(No Model.) 3 Sheets—Sheet 1.

F. L. TWISS & L. A. BARBER.

TYPE WRITER CARRIAGE.

No. 473,485. Patented Apr. 26, 1892.

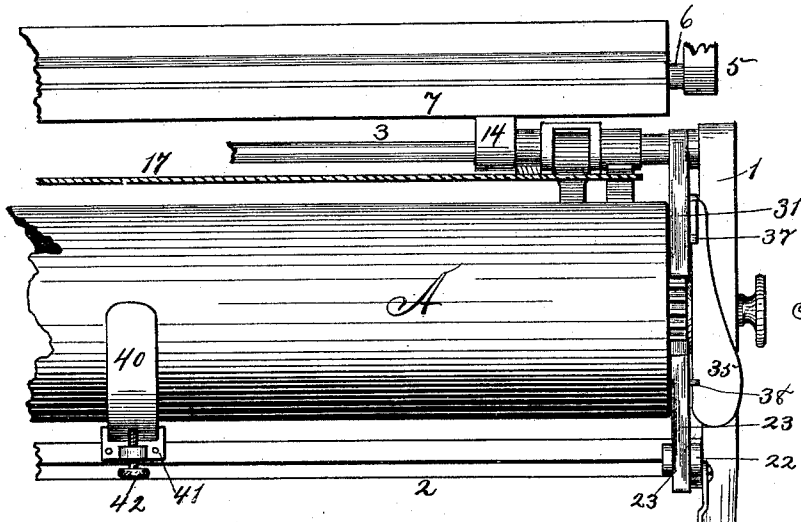

Fig. 1.

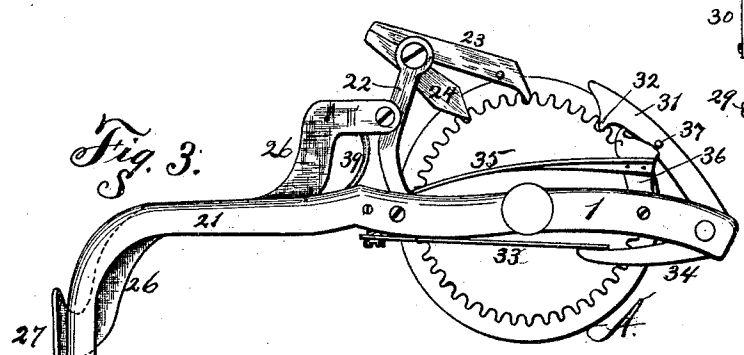

Fig. 3.

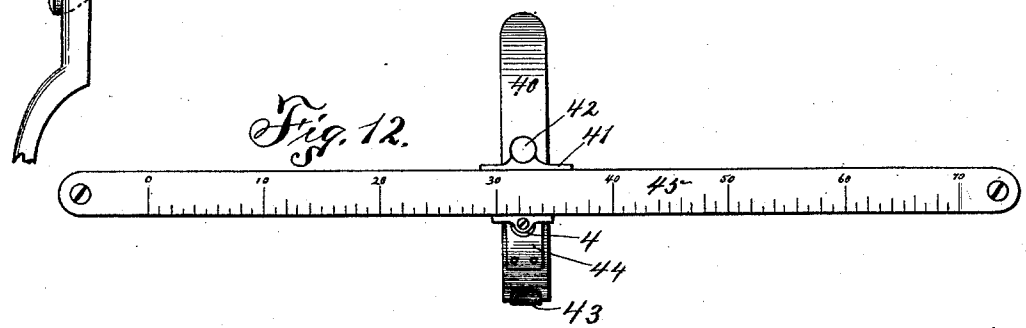

Fig. 12.

Witnesses
H. A. Carhart
C. B. Kinne

Freeman L. Twiss & Luther A. Barber Inventors

By their Attorneys
Smith & Denison

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F. L. TWISS & L. A. BARBER.

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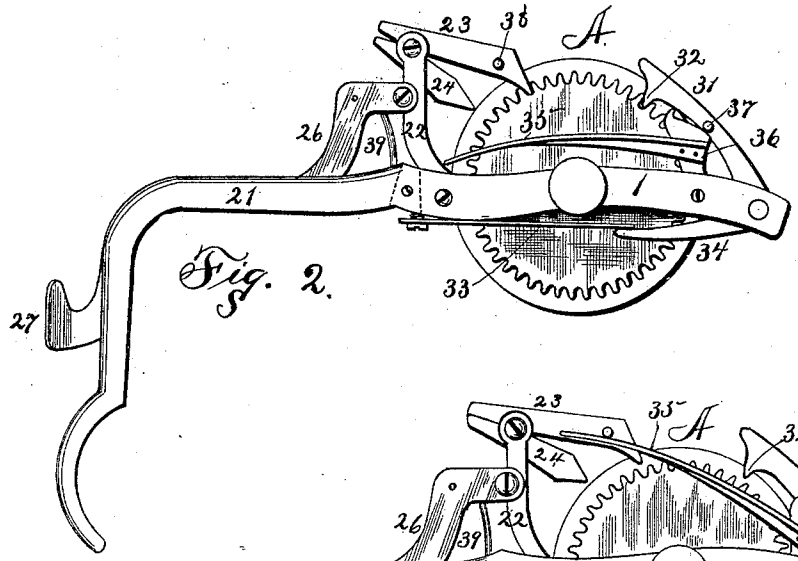


Fig. 2.

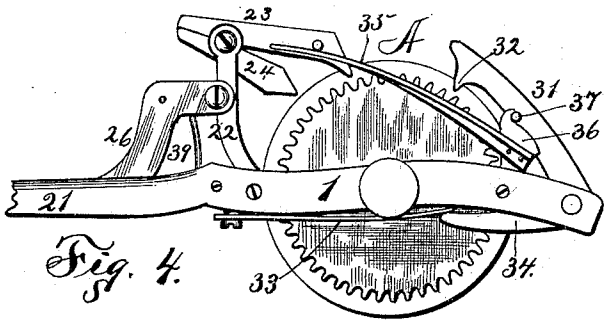
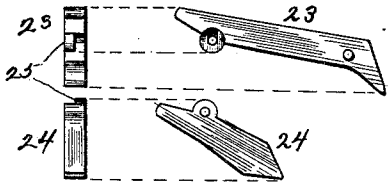


Fig. 4.

Fig. 5.



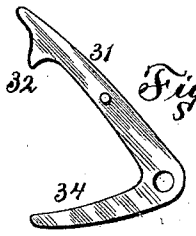


Fig. 6.

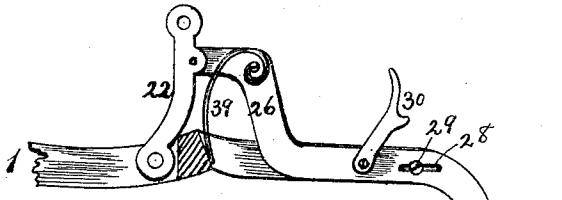
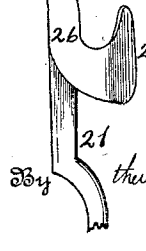


Fig. 7.



Witnesses
H. A. Earhart
C. B. Kinnee

Freeman L. Twiss &
Luther A. Barber
Inventors.

By their Attorneys
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F. L. TWISS & L. A. BARBER.

TYPE WRITER CARRIAGE.

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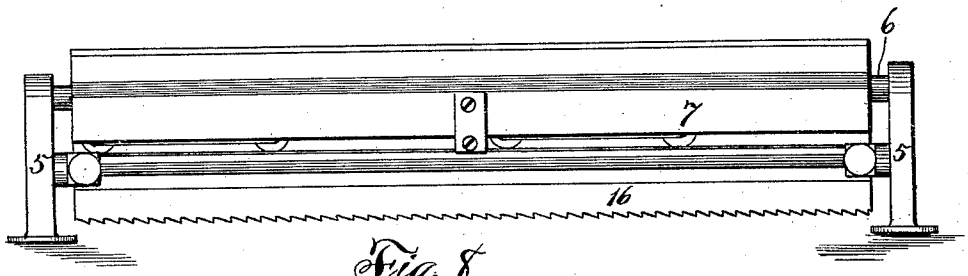

Fig. 8.

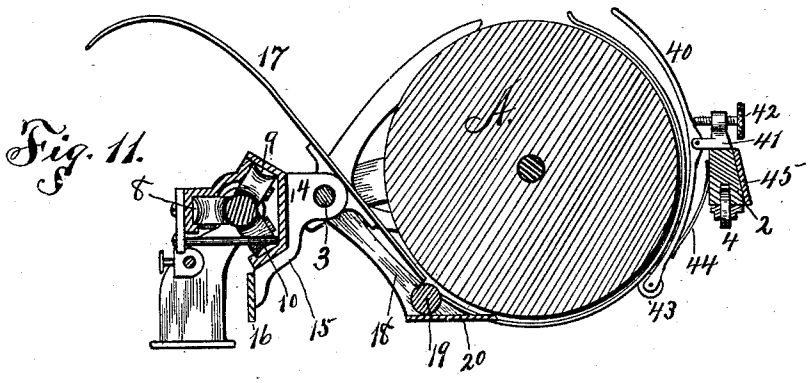

Fig. 11.

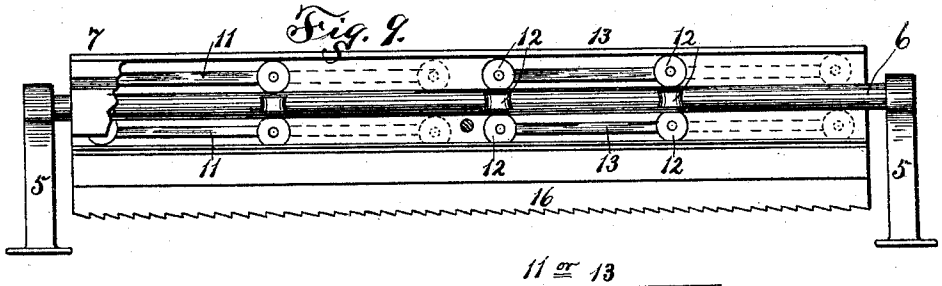

Fig. 9.

Fig. 10.

Witnesses
H. A. Earhart
C. B. Kinne.

Inventors
Freeman L. Twiss &
Luther A. Barber
By their Attorneys
Smith & Denison

UNITED STATES PATENT OFFICE.

FREEMAN L. TWISS AND LUTHER A. BARBER, OF GROTON, NEW YORK.

TYPE-WRITER CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 473,485, dated April 26, 1892.

Application filed March 9, 1891. Serial No. 384,260. (No model.)

To all whom it may concern:

Be it known that we, FREEMAN L. TWISS and LUTHER A. BARBER, of Groton, in the county of Tompkins, in the State of New York, have invented new and useful Improvements in Type-Writer Carriages, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to type-writing machines, and more particularly to the carriage thereof, the machine being of the type commonly known as "center strike."

Our object is to produce an improved mechanism for mounting the carriage upon its traversing-ways upon or adjacent to the top plate, comprising a rod supported above the top plate of the machine, concave rollers fitting the periphery of the rod connected together in pairs and bearing upon three or more sides of the rod, and a casing inclosing the rod and rollers and forming the outer trackways for the rollers, said casing having lugs, to which the frame carrying the platen is hinged, and an improved line-spacing mechanism operated by a push-button upon the front of the carriage at one end, which operates the push and check pawls simultaneously to release and partially rotate the platen, and then to lock it as soon as the pressure is released upon the button.

Our invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan of part of the carriage and platen of a type-writing machine. Fig. 2 is an end elevation thereof, showing the platen locked. Fig. 3 shows in end elevation the platen, its carriage, and the pawl mechanisms for rotating the platen for line-spacing and locking it as shifted, the parts being in the position they occupy just as the platen is rotated the distance of the line-space and just before the push-pawl is retracted. Fig. 4 is a like view of the same parts, showing the push and locking pawls thrown out of engagement with the rack to permit the platen to be rotated by hand. Figs. 5 and 6 are details of the push-pawls and locking-pawls, respectively. Fig. 7 is an elevation of part of the carriage, showing the inner face of the platen-shifting bar, the line-spacing mechanism for single or double spacing, and part of the carriage-shifting bar. Fig. 8 is a rear elevation of the carriage-frame and its mounting in the trackway around the rear rod. Fig. 9 is a like view of the same with part of the trackway-casing broken out to show the rollers and their action by the dotted lines. Fig. 10 shows, respectively, a top plan and side elevation of one of the roller-carriages which carry the main carriage. Fig. 11 is a vertical transverse sectional elevation of the platen, its carriage, the carriage-mounting, the hinge permitting the platen to be raised, and the scale-bar under the platen. Fig. 12 is a front elevation of the front paper-guide, showing the scale upon the front rail of the platen-frame.

A is the platen, mounted upon end trunnions in a rectangular frame, of which 1 is one end bar, and 2 and 3 are respectively the front and rear bars, the rear bar being cylindrical and the front bar of substantially the form in cross-section shown in Fig. 11. A single wheel or roller 4 is mounted below the front bar of this frame and travels upon the top plate of the machine. In rear of this frame, in posts 5 erected upon said top plate, we mount the carriage-rail 6, consisting of a rod parallel with the rear bar of the carriage-frame and with the top plate. This rail is inclosed on three sides—front, rear, and top—by a casing 7, the inner surface of which constitutes these trackways 8 9 10, and the auxiliary carriages 11 travel thereon outwardly and inwardly upon the rail 6. Each carriage comprises two concaved rollers 12 and a connecting-bar 13, which carries their arbors. These carriages all stand at substantially the same angle to the rail and together create a bearing substantially inclosing the rail, as shown in Fig. 11. As shown in Fig. 9, we use two or more sets (of three each) of these auxiliary carriages, and the dotted lines indicate their travel. This casing is provided on its front face with two lugs 14, which are perforated and fit over the rear bar of the platen-frame and constitute the hinge upon which the carriage is raised to permit inspection of the writing. These lugs are provided with downward arms 15, upon which the letter-spacing rack-bar 16 is mounted, standing vertically, Figs. 8, 9, and 11.

Upon the rear of the platen-frame we mount

the apron 17. We also secure thereon, near each end, an arm 18, in which the paper-roller 19 is journaled and which also carries the ends of the scale-bar 20, which is normally in the rear of the printing-line on the platen, and when the platen is lifted upon the hinge-joint this scale is also lifted and remains in the same relation to the platen and the printing-line thereon. This apron extends down to and meets the scale and is provided with a longitudinal slot, (not shown,) through which the paper-roll protrudes upward, the main body of said roll being under the apron and in the angle between it and the scale.

To the platen-frame bar 1 or upon the projecting ends of the bars 2 and 3, we secure the carriage-shifting handle 21 of substantially the form shown in Fig. 2, which is integral with end bar 1 and extends to the rear of said frame. An upright lever 22, pivotally connected to this handle and a push-pawl composed of two sections 23 and 24, is pivotally connected to this lever. These pawl-sections are each cut away so as to create a bearing-shoulder 25 on each, so that when placed together these shoulders constitute a bearing for both, and both sections stand in the same vertical plane. From the bearing each section is beveled outwardly, substantially as shown in Fig. 5, so that when in the position shown in Fig. 2 they stand apart and when in the position shown in Figs. 3 and 4 are close against each other. The inner ends of both are beveled, so as to properly engage with the ratchet on the platen, which ratchet is of the ordinary form, encircling one end of the platen. The push-lever 26 is pivotally connected to the lever 22 and extends partly alongside of the shifting-lever toward the front and on its outer end has a head 27. A slot 28 and screw 29, Fig. 7, operate to retain it in position, and also the slot regulates the extent of the throw of the lever and the push of the push-pawl. The full length of the slot is for full-line spacing, and when the pawl 30 is dropped down it closes part of the slot, and then the push-lever can only be operated for half-spacing.

In Fig. 6 we show the locking-pawl 31, having a point 32 to engage with the ratchet-teeth, having a wedging front face, so that the platen can be rotated one way by hand without lifting this pawl, which will then snap from one tooth to another under the tension of the spring 33, which engages with the arm 34 of the pawl. This pawl is loosely mounted upon the rear bar 3 of the platen-frame. Thus when the push-lever is pushed inward the lever 22 will swing back, the pawl-section 23 will rotate the platen the space desired, single or double, and the point of the other section will aid therein, and will also prevent the platen from flying over too far when a quick blow is given to the push-lever.

A pawl-lifter 35, consisting of a flat piece of metal, has its rear end secured to the vertical bar 36, which is pivotally connected to the handle 21, and this bar projects above the lifter and has its upper end beveled and provided with a hook, substantially as shown, so that when this lifter is raised the top of the bar 36 will engage with a pin 37 on the pawl 31 and raise it out of its engagement with the ratchet, and the hook will control the extent to which it is raised, and at the same time the outer end of the lifter-bar will engage with the pin 38 on the push-pawl section 23 and raise this out of its engagement, all of which leaves the platen free to rotate in either direction, as shown in Fig. 4. A spring 39 upon the push-lever, Fig. 7, which engages with the bar 2 of the platen-frame, retracts the push-lever and pawl as soon as the pressure upon the lever is released.

The front paper finger or guide 40 is pivotally mounted upon a bracket 41, mounted upon the bar 2.

42 is a set-screw through the bracket, which regulates the tension of the roller 43 in the lower end of the guide against the platen, and 44 is a tension-spring secured to the guide and bearing against said bar. The upper scale 45 is secured upon the front of the bar 2.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with the platen, its frame, and the front roller under said frame, of a casing to which the platen-frame is hinged, a trackway within said casing, and grooved rollers within the casing substantially embracing the trackway and traveling upon it and upon the inside of the casing.

2. The combination, with the platen, its frame, and the front roller under said frame, of a casing to which the platen-frame is hinged, a stationary trackway within said casing, and multiple rollers bearing upon and substantially surrounding said trackway, each roller having a track within said casing.

3. The combination, with the stationary trackway, of multiple auxiliary carriages within and upon which the casing travels, consisting of rollers coupled in pairs bearing upon the trackway and inner faces of the casing, and a platen-frame hinged to said casing.

4. The combination, with a platen and a frame carrying it, of a stationary trackway in rear thereof, multiple auxiliary carriages consisting of rollers coupled together and traveling upon and embracing said trackway, and a casing provided with inner tracks and traversing said auxiliary carriages.

5. The combination, with the push-pawl and the ratchet upon the platen, of the lever actuating the pawl, provided with a slot, and an adjustable stop adapted to limit the stroke of the push-pawl to vary the line-spacing.

In witness whereof we have hereunto set our hands this 3d day of March, 1891.

FREEMAN L. TWISS.
LUTHER A. BARBER.

In presence of—
C. J. FLANAGAN,
D. D. BRUSEE.