

No. 626,776.

Patented June 13, 1899.

C. H. SHEPARD.
TYPE WRITING MACHINE.

(Application filed Feb. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.

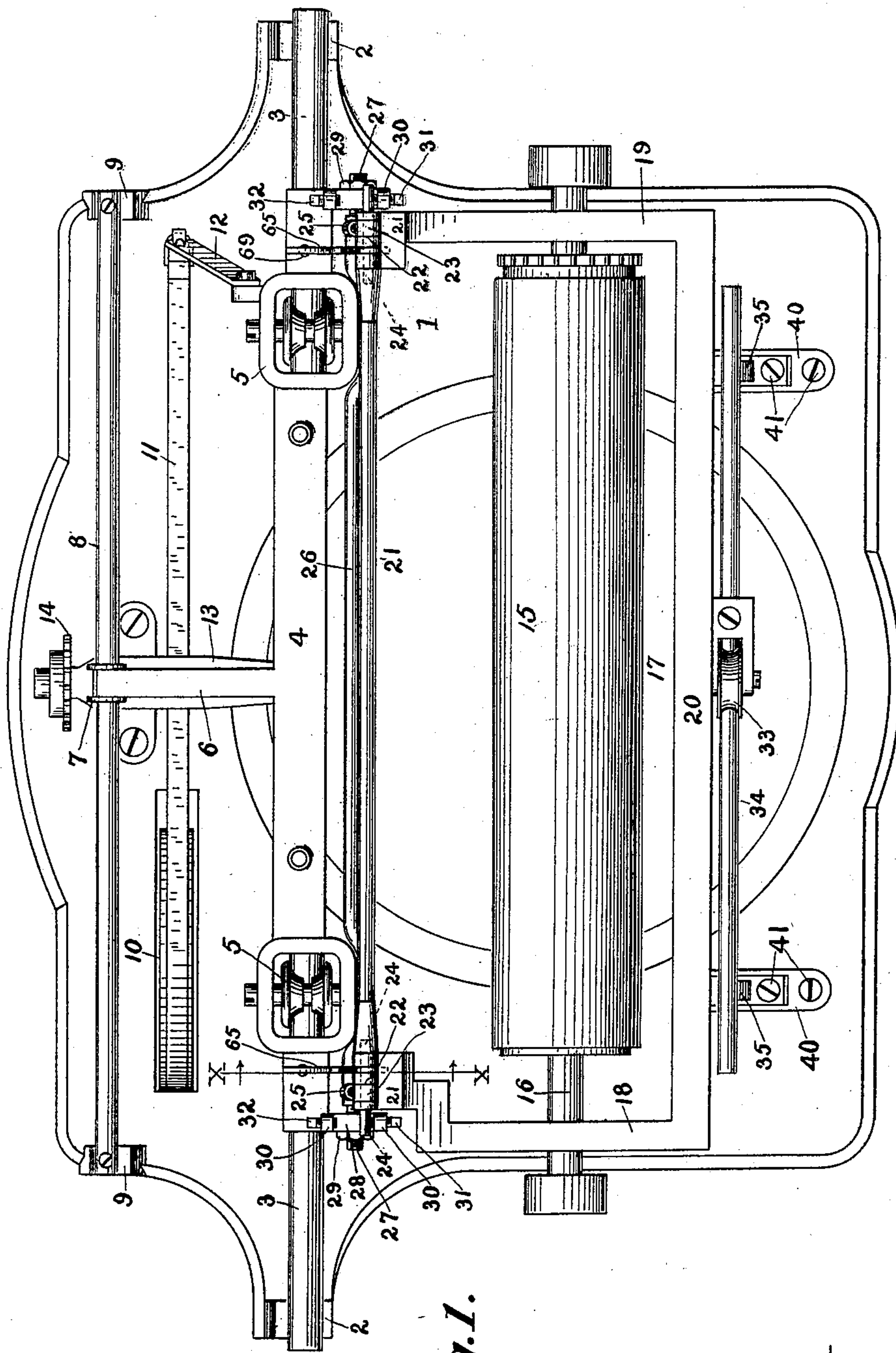


Fig. 1.

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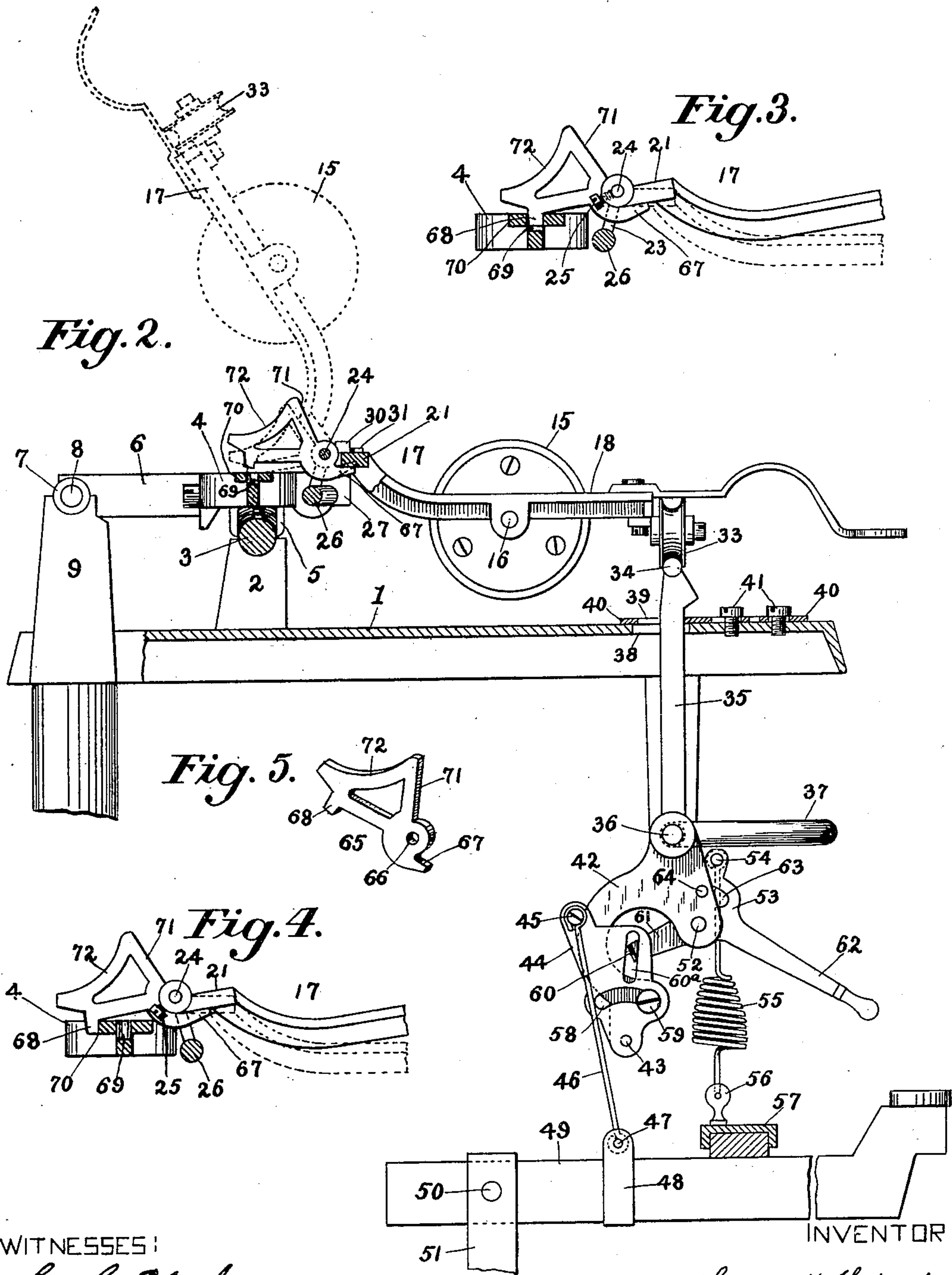
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 626,776, dated June 13, 1899.

Application filed February 24, 1899. Serial No. 706,646. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SHEPARD, a citizen of the United States, and a resident of the borough of Brooklyn, in the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Heretofore in type-writing machines in which the type-bars are provided each with two types and in which the platen is shiftable for the purpose of receiving in line the impression from either type it has been common to construct the paper-carriage of two parts, one part mounted upon and traveling longitudinally with the other and arranged also to have a backward and forward movement independently thereof. The lower or main carriage is hinged at its rear edge upon a guide-rod and the upper or supplemental carriage carrying the platen is mounted to slide backwardly and forwardly upon the lower carriage. The supplemental carriage is in a forward position for lower-case work and is adapted to be shifted rearwardly therefrom for upper-case work and to be restored to normal position by means of a spring mechanism. When the supplemental carriage is in its normal position and the main carriage is turned up, as for inspection of the work done on the under side of the platen, the supplemental carriage is prevented from sliding rearwardly by gravity by reason of the presence of a locking device which drops or otherwise moves to a position to arrest such rearward movement of the supplemental carriage immediately it and the main carriage are raised, and the construction and arrangement are such that during the turning-down movement of the two carriages the locking device is automatically restored to its normal disengaging or inactive condition, so as to permit the shifting platen carrier or carriage to be vibrated transversely for upper or lower case work, as may be required. A machine of this description, together with the automatically-acting locking device, is set forth in the patent to Philip T. Dodge, No. 322,810, granted July 21, 1885.

My present invention relates more espe-

cially to a machine wherein the platen-carriage is mounted upon vibratory arms or links pivotally connected to a non-shifting truck or carriage arranged in rear thereof, an example of which may be found in the patent to George B. Webb, dated September 15, 1896, No. 567,799.

One of the objects of my invention is to provide a locking device for a carriage construction of this description.

A further object is to so make the said locking device as that it will serve to prevent vibration of the links or arms, and hence of the platen-carrier when the latter is turned up for inspection of the work, both in the normal or lower-case position of the platen-carrier and in the abnormal or upper-case position of said carrier; and a further object of my invention is so to construct the said locking device as that it shall afford a stop and rest or support for the platen-carrier in its upturned position.

To these ends my invention consists in the various features of construction and combinations of devices, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of enough of a Remington No. 6 type-writing machine to illustrate my improvements and which are shown as added thereto. Fig. 2 is a vertical cross-section taken at the line X of Fig. 1. Fig. 3 is a detail side view, partly in section, showing the locking device as having moved into locking engagement upon the initial lifting movement of the platen carrier or frame and while the latter is in its normal or lower-case position. Fig. 4 is a similar view, but showing the locking device as having moved into engagement upon the initial upturning of the platen-carrier frame while in its abnormal or upper-case position; and Fig. 5 is a detail perspective view of the locking device.

In the various views the same part will be found designated by the same numeral of reference.

Upon the top plate 1 of the machine and well toward the rear thereof is supported upon posts 2 a guide-rod 3, upon which travels lon-

gitudinally a non-transversely shifting truck or carriage 4, provided, preferably, with anti-friction-rollers 5. Extending rearwardly from the center of said truck or carriage is an arm 6, that embraces a flanged sleeve or collar 7, which travels upon a parallel guide-rod 8, fixed upon posts 9 on the top plate and almost at the extreme rear edge. The said truck or carriage is propelled from right to left in the usual manner by means of a spring-drum 10 and a strap or band 11, connected by an arm 12 to said carriage, which, as usual, is controlled in its movements from right to left by a suitable escapement mechanism, (not fully illustrated, but indicated partially in Fig. 1 at 13 and 14.)

15 designates a cylindrical platen having a shaft or axis 16, which is mounted to rotate in a frame, carrier, or carriage 17, and consisting in the present instance of end bars 18 and 19, a front bar 20, and a rear bar 21, preferably all cast integral, the rear bar being also preferably round in cross-section.

The rear extremity of each side or end bar 18 or 19 is forked or cut away, as at 22, to receive between its branches or members the upper end of a short arm 23, which closely fits the space between such branches. A pin 24 passes horizontally through an eye or perforation in the outside fork and through a perforation in the upper end of the arm 23 and also into a perforation or hole formed in the inside fork, the said perforations all being arranged in alinement and about axially of the rear bar 21. A small binding-screw 25 passes transversely through the upper end of the arm 23 and bears at its inner end upon the pin 24, thus securing the said pin in the said arm and leaving the pin free to turn in the holes in the forks, while also permitting the forks to be turned around the pin when the platen-frame is lifted, the pin remaining stationary at such time. Thus the forks and pins constitute hinges for the rear side of the platen-carrier and by reason of which the latter may be freely turned up and down, as for inspection and correction of the work.

The lower end of each arm or link 23 rises from a shaft or long pivot 26, which is supported at each end by a conical screw or pivot 27, which passes inwardly through a forward extension 28 in the end of the truck and is held securely by a jam-nut 29.

Rising from each extension 28 are two ears 30, provided with opposing horizontal screws 31 and 32, the former of which acts as a front stop and the latter as a rear stop for the transverse vibratory movements of the platen-carrier. The said stops coact with the hinge-pin 24, which is elongated or extended outwardly.

The shaft or pivot 26 of the arms 23 is situated in a vertical plane about midway between the said stops, and hence the pins rise and fall equally on opposite sides of said plane in swinging from one stop to the other about said pivot or axis of motion.

At the front side of the platen-carrier is a grooved roller 33, which travels on a shifter bar or rail 34 parallel with the guide-bars 3 and 8 and secured, as usual, at the upper ends of rocker-arms 35, pivoted at 36 in the framework and connected together by a curved cross-bar 37, so as to operate in unison. The upper ends of the rocker-arms 35 pass through openings 38 in the top plate and through slots 39 in stop-plates 40, adjustably fastened by screws 41 upon said top plate. The rocker-arms 35 are located one at each side of the machine. Formed integral with the left-hand rocker-arm is an arm or member 42 and depending below the pivot or axis of motion 36. At 43 on said arm 42 is pivoted the lower end of a lever 44, having at its upper end a stud 45, upon which is hooked the upper end of a connecting-rod 46, which at its lower end is pivotally connected at 47 to a strap 48, embracing a shift-key lever 49, fulcrumed at 50 in a part of the framework 51.

Pivoted at 52 on the opposite side of the arm 42 is another lever 53, having a stud 54, to which is connected one end of a spiral spring 55, whose opposite end is connected to a post 56, inserted in a part of the framework 57. The lever 44 is formed with an arc-shaped slot 58, which embraces a screw-stop 59, secured in the arm 42, and said lever is also formed with a straight slot 60^a, which receives a lateral projection 60, formed on one arm 61 of the lever 53, which latter is provided with a handle portion 62 and also with an arc-shaped slot 63, that embraces a pin 64 on the arm 42.

The key-actuated shifting mechanism herein shown forms the subject-matter of the Letters Patent No. 492,599, granted to George B. Webb February 28, 1893, to which reference is made for a fuller description of its construction and mode of operation. As far as the main features of my invention are concerned any other suitable construction of key-actuated shifting mechanism may be employed instead of that herein illustrated.

In the positions of the parts shown at Fig. 3 the spring 55 tends to keep the arms 35 against the forward ends of the slots 39 in the stop-plates. When the shift-key 49 is depressed and the parts are in the condition shown at Fig. 2, the arms 35 are rocked rearwardly against the tension of the spring 55, and through the shifter-bar 34 and roller 33 the platen-carrier is shifted rearwardly and the links or arms 23 are rocked rearwardly on their pivots 26 and the pins 24 move from their positions against the front stop-screws 31 back against the rear stop-screw 32, and thus arrest the rearward movement of the platen-carrier and the vibratory arms. When the shift-key is released, the spring 55 restores the said parts to their normal positions. (Shown in Figs. 1 and 2.) In this position of the platen the lower-case types are adapted to print; but when the platen is shifted rearwardly the upper-case types are adapted to print.

When the handle 62 is raised and the lever 44 is vibrated about its pivot 43, so that the opposite end of the slot 58 strikes against the screw 59 and the opposite end of the slot 63 strikes against the pin 64, the point of action of the rod 46 is moved over to the opposite side of the vertical plane of the pivot 36 and the point of action of the spring 55 is moved rearwardly or to the other side of said plane, so that the normal tension of said spring is then adapted to hold the rocker-arms 35 at the rear ends of the slots 39 and also to hold the platen-carrier in its rearmost or upper-case position. By this adjustment also when the key-lever 49 is depressed the rocker-arms are vibrated forwardly against the tension of said spring and the platen-carrier is shifted to its forward or lower-case position, the pins 24 of the vibratory arms 23 at the same time swinging from against the back stops 32 over against the forward stops 31. It will thus be seen that the platen-carrier is adapted to be locked or held normally in either the lower-case position or the upper-case position. For the larger part of the work, however, the platen-carrier is always normally in lower-case position.

At each end of the platen-carrier is a lock or latch device 65, adapted to prevent the platen-carrier from shifting or moving from its normal position when lifted for the purpose of inspecting or correcting the work done on the under side of the platen. This device acts automatically whether the platen-carrier be normally in the lower-case or in the upper-case position and effectually prevents any rocking of the arms 23 and any slamming or knuckling of the platen-carrier either forward or backward when the same may be raised. The said device is normally in position such that it does not interfere at all with the shifting of the platen-carrier either backwardly or forwardly during the progress of the writing, yet it is so mounted and related to other parts as that at the beginning of the lifting movement of the platen-carrier it acts automatically to lock the same against shifting movement relatively to the truck or main carriage, while at the same time it is adapted automatically to unlock said platen-carrier at near the end of its turning-down movement to normal position, so as to leave it free for shifting by the key mechanism. Although I prefer to employ two such devices, (one at each end of the machine,) one device may, however, be used so far as the gist of my invention is concerned.

The device 65 is in the form of an arm or lever, and at near its forward end is formed with a pivot-hole 66, which receives the pivot-pin 24, the inner fork or member of the bifurcated end bars being cut away for the reception of this portion of the locking device. At the forward end of the locking device and below the plane of the pivot-hole is a hook or projection 67, that is adapted to bear on the underside of the rear end of the end bar. A

downward projection 68 is provided at the rear end of said locking device, which projection is adapted to enter a hole or opening 69 in the truck 4 or engage the rear wall or edge 70 of said truck, according as the platen-carrier is normally in lower-case position or in upper-case position, and thus lock the platen-carrier and the vibratory arms 23 immediately the platen-carrier is started to be raised.

At Fig. 2 the platen-carrier is shown as down in working and in lower-case position in full lines and as raised for inspection or correction of the work in the dotted lines, and the locking device is likewise shown in full and dotted lines in said view. It will be observed by the full lines that when the platen-carrier is in working position the projection or locking-lug 68 stands above the plane of the hole 69 in the truck, and thus does not interfere with the back-and-forth shifting movements of the platen, and it will also be observed by the dotted lines that when the platen-carrier is in its upturned position said projection has dropped into the hole 69, and thus has locked the vibratory arms of the platen-carrier in their normal or lower-case position.

The locking projection is held above the hole 69 by the weight of the platen-carrier acting on the hooked end 67 of the locking device, which, as will be observed at Fig. 2, maintains the locking projection in its raised or inoperative position. By a further reference to this view and also to Fig. 3 it will be seen that almost immediately the platen-carrier is swung up about the hinge-pins, as shown by the full lines at Fig. 3, the superior weight of the locking device on the rear side of its pivot will cause it to descend and the hook 67 to ascend with the platen-carrier until the projection 68 comes to a bearing in the hole 69, and thereafter the continued upward swing of the platen-carrier takes place without any effect upon the locking device. Immediately the projection enters the hole a catch or lock is thus provided for the vibratory arms 23, and they are held firmly in their normal positions during the continued upturning of the platen-carrier, and as soon as the said arms are locked against vibration the platen-carrier hinged thereto is likewise locked against vibration or buckling. The locking action thus established continues until the platen is almost at the end of its turning-down movement. During the final portion of the downward movement of the platen-carrier the end bar strikes upon the hook 67 and acts to vibrate the locking device and raise the projection 68 out of and above the hole 69 or to the position shown in full lines at Fig. 2.

At Fig. 4, where the platen-carrier is represented as locked or held normally in its upper-case position, from which it is adapted to be shifted forwardly by the shift-key mechanism for the purpose of printing at intervals small letters, punctuation-marks, &c., classi-

fied as "lower-case" characters, the locking device is illustrated as in operative engagement with the rear face or wall of the truck or carriage 4, the platen-carrier being shown as having been lifted from its normal dotted-line position for the purpose of swinging it upwardly, as in Fig. 2. When the platen-carrier is locked in upper-case position, the vibratory arms or links 23 incline rearwardly, as shown at Fig. 4, and the projections 68 of the locking devices carried by the hinge-pins on said arms are moved rearwardly to a corresponding extent and so as to register or align with the rear edge of the truck or carriage 4. The locking engagement between the projection 68 and the rear edge of the truck (illustrated at Fig. 4) is disturbed or broken by the lifting action of the platen-carrier on the hook 67 during the last part of the turning-down movement of the platen-carrier, or during the movement of the latter from the position shown in full lines to that shown in dotted lines, thus leaving the platen-carrier free to be shifted forwardly and backwardly by the shift-key mechanism, as in the case described with reference to Fig. 2. If desired, instead of having the projection drop behind the rear edge of the truck or carrier the latter may be made of greater width and a hole provided therein, and in lieu of providing a hole, as 69, the forward portion of the truck might be removed, leaving only the rear wall or face of the hole remaining, since it is this wall which stops the backward movement of the projection and keeps the links or arms 23 and the platen-carrier in their normal positions against the front stops when the platen-carrier is arranged for lower-case work and the platen-carrier is lifted. The locking devices are also provided with means for supporting the platen-carrier in its upturned or non-working position. To this end there is formed or provided an inclined stop and bearing 71, which may be formed integral with the locking-arm and connected thereto by a brace member 72. The device 71 is preferably arranged at an inclination to the vertical and on the rear side of the hinge-pin of the platen-carrier and above the level of the same in order that when the latter is turned up to its non-working position its weight may rest on the rear side of said hinge-pin, and thus avoid any tendency of the platen-carrier to fall back to normal position by gravity. The devices 71 act as stops to the turning-back movement of the platen-carrier, and while the end bars of the latter are in contact with such stops a firm and steady support is afforded by the latter for the platen-carrier, thus enabling the operator to exert considerable pressure upon the platen, if necessary, for the purpose of making erasures, &c., without putting any injurious strain on any of the working parts. The stop and bearing 71 is sustained firmly by the locking device in conjunction with

the truck in both the upper and lower case positions of the platen-carrier.

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

1. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier connected thereto by pivotally-mounted arms and hinged to swing up and down independently upon said arms, front and back stops for said arms; means for holding the platen-carrier normally in either of two positions, a locking device adjustable with said platen-carrier and adapted to lock the latter and the vibratory arms in both of the two positions to which they may be adjusted upon the initial upturning movement of the platen-carrier.

2. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier connected thereto by pivotally-mounted arms and hinged to swing up and down independently upon said arms, front and back stops for said arms, means for holding the platen-carrier normally in either of two positions, a locking device pivotally mounted on said arms and movable therewith and adapted to engage the non-shifting carriage in either of the two positions to which the platen-carrier and its arms may be adjusted, and provided with a hook or projection to be engaged by a part of the swinging platen-carrier for the purpose of effecting a disengagement of the locking device during the turning-down movement of the platen-carrier.

3. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier connected thereto by pivotally-mounted arms and hinged to swing up and down independently upon said arms, front and back stops for said arms, means for holding the platen-carrier normally in either of two positions, a locking-lever mounted upon the hinge-pin of the platen-carrier, a projection, engaging faces therefor, one element being on the cocking-lever and the other upon the non-shifting carriage, and a forward projection on the locking-lever adapted to be acted upon by a part of the swinging platen-carrier.

4. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier connected thereto by pivotally-mounted arms and hinged to swing up and down independently upon said arms, front and back stops for said arms, means for holding the platen-carrier normally in either of two positions, a locking-lever mounted upon the hinge-pin of the platen-carrier, a projection on the rear end of the said lever adapted to engage with either of two faces or walls on the non-shifting carriage, and a projection on the forward end of said lever adapted to be engaged by a part of the swinging platen-carrier.

5. In a type-writing machine, the combi-

nation of a carriage, a platen-carrier pivotally connected thereto and having an independent hinge movement, a locking-lever having a projection engaging a part of the platen-carrier whereby the weight of the latter is adapted to lift said lever, a projection, and a locking device, one of said elements being upon the locking-lever and the other upon the carriage.

6. In a type-writing machine, the combination of a carriage having two engaging faces or walls, a platen-carrier hinged thereto and adapted to be adjusted to either of two positions relatively to said carriage, and a pivoted locking-lever having a projection at one end adapted to engage with said walls or faces and having also a projection at its opposite end adapted to be engaged by a part of the platen-carrier.

7. In a type-writing machine, the combination of the non-shifting carriage having two engaging faces or walls, the front and back stops on said carriage, the arms 23 pivotally mounted on said carriage, the platen-carrier hinged to the upper ends of said arms, shifting mechanism adapted to set said platen-carrier and said arms in either of two positions, and the locking-lever pivotally mounted on one of the hinge-pins of said platen-carrier and provided with a rear projection to engage said faces or walls and with a forward projection to engage the under side of the platen-carrier.

8. In a type-writing machine, the combination of a non-shifting carriage having a hole 69 and a rear wall 70, a platen-carrier mounted on hinge-pins at the upper end of arms pivotally attached to said carriage, a locking-lever pivoted on one of said hinge-pins and having a forward projection adapted to be acted upon by said platen-carrier, and a rear projection adapted to engage with said hole or said rear wall, according to the adjustment of the platen-carrier frame for lower-case printing or upper-case printing, and stops on said carriage for determining the adjustment of the platen-carrier and its arms and also of their shifting means.

9. In a type-writing machine, the combination of a non-shifting carriage having two engaging faces or walls, a platen-carriage hinged to pivotally-mounted arms and adapted to be shifted back and forth therewith, shifting mechanism adapted to set said platen-carrier and said arms in either of two positions, and a lever pivotally connected to one of said arms and platen-carrier to move therewith and provided with a locking projection to en-

gage either of said faces or walls according to the adjustment of the platen-carrier for lower-case printing or upper-case printing and also adapted to be disengaged from said faces or walls by a part on or connected with said platen-carrier.

10. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier connected thereto by pivotally-mounted arms and hinged to swing up and down independently upon said arms, front and back stops upon said non-shifting carriage, means for holding the platen-carrier normally in either of two positions, a pivoted locking device adapted to shift with said arms and platen-carrier, a projection, and a pair of engaging walls therefor, one for the lower-case position and the other for the upper-case position of the platen-carrier.

11. In a type-writing machine, the combination of a carriage, a shifting platen-carrier, and an inclined stop and bearing adapted to be shifted within said platen-carrier.

12. In a type-writing machine, the combination of a non-shifting carriage, a shifting platen-carrier, an inclined stop and bearing pivotally connected to said platen-carrier and adapted to be shifted therewith, and means for holding the shiftable parts in either of two positions.

13. In a type-writing machine, the combination of a non-shifting carriage, a platen-carrier hinged thereto and adapted to be shifted backwardly and forwardly with reference to the same, a pivoted stop and bearing connected to said platen-carrier and adapted to be shifted therewith, and means for engaging said stop and bearing with the non-shifting carriage when the platen-carrier is turned up.

14. In a type-writing machine, the combination of a non-shifting carriage, a platen-carrier hinged to pivotally-mounted arms and adapted to be shifted back and forth therewith, a lever pivotally connected to said arms and platen-carrier to move therewith and provided with a locking projection to engage said carriage, an unlocking projection to be engaged by the platen-carrier, and an inclined stop and bearing for the platen-carrier in its upturned position.

Signed at the borough of Manhattan, in the city of New York, in the county of New York and State of New York, this 23d day of February, A. D. 1899.

CHARLES H. SHEPARD.

Witnesses:

K. V. DONOVAN,
E. M. WELLS.