

No. 691,778.

Patented Jan. 28, 1902.

W. J. KAUFFMAN.

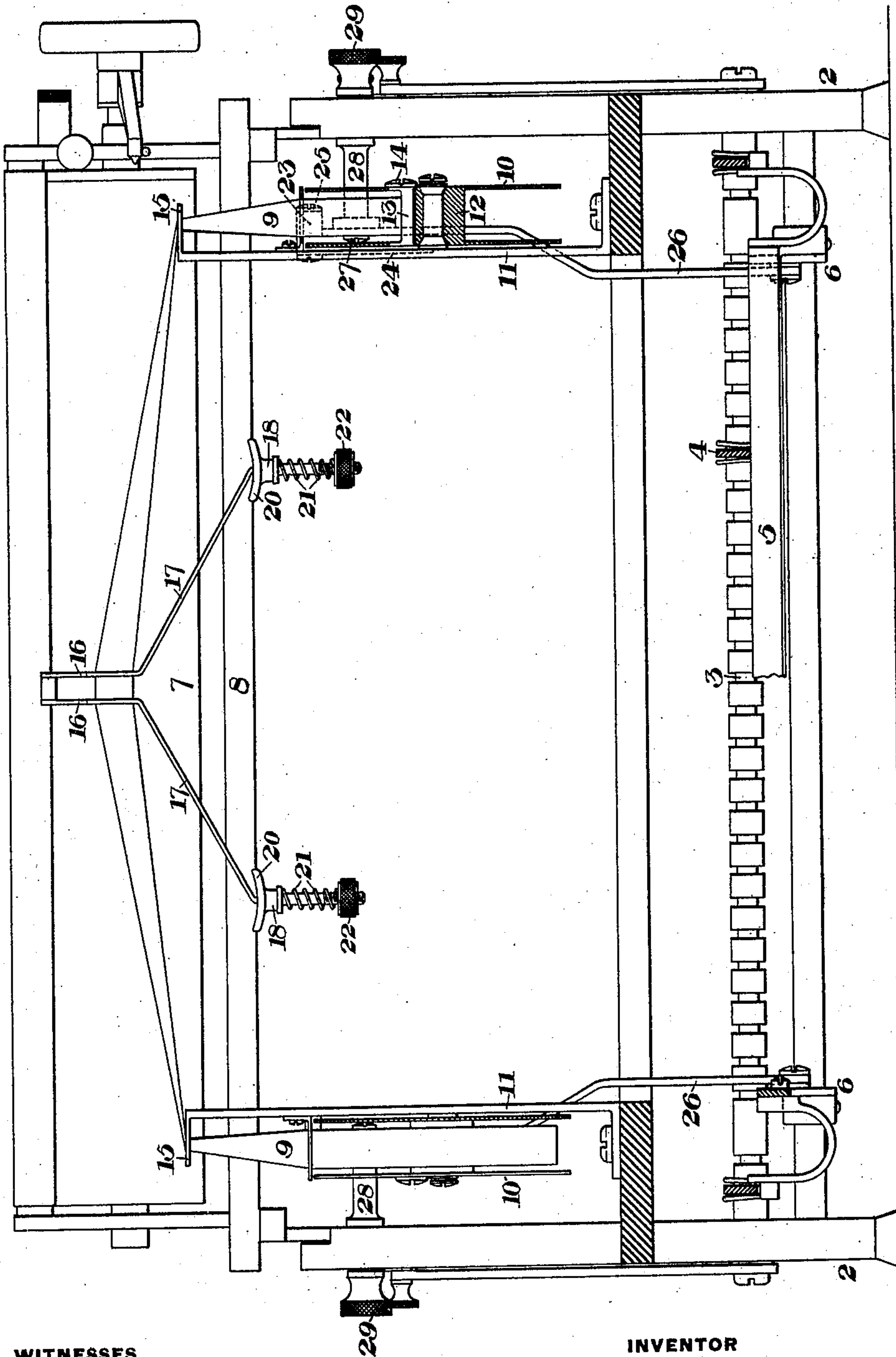
RIBBON FEED MECHANISM FOR TYPE WRITERS.

(Application filed June 15, 1899. Renewed Sept. 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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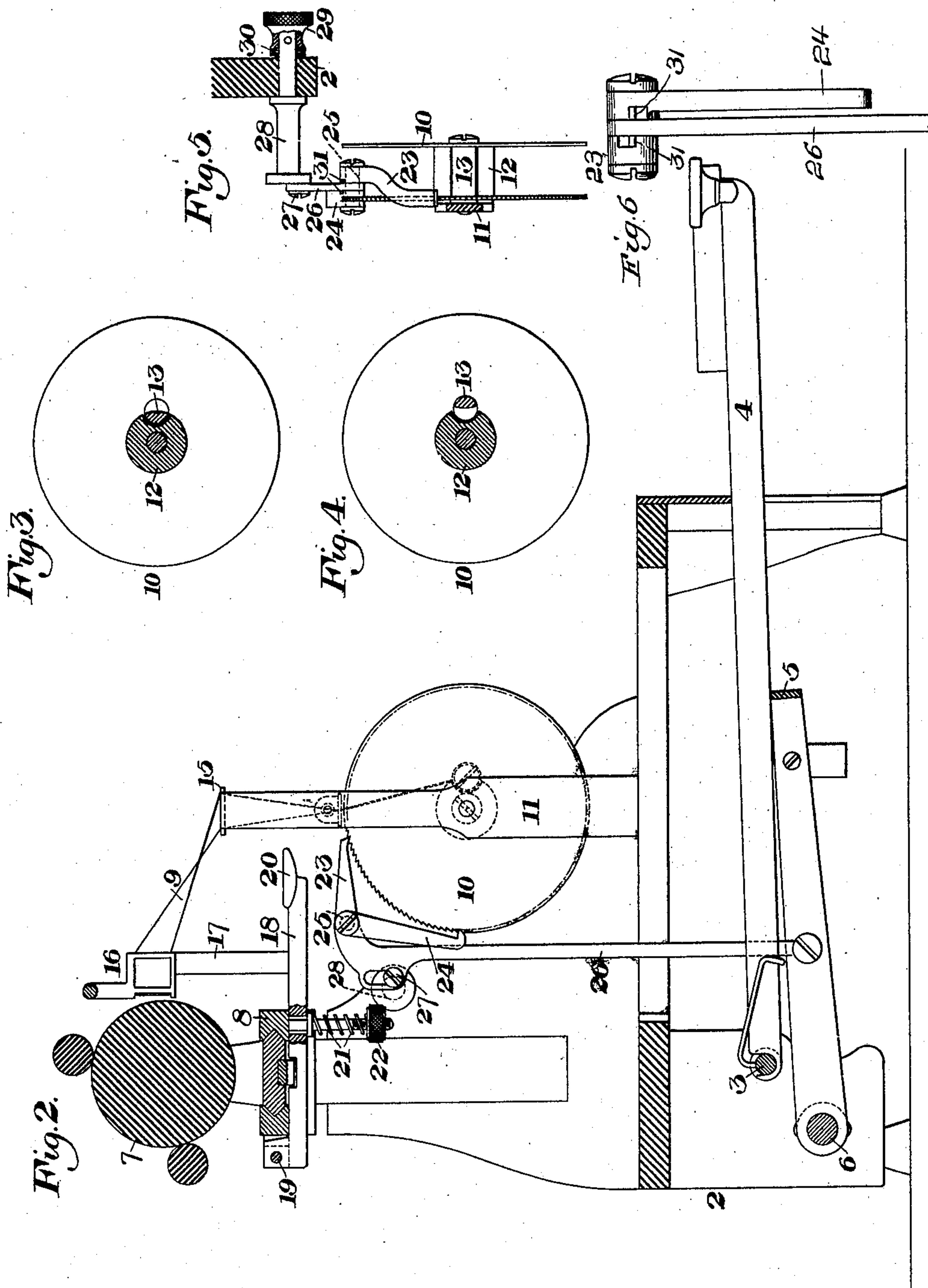
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2 Sheets—Sheet 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM J. KAUFFMAN, OF CANTON, OHIO, ASSIGNOR TO THE KAUFFMAN TYPEWRITER COMPANY, A CORPORATION OF OHIO.

RIBBON-FEED MECHANISM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 691,778, dated January 28, 1902.

Application filed June 15, 1899. Renewed September 20, 1901. Serial No. 75,954 (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KAUFFMAN, of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Ribbon-Feed Mechanism for Type-Writers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a front elevation of my improved ribbon-feed mechanism applied to a typewriter, partly broken away and with parts removed for clearness. Fig. 2 is a vertical cross-section. Figs. 3 and 4 are detail sections of one of the spools, showing the two positions of the ribbon-clamp. Fig. 5 is a top plan view showing the pawl mechanism of one of the spools, and Fig. 6 is a broken detail elevation of the pawl mechanism.

20 My invention relates to the mechanism for carrying and feeding the ribbons of typewriters and is designed to provide a simple and effective device of this character which can be easily reversed, so as to wind in either direction, and which shall be provided with a suitable depressing device arranged to move the central portion of the ribbon from in front of the character, so as to bring it within the view of the operator.

30 In the drawings, 2 represents the general frame of a type-writer of the class wherein the type-bars print in the upward swing of their carrying-levers.

35 3 is the key-lever shaft to which the key-levers 4 are pivoted, and 5 is the universal bar, pivoted in the rear of the machine at 6.

7 is the platen supported upon a movable carriage on track 8.

40 The above parts may be changed widely without departing from my invention, which relates solely to the ribbon mechanism.

45 The ribbon 9 is carried upon two spools 10, which lie in planes parallel with the key-levers and are carried upon supports 11 at each side of the machine and above the key-levers. The hollow shaft 12 of each spool is provided at one side with a recess within which enters the cut-away portion of a transverse rotary pin 13, having a screw-head 14. In securing 50 the ribbon its end is slipped between the pin 13 and the shaft-recess, and the pin is then

turned to force it into the recess, as shown in Fig. 3, thus clamping the ribbon.

From the one spool the ribbon extends up through a guide-loop 15, secured to an extension of the standard 11, thence to the center of the machine, in and out through two slots in a guide 16, secured to an inwardly-inclined arm 17, across the center of the machine, forwardly through two slots in another plate 16, 60 and thence to the other guide 15 and the other spool. Each arm 17 is secured to a lever 18, pivoted at 19 to the rear of the carriage-track and having at its front end a finger-rest 20. The levers 18 are normally pressed upwardly 65 by spiral springs 21, surrounding pins which extend up through slots in the levers into the carriage, and are provided with nuts 22 to adjust the tension of the springs. By depressing either of the levers 18 the central part of 70 the ribbon between the guides 16 will be drawn down, so as to reveal the character.

Each spool is provided on its rim portion with ratchet-teeth which are engaged by two pawls 23 and 24, pivoted to either end of a short shaft 25, carried in a vertically-moving bar 26, pivotally connected at its lower end to the universal bar. The upper end of each bar 26 is guided by a small screw 27, extending through a vertical slot in the bar and eccentrically secured to a small disk at the inner end of a turning shaft 28, having an external thumb-piece 29 secured thereto for turning it. A short spiral spring 30 is placed in a recess in the inner end of the thumb-piece and bears upon the thumb with sufficient force to hold the shaft in any of its adjusted positions. The rear portions of the pawls 23 and 24 are provided with short recesses engaged by the ends of a small pin 31, 85 secured to the bar 26, and which limits their movements and prevents their falling into engagement with the ratchet-wheel when the pawls are drawn away from its teeth.

In operation one of the bars 26 is moved 95 rearwardly by turning the shaft 28, so that its pawls are inoperative. When the universal bar is depressed, the pawl 24 of the other bar, descending with the universal bar, engages another tooth and as the bar 26 is 100 moved upwardly turns its spool, drawing the ribbon from the other spool through the

guides. During the time that the pawl 24 is moving down the pawl 23, engaging one of the ratchet-teeth, prevents a rearward rotation of the spool and acts as a detent. When the ribbon has been wound on one spool, its pawls are disengaged and the pawls of the other spool thrown into engagement, when the ribbon will be automatically rewound upon the first spool.

The advantages of my invention result from the simplicity and ease of operation of the device. It may be cheaply made and applied to any ordinary machine with upwardly-striking type-levers. A cheap and simple clamp for the ribbon is afforded, and the central portion of the ribbon may be easily moved aside to reveal the character.

Many changes may be made in the form and arrangement of the pawls, their actuating connections, and the other parts without departing from my invention.

I claim—

1. A type-writer having a pair of spools supported on either side of the machine and in planes substantially parallel with the key-levers, a central ribbon-guide supported upon a lever hinged to the carriage-bed and having a finger-rest, and intermediate guides for the ribbon between the spools and the central guide; substantially as described.

2. A type-writer having a central ribbon-guide carried upon oppositely-inclined arms, a pair of levers hinged to the carriage-bed and supporting the arms, and springs holding the levers normally in elevated position, said levers having finger-rests; substantially as described.

3. A type-writer having a central ribbon-guide provided with supporting-arms secured to two levers pivoted to the carriage-track, springs arranged to normally hold the levers in elevated position with the guide hiding the character, and finger-rests on the levers for depressing the guide, substantially as described.

4. A type-writer having a pair of spools, a ribbon extending between them, a pair of ver-

tically-moving bars connected with the universal bar, each such vertical bar having two pawls pivoted on the same axis and engaging the ratchet-teeth of the spools, and mechanism for disengaging either pawl connection, substantially as described.

5. A type-writer having a ribbon-spool provided with ratchet-teeth, a vertical bar connected to the universal bar, two pawls pivoted upon the same pin secured to the vertical bar and mechanism for removing the vertical bar away from the spool to disengage the pawl mechanism, substantially as described.

6. A type-writer having a ribbon-spool provided with ratchet-teeth, a vertical bar connected to the universal bar, two pawls pivoted to the vertical bar on the same axis, limiting-stops for the pawls, and mechanism for moving the vertical bar to disengage the pawls, substantially as described.

7. A type-writer having a vertical bar pivoted to the universal bar, a crank-pin extending through a slot in the vertical bar and arranged to swing it toward or away from the spool, and pawls pivoted to the vertical bar and engaging the ratchet-teeth of the spool, substantially as described.

8. In a type-writer, a ribbon-spool having a recessed shaft or hub and an eccentric pin arranged to turn and clamp the ribbon within the recess, substantially as described.

9. In a type-writer, a pair of spools, a ribbon extending between the spools and through an intermediate guide, the vertical bars connected to the universal bar and having pawl-and-ratchet connection with the spool, and rotary adjustable shafts having pins entering slots in the vertical bars and arranged to throw either bar into inoperative position; substantially as described.

In testimony whereof I have hereunto set my hand.

WILLIAM J. KAUFFMAN.

Witnesses:

C. W. STROHN,
CHAS. A. REX.