No. 754,242. PATENTED MAR. 8, 1904.

F. S. ROSE.

TYPE WRITING MACHINE.

APPLICATION FILED FEB. 11, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

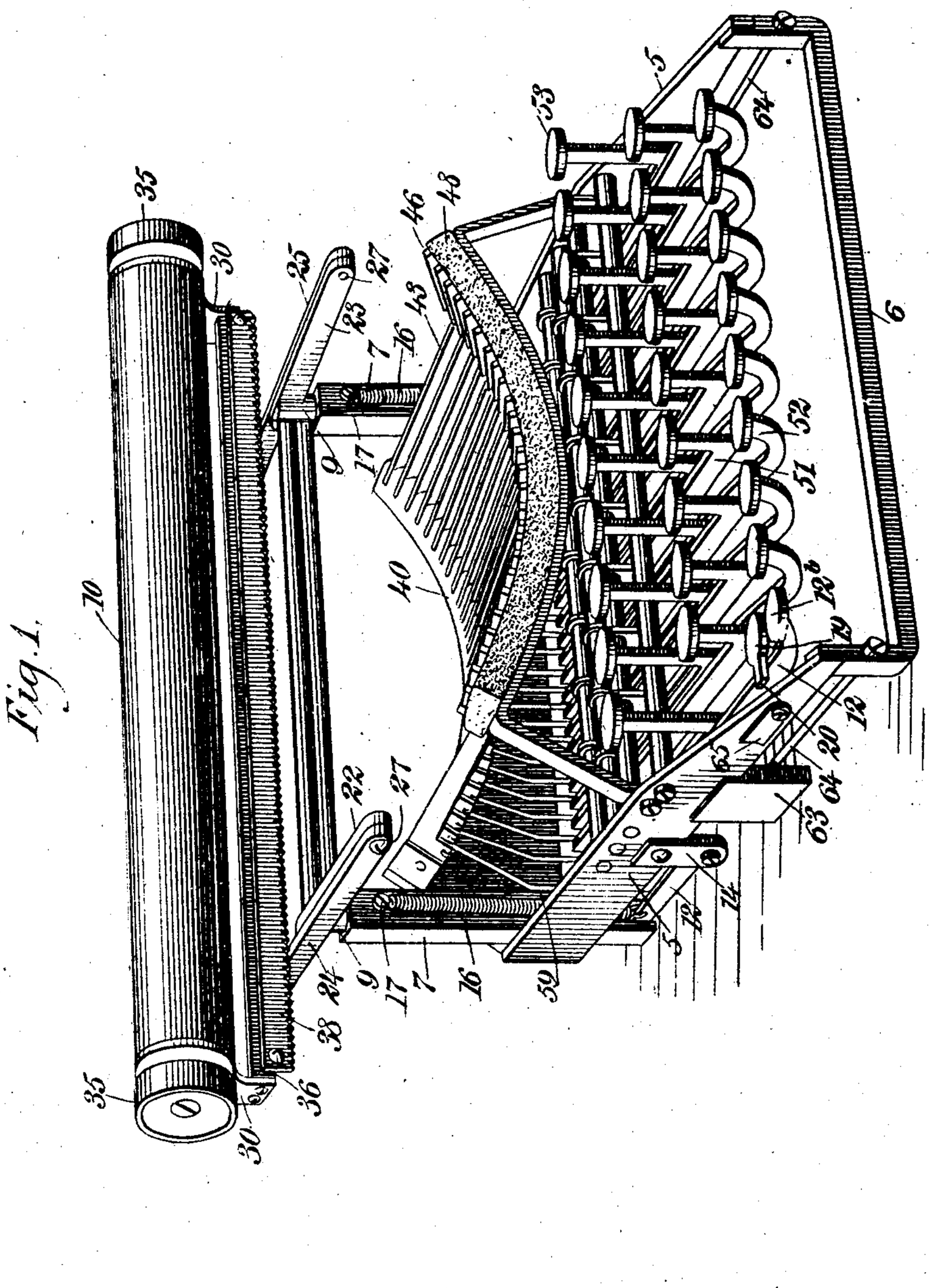


Fig. 1.

WITNESSES:

Edward Thorpe

W. J. Bernhard

INVENTOR

Frank S. Rose

BY Munn & Co

ATTORNEYS.

No. 754,242.

PATENTED MAR. 8, 1904.

F. S. ROSE.

TYPE WRITING MACHINE.

APPLICATION FILED FEB. 11, 1903.

NO MODEL.

3 SHEETS—SHEET 2.

Fig. 2,

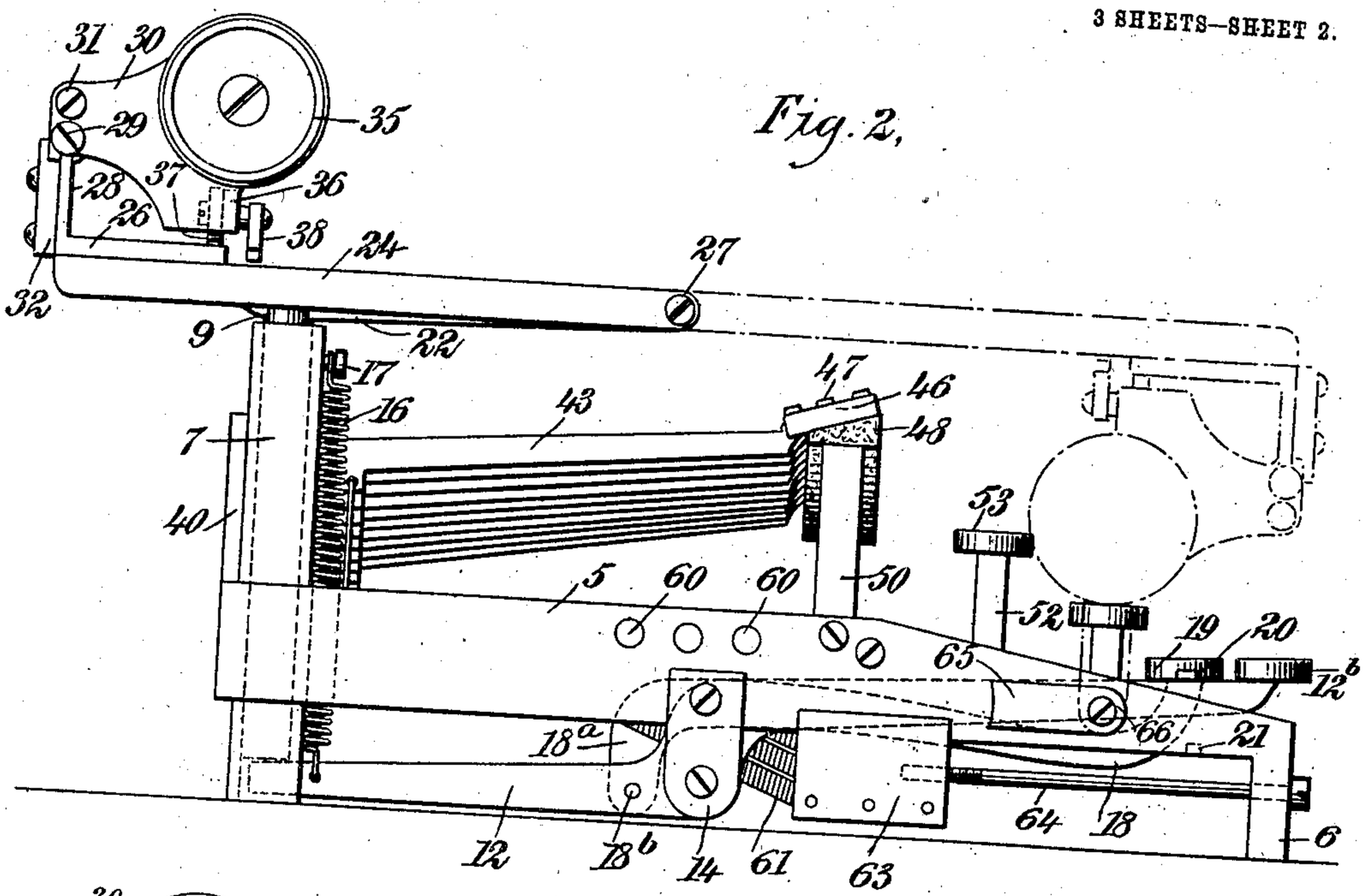
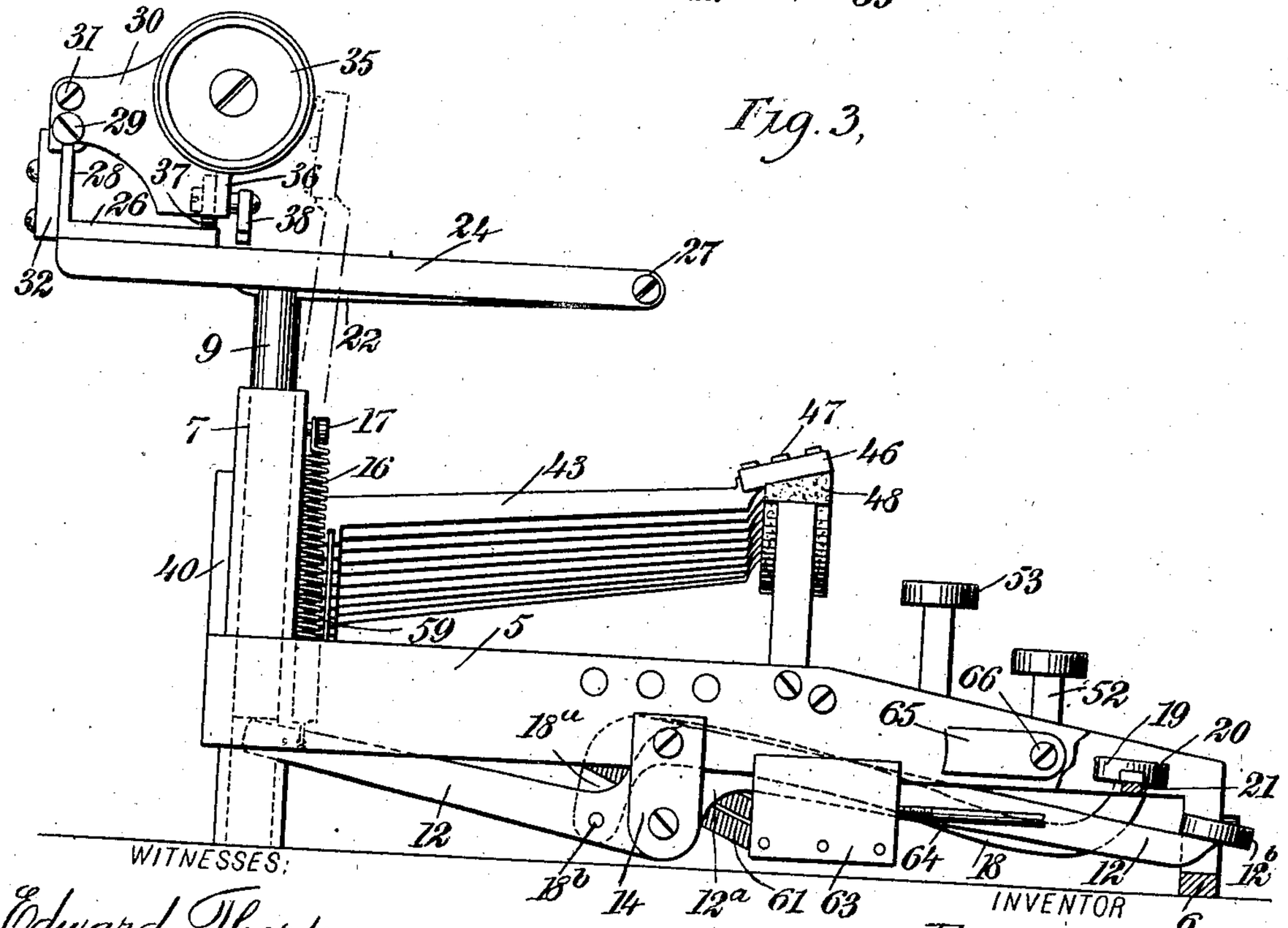


Fig. 3,



WITNESSES:

Edward Thorpe.

W. J. Bernhard

INVENTOR

Frank S. Rose

BY Munn & Co

ATTORNEYS.

No. 754,242. PATENTED MAR. 8, 1904.

F. S. ROSE.

TYPE WRITING MACHINE.

APPLICATION FILED FEB. 11, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 4.

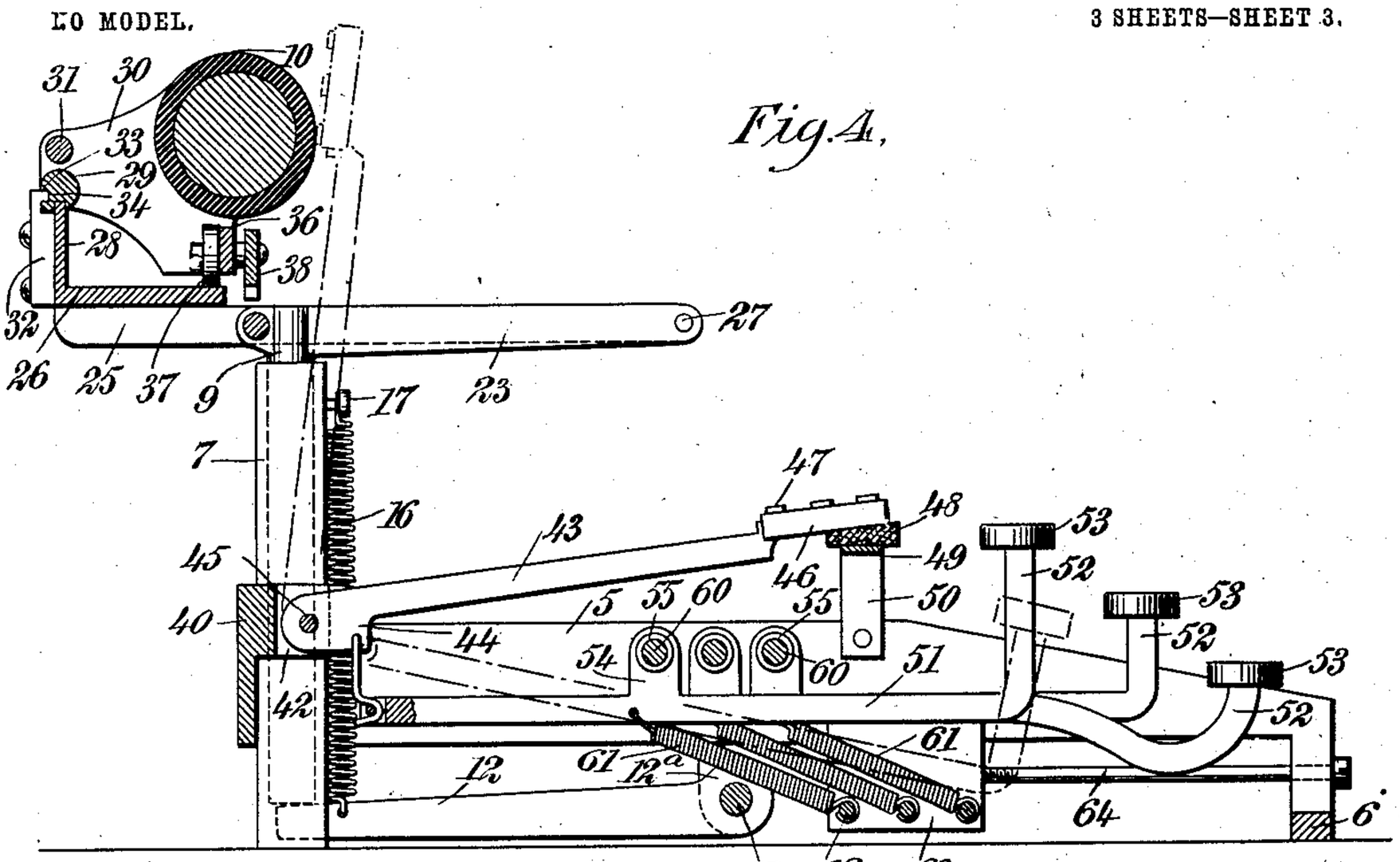
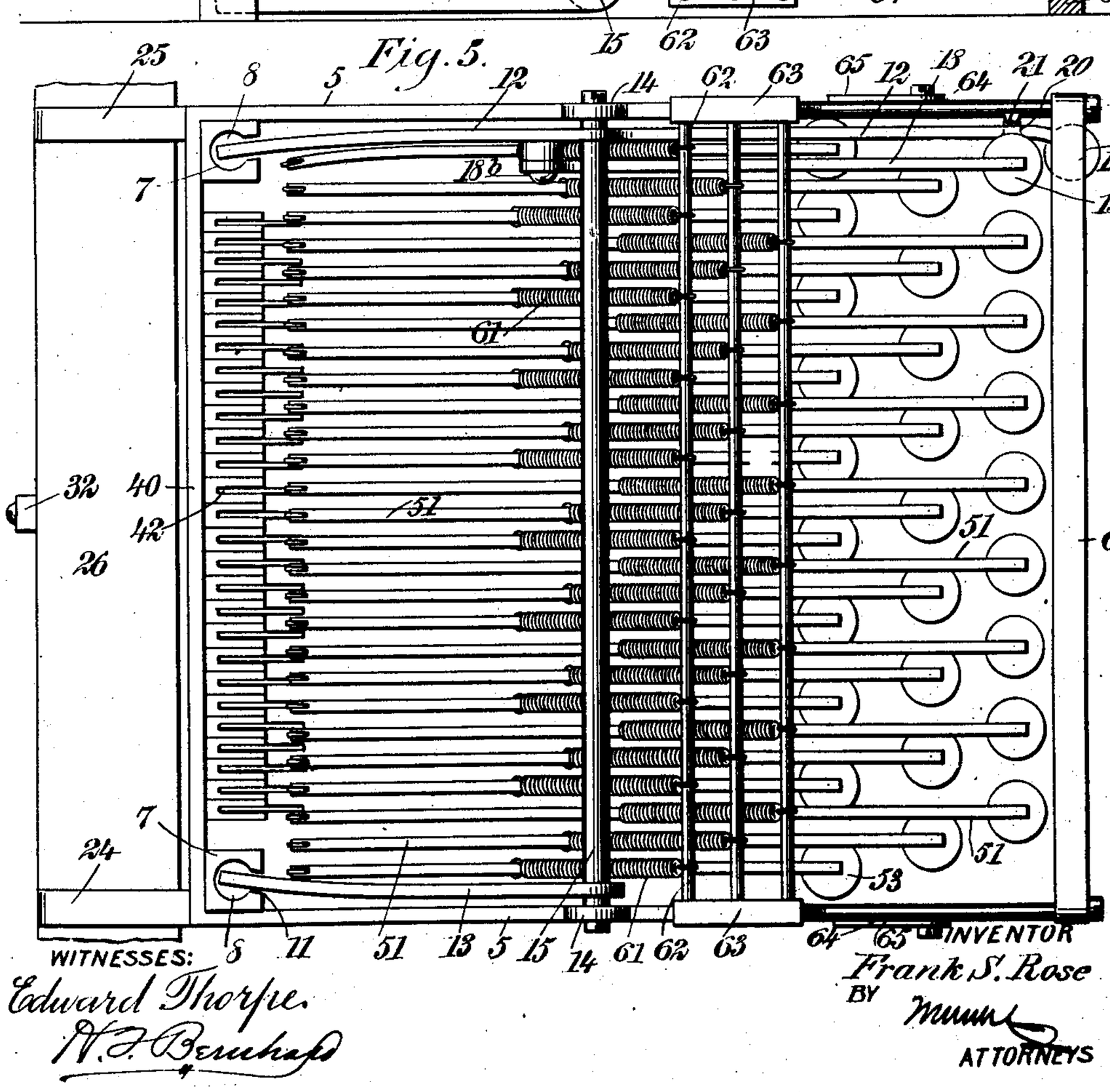


Fig. 5.



No. 754,242. Patented March 8, 1904.

UNITED STATES PATENT OFFICE.

FRANK S. ROSE, OF NEWARK, NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,242, dated March 8, 1904.

Application filed February 11, 1903. Serial No. 142,828. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. ROSE, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Type-Writing Machine, of which the following is a full, clear, and exact description.

This invention relates to improvements in type-writers, in which I seek to produce a new construction of the support or carriage for the type-platen or cylindrical roller which enables the same to be folded into compact relation to the keyboard, thus making provision for ready and convenient transportation of the instrument.

Another object that I have in view is to provide improved means for shifting the platen relatively to the point of impact of the type-faces on the type-levers.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a type-writing machine constructed in accordance with my invention, omitting certain parts, such as the inking mechanism and the escapement. Figs. 2 and 3 are views in side elevation, showing the different adjustments of the carriage and platen devices, said carriage and the platen being represented in their folded positions by dotted lines in said Fig. 2. Fig. 4 is a vertical transverse section through the machine, the dotted lines illustrating a depressed position of one key-lever and a raised position of the corresponding type-lever. Fig. 5 is an inverted or under plan view of the type-writing machine.

The several working parts of the improved machine are mounted on a suitable frame, which may be of any desired construction; but in the drawings this frame consists of the side bars 5, a yoke-shaped front bar 6, and the posts 7, said parts being united in any preferred way and presenting a substantial construction for the working elements. It will be understood, however, that the style of the frame is not material and that it may be modified as desired by a skilled constructor. The posts 7 are parallel and located at the rear corners of the frame, said posts being hollow to form the vertical channels or guideways 8, adapted to receive the slidable stems 9, which support the frame for the carriage, in which is mounted a platen 10. The posts 7 are provided in their front sides and at their lower ends with slots 11, which accommodate the rear end of a lever 12 and an arm 13. Said lever is disposed on one side of the machine, as shown by Fig. 5, while the arm 13 is on the opposite side of the machine. The frame is provided with depending bearings 14, in which is journaled a horizontal rock-shaft 15, the same being disposed below the banks of key-levers to be presently described. The arm 13 is secured rigidly at its front end to the rock-shaft 15, while the lever 12 is bent or offset at a point intermediate of its length, as at 12^a, said offset portion of the lever being secured rigidly to the rock-shaft 15 near the other end from the arm 13. It will be understood that the arm 13 and the rear end of the lever 12 fit loosely in the slots 11 and the channels 8 of the posts 7, and said lever and the arm are disposed below and in engagement with the lower ends of the slidable stems 9.

Lifting-springs 16 are operatively connected with the lever 12 and the arm 13, said springs being shown by the drawings in the form of coiled springs disposed in vertical positions in front of the posts 7, each spring having its upper portion secured in a suitable way, as by a screw 17, to one of the posts, while the lower end of the spring is attached to the rear end of the lever 12 or to the corresponding end of the arm 13. The lever 12 extends practically from the front portion to the rear portion of the main frame, and this front end of the lever is equipped with a suitable key 12^b. The weight of the platen and the carriage imposed on the carriage-frame and the stems 9 is sufficient to overcome the tension of the springs 16, so that the platen will normally remain in position to receive the impact of the lower-case type on the heads of the type-levers to be presently described,

and these springs 16 serve to normally hold the lever 12 and the arm 13 in engagement with the vertically-slidable stems 9. The lever 12 serves as the means for raising the carriage and the platen to the highest point of adjustment contemplated by this invention and as indicated by Fig. 3 of the drawings, so that the numerals and punctuation-marks on the type-heads of the type-levers may be pressed against the platen; but to bring the platen and the carriage into position to receive the impact of the upper-case type on the type-levers I employ an auxiliary shifting-lever 18. This auxiliary shifting-lever is arranged alongside of the primary shifting-lever 12, and the rear end of said auxiliary lever is bent downwardly, as at 18^a, and connected pivotally by a pin 18^b to the lever 12 at a point in rear of the offset portion 12^a. Said lever 18 is also provided with a key 19 and with a laterally-extending finger 20, the latter being arranged to project laterally from the key 19 and to rest upon the front portion of the shifting-lever 12, as shown more clearly by Fig. 1. The auxiliary shifting-lever is thus pivoted at one end to the lever 12 and provided at its other end with a finger which engages with said lever 12, thus insuring a simultaneous movement of the levers 18 and 12 when pressure is applied to the finger-piece 19; but as the platen and the carriage should not be raised as high when the lever 18 is depressed as when the lever 12 is likewise actuated I have provided a stop 21 on one side bar 5 of the main frame, said stop 21 being disposed in the path of the finger 20 and arranged to limit the depressing movement of the auxiliary shifting-lever 18.

The important features of the present invention is the provision of means whereby the platen and its carriage may be folded into compact relation to the banks of keys, thus making provision for convenient transportation of the instrument. In carrying out this part of the invention I employ a foldable sectional construction of a frame adapted to support the carriage and the platen, and in the drawings this frame is shown as consisting of two main parts, one of which is carried by the adjustable stems 9, while the other part is pivoted to the non-foldable part and serves as a track for the platen-carriage. The non-folding part of the carriage-frame thus far described consists of arms 22 23, arranged in horizontal positions to extend from the front sides of the stems 9 and having their rear portions secured firmly to said stems. The folding part of the carriage-frame consists of arms 24 25 and a base-plate 26. Said arms 24 25 of the folding member of the carriage-frame normally lie alongside of the arms 22 23, and the two pairs of arms are pivoted directly together, as at 27, in any suitable way. Said pivoted arms 24 25 are arranged to rest upon the arms 22 23 when the carriage and the platen are adjusted in their operative positions, as in Figs. 1 to 4, inclusive, thus sustaining the two parts of the frame in compact relation and skeletonizing the frame, so that the type-levers may work between the arms in a way to strike against the platen 10.

The base 26, constituting a part of the movable member of the carriage-frame, consists in the embodiment of the invention shown by the drawings of a flat plate having an upstanding flange 28, and this base-plate is rigidly secured to the rear ends of the arms 24 25, the latter being somewhat longer than the arms 22 23. The base-plate 26 joins the arms 24 25 rigidly, and this plate and its flange form the track-surfaces for the endwise-movable carriage, which, as in ordinary type-writing machines, is capable of a traveling step-by-step movement under the control of a suitable spring and an escapement mechanism. The upstanding flange 28 on the plate 26 has its upper edge arranged to form one of the track-surfaces for the carriage of the roller-platen, while the top face of the plate 26 affords the other track-surface for a roller of the platen-carriage to be presently described.

The carriage consists of a longitudinal rail 29, a pair of brackets 30, and a tie-rod 31. The brackets 30 are rigidly secured in a suitable way to the rail 29, and these brackets are joined by the tie-rod 31, which serves to hold the brackets in firm relation to the rail and in parallel relation to each other. The rail 29 is fashioned to ride or travel directly upon the track-surface afforded by the upper edge of the flange 28, forming a part of the plate 26, and the carriage is held in proper relation to the plate 26 by means of one or more blocks 32, secured to the rear face of the flange 28, said block or blocks being provided with a lip 33, arranged to slide in a groove 34 of the rail 29, as shown more clearly by Fig. 4 of the drawings. The brackets 30 are provided with openings adapted to receive the shaft of the roller-platen 10, the latter being free to turn in the bearings afforded by said brackets. This platen may be of any suitable construction known to the art—as, for instance, a core covered by a rubber jacket—and said roller is provided at one or both ends with suitable gripping-wheels 35, by which the roller may be conveniently turned by hand. The brackets 30 are also connected at their front ends by a rail 36, which is disposed below the roller-platen and fastened at its ends to the brackets in any approved way, and this rail 36 has a track-roller 37 mounted thereon in a way to turn freely, said roller riding on the track afforded by the plate 26 of the carriage-frame. The carriage is adapted to carry a ratchet-bar 38, which may be fastened to the brackets 30 or to the rail 36, and with the teeth of this ratchet-bar are adapted to engage the pawls of a suitable escapement mechanism. It is to be understood that the carriage and the platen

are normally drawn in one direction by the action of a spring contained within a suitable drum and that the movement of the carriage is controlled by an escapement; but as the spring and the escapement mechanism do not form any part of the present invention I have not considered it necessary to illustrate or to describe said devices in detail.

40 designates a pivotal plate secured between the rear posts 7, said plate having notches or recesses 42, in which are fitted the type-levers 43. Each type-lever has a shoulder 44, pivoted by a pin 45 to the plate 40, and said type-lever has a head 46, which is provided with a series of type characters 47. The heads 46 of the type-levers are adapted to rest on a cushion 48, provided on a rest-bar 49, having legs 50 attached to the machine-frame.

51 designates a series of key-levers each provided at its front end with a shank 52, having a finger-piece 53. Each key-lever has a short upstanding lug 54, provided with a pivotal sleeve 55, and the rear end of each lever has a notch 56, across which extends a pin 57, adapted to receive the hook 58 of a link 59, the upper end of said link being suitably connected to the shoulder 44 of the type-lever.

60 designates a series of pivotal rods on which are loosely hung the sleeves 55 of the key-levers.

The keys are held under tension by coiled springs 61, which lie below the banks of key-levers. Said springs are connected to cross-rods 62, which are attached to supporting-plates 63, the latter being slidable on the members 5 of the machine-frame. The plates are adjusted by manipulating the rods 64, which are loosely supported in the main frame and have threaded engagement with the plate 63, whereby the tension of the springs may be increased or decreased to secure the desired tension on the key-levers.

The improved machine should be equipped with an inking mechanism, which is preferably carried by the carriage-supporting frame. Any suitable kind of inking device may be employed—such, for example, as an inked ribbon adapted to be coiled on and uncoiled from suitable spools, said ribbon arranged to pass through a suitable guide on the carriage-supporting frame in order to lie adjacent to the roller-platen.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings. The depression of one of the key-levers pushes on the link 59 to raise the corresponding type-lever 43, and assuming that the carriage is in its normal lowered position (shown by Figs. 2 and 4) the lower-case type of the key-lever will strike through an inked ribbon against the paper confined on the platen, thus securing the desired impression. If it is desired to have the upper-case type strike through the inked ribbon against the work, the operator should depress the auxiliary shifting-key 18 until its finger 20 strikes the stop 21, and this movement of said lever 18 causes the finger 20 to depress the shifting-lever 12, whereby the shaft 15 is turned and the lever 12, together with the arm 13, raises the posts 9 a limited distance, thus bringing the roller-platen 10 into position to receive the impact of the upper-case type. To utilize the type representing the numerals or punctuation-marks, the operator should depress the key-lever 12, thus turning the shaft 15 and operating the arm 13 simultaneously with said lever 12 to elevate the carriage and platen to the highest point, as represented by Fig. 3, thus making the platen take a position in the path of the outermost type on either of the type-levers 43. As before indicated, the tension exerted by the springs on the key-levers may be varied by adjusting the rod 64 to change the positions of the plates 63 and the rods 62, thus slackening or increasing the tension of the springs 61. When it is desired to carry or transport the machine, the carriage-frame, together with the carriage and the platen, are adjusted by turning the arms 24 25 on the pivots 27, which connect said arms with the non-adjustable member of the carriage-frame. By turning the arms 24 25 and the plate 26 in a forward and downward direction the position of the carriage and the platen is inverted to assume the compact relation to the banks of keys indicated by dotted lines in Fig. 2. The carriage and platen may be allowed to rest on the keys; but I also contemplate the employment of adjustable rests, which may be embodied in the form of plates 65, which are pivoted to the sides 5 of the machine-frame. Said plates are provided with concave free edges to snugly receive the platen 10, and the plates are held in their raised positions by the engagement of the platen therewith.

The improved machine of my invention presents a compact construction and arrangement of parts. It is light in weight and easy and convenient to operate.

The coiled springs 16, which are connected to the arm 13 and lever 12, not only hold these parts in engagement with the slidable stems, but also assist in raising the stems and the weight imposed thereon, thus insuring easy motion to the lifting of the platen-carriage on the depression of either of the shifting-keys.

It is evident that any suitable means may be used for holding the foldable member of the carriage-supporting frame in its normal operative position relative to the non-foldable member of said frame. As shown, said foldable frame member is adapted to rest when folded on shoulders formed by the upper ends of the stems 9; but this is an immaterial feature of the carriage-supporting frame.

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

1. In a type-writer, a foldable support for a platen-carriage having one of its members movable to an abnormal position in overhanging relation to a keyboard.

2. In a type-writer, a foldable support for a carriage and a platen, consisting of a non-adjustable member, and an adjustable member foldably connected with said non-adjustable member and movable to an abnormal position, combined with a carriage mounted to travel on the adjustable member of said support, and a platen supported by said carriage.

3. In a type-writer, a foldable support for a carriage and platen, consisting of a skeletonized non-adjustable member, and an adjustable member having pivotal connection with said non-adjustable member and foldable relatively thereto, in combination with a carriage mounted on the adjustable member, and a platen supported in said carriage.

4. In a type-writer, a foldable support for a carriage and a platen, consisting of a non-adjustable member, and an adjustable member pivotally connected with said non-adjustable member and movable to an abnormal position, combined with a carriage mounted on the adjustable member, and a platen in said carriage, said adjustable member and the parts supported thereby being arranged to rest in normal position on the non-adjustable member of the support.

5. In a type-writer, the combination of a two-part foldable support, and a carriage provided with a platen and mounted on the adjustable member of said support, said carriage and the adjustable member being movable into overhanging relation to a keyboard.

6. In a type-writer, the combination of a two-part foldable carriage-support, a traveling platen-carriage mounted on the foldable part of said carriage-support, and means for shifting said carriage-support and the platen-carriage bodily in a vertical plane.

7. In a type-writer, the combination of a foldable carriage-supporting frame, a traveling platen-carriage mounted on the foldable member of said carriage-frame to be foldable therewith, and means for bodily raising and lowering the carriage-supporting frame and the carriage thereon in a vertical plane.

8. In a type-writer, the combination of vertical posts, a two-part carriage-frame having a non-foldable member mounted on said posts and movable vertically therewith, a platen-carriage supported by said foldable member of the frame to travel thereon and to be raised or lowered bodily with said carriage-frame, and means controllable at will for adjusting the carriage-frame and the carriage thereon in a vertical plane.

9. In a type-writer, the combination of vertical posts, a two-part carriage-frame having one member attached to said posts, and a foldable member pivoted to said first-named member for adjustment to an abnormal position relatively thereto, a platen-carriage carried wholly by the adjustable member of said frame for movement vertically and foldably therewith, and means for vertically adjusting the supporting-frame and the carriage thereon.

10. In a type-writer, a carriage-supporting frame consisting of a skeletonized non-adjustable member, and an adjustable member pivoted to said skeletonized member and equipped with a base-plate affording two track-surfaces, in combination with a platen-carriage mounted on said base-plate to travel thereon and to be foldable with the adjustable member of the carriage-supporting frame.

11. In a type-writer, a foldable carriage-supporting frame consisting of a skeletonized non-adjustable member, and an adjustable member pivoted to said non-adjustable member, said adjustable member of the frame having a track-surface, combined with a platen-carriage fitted to said track-surface of the adjustable frame member to travel thereon and to be foldable therewith, and means for bodily shifting the carriage-frame and its contained parts in a vertical direction.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK S. ROSE.

Witnesses:
JNO. M. RITTER,
H. T. BERNHARD.