No. 720,763. PATENTED FEB. 17, 1903.

C. W. WALKER.

TYPE WRITING MACHINE.

APPLICATION FILED NOV. 26, 1902.

NO MODEL. 2 SHEETS—SHEET 1

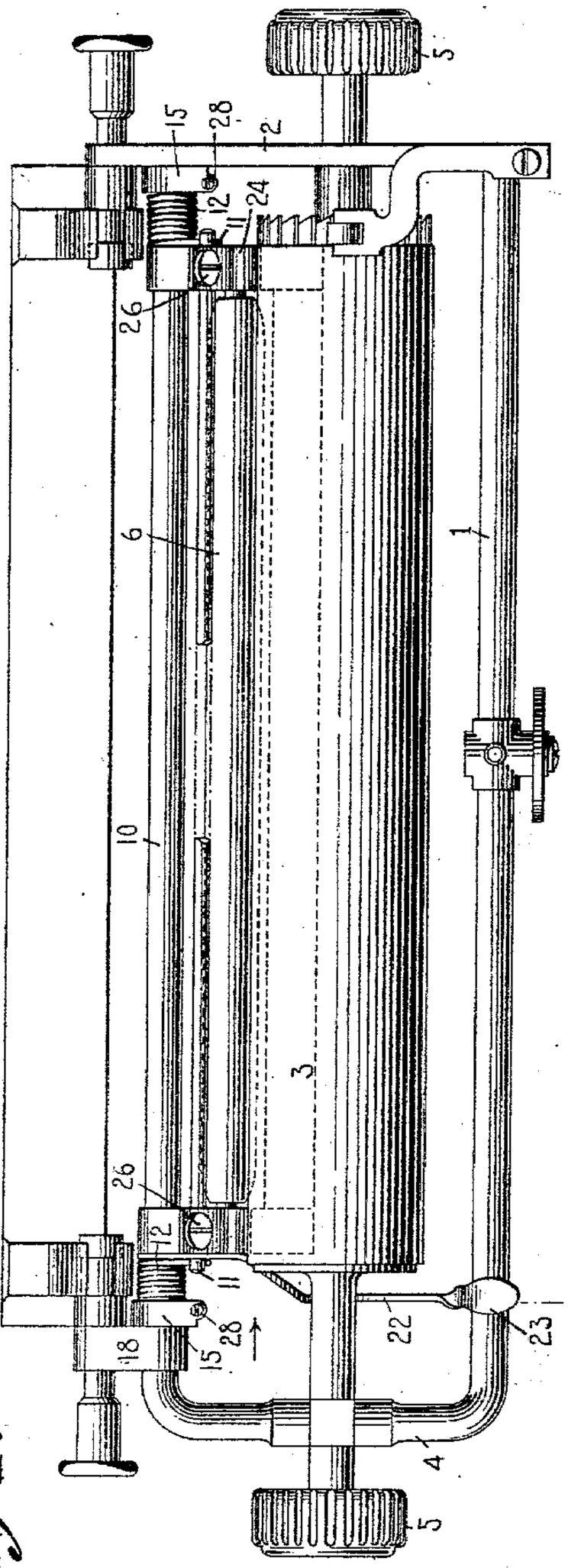

Fig. 1.

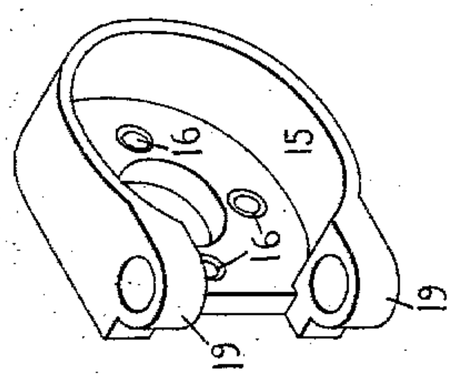

Fig. 3.

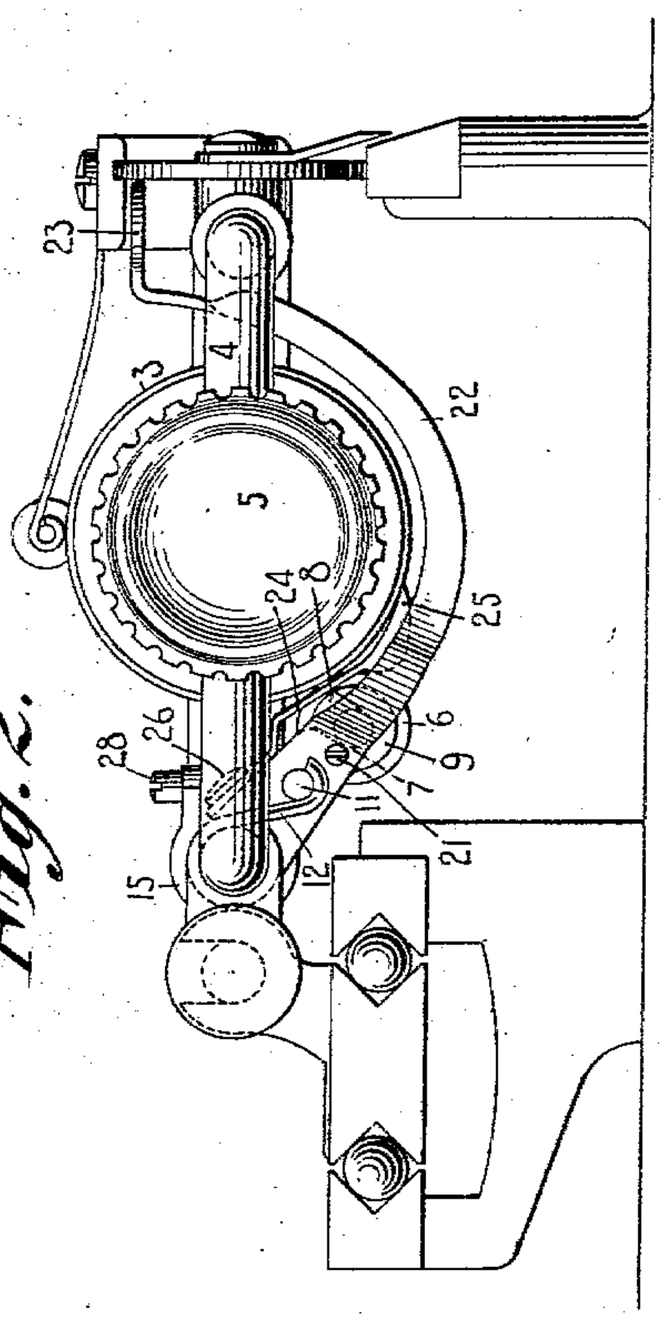

Fig. 2.

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TYPE WRITING MACHINE.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

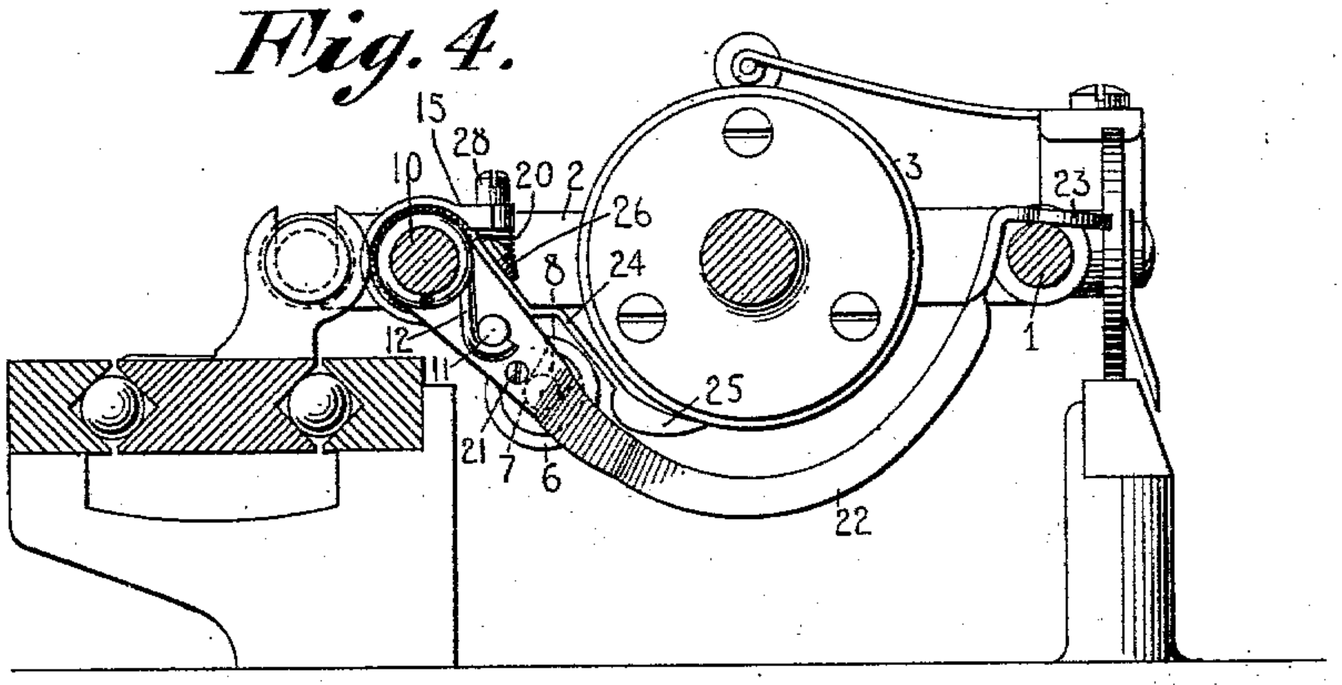


Fig. 5.

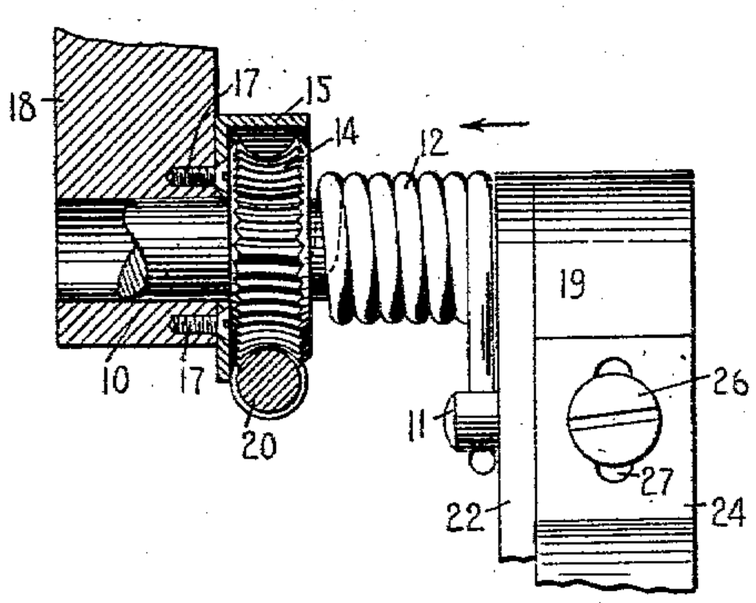
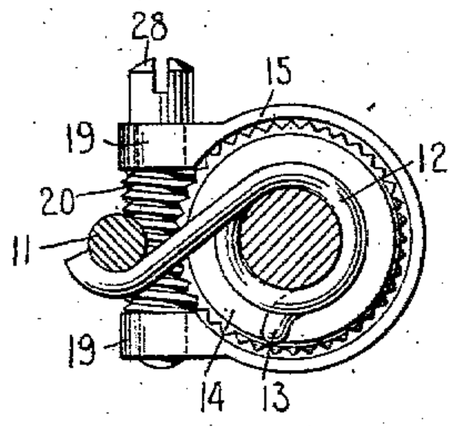


Fig. 6.



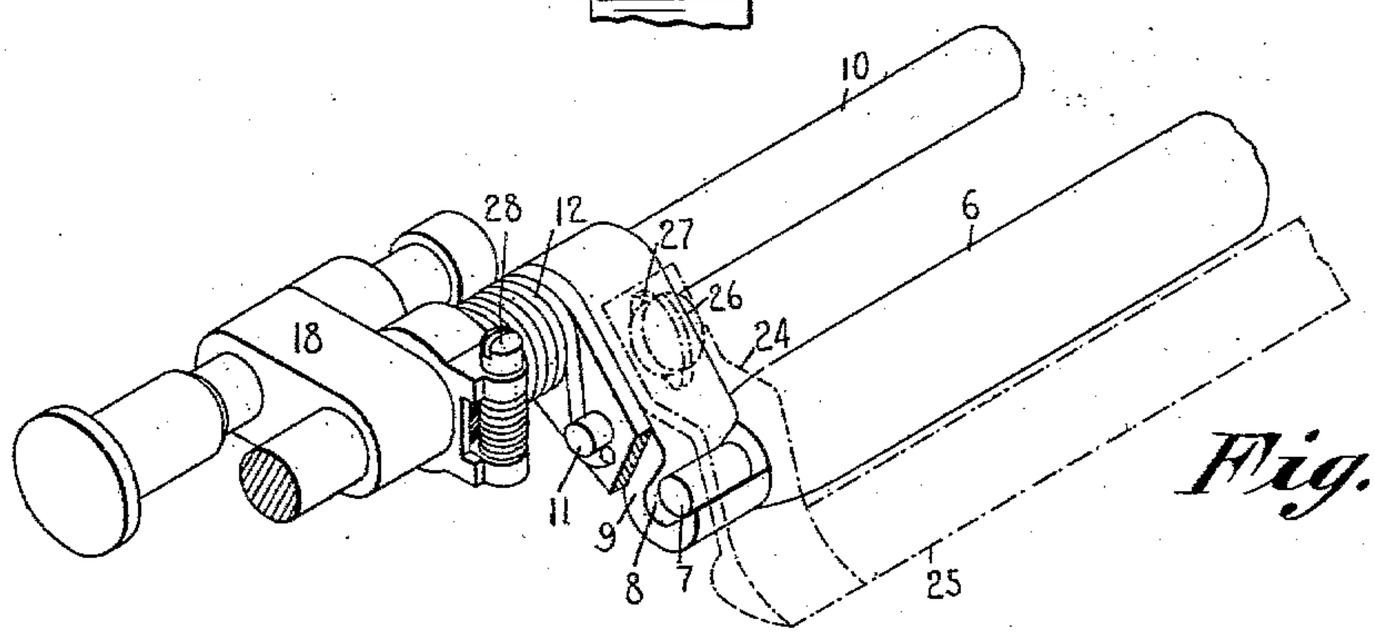


Fig. 7.

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UNITED STATES PATENT OFFICE.

CHARLES W. WALKER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO YOST WRITING MACHINE COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 720,763, dated February 17, 1903.

Original application filed December 21, 1901, Serial No. 86,821. Divided and this application filed November 26, 1902. Serial No. 132,891. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. WALKER, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type-writing machines, and more particularly to tension-adjusting devices therefor; and the object of said invention is to provide simple and efficient means of the character specified.

To the above and other ends which will hereinafter appear my invention consists in the features of construction, arrangements of parts, and combinations of devices to be hereinafter described and claimed.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a plan view of a type-writer carriage with the features of my invention applied thereto. Fig. 2 is an end view of the same. Fig. 3 is a detail perspective view, on an enlarged scale, of the so-called "housing" of the adjusting device. Fig. 4 is a vertical front to rear sectional view taken through the carriage and corresponding substantially to a section taken on the line *x x* of Fig. 1. Fig. 5 is a fragmentary plan view, partly in section, of one of the adjusting devices, the view being on an enlarged scale. Fig. 6 is a side or end view of the same looking in the direction of the arrow in Fig. 5. Fig. 7 is a fragmentary detail perspective view of one of the adjusting devices and the parts with which it coöperates.

The present case is a division of my application, Serial No. 86,821, filed December 21, 1901.

The platen-frame is made up of a yoke-like frame 1, the free ends of which are united by an end bar 2, a platen 3 revolving in bearings in the cross-head 4 of the yoke-like frame and in the end bar 2 and being provided with the usual finger-wheels 5. Coöperating with the platen 3 is a paper-feed roller 6, the shaft 7 of which rests in open slot-bearings 8 in the arms 9, one being provided at each end of the shaft. These arms or links 9 are pivoted to the rear bar 10 of the platen-frame, and to each arm is connected at 11 one end of a coiled spring 12, that surrounds the bar 10 of the platen-frame. The opposite end 13 of each spring is connected to a worm wheel or gear 14, which is contained within a housing 15. (Shown in detail in Fig. 3.) This housing is provided with apertures 16 for the reception of headed screws 17, the stems of which pass through the housing and take into the member 18 or in the end bar 2 of the platen-frame, so that the housing is rigidly secured thereto. Each worm-wheel 14 rotates upon the rear bar 10 of the platen-frame, and the housings are each provided with bearings 19 for a worm-screw 20, which coöperates with a worm-wheel 14. It having been explained that one end of each of the springs 12 is connected to a worm-wheel, it will be understood that a turning of the worm-wheel will adjust the tension of its spring, and thus regulate the pressure of the feed-roller 6 against the platen or the paper thereon.

The construction of the adjusting means for the spring 12 is the same at both ends of the feed-roller, so that an independent adjustment may be provided at each end of the roller in order to insure an even distribution of pressure, and consequently a straight feeding of the paper.

The link 9, which supports the left-hand end of the feed-roller, has rigidly connected thereto by a screw 21 a forwardly-extending arm 22, which is fastened into a finger-key 23 at its forward end and is pivoted at its rear end to the bar 10. By depressing the finger key or piece 23 the paper-feed roller 6 will be forced out of contact with the platen or the paper thereon and the paper may be easily adjusted to any desired position on the platen.

Each of the links 9 supports a spring-arm 24, and the lower or free ends of these arms are connected by a paper blade or scale 25, which extends substantially throughout the length of the platen and normally presses

against it. This paper-blade may be adjusted with relation to the platen by screws 26, which extend through elongated slots 27 in the spring-arms 24 to secure them in place. The paper-blade being connected to the feed-roller carrying arms or links, it will be understood that a downward movement of a finger-key 23 operates to move both the feed-roller and paper-blade away from the platen in order that the paper may be freely introduced and adjusted on the platen.

One end of each of the worm-screws 20 extends beyond the bearing 19 thereof and has a nicked head 28, by means of which the screws may be turned to the desired extent with the aid of a screw-driver or like tool in order to turn the worm-wheels, and thus provide the requisite adjustment of the spring tension for the paper-feed roller.

It will be observed that by my invention I provide simple and efficient means whereby a nice adjustment of the tension of the springs on the paper-feed roller may be effected and that there is no liability of the adjusting devices creeping, and thereby destroying or disarranging the adjustment of the parts.

Various changes in details of construction may be made without departing from the spirit of my invention.

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

1. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring for pressing said feed-roller in contact with the platen, and adjusting means for adjusting the tension of said spring, said adjusting means comprising a worm-screw, and a worm-wheel which is secured to one end of said spring.

2. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring at each end of said roller for normally maintaining said feed-roller in contact with the platen and means for adjusting the tension of each of said springs, said adjusting means each comprising a worm-screw, a worm-wheel which is secured to one end of a spring, and a relatively fixed housing for said worm-wheel, and a bearing on said housing for said worm-screw.

3. In a type-writing machine, the combination of a platen, a feed-roller, pivoted arms which carry said roller, a worm-wheel, a pivotal support therefor, a coiled spring attached at one end to the worm-wheel and at the opposite end to one of the roller-carrying arms and a worm-screw for turning said worm-wheel and for adjusting the tension of said spring.

4. In a type-writing machine, the combination of a platen, a pressure-roller, a platen-frame, including a rod or bar 10, arms pivoted on said rod for supporting said roller, pressure-springs surrounding said rod and connected each at one end to one of said arms and tension-adjusting devices for each spring, comprising a worm-wheel mounted to turn on said rod and attached to one end of said spring, a housing for said worm-wheel attached to the platen-frame, and a worm-screw having a bearing in said housing and engaging said worm-wheel.

5. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring for normally maintaining said feed-roller in contact with the platen and adjusting means for adjusting the tension of said spring, said adjusting means including a worm-screw.

6. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring for normally maintaining said feed-roller in contact with the platen, and adjusting means for adjusting the tension of said spring, said adjusting means comprising a worm-screw, a worm-wheel which is secured to one end of said spring, and coöperates with said worm-wheel and a housing which contains said worm-wheel and constitutes a bearing for the worm-screw.

7. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring at each end of said roller for normally maintaining said feed-roller in contact with the platen, and adjusting means for adjusting the tension of each of said springs, said adjusting means each including a worm-screw.

8. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring at each end of said roller for normally maintaining it in contact with the platen and adjusting means for adjusting the tension of each of said springs, said adjusting means each comprising a worm-screw and a worm-wheel which is secured to one end of each of said springs.

9. In a type-writing machine, the combination of a platen, a platen-frame, links pivoted thereto, a shaft supported by said platen-frame, coiled springs surrounding a bar of said platen-frame and each connected at one end to one of said links, a worm-wheel connected to the opposite end of each spring and a worm-screw for each of said worm-wheels.

10. In a type-writing machine, the combination of a platen, a platen-frame, links pivoted thereto, a shaft supported by said platen-frame, coiled springs surrounding a bar of said platen-frame and each connected at one end to one of said links, worm-wheels that turn on a bar of the platen-frame, and each of which is connected to an end of one of said springs, a housing for each of said worm-wheels, a worm-screw carried by each of said housings and coöperating with the associated worm-wheel, and means for affording the adjustment of said worm-screws.

11. In a type-writing machine, the combination of a platen, a platen-frame, hooks pivoted thereto, a shaft supported by said platen-frame, coiled springs surrounding a bar of said platen-frame and each connected at one end to one of said links, worm-wheels that turn on the bar of the platen-frame, which is surrounded by the coiled springs and each of

which has an end of one of said springs connected thereto, housings which likewise surround said bar and are secured to the platen-frame, and each of which contains a worm-wheel, a worm-screw for each of said worm-wheels and bearings for a worm-screw in each of said housings.

12. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring for pressing said feed-roller in contact with the platen, and worm-gearing for adjusting the tension of said spring.

13. In a type-writing machine, the combination of a platen, a paper-feed roller, a spring for pressing said feed-roller in contact with the platen, an adjustable worm-screw, and a worm-gear controlled by said worm-screw for adjusting the tension of said spring.

14. In a type-writing machine, the combination of a platen, a feed-roller, pivoted arms which carry said feed-roller, a spring for each arm, and independently-adjustable worm-gearing for each of said springs.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 24th day of November, A. D. 1902.

CHARLES W. WALKER.

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