No. 620,125. Patented Feb. 28, 1899.

W. P. HATCH & F. W. HILLARD.

TYPE WRITER.

(Application filed June 16, 1898.)

(No Model.) 4 Sheets—Sheet 1.

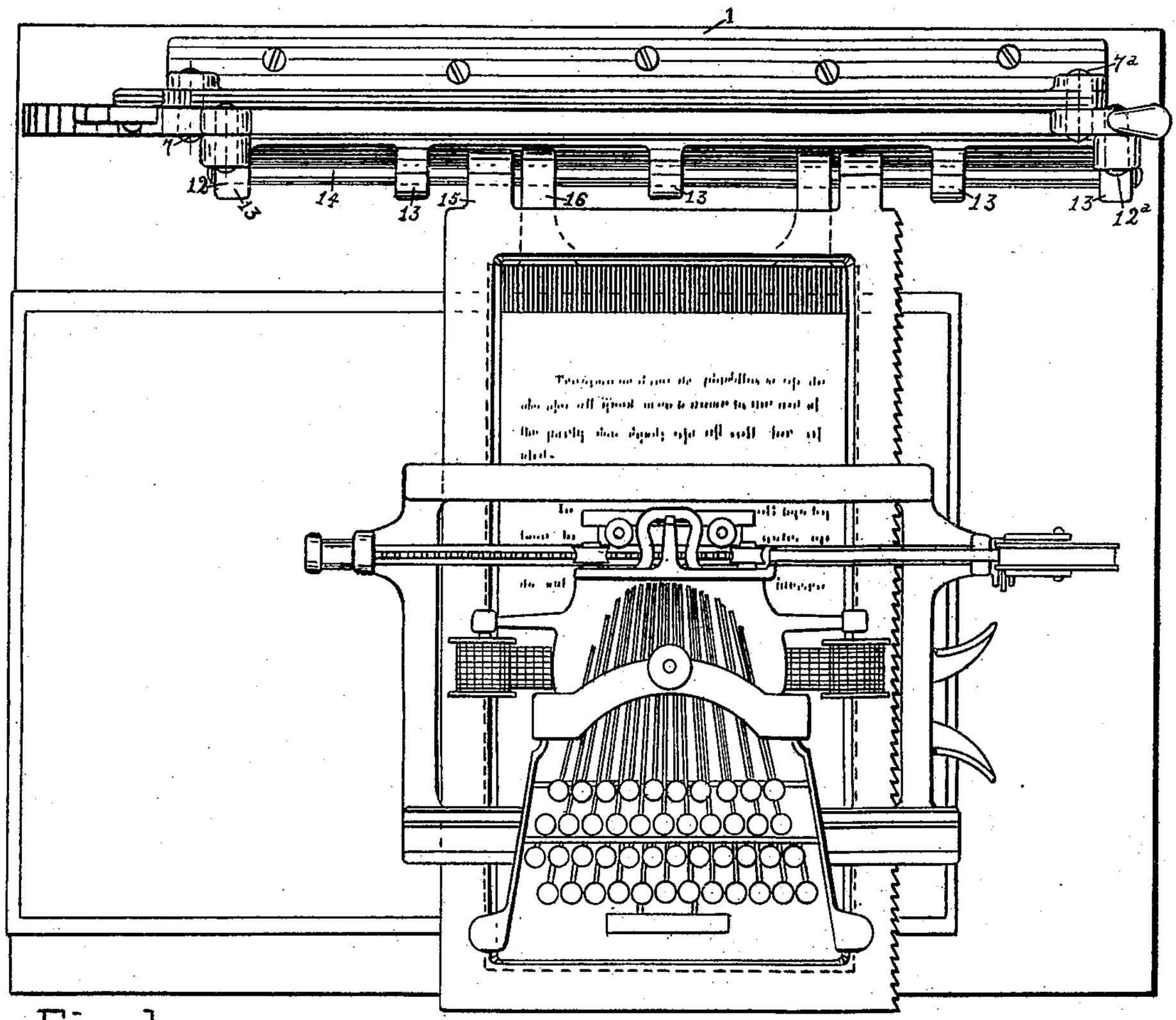


Fig. 1.

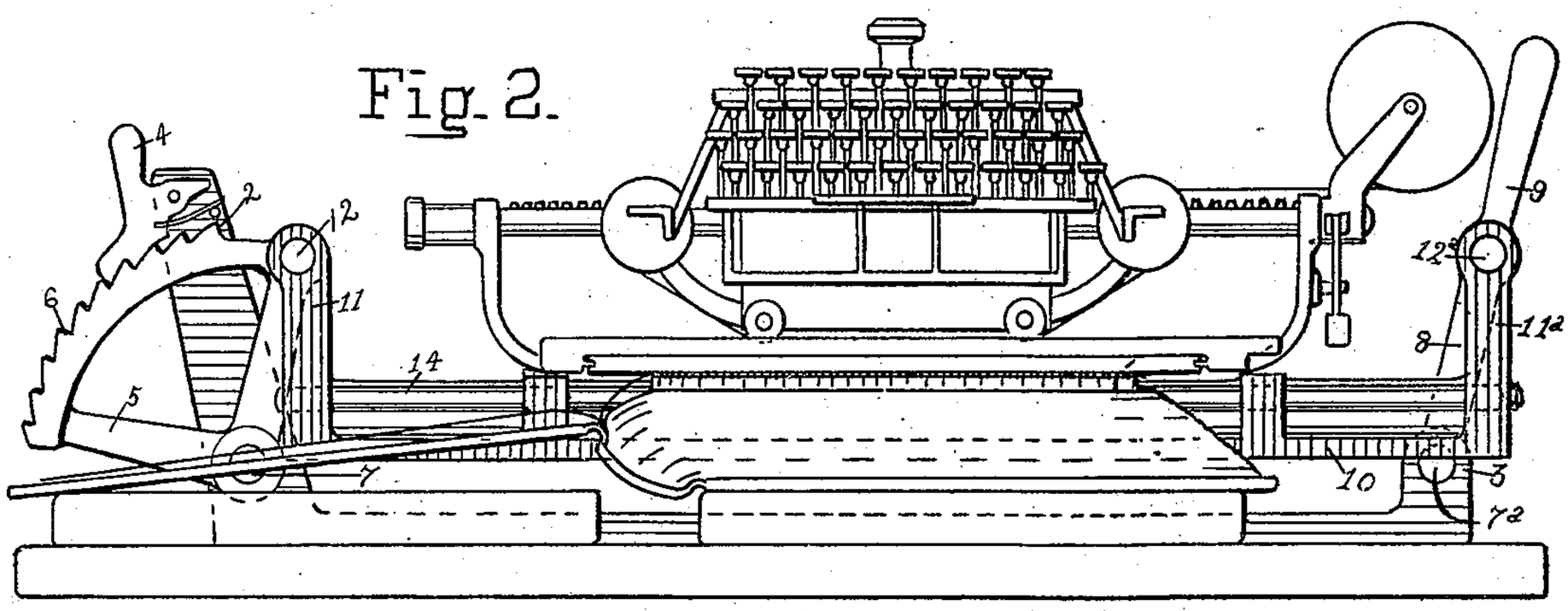


Fig. 2.

Witnesses:
Samuel W. Balch
E. J. O'Connor

Inventors,
Walter P. Hatch,
Frederic W. Hillard,
by Thomas Ewing, Jr.,
Attorney

No. 620,125. Patented Feb. 28, 1899.

W. P. HATCH & F. W. HILLARD.

TYPE WRITER.

(Application filed June 16, 1898.)

(No Model.) 4 Sheets—Sheet 2.

Fig. 3.

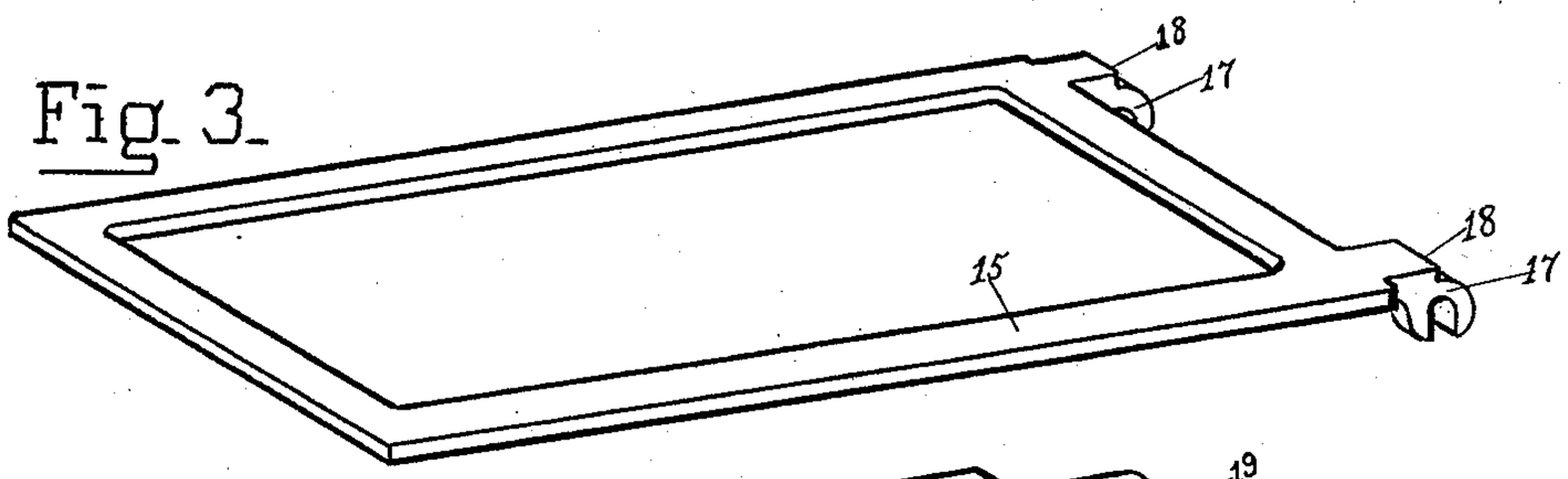


Fig. 4.

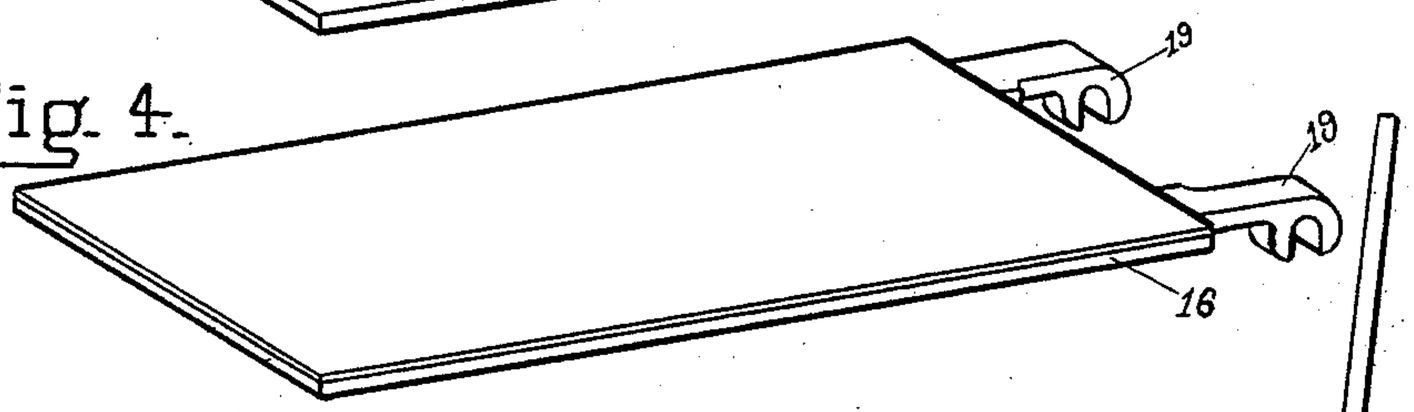
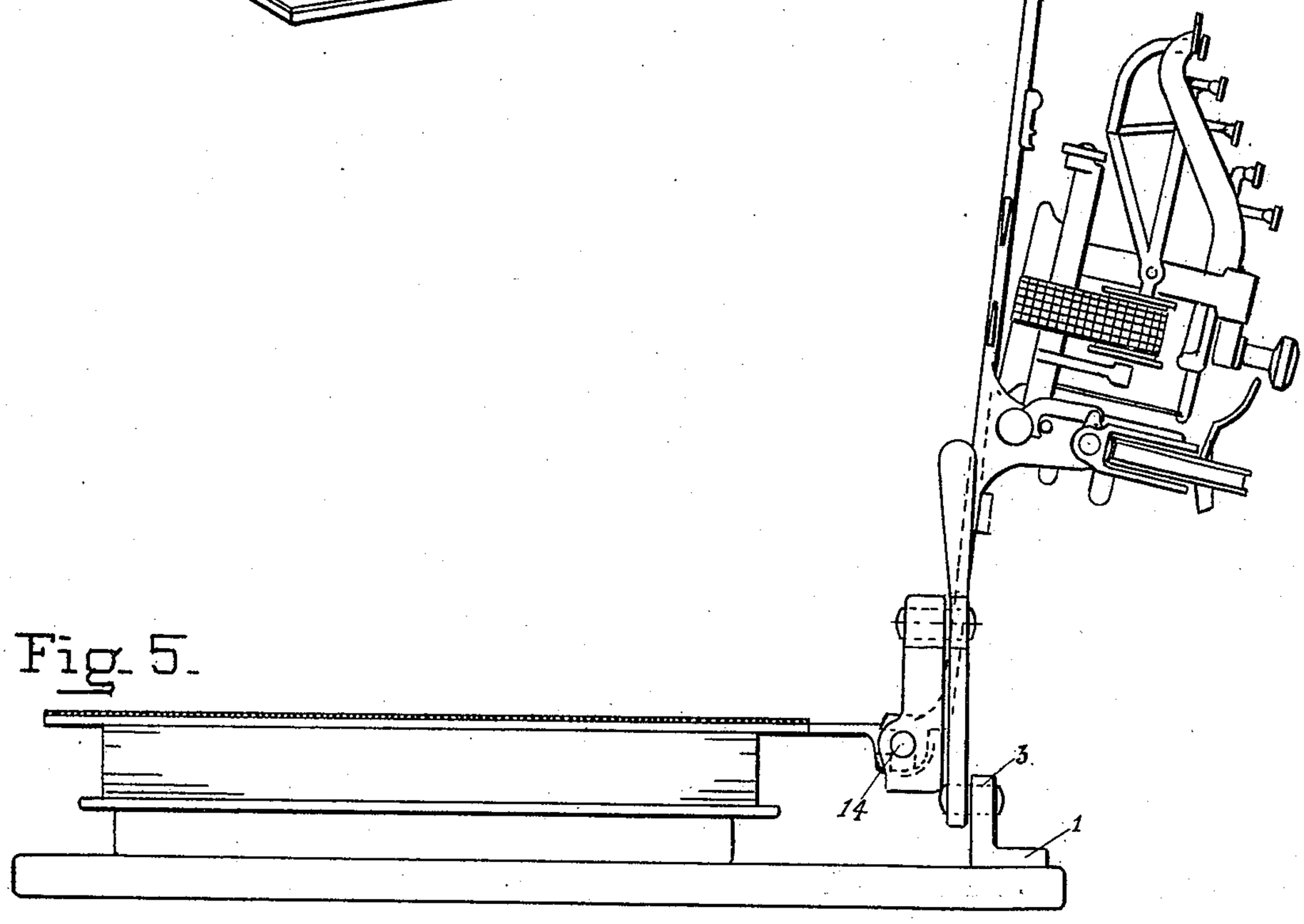


Fig. 5.



Witnesses:
Samuel W. Balch
Edward J. O'Connor

Inventors,
Walter P. Hatch,
Frederic W. Hillard,
by Thomas Ewing, Jr.,
Attorney

No. 620,125. Patented Feb. 28, 1899.

W. P. HATCH & F. W. HILLARD.

TYPE WRITER.

(Application filed June 16, 1898.)

(No Model.) 4 Sheets—Sheet 3.

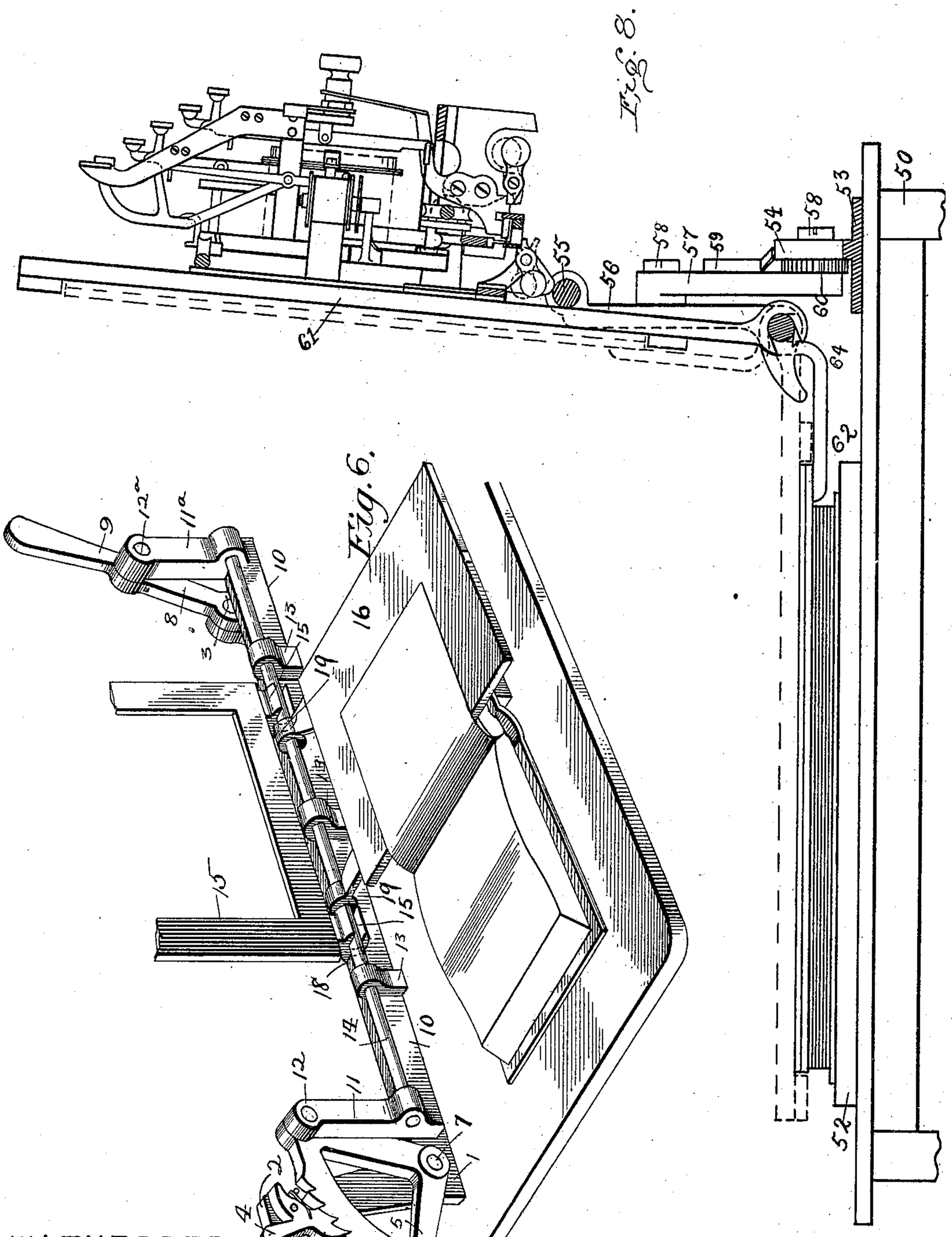


Fig. 6.

WITNESSES

E. J. O'Connor

Samuel W. Balch.

INVENTORS

Walter P. Hatch

Frederic W. Hillard

BY Thomas Ewing, Jr.,

ATTORNEY.

No. 620,125. Patented Feb. 28, 1899.

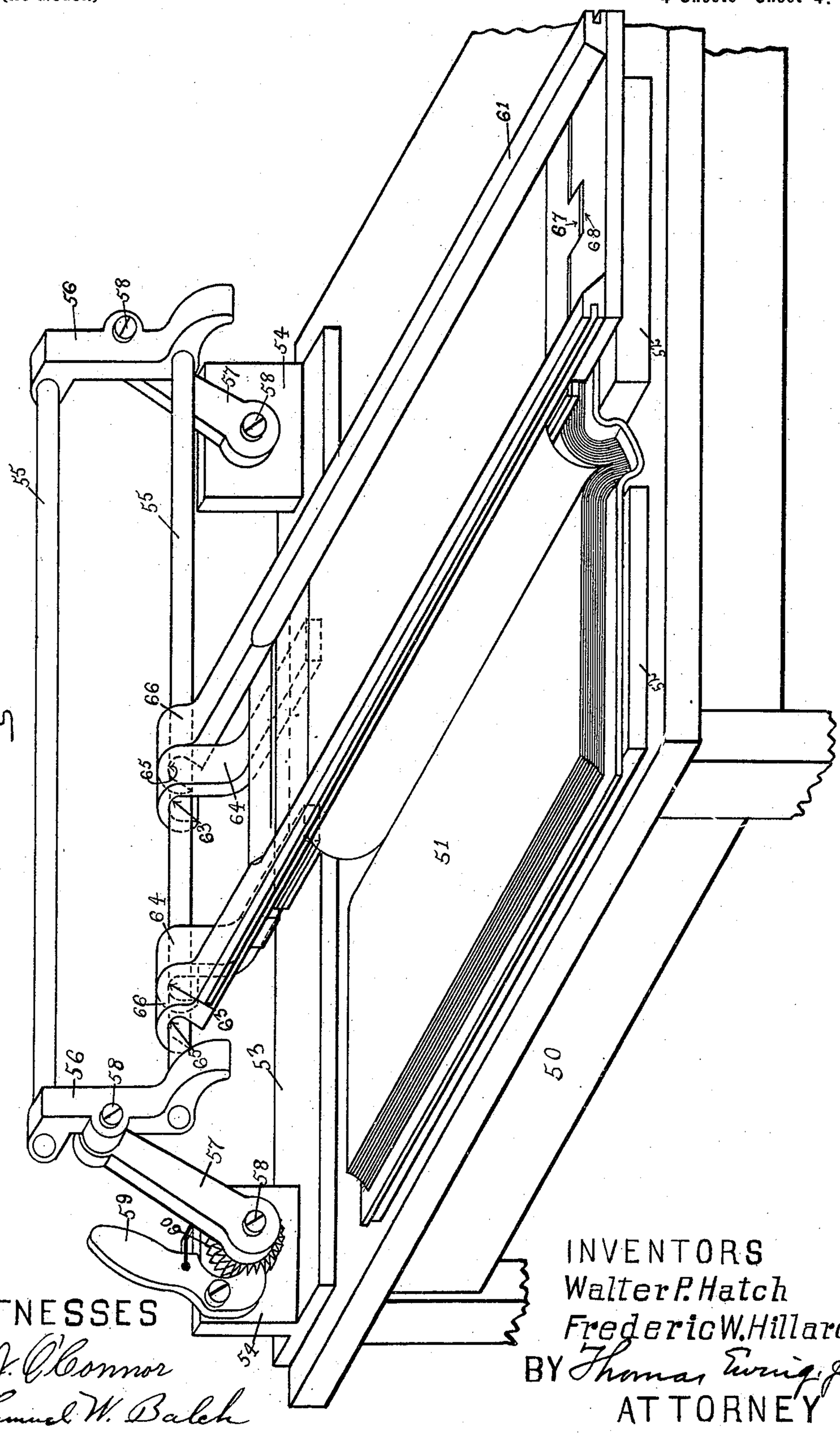
W. P. HATCH & F. W. HILLARD.

TYPE WRITER.

(Application filed June 16, 1898.)

(No Model.) 4 Sheets—Sheet 4.

Fig. 7.



WITNESSES
E. J. O'Connor
Samuel W. Balch

INVENTORS
Walter P. Hatch
Frederic W. Hillard
BY Thomas Ewing, Jr.,
ATTORNEY

UNITED STATES PATENT OFFICE.

WALTER P. HATCH AND FREDERIC W. HILLARD, OF NEW YORK, N. Y., ASSIGNORS TO THE ELLIOTT & HATCH BOOK-TYPEWRITER COMPANY, OF NEW YORK.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 620,125, dated February 28, 1899.

Application filed June 16, 1898. Serial No. 683,606. (No model.)

To all whom it may concern:

Be it known that we, WALTER P. HATCH, a resident of the borough of Manhattan, in the city, county, and State of New York, and FREDERIC W. HILLARD, a resident of Tottenville, in the county of Richmond and city and State of New York, citizens of the United States of America, have invented certain new and useful Improvements in Type-Writers, of which the following is a specification.

The invention consists in an adjustable supporting-frame, called the "adjusting-frame" or the "supporting-frame," which supports one end of the platen and base-frame of the machine, and in the manner in which the platen and base-frame are attached to the adjusting-frame. The machine is especially designed as a book type-writer, but may be used for other purposes.

Referring to the accompanying four sheets of drawings, which form a part of this specification, Figure 1 is a plan view of the type-writing machine in position for writing on a book. Fig. 2 is a front view in elevation, showing the book in position to be written on and the machine in position for writing. Fig. 3 is a perspective of the base-frame. Fig. 4 is a perspective of the platen. Fig. 5 is a side view showing the platen resting upon the book and the base-frame tilted back against the adjusting-frame with the type-writing machine in the position which it will then occupy. Fig. 6 is a perspective view of the adjusting-frame and parts of the platen and base-frame carried thereby, the platen and base-frame being tilted up. Fig. 7 is a perspective view showing a table with a book in position thereon and a leaf properly held in place by the platen and base-frame for printing, the adjusting-frame and the manner of attaching the base-frame and platen thereto being a modification of the showing in the foregoing figures. Fig. 8 is a side view of Fig. 7, showing in full lines the base-frame tilted back, so as to free the leaf.

The type-writer carriage is shown conventionally.

The platen is shown in dotted lines in the position it occupies when tilted back against the base-frame, and the base-frame is shown in dotted lines in the position which it occupies when resting upon the platen holding a leaf in position for printing.

The type-writer machine proper and the manner of mounting it and moving it upon the base-frame and of moving it with the base-frame form no part of our joint invention. Therefore these parts of the device are shown only in a general way in order to illustrate the position and relations of the parts when all assembled and will not be specifically described.

In addition to the movement of the carriage-frame on the base-frame the carriage is so mounted that it may be rocked through somewhat more than ninety degrees on the carriage-frame independently of the base-frame. In order to prevent the rack from dropping out of engagement with the dog when the carriage is tilted on the carriage-frame, a curved lock is provided, which locks the frame and the carriage together and prevents relative movements of the two as the carriage approaches the vertical position. There is also provided at the rear of the carriage a finger, which is intended to rest upon a bar extending clear across the base-frame when the carriage is turned up to prevent it from turning over, the bottom side up. On the carriage-frame there are also provided two locks, one at each of the rear corners of the carriage-frame, which when the base-frame, with the carriage, is lifted in the position shown in Figs. 5 and 8 lock the carriage and the carriage-frame together and prevent the carriage from falling back to a position at right angles to the base-frame; but these locks and the finger referred to are not fully described, because they are the sole invention of one of the applicants and not the joint invention of the two.

Referring now more especially to Figs. 1 to 6, it will be seen that the adjusting-frame is fastened to the table. This I prefer to do by attaching to the table a suitable base-plate 1, which is provided with lugs 2 3, the lug 2 being higher than lug 3. On the lug 2 is mounted a spring-controlled pawl 4 and a segment 5, provided with ratchet 6, with which the pawl engages. Segment 5 is pivoted to lug 2 by a pin or screw 7. Lug 3 is provided with

lifting-lever 8, which is pivoted to the lug by pin or screw 7ª, and has on its upper end a handle 9.

The adjusting-frame consists of a horizontal bar 10, provided at each end with ears 11 11ª, pivoted, respectively, to segment 5 and lifting-lever 8 by pins or screws 12 12ª. The distance between pivots 7 and 7ª is equal to the distance between pivots 12 and 12ª, and the distance between pivots 7 and 12 is equal to the distance between pivots 7ª and 12ª. Hence cross-bar 10 will remain horizontal in all positions at which it may be adjusted and each position of the cross-bar will be parallel with all other positions thereof. Segment 5 and lifting-lever 8 constitute links by which the adjusting-frame is supported in position on base-plate 1. By means of the handle 9 the adjusting-frame can be lifted or lowered, and by means of the ratchet 6 and the pawl 4 it can be held at any point, the ratchet and pawl supplying a self-acting stop, which permits the lifting of the frame, but holds it against being lowered, except when the pawl is raised out of the ratchet. Cross-bar 10 is provided with lugs 13 13, which are bored out to receive shaft 14. This shaft is circular, so that it both supports base-frame 15 and platen 16 and also permits them to swing thereon when they are lifted up off from the book.

As shown in Fig. 3, the base-frame is a rectangular frame, and as shown in Fig. 4 the platen is a plate of iron faced with a sheet of rubber and is made of a size slightly larger than the opening in the base-frame.

The base-frame is provided with two supporting-yokes 17 17, which are grooved to rest over shaft 14 of the adjusting-frame. Yokes 17 17 are also provided with ears or stops 18 18. With the base-frame thus yoked to the adjusting-frame the base-frame can be tilted up as shown in Fig. 5, its lower end being supported by the yokes 17 17, which rest upon shaft 14 of the adjusting-frame, while the ears or stops of the yokes 18 18 rest against the rear of cross-bar 10, which acts as a rest. The rear of the cross-bar, which acts as a rest, should be set so that the base-frame may be tilted back beyond the perpendicular. The platen is also provided with supporting-yokes 19 19, which are grooved to engage with shaft 14 of the adjusting-frame. The platen cannot be tilted backward unless the base-frame is tilted backward, and then the platen when tilted up will rest against the bottom of the base-frame. The supporting-yokes of the base-frame are placed so that they will lie outside of the supporting-lugs of the platen, and the end of the base-frame rests just above the supporting-lugs of the platen when the base-frame and the platen are in the position for printing.

The platen and the base-frame together constitute the base of the machine. The platen is the printing-base and helps to support the base-frame, and the base-frame is a supporting-base for the carriage-frame and carriage. One end of the base is, as will be seen, attached to the supporting or adjusting frame, upon which the base is free to be tilted as a fulcrum, and when tilted can be leaned against the cross-bar of the adjusting-frame as a rest.

The construction whereby the platen and the base-frame are yoked to the adjusting-frame has the advantage that there is formed a sliding contact, so that when the adjusting-frame is moved up and down the base-frame and platen do not follow the consequent lateral movement of the adjusting-frame.

Referring now particularly to Figs. 7 and 8, there is shown a suitable table 50, provided for holding the book 51, which is laid upon blocks 52 52, between the adjacent edges of which the back of the book rests. The adjusting-frame is fastened to the table as before by attaching to the table a suitable plate 53, which is provided with lugs 54 54. The adjusting-frame in the form in which it is shown in Figs. 7 and 8 consists of two horizontal rods 55 55, rigidly connected to each other by brackets 56 56. The adjusting-frame is connected to the lugs 54 54 by means of links 57 57, which are attached to the lugs and the brackets by bolts 58 58, as in the other form. On one of the lugs 54 is mounted a spring-controlled pawl 59, which engages with the ratchet wheel or segment 60, rigidly attached to an end of one of the links at the point where it is bolted to the lug 54. This pawl and ratchet constitute a self-actuating catch to hold the frame in any position in which it is set. The pawl permits the rotation of the ratchet-wheel in the direction for lifting the frame, but holds the ratchet-wheel so that the frame cannot fall back when lifted until the pawl has first been disengaged from the ratchet-wheel.

The base-frame 61 is made up of four sides riveted together. The platen 62 is a plate of iron faced with a sheet of rubber and made of a size just to fit into the base-frame lengthwise and somewhat wider than the interior measurement of the base-frame. When in position for printing, the sides of the base-frame lie above the edges of the platen. The grooves 63 63 in the supporting-yokes 64 64 of the platen and the grooves 65 65 in the yokes 66 66 of the base-frame are cut at different angles. This renders it impossible to jar or remove them from the rod when in the printing position or when tilted back against the upper rod 55. The grooves in the yokes 66 66 of the base-frame make an angle with the vertical when the frame is in printing position.

The platen is provided with a tongue 67, which fits into a notch 68, cut in the adjacent end of the base-frame to prevent lateral movement between the platen and the base-frame; but this feature also forms no part of our joint invention.

The two horizontal rods 55 55 may be

brought closer together or placed farther apart, according to the preference of the constructor. Placing them close together, as in the first form illustrated, has the advantage that the base-frame may be turned back, carrying with it the carriage and carriage-frame, irrespective of the position of the carriage-frame on the base-frame, which is not true in the second form illustrated, and, further, since the supporting-yokes 17 17 of the base-frame bear at stops 18 18 against the adjusting-frame there is no chance that the yokes will slip off from the rod of the adjusting-frame with which they engage when the base-frame is tilted backward. On the other hand, with a heavy type-writing machine and frame there is some danger that the weight of the machine may break the supporting-yokes of the base-frame when the rods of the adjusting-frame are brought close together.

In either form of our invention it will be seen that the parallelism of all positions of the adjusting-frame is insured with every other position thereof. From this it follows that if the parts are properly proportioned to insure the parallelism of any one position of the adjusting-frame with the table-top this parallelism will always be maintained and that if the table-top be level the adjusting-frame will also be level. It will also be seen that the loose connection between the platen and the adjusting-frame formed by the slots in the platen permits a freedom of movement between the two parts, whereby the platen can when lowered on the book rise partly or entirely off the adjusting-frame. The platen will rise partly off the adjusting-frame—for instance, at one yoke—if the adjusting-frame is closely adjusted to the height of the book; but the book is not exactly level, while if the adjusting-frame is not lifted sufficiently high the platen when lowered on the book will rest entirely thereon and be raised entirely from off the adjusting-frame. Whether the platen has its one end entirely or partly supported by the adjusting-frame or whether the platen is supported by the book independent of the adjusting-frame the loose connection above referred to permits the adjusting-frame to hold the platen against lateral displacement and the ready dismounting of the platen. The similar loose connection between the base-frame and the adjusting-frame permits the weight of the base-frame in writing to be carried entirely by the platen and at the same time permits the adjusting-frame to hold it against displacement, the adjusting-frame forming a pivot for the base-frame and platen to turn upon when it is desired to raise the latter. This automatic adjustment of the platen and base-frame vertically in relation to the lift-frame is found to be of importance.

Having thus described the invention and the best means known to us for carrying it into effect, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of an adjusting-frame and a platen having one end attached to and adjustable with the frame, the opposite end of the platen being adjustable independently of the frame, substantially as described.

2. The combination of an adjusting-frame, means for insuring parallelism of the several positions thereof, and a platen having one end attached to and adjustable with the frame, substantially as described.

3. The combination with a frame, of a platen having its one end pivotally attached to the frame, the opposite end of the platen being free and adjustable in height when in position for use and supported independently of the frame, substantially as described.

4. In a type-writer for writing on bound books, the combination with an adjusting-frame, of a platen having its one end pivotally attached to the adjusting-frame, the opposite end of the platen being free and adjustable in height when in position for use and being supported by the book to be written and independently of the adjusting-frame, substantially as described.

5. The combination of an adjusting-frame, links for adjusting the frame and for supporting it in all positions, and a platen, one end of which is attached to the frame by a sliding connection and adjustable with the frame, substantially as described.

6. The combination of an adjusting-frame, pivoted parallel links for supporting the frame so that it may be moved in different positions, and a base, one end of which is attached to the frame by a sliding connection, so that by moving the frame the end of the base may be adjusted in position vertically without moving the base laterally, substantially as described.

7. The combination of an adjusting-frame having a rod supported thereby, pivoted parallel links for adjusting the frame with the rod in different positions, a base, one end of which engages with the rod and can be tilted thereon as a fulcrum to lift the base into an elevated position, and contacting parts on the base and the frame to limit the movement of the base about the rod as a fulcrum substantially as described.

8. The combination of an adjusting-frame consisting of two rods and brackets for holding the rods, links for adjusting the rods in different positions, and a base, one end of which engages with one of the rods, so that the base can be tilted upon the end so engaging with the one rod, and can rest against the other rod, substantially as described.

9. The combination of an adjusting-frame having a rod supported thereby, pivoted parallel links for adjusting the frame with the rod in different positions, a base, one end of which engages the rod with a sliding connection and can be tilted thereon as a fulcrum to lift the base into an elevated position, and

contacting parts on the base and the frame to limit the movement of the base about the rod as a fulcrum, substantially as described.

10. The combination of an adjusting-frame consisting of the two rods and brackets for holding the rods, links for adjusting the rods in different positions, and the base, one end of which engages one of the rods in a sliding connection, so that the base can be tilted upon the end so engaging with the one rod, and can rest upon the other rod, substantially as described.

11. The combination of a base-frame, a platen, and a supporting-frame to which one end of the base-frame and one end of the platen are each attached by a pivoting connection, substantially as described.

12. The combination of a base-frame, a platen, and a supporting-frame to which one end of the base-frame and one end of the platen are each attached by a pivoting connection, the base-frame overlying the platen, substantially as described.

13. The combination of a base-frame, a platen, a supporting-frame to which one end of the base-frame and one end of the platen are each attached by pivoting connections, the base-frame and the platen being each independently attached to the supporting-frame, substantially as described.

14. In a type-writing machine, the combination with a supporting-frame, of a platen having a loose connection therewith to permit automatic vertical adjustment of the platen in relation to the supporting-frame, substantially as described.

15. In a type-writing machine, the combination with a supporting-frame, of a platen having downwardly-opening slots to receive the frame to permit automatic vertica ladjustment of the platen in relation to the supporting-frame, substantially as described.

16. In a type-writing machine, the combination with a supporting-frame, of a base, composed of a platen and superimposed base-frame, the base-frame being connected to the supporting-frame by a loose connection to permit automatic vertical adjustment of the base-frame in relation to the supporting-frame, substantially as described.

17. In a type-writing machine, the combination with a supporting-frame, of a base, composed of a platen and superimposed base-frame, the platen and base-frame being connected to the supporting-frame by independent and loose connections to permit automatic vertical adjustment of the platen and base-frame in relation to the supporting-frame, substantially as described.

18. In a type-writing machine adapted for writing in bound books, the combination with a base-frame, a platen and a supporting-frame to which one end of the base-frame and of the platen is attached, the other end of the platen resting on the book and supporting the base-frame thereon, substantially as described.

19. In a type-writing machine adapted for writing in bound books, the combination of a base-frame, a platen, and a supporting-frame, one end of the base-frame and of the platen being each independently attached to the supporting-frame, the other end of the platen resting on the book and supporting the base-frame thereon, substantially as described.

20. The combination in a machine for writing on bound books of an adjusting-frame, means for insuring a parallelism of the several positions thereof, and a platen having one end supported on and attached to, the adjusting-frame by a pivotal connection, whereby the platen as a whole may move upon the adjusting-frame as a pivot to facilitate the placing of the book in position thereunder, the free end of the platen being also adjustable in height when in position for use, substantially as described.

Signed by us in New York city this 10th day of June, 1898.

WALTER P. HATCH.
FREDERIC W. HILLARD.

Witnesses:
C. W. HATCH,
A. G. OLNEY.