and a platen spanning the interval between and supported by said strips, to support a superposed book-leaf, and mounted for swinging movement upon one of the supporting-strips, substantially as specified.

9. A type-writing-machine support having a base, supporting-strips arranged above the plane of the base at an interval adapted to receive a book, and a platen spanning the interval between and supported by said strips, to support a superposed book-leaf, said platen being hingedly mounted upon one of the supporting-strips, and supported at its free edge by the other strip, substantially as specified.

10. A type-writing-machine support having a book-supporting base, and a platen-supporting member adjustable to vary the interval between the plane of the platen and that of the base, the platen being mounted upon said member for swinging movement, substantially as specified.

11. A type-writing-machine support having

a frame, a horizontally-disposed member mounted upon the frame for adjustment toward and from the plane of the frame, and adapted to be secured at the desired adjustment, and a book-leaf-supporting platen carried by said adjustable member, substantially as specified.

12. A type-writing-machine support having a frame, adjustable spaced members mounted upon the frame and adapted to be secured at the desired adjustment, and a book-leaf-supporting platen carried by and hingedly mounted upon one adjustable member for swinging movement, and supported at its free edge by the other member, substantially as specified.

13. A type-writing-machine support having a base and spaced supports, and a book-leaf-supporting platen spanning the interval between the supports and hingedly mounted at one edge upon one of the supports, substantially as specified.

14. A type-writing-machine support having a base, spaced vertically-adjustable machine-supporting strips mounted upon the base, connected gears meshing with racks on said strips, and an operating-shaft connected with the spindles of said gears by intermeshing worms and worm-gears, substantially as specified.

15. The herein-described type-writing-machine support having a table-top, front and rear parallel machine-supporting strips mounted upon the table-top for supporting opposite ends of a type-writing-machine base-frame, front and rear pairs of gears meshing with racks depending from said strips, said pairs of gears having common spindles, and a worm-shaft having worms meshing with worm-gears on said spindles and provided with a crank-arm, substantially as specified.

16. A type-writing-machine support having a base, supporting-strips arranged above the plane of the base at an interval adapted to receive a book, and a platen spanning the interval between and supported by said strips, to support a superposed book-leaf, and mounted for swinging movement upon one of the supporting-strips, substantially as specified.

17. In a type-writing machine, the combination with a supporting-frame having elevated carriage-guides, a carriage mounted for movement upon said guides, and a type-bar-supporting ring depending from the carriage between the guides, of a supplemental guide carried by the frame parallel with the path

of the carriage and below the carriage-guides, and a sliding connection between the supporting-ring and said supplemental guide, substantially as specified.

18. In a type-writing machine, the combination with a supporting-frame, a carriage mounted upon the supporting-frame for movement parallel with the lines of writing, and a type-bar-supporting ring depending from the carriage, of a guide-bar mounted upon the supporting-frame parallel with the path of the carriage and provided with a longitudinal groove, and a slide consisting of a clip or feather carried by the supporting-ring and engaging said groove of the guide-bar to prevent vibration of the supporting-ring transverse to the lines of writing, substantially as specified.

19. In a type-writing machine, the combination with a supporting-frame, a carriage mounted upon the supporting-frame for movement parallel with the lines of writing, and a type-bar-supporting ring depending from the carriage, of a guide-bar secured to the supporting-frame parallel with the path of the carriage and contiguous to the plane of said supporting-ring, and provided in its under side with a longitudinal groove, and a slide secured to the supporting-ring and provided with a blade fitting to slide in the groove of the guide-bar to prevent vibration of the supporting-ring transverse to the lines of writing, substantially as specified.

20. In a type-writing machine, the combination with a supporting-frame, a carriage mounted upon the supporting-frame for movement parallel with the lines of writing, and a type-bar-supporting frame depending from the carriage, of a guide-bar secured to the supporting-frame parallel with the path of the carriage and adjacent to the plane of the supporting-ring, and a plurality of slides secured to the supporting-ring and having an interlocking sliding engagement with said guide-bar to prevent torsional vibration of the supporting-ring, or movement thereof transverse to the lines of writing, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

ROBERT JOSEPH FISHER.
CHARLES F. LAGANKE.

Witnesses:

RALPH D. STACKPOLE,
EDWARD C. ZWICKER.