

No. 730,508.

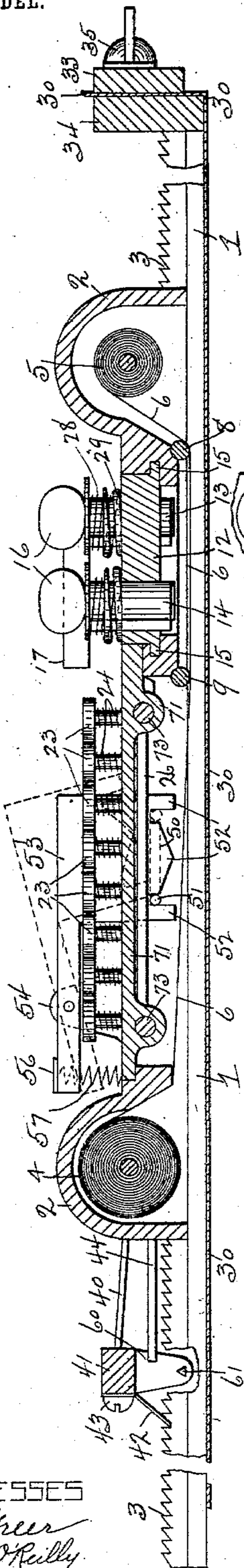
PATENTED JUNE 9, 1903.

I. F. BADEAU.
MUSIC TYPE WRITER.
APPLICATION FILED NOV. 8, 1902.

NO MODEL.

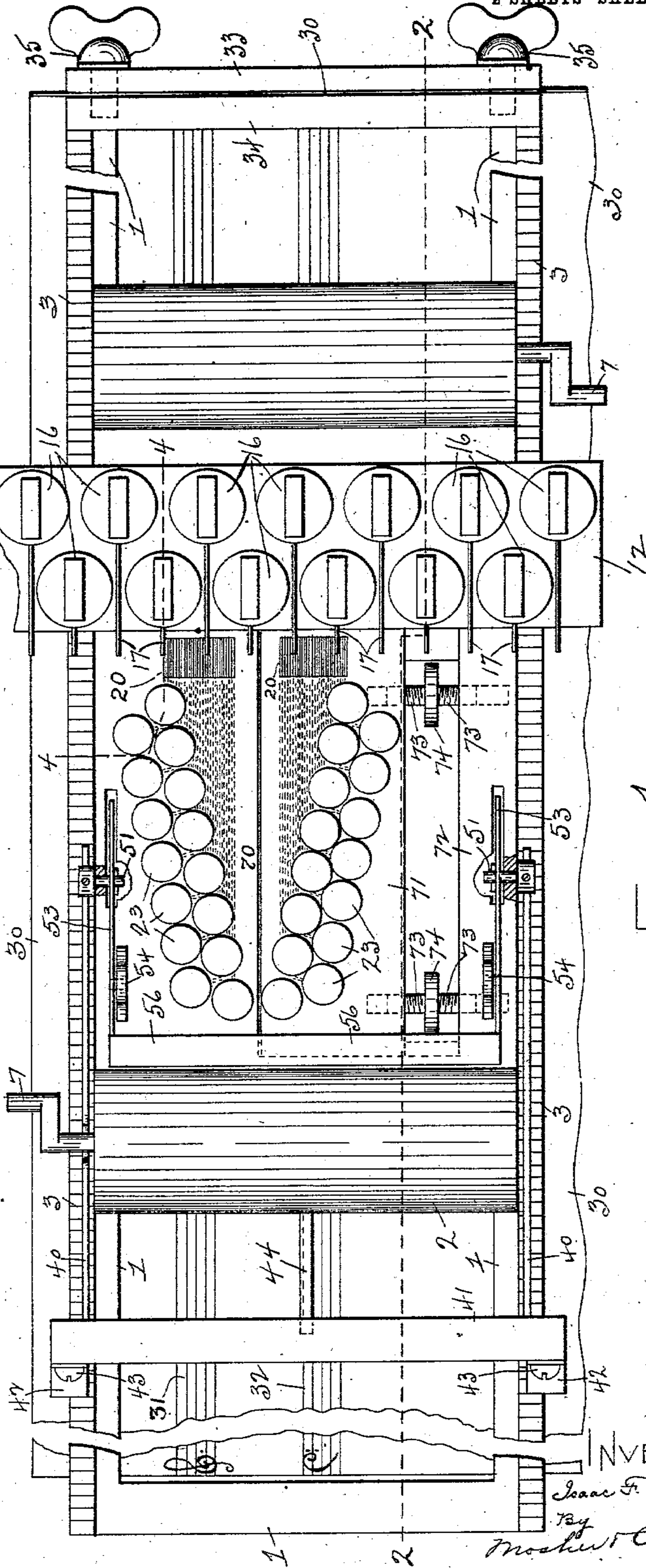
2 SHEETS—SHEET 1.

FIG 2



WITNESSES
Wm. J. Greer
E. M. O'Reilly

FIG 1



INVENTOR
Isaac F. Badeau
By
Moser & Curtis
Attys

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2 SHEETS—SHEET 2.

FIG 3

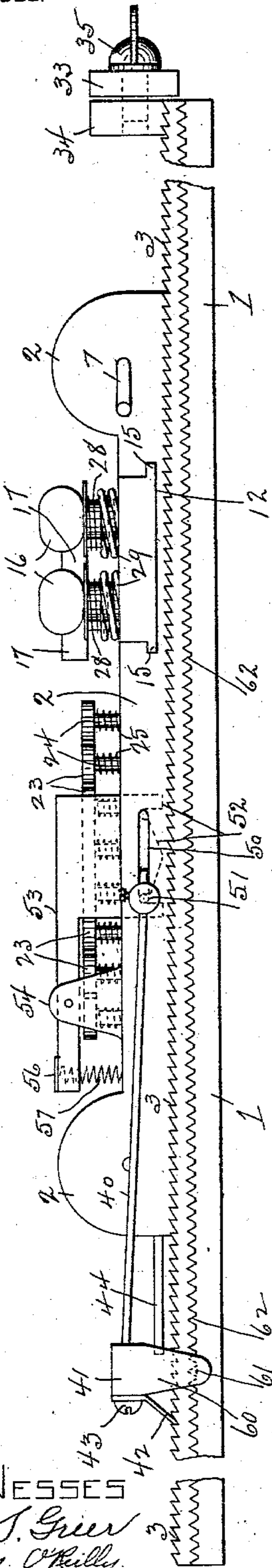
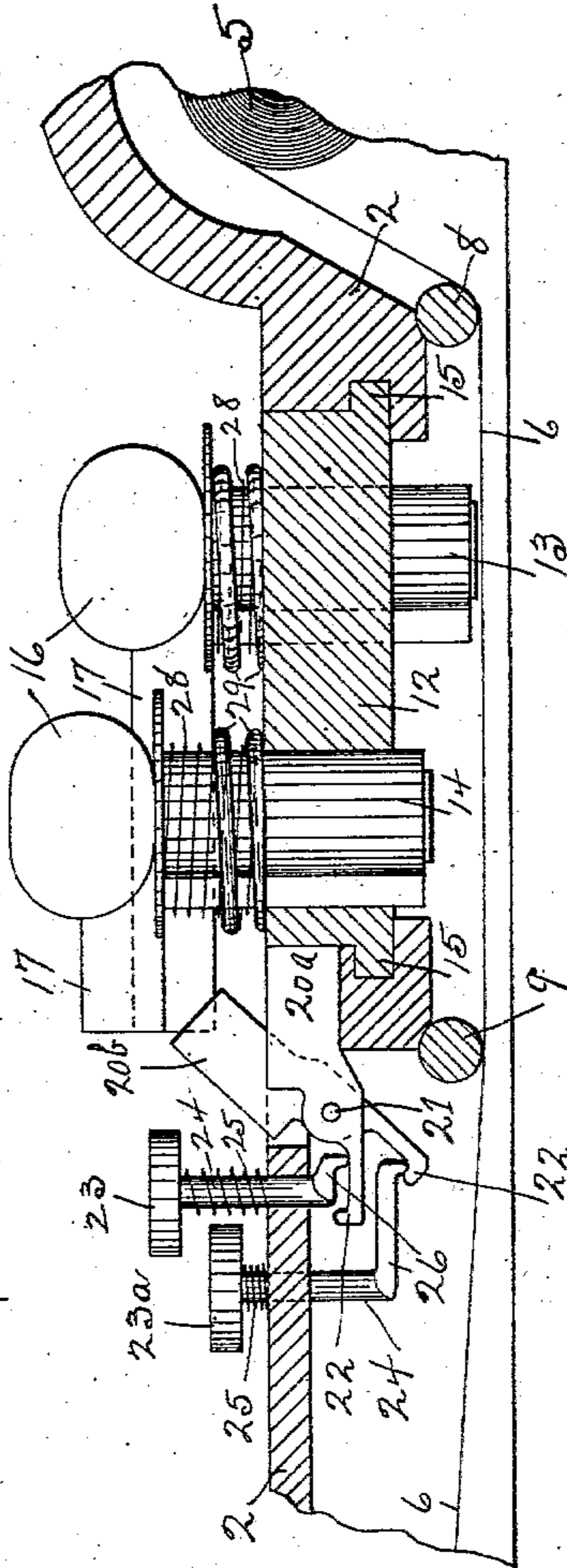


FIG 4



VITNESSES
Wm. J. Greer
E. M. O'Reilly

INVENTOR
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By Mosher & Curtis
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UNITED STATES PATENT OFFICE.

ISAAC F. BADEAU, OF SCHENECTADY, NEW YORK.

MUSIC TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 730,508, dated June 9, 1903.

Application filed November 8, 1902. Serial No. 130,554. (No model.)

To all whom it may concern:

Be it known that I, ISAAC F. BADEAU, a citizen of the United States, residing at Schenectady, county of Schenectady, and State of New York, have invented certain new and useful Improvements in Music Type-Writers, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures.

Figure 1 of the drawings is a top plan view of my improved type-writing machine with intermediate portions near the ends broken away and one end of the type-carrier broken away. Fig. 2 is a longitudinal vertical section of the same, taken on the broken line 2 2 in Fig. 1. Fig. 3 is a view in side elevation of the machine shown in Fig. 1. Fig. 4 is a longitudinal vertical section taken on the broken line 4 4 in Fig. 1 of a portion of the device made on an enlarged scale.

The rectangular frame 1, adapted to rest upon a table or other suitable support, has mounted thereon a movable carriage 2, adapted to slide longitudinally of the frame, being held and guided thereon by a toothed rack 3, secured to and forming part of the frame. The movable carriage has journaled thereon printing-rolls 4 and 5 for carrying the printing-ribbon 6, one or both of the rolls being provided with a crank-handle 7 for feeding the ribbon past the printing-point, which is situated intermediately of the ribbon-guiding bars 8 and 9. Mounted upon the carriage is the type-carrier 12, which carrier is provided with two rows of types 13 and 14, adapted to slide vertically in the carrier, as seen in Figs. 2 and 4. The carrier is provided with guide-flanges 15, adapted to slide in corresponding grooves forming a slideway in the carriage-frame, as seen in Fig. 4. The upper ends of the several types may be provided with a finger-key 16, upon which may be placed a representative of the character to be printed by that type in the usual manner heretofore em-

ployed with type-writer keys. Each type mechanism is provided with a laterally-projecting wing or guide 17, adapted to be operated by the type and be given thereby a vertical reciprocating movement. The carriage is also provided with one or more series of spacing-stops 20, each pivotally mounted thereon, as shown in Fig. 4, being fulcrumed at 21 and provided with an arm 22, adapted to be operated by a finger-key 23, supported by a stem 24, adapted to slide in a slideway-aperture formed in the carriage-wall and controlled by coiled springs 25. The vertical stems are provided at their lower ends with horizontal projections 26, made long enough to reach the stop-arms 22. These spacing-stops are so located on the carriage that they will correspond with the lines and spaces forming a music-staff, as seen in Fig. 1, wherein a music-sheet 30 is shown having the music-staffs 31 and 32. I have shown fifteen stops in each series, which would represent all the lines and spaces of the ordinary staff, and two additional spaces and a line both above and below on the staff.

As a means for securing the music-sheet firmly in place I provide at one end the clamping-bars 33 and 34, which are made to clamp the interposed end of the music-sheet by means of the clamping-screws 35.

The carriage which supports the printing mechanism is movable along a line parallel with the lines of the music-staff. The step-by-step movements of the carriage enable me to write or print characters successively along the lines and spaces of the music-staff, forming along such staff-lines and spaces what I call "printing-lines," and the position in such lines where a character is to be placed is called a "printing-point." As a means for producing the step-by-step movements of the carriage I provide on each side of the main frame a rod or link 40, connected at one end with the carriage and at its opposite end with the key-bar 41, which extends transversely of the frame and connects both links. The key-bar is provided at each end with a spring pawl or dog 42, secured to the bar by a screw 43. The lower end of each dog bears upon one of the teeth in the toothed rack 3, as shown. To force the carriage forward a step, which is equal to the distance apart of the

teeth on the rack, it is only necessary to press down upon the key-bar 41 until it strikes the stop 44, projecting rearwardly from the end of the carriage, the yielding nature of the spring-dog permitting of such depression. When the key-bar is released, the resilient nature of the spring-dog forces the key-bar up to its normal position and the lower end of the dog advances one tooth on the rack.

By repeating the operation the carriage can be advanced any desired distance step by step. After the carriage has been moved to the desired position for printing the first character on the music-staff that one of the spacing-keys 23 which represents the line or space of the music-staff on which the character is printed is depressed, as shown at 23^a, Fig. 4, which forces one of the pivoted stops 20 from the horizontal position of stop 20^a (shown in Fig. 4) to the inclined position of the stop 20^b, same figure. Then the type having the desired character to be printed on such line and space is depressed by placing the finger upon its key until the guide 17 is forced down from the position shown by solid lines to the position shown by dotted lines in Fig. 4. Then the type-carrier is forced along its slideway until the guide 17 strikes the inclined stop 20^b, whereupon the type is further depressed until the type reaches the printing-point on the desired line or space of the music-staff and prints the character on such staff, whereupon both the type-key and spacing-key are released and the bars resume their normal position, the spacing-keys being forced back to their normal position by the coil-springs 25 and the type-key by the coil-springs 28 and 29. It will be observed that the coil-spring 28 is a much weaker spring than the spring 29, which permits the type to be partially depressed into the path of the inclined stop without danger of forcing the type down upon the printing-point on the staff, in which position the guide 17 is free to pass over all of the stops which occupy their normal position, engaging only that stop which has been tipped to the angular position by its actuating-key, so that when the guide and the inclined stop come in contact with each other more force is applied to overcome the stronger spring 29 and print the desired character upon the staff. It will thus be seen that any desired stop may be forced from its normal position into the path of the depressed guide, and as that guide only which is connected with and operated by the type selected for printing the required character is depressed that type is certain to be guided to the proper printing-point.

In printing music it is usual to place two characters on the upper staff and two characters on the lower staff on the music-sheet, so that four characters are usually printed in the same vertical line on the music-sheet, and one of the main objects of my invention is to enable these four characters to be placed in exactly the same vertical line which ex-

tends at right angles to the lines and spaces of the music-staff. I am able to accomplish this result by having the type-carrier movable in a fixed slideway on the carriage along a line at right angles to the printing-lines. In practice the carriage remains at rest while these four characters are printed on the staff, it only being necessary to depress the proper spacing-key to locate the printing-point on the desired line or space in either staff of the sheet and then to partially depress the selected type and slide the type-carrier along its slideway until the projecting guide of that key strikes the tilted stop, and is thereby brought to the required printing-point, after which the type is forced to the printing-point to print the required character by a further depression of the type by pressing down upon the key, overcoming the force of the springs 28 and 29. After all the desired characters to be placed on a line at right angles to the staff-lines have been printed then the carriage is moved forward a step by means of the key-bar 41 or as far as may be desired, when the operation is repeated of placing the desired number of characters on the staff in another line at right angles to the printing-lines, and so on until the desired work is accomplished. When only a comparatively few characters are employed, a single row of types may be employed on the type-carrier; but if a comparatively large number of characters are required, so that if placed in a single row the type-carrier would be of such a length as to become unwieldy and inconvenient of manipulation, two or more rows of types may be placed on the same carrier. I have shown in the drawings two rows of types. Should it happen that the types required for printing the desired characters on a line extending at right angles to the printing-lines should be located some in one row and some in another, it would be necessary to change the position of the type-carrier in changing from the use of the type in one row to that of a type in another row, so as to bring their printing-points in the same transverse line. As a means for accomplishing this object I provide the side walls of the carriage with a slot 50, one being indicated partly by dotted lines in Fig. 2 and the other by solid lines in Fig. 3. One end of the connecting-links 40 is secured to the head of the stud 51, which stud passes through the slot 50 and projects inwardly of the carriage-wall on each side of the carriage. As shown by the solid lines in Fig. 3, the stud occupies the rear end of the slot that is held in position by means of the double catch 52 on one end of lever 53. This lever is fulcrumed upon the stationary support 54, fixed to the carriage at 55. The other end of the lever is secured to a key-bar 56, which extends transversely of the carriage and connects such lever with a like lever on the opposite side of the carriage. The levers are held in their normal positions, as shown by solid lines in the drawings, by means of the

coil-springs 57. The position shown by the solid lines is that adapted for bringing the left-hand row of types on the type-carrier to the printing-point, as heretofore described. Should it be desired to bring any of the types in the right-hand row to the same printing-point or to any printing-point in the same transverse line containing the printing-points of the types in the left-hand row, it would only be necessary to depress the key-bar 56 to uplift the catch 52 from the stud 51, thereby releasing the stud. The carriage can then be moved backward until the stud 51 occupies the opposite end of the slot 50. Upon releasing the key-bar 56 the catch will again descend and lock the stud in position in that end of the slot. This movement of the carriage is exactly the same as the distance apart of the two rows of types on the carrier. The releasing position of the lever 53 is shown by dotted lines in Fig 2.

When desired, means may be provided for locking the carriage in any desired position while the type-carrier is being manipulated. I have shown such means in Fig. 2, consisting of a depending bracket 60, having an inwardly-projecting stud or dog 61, adapted to engage the teeth 62 on the lower side of the toothed rack 3 when the key-bar 41 is in the normal position, as shown in Fig. 2. When the key-bar 41 is depressed to advance the carriage a step, the dog 61 is forced from engagement with the teeth 62 and the carriage allowed to advance. When the key-bar 41 is released and returned to its normal position by the resilient force of the spring-dog 42, the dog 61 on the depending bracket 60 is again forced up into engagement with the teeth 62 to hold the carriage against a forward movement.

I have also provided means for adjusting one of the series of placing-stops relatively to the other for the purpose of accommodating the machine to use in connection with music-sheets in which the staves are arranged at differing distances from each other. One series is mounted upon a fixed part 70 of the carriage and the other series upon a movable support 71, which is movable along the carriage toward and from the fixed support. The movable support is connected with a fixed portion 72 of the carriage by means of the right and left threaded screws 73, which are provided with thumb-wheels 74, by means of which they can be turned in either direction to force the supports 71 toward and from the fixed support 70.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, the combination with a type-carrier movable transversely of the printing-lines; a series of movable types and type-operated guides on such carrier; of a series of movable stops normally out of the transverse path of the guides; means for operating the stops, whereby any desired stop may be projected into the transverse path of a guide which has been forced

from its normal position by a partial printing movement of its actuating-type; means, enabling transverse movements to be imparted to the type-carrier and means enabling printing movements to be imparted to the type, substantially as described.

2. In a type-writing machine, the combination with a type-carrier movable transversely of the printing-lines; a series of movable types and type-operated guides on such carrier; of a series of movable stops normally out of the transverse path of the guides; a series of spacing-keys engageable with the stops for projecting a predetermined stop into the transverse path of any guide which has been moved from its normal position by a partial printing movement of its actuating-type and guiding such type to any desired printing-line, substantially as described.

3. In a type-writing machine, the combination with a type-carrier movable transversely of the printing-lines; movable types mounted on such carrier arranged to form a plurality of rows, each row being parallel with the line of transverse movement; a type-actuated guide for each type; a supporting-carriage for the carrier movable longitudinally of the printing-lines; means for adjusting such carriage to secure any desired row of type in line with the printing-point; movable stops on the carriage normally out of the transverse path of the guides; means for operating the stops whereby the desired type may be guided to the printing-point; means by which transverse movements can be imparted to the carrier and printing movements to the type, substantially as described.

4. In a type-writing machine, the combination with a type-carrier movable transversely of the printing-lines; a series of movable types and type-operated guides on such carrier; of two series of movable stops normally out of the transverse path of the guides, one series being movable, relatively to the other, transversely of the printing-lines; means for adjusting and securing the movable series in differing positions relatively to each other; means for operating the stops, substantially as described.

5. In a type-writing machine, the combination with a stationary bed; and a carriage, for supporting the printing mechanism, capable of movements on the bed parallel with the printing-lines; of feeding mechanism for imparting to the carriage step-by-step movements; a type-carrier movable on such carriage transversely of the printing-lines; movable types on such carrier arranged to form a plurality of rows, each row being parallel with the line of transverse movement; a type-actuated guide for each type; means for adjustably connecting the feed mechanism with the carriage on differing transverse lines separated from each other by a distance equal to the distance apart of the rows of types whereby each of the rows of type may be successively brought into alinement with the same print-

ing-point; movable stops on the carriage normally out of the transverse path of the guides; separate means for operating the stops and guides whereby the desired type may be
5 guided to the printing-point; and means by which transverse movements can be imparted to the carrier and printing movements to the type, substantially as described.

6. In a type-writing machine, the combination with a carriage which supports the printing mechanism and is movable on a line parallel with the printing-lines; and a feed mechanism for imparting to the carriage step-by-step movements; of a connection secured to
10 the feed mechanism and movable along a slideway on the carriage; a key-operated lever on the carriage for holding the connection at differing points on the slideway, substantially as described.

20 7. In a type-writing machine, the combination with a carriage capable of movements

parallel with the printing-lines; and mechanism for imparting step-by-step movements to the carriage; of a printing-ribbon supported by the carriage between the printing-point
25 and the type; means for feeding the ribbon past the printing-point; a type-carrier capable of movements on such carriage at right angles to the printing-lines; a plurality of types mounted on such carrier in a row extending at right angles to the printing-line; means
30 for presenting the types successively to the printing-point; and means for enabling the types to be successively operated when presented to the printing-point, substantially as
35 described.

In testimony whereof I have hereunto set my hand this 25th day of October, 1902.

ISAAC F. BADEAU.

Witnesses:

GEO. A. MOSHER,
E. M. O'REILLY.