No. 827,704. PATENTED AUG. 7, 1906.

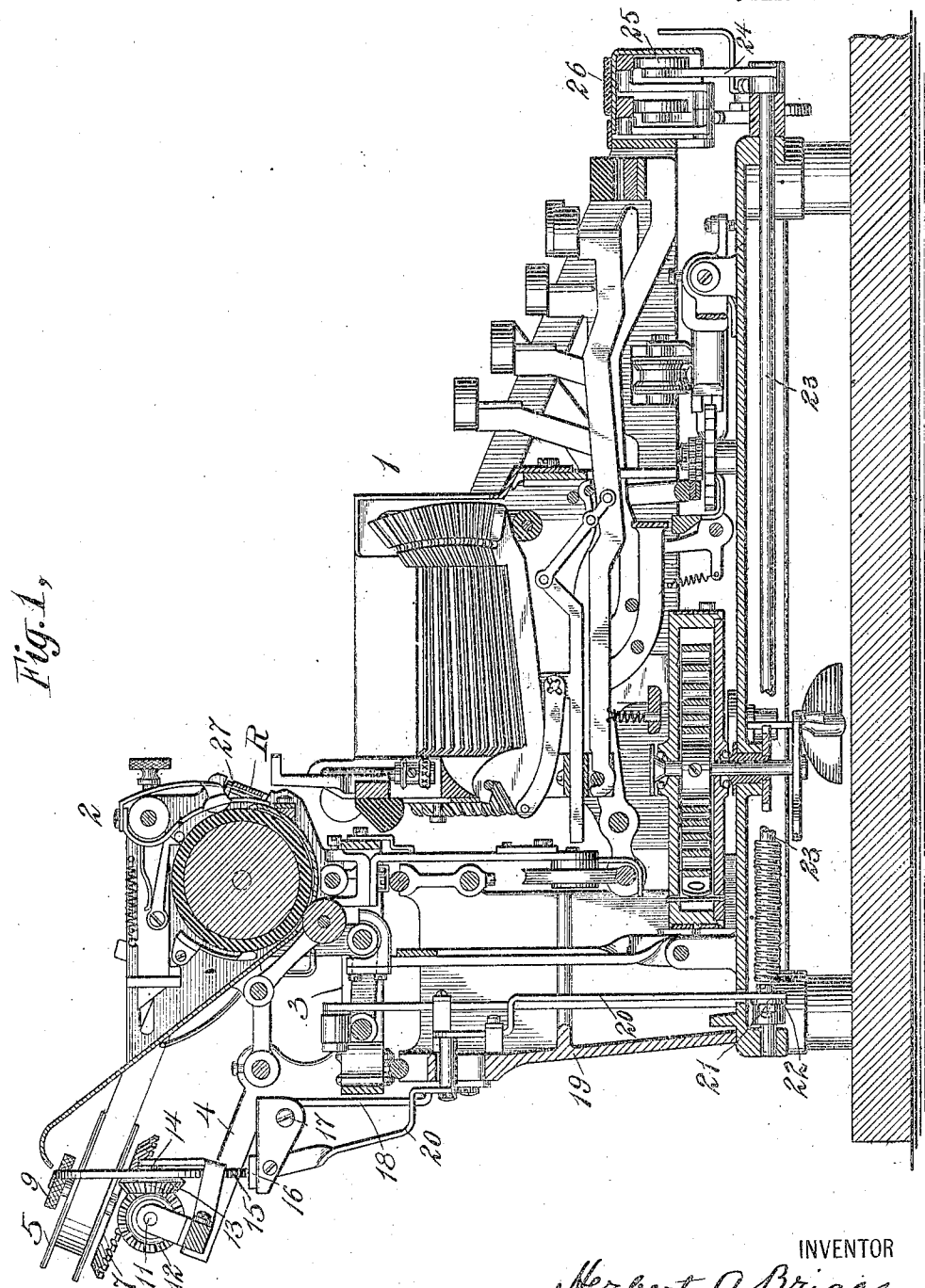
H. A. BRIGGS.

TYPE WRITING MACHINE.

APPLICATION FILED AUG. 26, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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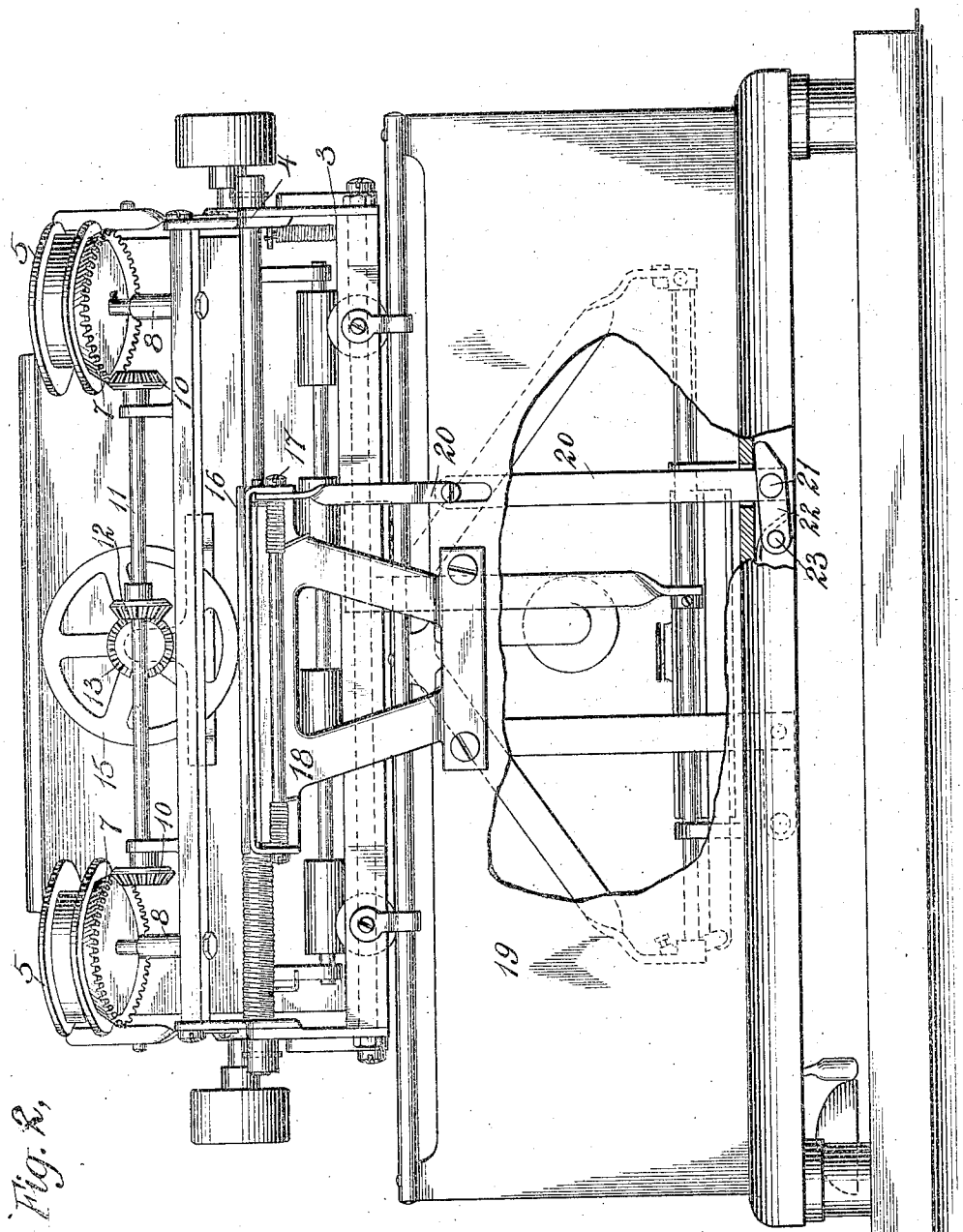


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 4.

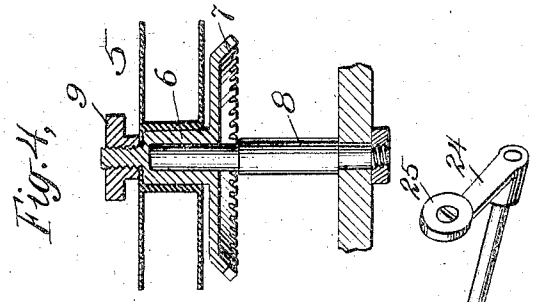
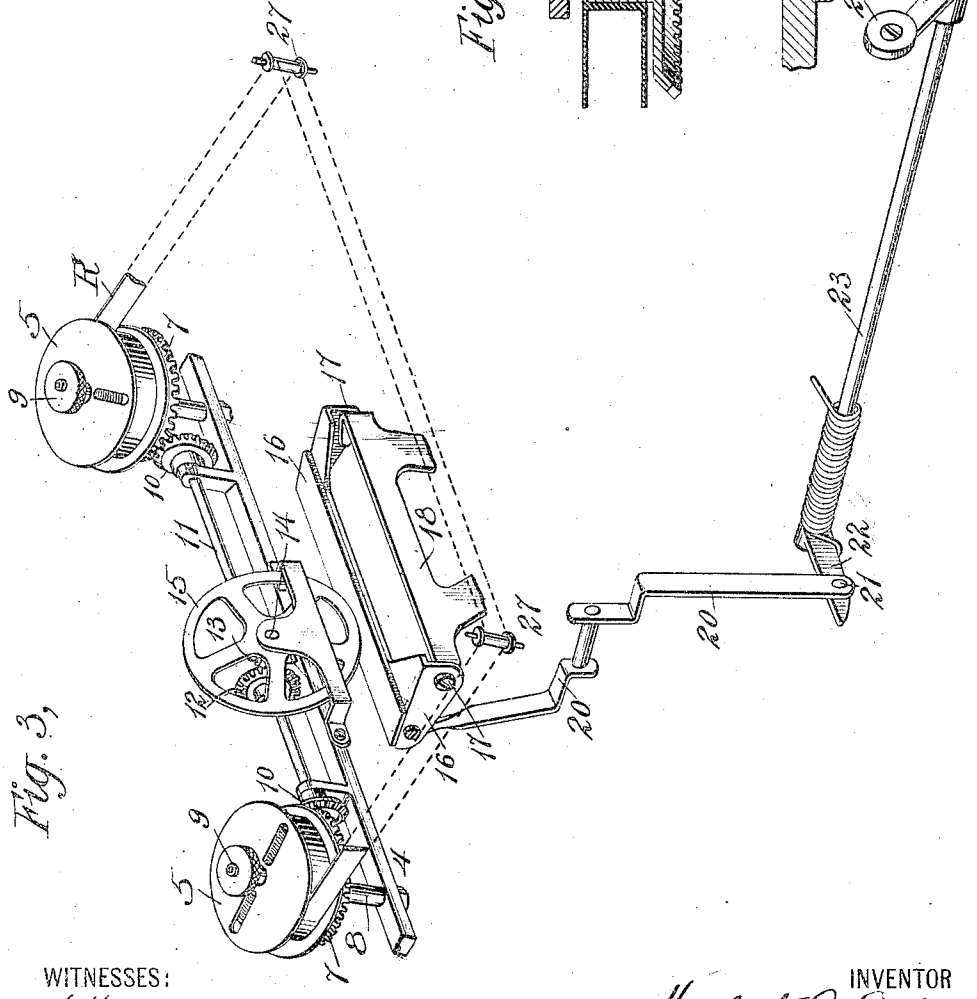


Fig. 3.



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HERBERT A. BRIGGS, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

No. 827,704. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed August 26, 1904. Serial No. 222,273.

To all whom it may concern:

Be it known that I, HERBERT A. BRIGGS, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have made certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to ribbon mechanism for type-writing machines, and is particularly well adapted for use in connection with a type-writing machine wherein both the type-action and the paper-carriage have a traveling movement and are so related that the travel necessary to get from the final letter of one printed line to the initial letter on the next printed line is divided between the two carriages.

The invention, while specially useful in the above connection, is capable of general application to type-writing machines employing a traveling platen, and in its application to any form of machine is intended to provide a simple and a practical form of mechanism whereby the ribbon-feed mechanism, which operates to feed the ribbon on the forward movement of the platen, is thrown out of operation during the reverse movement of the platen and wherein the feeding direction of the ribbon may be readily reversed.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described, illustrated, and claimed.

The essential features of the invention, involved in the manner of mounting, driving, and disengaging the ribbon-spools and the improvements for throwing the mechanism in and out of gear, are necessarily susceptible to structural change without departing from the scope of the invention; but a preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of the preferred form of type-writing machine to which the ribbon mechanism is applied. Fig. 2 is a rear view of the machine. Fig. 3 is a skeletonized perspective view of the complete ribbon mechanism separated from the writing-machine. Fig. 4 is a detail sectional view through one of the spools, its post, and crown-gear, showing the mounting of the spool and the means by which it is made fast and loose with reference to its crown-gear.

Like reference characters designate corresponding parts in all the views.

In the form of type-writing machine illustrated in the drawings the numeral 1 designates a traveling type-carriage carrying the entire type-action or printing mechanism with its related parts, while the numeral 2 designates a traveling paper-carriage, which carries a platen and its auxiliaries and is also intended to carry the entire ribbon mechanism, excepting the key-controlled operating connections therefor.

The two carriages 1 and 2 have a traveling movement in parallel planes, but in opposite directions, and as the instrumentalities for maintaining this operative relation between the two carriages form no part of the invention further reference thereto is unnecessary. However, the invention contemplates the support of the ribbon mechanism proper upon the paper-carriage frame 3. To provide for such support, the said paper-carriage frame 3 has offset from the rear portion thereof a rearwardly-projected bracket extension 4, upon which is supported so as to travel with the paper-carriage the ribbon-carrying mechanism. This ribbon-carrying mechanism in its general organization includes the oppositely-arranged ribbon-spools 5, loosely mounted upon the sleeves 6, carried by the crown-gears 7, which, with their sleeves, loosely turn upon the spool-posts 8, supported by the bracket 4. The said sleeves carry at their upper ends the binding-nuts 9, which when tightened serve to clamp the spools fast to their crown-gears. Each crown-gear meshes with a pinion 10, carried by a motion-transmitting shaft 11, journaled in suitable bearings upon the bracket extension 4. At an intermediate point the shaft 11 has mounted thereon a beveled pinion 12, meshing with a complemental pinion 13, carried on the stub-shaft 14, on which is also mounted a revoluble driving device or wheel 15.

A platform or table 16 is normally held in a horizontal position in engagement with the revoluble driving device or wheel 15 and is pivotally hung, as at 17, upon a stationary supporting-bracket 18, carried at the upper end of the elevated section 19 of the main base of the machine. To the platform 16 is connected the upper end of the rod 20, the lower end of which is pivoted, as at 21, to a

rocker-arm 22, carried at the rear end of an operating rock-shaft 23, journaled in bearings beneath the base of the machine and having attached to the front extremity thereof an operating-arm 24, carrying an engaging roller 25, normally just out of engagement with a spring-elevated movement-controlling key 26, supported at the front of the keyboard, and which when depressed serves to rock the shaft 23 and provide for dropping the platform 16, so as to disengage the driving-wheel 15 when the platen is returned to its initial position.

The ribbon R winds and unwinds from one spool to the other, according to which is fast or loose with its crown-gear, and is arranged, through the medium of suitable guides 27 at the ends of the platen-support, to pass entirely around such support and have its active portion arranged longitudinally of the platen in front thereof. It is to be observed that the spools 6 are disposed obliquely in the rear of the platen and at a higher elevation than the axis of the latter, so that the ribbon assumes an inclined position. The advantage of this is that it brings the path of the ribbon above the axis of the platen, out of the way of the platen-shaft, and also permits the operator to inspect the work from a point of view looking over and behind the ribbon.

The spools are each driven by frictional contact with the crown-gear therebelow. When the ribbon is exhausted from one spool, the frictional engagement between the other or full spool and its crown-wheel is released by loosening the binding-nut, thus freeing the spool from the control of such crown-wheel. The opposite or empty spool is then connected with its crown-wheel by tightening the binding-nut associated therewith. Thus while the crown-wheels are both positively driven at all times in opposite directions yet as only one of the spools is in operative connection with the gear the ribbon will travel in one direction when one spool is fast to its crown-wheel and in the opposite direction when the other spool is fast to the opposite crown-wheel.

The operation of the mechanism is clearly apparent. During the forward movement of the platen, the driving-wheel 15 being maintained in frictional contact with the platform 16, the travel of the platen will cause the wheel, which travels with the platen along the platform, to rotate on its axis, imparting motion, through gears 12 and 13, to the shaft 11 and to both crown-wheels. One ribbon-spool being fast and the other loose on its crown-wheel, the fast spool will be turned to wind the ribbon thereon from the loose spool. When the controlling-key 26 is depressed to return the platen to commence a new line, the arm 24, through the rock-shaft 23 and connections 20, pulls the tilting platform 16 out of engagement with the driving-wheel 15, so that on this return movement of the platen no movement is imparted to the driving-wheel, and hence none to the ribbon.

It is to be understood that I do not intend that my invention shall be restricted to mechanism operated by frictional engagement or to mechanism operating to feed the ribbon only during the forward movement of the platen, since many modifications in construction may be made without departing from the principle of my invention.

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

1. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the roller-platen, of oppositely-arranged ribbon-spools disposed obliquely and in a higher plane than the axis of the platen, and ribbon-guiding means for holding the ribbon in an inclined position in front of the platen, said ribbon being also held above the axis of the platen at the ends of the latter.

2. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the traveling paper-carriage bearing the roller-platen, of the ribbon supporting and actuating devices carried by the paper-carriage frame, said devices including positively-driven ribbon-spools disposed obliquely and at a higher elevation than the axis of the platen to arrange the ribbon at an inclination at the front of the platen, and held, at the ends of the platen, above its axis.

3. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the paper-carriage carrying the roller-platen, of the ribbon supporting and actuating devices carried by the paper-carriage frame, oppositely-arranged ribbon-spools disposed obliquely and in a higher plane than the axis of the platen, and ribbon-guiding means for holding the ribbon in an inclined position in front of the platen, said ribbon being also held above the axis of the platen at the ends of the latter.

4. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the platen, of oppositely-arranged, positively-driven crown-gears, ribbon-spools arranged on the gears and designed to be releasably clamped thereto, and operating means for the crown-gears including a normally stationary platform or table, and a rotating driving device engaging the same carried with the parts of the paper-carriage.

5. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the paper-carriage, of oppositely-arranged positively-driven crown-gears, ribbon-spools releasably clamped to said crown-gears, a connection for the crown-gears including a driving-wheel, and a plat-

form to which said wheel is relatively movable, arranged to engage said wheel.

6. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the paper-carriage, of oppositely-arranged crown-gears carried with the paper-carriage, ribbon-spools arranged to be releasably clamped to the crown-gears, a driving connection for the crown-gears including a motion-transmitting shaft carried with the paper-carriage and geared directly with the crown-gears, and a revoluble driving-wheel also carried with the paper-carriage and geared to the motion-transmitting shaft, a platform mounted on a stationary part of the machine and engaging said wheel, and a controlling-key arranged at the keyboard and having an operative connection with the platform for releasing its engagement with the wheel.

7. In a ribbon mechanism for type-writing machines, the combination with the printing mechanism and the paper-carriage, of the oppositely-arranged alternately fast and loose ribbon-spools carried with the paper-carriage, driving connections for said spools including a revoluble driving-wheel also carried with the paper-carriage, a platform pivotally supported on a stationary part of the machine, a rock-shaft having a connection with said platform, and a controlling-key operatively related to said rock-shaft.

8. In a ribbon mechanism for type-writing machines, the combination with a traveling printing mechanism and a traveling platen movable in opposite directions in parallel lines, of the ribbon-feed mechanism operating to feed the ribbon on the forward movement of the platen, and means for throwing said feed mechanism out of operation during the reverse movement of the platen.

9. In a ribbon mechanism for type-writing machines, the combination with the traveling printing mechanism and a traveling platen movable in opposite directions in parallel lines, of the ribbon-feed mechanism operating to feed the ribbon on the forward movement of the platen, means for throwing said feed mechanism out of operation during the reverse movement of the platen, and means for reversing the feeding direction of the ribbon.

10. In a ribbon mechanism for type-writing machines, the combination with a traveling printing mechanism and a traveling platen, of the ribbon-feed mechanism operating to feed the ribbon on the forward movement of the platen, said mechanism including a driving connection for the ribbon-spools having a revoluble driving device, a platform for engagement with said driving device, and means for disengaging the driving device and platform on the return movement of the platen.

11. In a ribbon mechanism for type-writing machines, the combination with the platen and ribbon-spools of a rotating wheel connected to drive said spools alternately, a movable platform held in working engagement with said wheel during the movement of the platen in one direction and means for disengaging said wheel and platform during the movement of the platen in the opposite direction.

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