No. 747,916. PATENTED DEC. 22, 1903.

F. W. HILLARD.

PAPER CLAMP FOR TYPE WRITING MACHINES.

APPLICATION FILED MAR. 7, 1902.

NO MODEL. 5 SHEETS—SHEET 1.

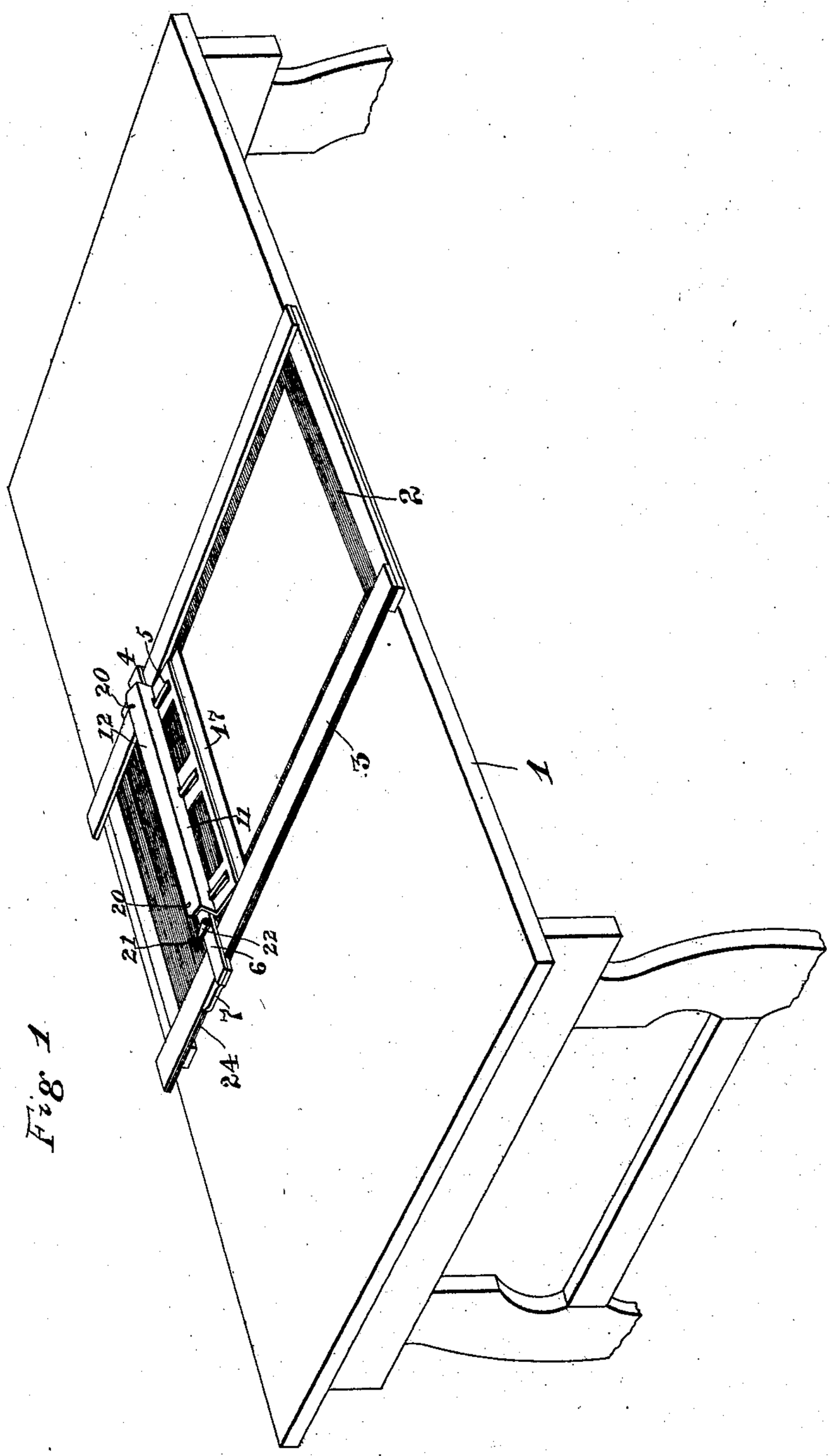

Fig. 1.

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NO MODEL. 5 SHEETS—SHEET 2.

Fig 2

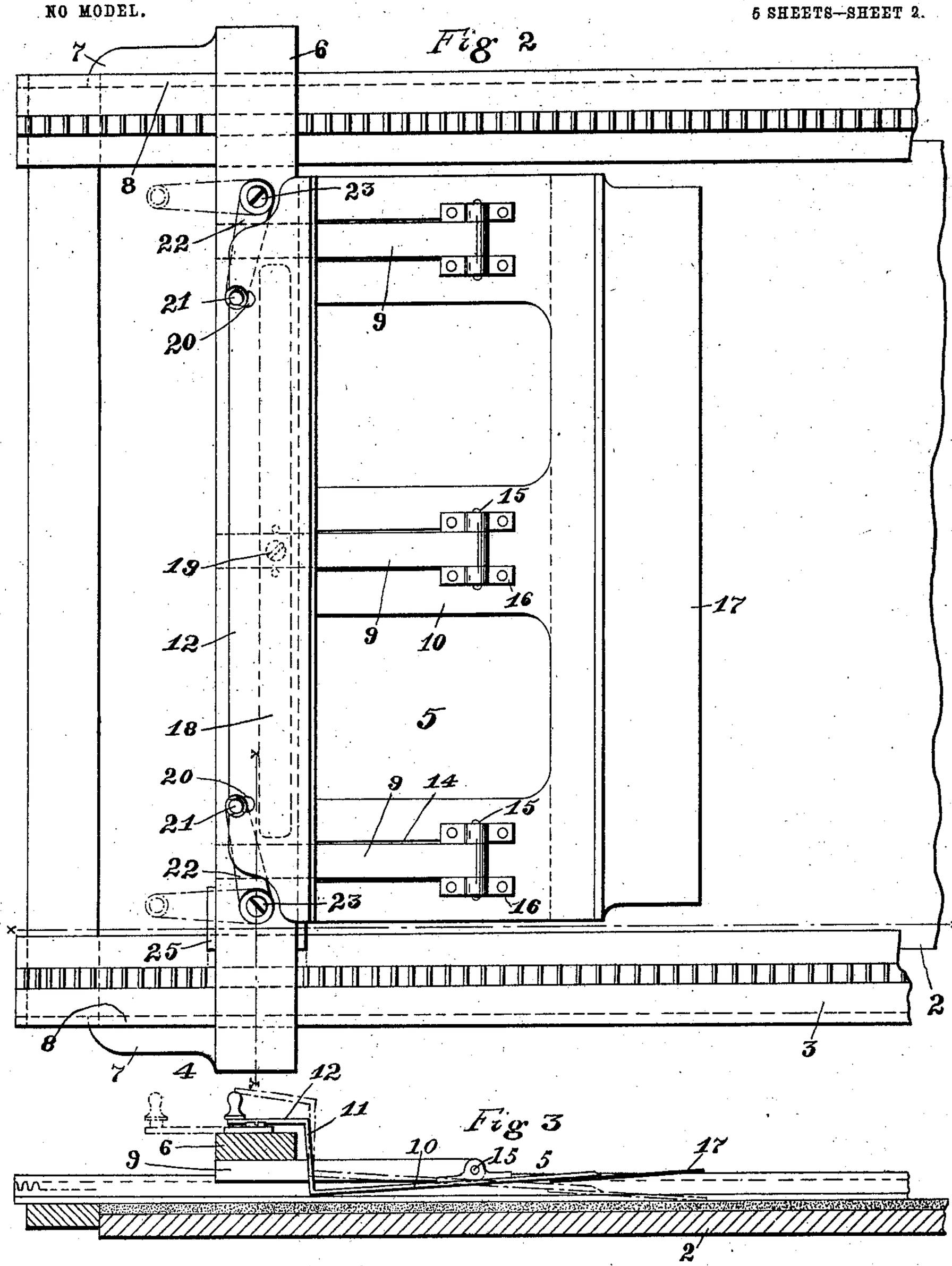
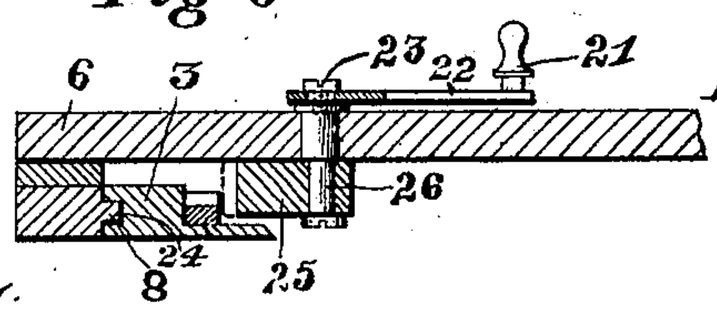


Fig 3

Fig 6



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NO MODEL. 5 SHEETS—SHEET 3.

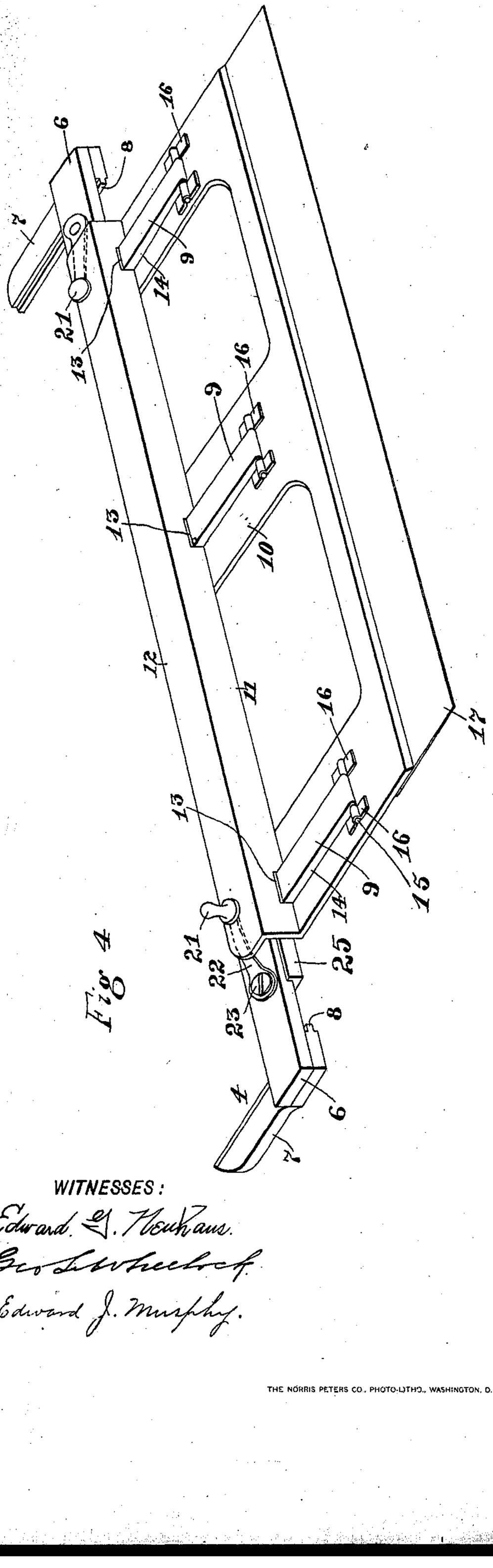

Fig. 4

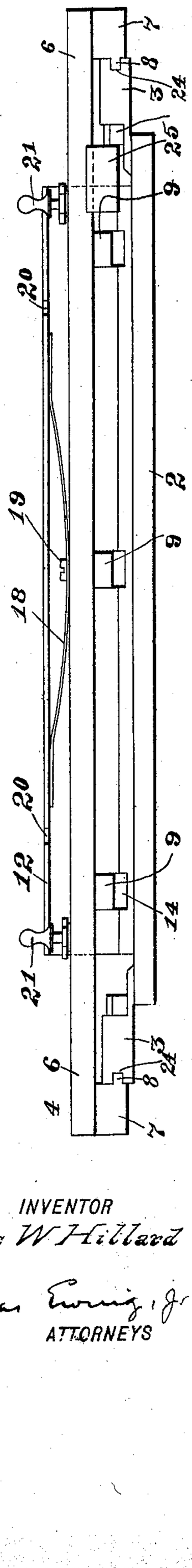

Fig. 5

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NO MODEL. 5 SHEETS—SHEET 4.

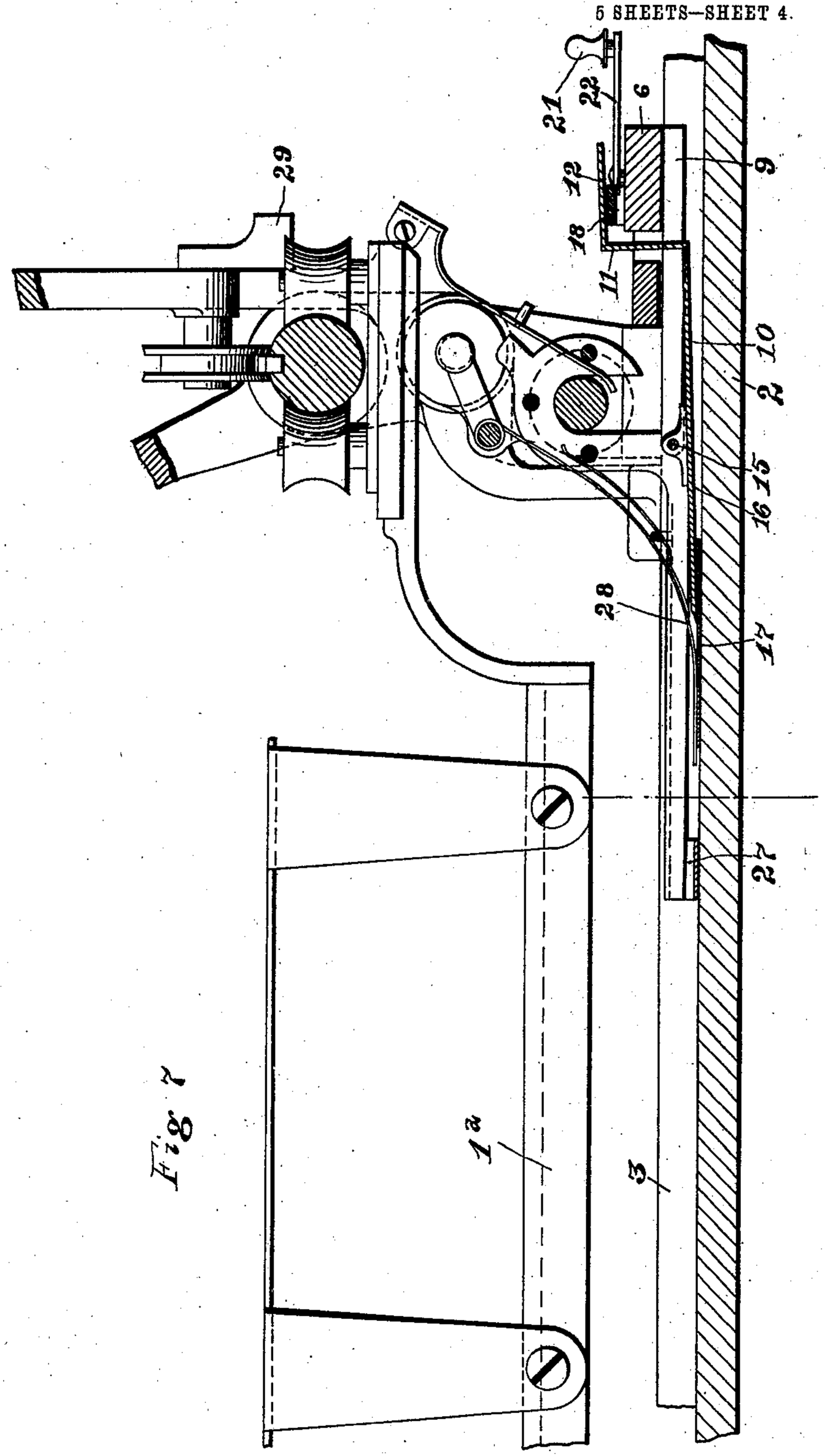

Fig. 2.

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NO MODEL. 5 SHEETS—SHEET 5.

Fig 8

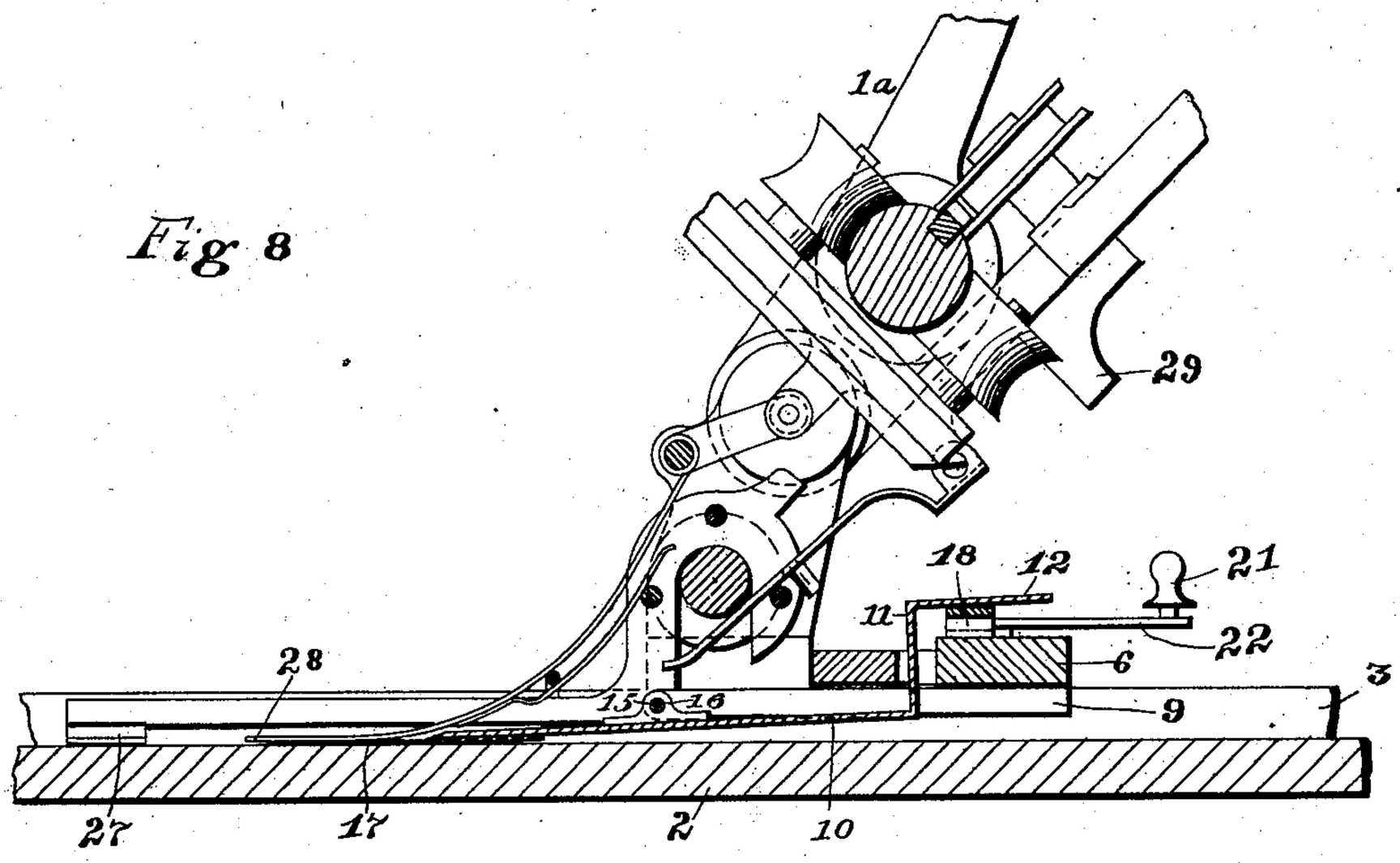
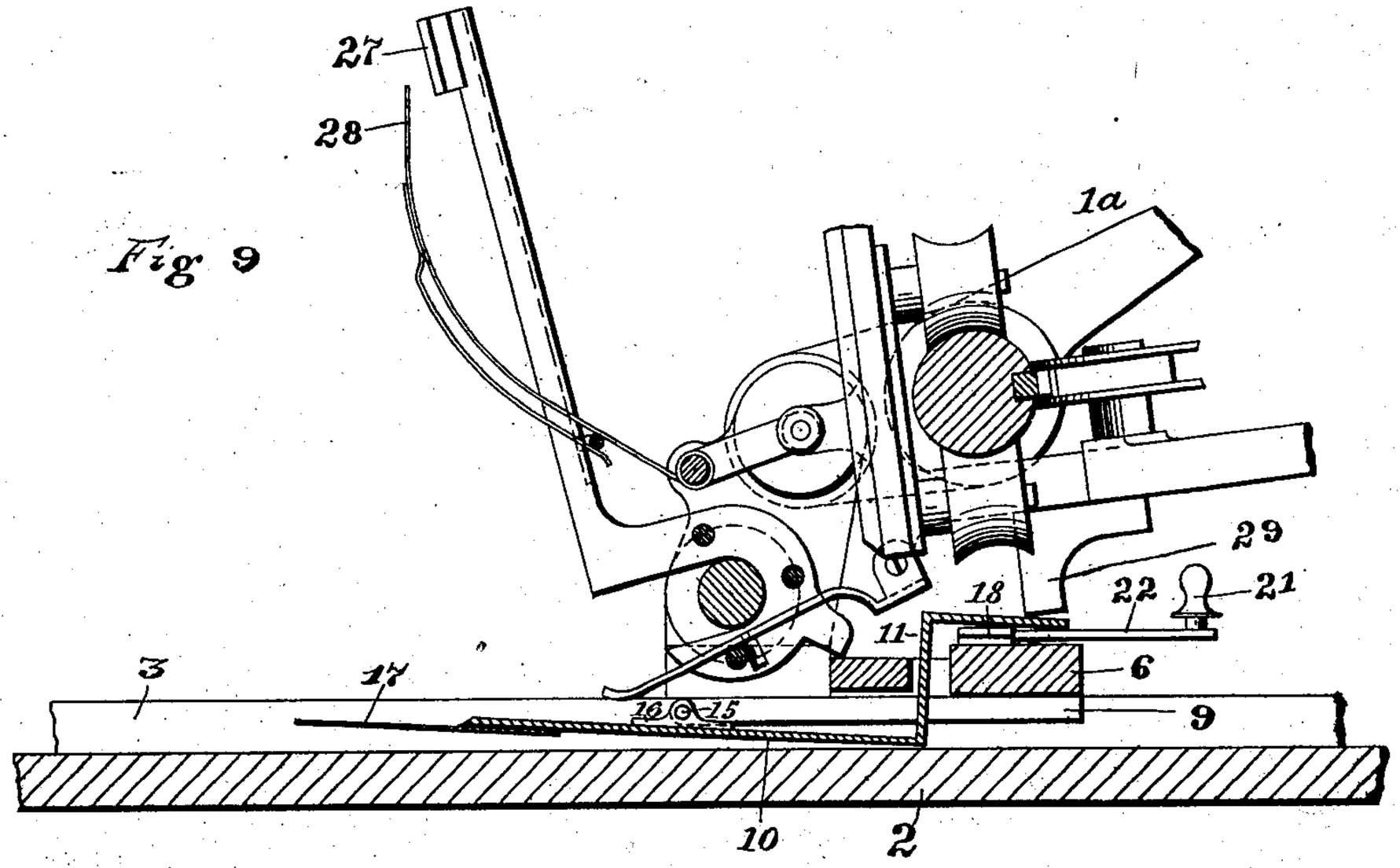


Fig 9



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No. 747,916. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

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PAPER-CLAMP FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 747,916, dated December 22, 1903.

Application filed March 7, 1902. Serial No. 97,041. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC W. HILLARD, a citizen of the United States of America, and a resident of Tottenville, borough of Richmond, city and State of New York, have invented certain new and useful Improvements in Paper-Clamps for Type-Writing Machines, of which the following is a specification.

The present invention relates to paper-clamps for type-writing machines of that class known as "book type-writing machines"—such, for instance, as made by the Elliott & Hatch Book Typewriter Company—in which the paper to be printed upon is retained on a flat platen.

It is very desirable in machines of the described class not only to provide means for retaining the leaf of the book to be printed on in smooth condition to receive the impact of the printing-type, but also to retain a separate or loose sheet-letter, legal-cap, or the like in position upon the platen.

The main purpose of the present invention is, therefore, to provide means for holding loose sheets from one end against displacement, as by line-spacing the carriage and carriage-frame, without requiring the insertion of the sheet under the base-frame for holding it.

Another and an important object of the present invention is to provide a paper-clamp for type-writing machines which may be readily adjusted and set in adjusted position relatively to the platen, particularly relatively to the length of the platen and of the sheet or leaf, and to provide means whereby the carriage of the type-writing machine may be utilized to automatically release the clamp from the sheet or leaf when the said carriage has reached the limit of its return movement.

A further object is to provide means for both automatically clamping and automatically releasing a sheet or leaf and to adapt the clamp for properly securing a sheet or leaf of any size less than the area of the opening in the base-frame of the machine which is ordinarily employed in book type-writing machines to bind the edges of the sheet or leaf against the platen.

A further object of the invention is to construct a type-writing machine so as to receive a paper-clamping attachment which can be placed on or removed from the machine with both ease and facility.

To these ends my invention consists of certain features of construction and combinations of parts to be hereinafter fully described, and then claimed.

In the accompanying five sheets of drawings, which show the invention applied to the machine covered by my copending application, Serial No. 86,999, filed December 23, 1901, Figure 1 is a perspective view showing a table, a platen, and a base-frame resting on the table, in which view my improved paper-clamp is shown in use, the machine proper, however, being omitted, so as to permit a clearer view of the clamp in its position upon the base-frame. Fig. 2 is a plan view of the clamp and portions of the base-frame to which it is attached and the platen, the clamp-locks or keepers being shown in full lines in position for holding the clamp inoperative and being shown in dotted lines as released from the clamp while the latter is in position of use. Fig. 3 is a side view of the same parts, the clamp being shown in raised position in full lines and in using position in dotted lines. Fig. 4 is a perspective view of the clamp detached from the machine. Fig. 5 is a rear elevation of the platen, base-frame, and paper-clamp. Fig. 6 is a sectional detail view showing the means for fixing the clamp in position, taken on section-line *y y* of Fig. 2. Fig. 7 is a sectional side view showing parts of the machine covered by my aforesaid application with the clamp applied, the object of this view being to show that when the carriage is in writing position and the movable scale and pointer are lowered upon the platen the clamp, if released, is in using position, resting upon the platen also. Fig. 8 is a similar view, most of the carriage being broken away, the carriage having been moved to the first raised position for permitting an examination of the work, in which position the scale, pointer, and paper-clamp still rest upon the platen; and Fig. 9 is a similar view in which the carriage has been moved to second raised

position, thereby raising the scale and pointer and at the same time automatically raising the clamp from the sheet.

A table 1 is shown in Fig. 1, which supports a platen 2 and a base-frame 3, the sides of which form tracks to which the paper-clamp is shown as applied, the platen and base-frame being shown as simply resting on the table and no machine proper being shown in said figure.

Referring now to Figs. 2 to 6, inclusive, the construction of the paper-clamp and the manner of mounting the same on the base-frame will be described. The clamp comprises two main parts—namely, a supporting member 4 and a clamping member 5. The supporting member 4 consists of a back bar 6, at the ends of which are arranged transverse guide-pieces 7, which are provided with longitudinal ribs or tongues 8 on their inner faces, while between the ends of the bar there are screwed or otherwise fastened preferably three forwardly-projecting arms 9. A clamp-jaw frame 10 is hinged to the said forwardly-projecting arms 9 on the supporting member. This clamp-jaw frame 10 preferably comprises a plate with the superfluous portions of the stock of the same removed for lightness and which is provided at its rear edge with an upwardly and rearwardly bent portion 11, the rearwardly-extending top of which forms a flange or abutment 12, for the purpose to be hereinafter stated. That part of the bent-up portion of the clamp-jaw frame which is at an angle to the body of the said frame is recessed at 13, and the adjacent portion of the main body of the clamp-jaw frame is correspondingly recessed at 14, so that openings in the clamp-jaw frame are provided, which correspond with and receive the forwardly-projecting arms 9 on the supporting member. The arms are preferably drilled at their outer ends, so as to receive short pivot-shafts 15, which are secured to the clamp-jaw frame 10 by suitable straps 16, secured by screws or other suitable fastenings. By this manner of constructing the clamping member and mounting it on the supporting member the flange or abutment 12 thereon will be located above the back bar 6. At the front edge of the clamping member is a lip 17, which preferably corresponds in width relatively to the width of the base-frame with the width of the largest sheet that may be clamped at its upper edge. This lip is formed of a very thin plate of sheet metal, preferably German silver, which is secured by rivets or in any other suitable manner to the edge of the clamping member, and being quite flexible and yielding it enables the front edge or clamping part of the clamp to conform with irregular surfaces and to clamp a sheet snugly across the portion to be clamped. Located between the back bar 6 of the supporting member and the said flange or abutment 12 of the clamping member is a spring 18, formed of a strip of spring metal, which is secured at about its mid-length by means of a screw or suitable fastening 19 to the mid-length of the said back bar, while its outer ends are curved or bent upwardly toward said flange or abutment, with its free extremities bearing upon the under side of the ends of the flange or abutment, so that the tendency of this spring is to raise the flange or abutment and to lower the front edge of the clamping member, causing a clamping action. Recesses or notches 20 are formed in the ends of the flange or abutment 12 of the clamping member, which recesses receive buttons 21, located on the free ends of short arms 22, pivoted at 23 to the back bar 6 adjacent its ends, said pivoted arms, with their buttons 21, forming crank-like keepers, which may engage the notched or recessed portions of the said flange to lock the clamping member in raised position and to hold the spring compressed for the purpose to be stated.

In the outer edges of the base-frame 3 are preferably formed grooves 24, which receive the tongues 8 on the guide-pieces of the supporting member 4, so that, if desired, the said guide-pieces may be guided on the same and the clamp adjusted along the length of the platen and be removed entirely from the base-frame or readily applied thereto, thus making the clamp an attachment for the machine. When in position, the back bar will extend transversely of the base-frame, as shown in Fig. 1 and also in Fig. 2, while the clamping member will be located in front of the back bar and under the carriage, as shown in Fig. 7, and, as shown in the last-named figure, as well as in Figs. 8 and 9, the back bar extends across the rear of the carriage, and thus limits the rearward movement thereof on the tracks. This is a convenience in that when the paper-clamp is adjusted to any point along the platen it serves as a stop to arrest the rearward movement of the carriage at the proper point to bring the printing-point of the writing mechanism into proper relation with the card or sheet held by the clamp to permit writing thereon without further attention on the part of the operator and dispenses with the necessity of a separate stop requiring independent adjustment. The adjusted position referred to of the clamp may be fixed by means of a clamp-block 25, guided on the under side of one end of the back bar, as shown in Fig. 6, which clamp-block receives the pivot 23 of the corresponding keeper, said pivot having an eccentric portion 26, journaled in an opening in the said back bar, so that when the said keeper is actuated the clamp-block 25, which forms an opposing jaw to the adjacent guide-piece 7, will be caused to bind upon the side bar of the base-frame.

The clamp described is shown in connection with the machine covered by my application above referred to; but it is of course not necessarily used in connection therewith. It will, however, be described in such connec-

tion. In that application the carriage 1ª has a plurality of positions—namely, a writing position, in which a movable scale 27 and a pointer 28 rest upon the sheet or leaf which is being written upon, as shown in Fig. 7, and two raised positions. In the first raised position of the carriage for enabling a view of the type-written matter for the purpose of correction or otherwise the scale and pointer still rest upon the type-written matter, as shown in Fig. 8. When, however, the carriage is moved to its second raised position, as indicated in Fig. 9, the scale and pointer are automatically raised from the type-written matter and the sheet or leaf may be removed and a new one inserted. In Fig. 7 the clamping member 5 is shown as released from the keepers 21 22, so that the clamping-lip 17 thereof may be clamped upon the paper or leaf. The clamping attachment, if adjustable, is ordinarily adjusted along the base-frame, according to the length of the sheet or leaf. The clamp when first placed on the machine has its clamping member in raised position, (shown in full lines in Figs. 2 and 3,) secured by the engagement of the keepers with the flange or abutment 12. Normally after the clamp has been fixed in position by disengaging the keeper controlling the lock 25 from the flange or abutment 12 the clamping member is in the dotted-line position shown in Fig. 3. The other keeper is, however, first released if a second keeper be used.

When a sheet of paper or a leaf is to be clamped, the clamping member is raised, the sheet inserted under the clamping-lip 17, and the spring 18 then permitted to act to automatically lower the clamping-lip to the position shown in dotted lines in Fig. 3 and to bind or clamp the sheet or leaf between the lip and the platen. The resiliency or flexibility of the thin lip 17 will permit it to conform to any inequalities in the platen or paper and to hold the sheet snugly and smoothly. When the carriage is moved to the first raised position for the purpose of exposing the sheet with its type-written matter, the scale and pointer remain upon the sheet while the sheet remains clamped, as shown in Fig. 8; but when the carriage is lifted to its second raised position, as shown in Fig. 9, the scale and pointer are automatically raised from the sheet, and an actuating-piece 29 on the carriage strikes the flange or abutment 12 of the clamping member and automatically raises the latter, thereby releasing the sheet or leaf from the clamping-lip, so that the sheet or leaf may be removed and another inserted. This movement (shown in Fig. 9) is ordinarily accomplished when the carriage has been moved back as far as possible upon the base-frame and lifted so that its actuating-piece will strike the flange or abutment, usually after the type-written matter has been printed on the sheet or leaf.

What I claim as new and of my invention is—

1. In a paper-clamping attachment for type-writing machines, the combination of a back bar provided with guide-pieces constructed to be guided on the base-frame of a type-writing machine, and a clamping member pivoted to said back bar, substantially as described.

2. The combination, in a type-writing machine, of the base-frame, a paper-clamp adjustable thereon in the direction of line-spacing, and a carriage, the rearward movement of which is limited by said clamp according to the position thereof, substantially as described.

3. In a type-writing machine the combination with tracks, of a writing-machine movable toward or from the tracks, and a work-clamp arranged to be operated by the said movement of the said machine in respect to the track or guides, substantially as described.

4. In a type-writing machine, the combination with a stationary flat platen, of tracks, a writing-machine mounted thereon for movement toward and away from the said tracks, and a work-clamp disposed directly over the writing-surface of the platen to clamp the work thereon, and movable toward and away from the platen, said work-clamp being disposed for actuation by the said movement of the writing mechanism, substantially as described.

5. In a type-writing machine the combination with the relatively flat platen, of tracks, a writing mechanism mounted thereon, and movable toward and away from the platen independently of the tracks, a swinging work-clamp disposed to clamp the work against the writing-surface, and means for automatically actuating the work-clamp by the movement of the writing mechanism, substantially as described.

6. In a type-writing machine, the combination with the stationary flat platen, tracks, a writing-machine mounted and pivoted for movement thereon toward and away from the platen independently of the tracks, a transverse work-clamp carried by and between the tracks in a plane below the writing mechanism, and movable toward the writing-surface to clamp the work thereon, and a clamp-actuating member located intermediate of the ends of the platen, and extending into coöperative relation with the writing mechanism, substantially as described.

7. In a type-writing machine, the combination with the stationary flat platen, of tracks, a writing mechanism mounted on the tracks and movable toward and away from the platen independently of the tracks, a transverse work-clamp disposed over the writing-surface of the platen, and means for automatically moving the work-clamp away from the writing-surface by the movement of the writing mechanism, independently of the tracks, substantially as described.

8. In a type-writing machine, the combination with the stationary flat platen, of tracks,

a writing mechanism mounted on the tracks and movable toward and away from the platen independently of the tracks, a transverse work-clamp disposed over the writing-surface of the platen, and means for automatically moving the work-clamp away from the writing-surface by the movement of the writing mechanism independently of the tracks, and separate means for moving the work-clamp toward the writing-surface to release the work, substantially as described.

9. In a type-writing machine, the combination with a flat platen, of tracks, a writing mechanism mounted thereon for movement away from the platen independently of the tracks, and a work-clamp adapted to be actuated by the said movement of the writing mechanism, substantially as described.

10. In a type-writing machine, the combination with a flat platen, of tracks, a writing mechanism mounted thereon for movement away from the platen independently of the tracks, and a work-clamp carried by the tracks, and adapted to be actuated by the said movement of the writing mechanism, substantially as described.

11. In a type-writing machine, the combination with a flat platen, of tracks, a writing mechanism movable thereon for line-spacing and mounted for movement away from the platen independently of the tracks, and a work-clamp mounted on the tracks and shiftable thereon in the direction of line-spacing, and adapted to be actuated to release the work upon the movement of the writing mechanism away from the platen, substantially as described.

12. In a type-writing machine, the combination with a flat platen, of tracks, a writing mechanism over the platen and mounted for movement away from the platen independently of the tracks, and a work-clamp carried by the tracks and adapted to be actuated by the said movement of the writing mechanism, substantially as described.

13. In a type-writing machine, the combination with a flat platen, of a writing mechanism over the platen and mounted for movement away from the platen, and a work-clamp disposed directly over the writing-surface of the platen to clamp the work thereon and actuated by the movement of the writing mechanism, substantially as described.

14. The combination, in a type-writing machine, of a paper-clamp, a platen, a carriage over the platen, having a plurality of raised positions above the level of the writing position on the platen, and means for automatically releasing the said clamp when the carriage is moved to its highest position, substantially as described.

15. The combination, in a type-writing machine, of a paper-clamp, a platen, a carriage over the platen, having two raised positions above the level of its writing position on the platen, and means for automatically releasing the said clamp when the carriage is moved to its highest position, substantially as described.

16. The combination, in a type-writing machine, of a paper-clamp, a carriage having a plurality of positions above its writing position, a scale actuated by the carriage when the latter is moved to its highest raised position, and means for automatically releasing the clamp when the carriage is in the highest raised position, substantially as described.

17. The combination, in a type-writing machine, of a paper-clamp, a carriage having a plurality of positions above its writing position, a pointer, a scale, both pointer and scale being actuated by the carriage when the same is moved to its highest raised position, and means for automatically raising the pointer, scale and clamp in the highest raised position of the carriage, substantially as described.

18. The combination, in a type-writing machine, of a carriage adapted to occupy two positions above the writing position, a letter-scale, means for maintaining the letter-scale in position upon the written matter when the carriage is being moved to the first raised position, a paper-clamp, and means for maintaining the paper-clamp in clamped position when the carriage is being moved to the first raised position, substantially as described.

19. The combination, in a type-writing machine, of an upwardly-movable carriage, a movable letter-scale adapted to remain in position upon the written matter during the first part of the upward movement, means for automatically raising the scale from the written matter during the completion of the said movement, a paper-clamp, and means for maintaining the paper-clamp in clamping position when the carriage is being moved to the first raised position, substantially as described.

20. The combination, in a type-writing machine, of a carriage adapted to occupy two positions above the writing position, a movable scale adapted to remain in position upon the written matter during the movement of the carriage to its first raised position, means for automatically moving the scale from its resting-point when the carriage is moved to its second raised position, a paper-clamp, and means for maintaining the paper-clamp in clamping position when the carriage is being moved to the first raised position, substantially as described.

21. The combination, in a type-writing machine, of a carriage, a letter-scale adapted to be moved during a portion only of the upward movement of the carriage, and a paper-clamp released by the carriage simultaneously with the upward movement of the scale, substantially as described.

22. The combination, in a type-writing machine, of a carriage, a letter-scale adapted to be moved during a portion only of the upward movement of the carriage, a pointer for said scale, and a paper-clamp released by the car-

riage simultaneously with the upward movement of the scale and pointer, substantially as described.

23. The combination, in a type-writing machine, of a swinging carriage, a swinging scale, each having two extreme positions and the carriage having in addition an intermediate position, and a paper-clamp, said scale and paper-clamp being simultaneously moved away from the paper by said carriage, substantially as described.

24. The combination, in a type-writing machine, of a paper-clamp comprising a supporting member and a clamping member, a locking device for fixing the supporting member to the machine, and means, engaging the clamping member, for actuating the locking device and simultaneously disengaging from the clamping member, substantially as described.

25. The combination, in a type-writing machine, of a paper-clamp comprising a supporting member and a clamping member, a locking device for fixing the supporting member to the machine, and common means for controlling both the locking device and the clamping member, substantially as described.

Signed by me at New York this 5th day of March, 1902.

FREDERIC W. HILLARD.

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