

No. 763,224.

PATENTED JUNE 21, 1904.

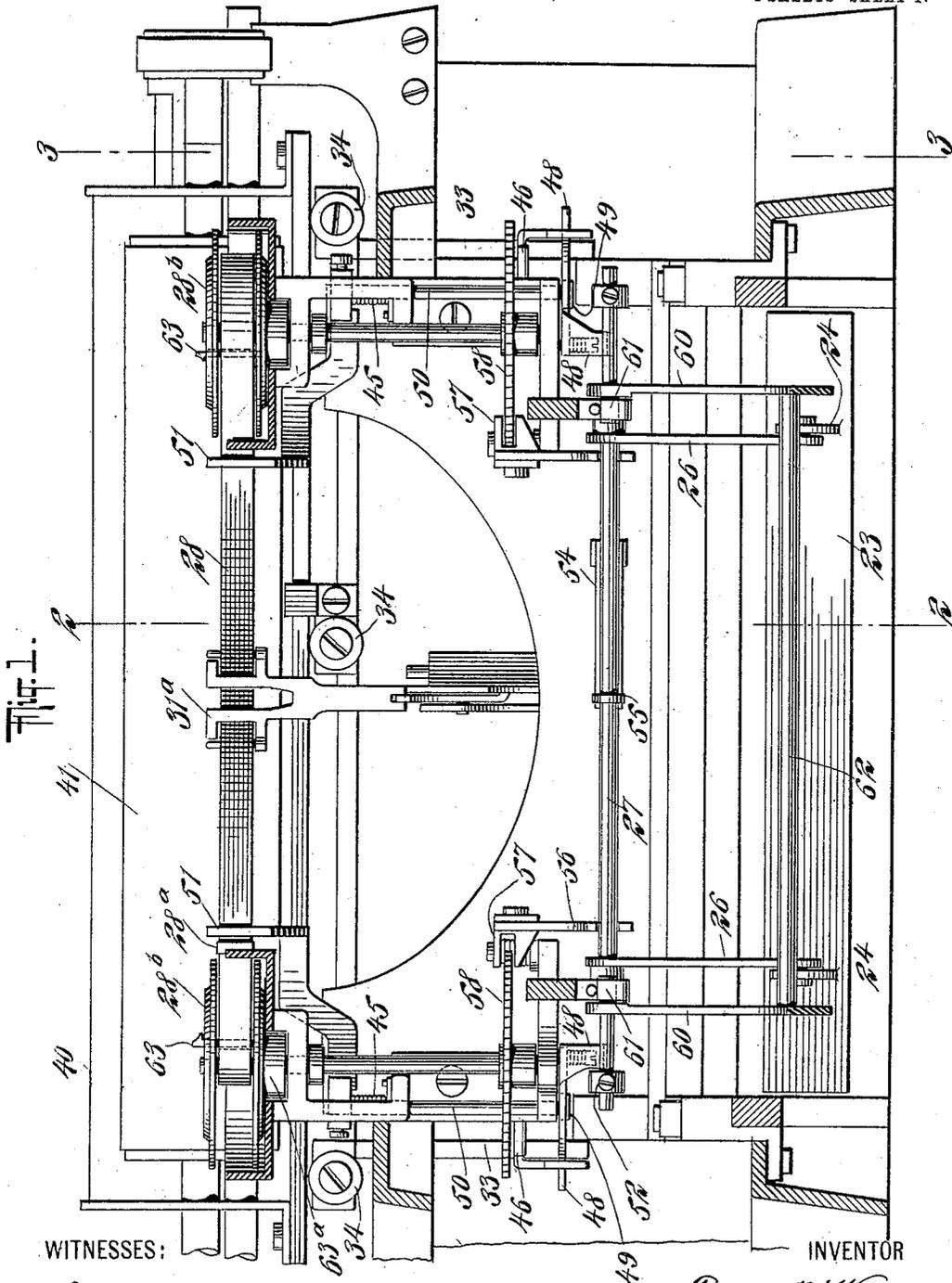
F. X. WAGNER.

RIBBON REVERSE MECHANISM FOR TYPE WRITERS.

APPLICATION FILED JUNE 12, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

INVENTOR

John A. Stehler
John Latta

Franz E. Wagner
 BY
Richard H. Mauthe
 his ATTORNEYS

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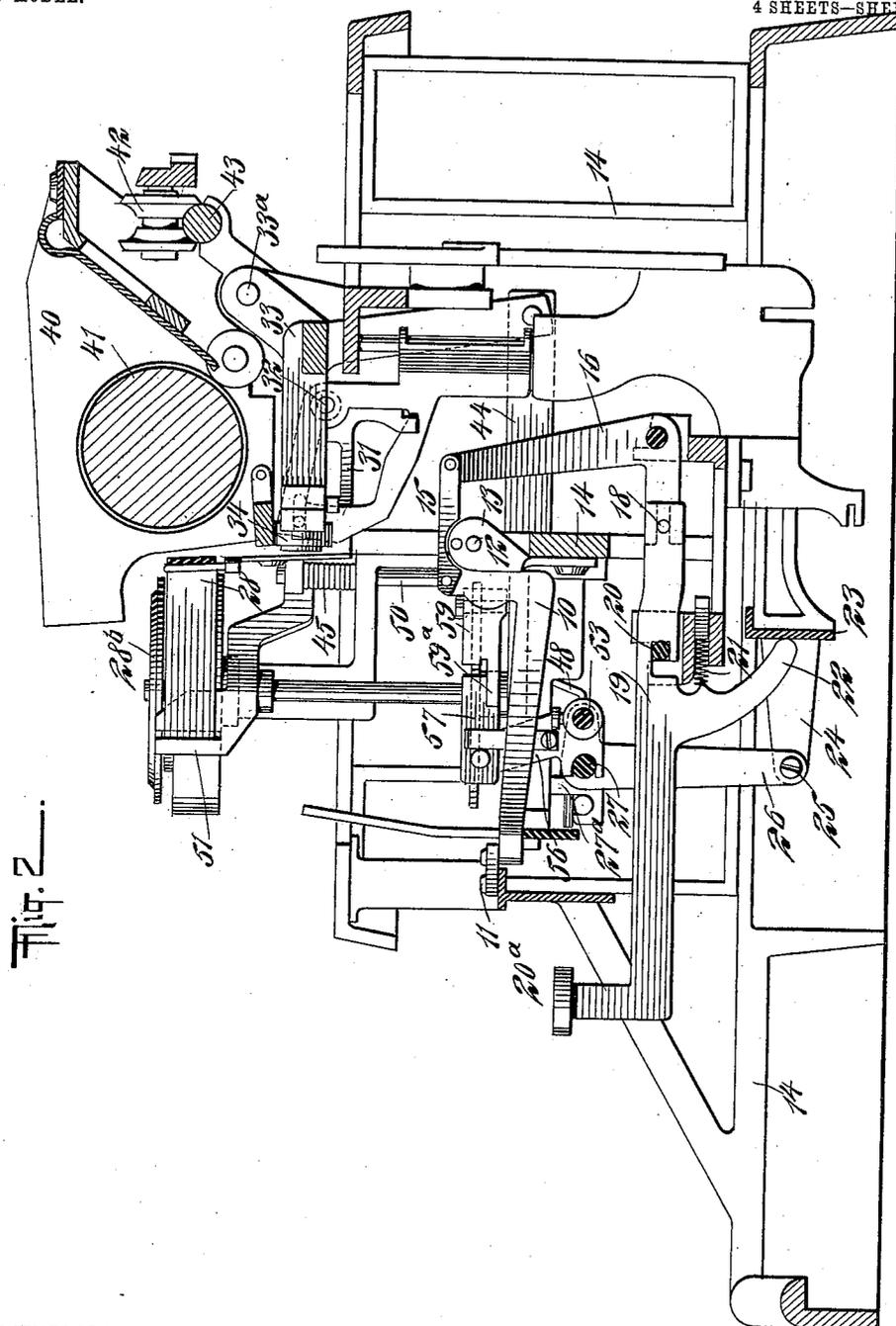


Fig. 2.

WITNESSES:

John A. Sehlbeck
John Lotka

INVENTOR

Franz X. Wagner

BY

Brissin & Straute
 his ATTORNEYS

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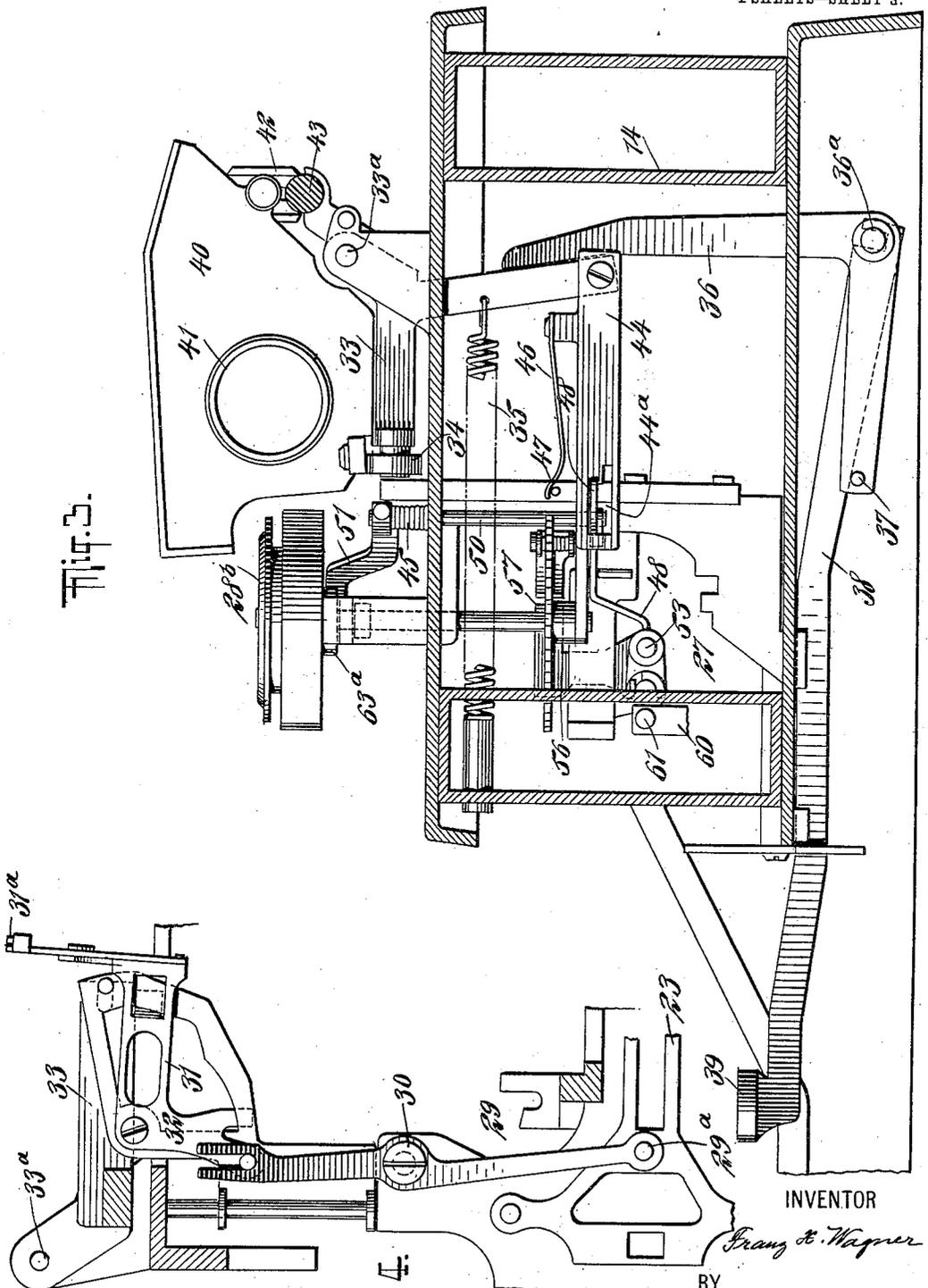


Fig. 3.

Fig. 4.

WITNESSES:
John A. Schlenker
John Laska

INVENTOR
Frang & Wagner
 BY
Bressan & Mauch
 ATTORNEYS

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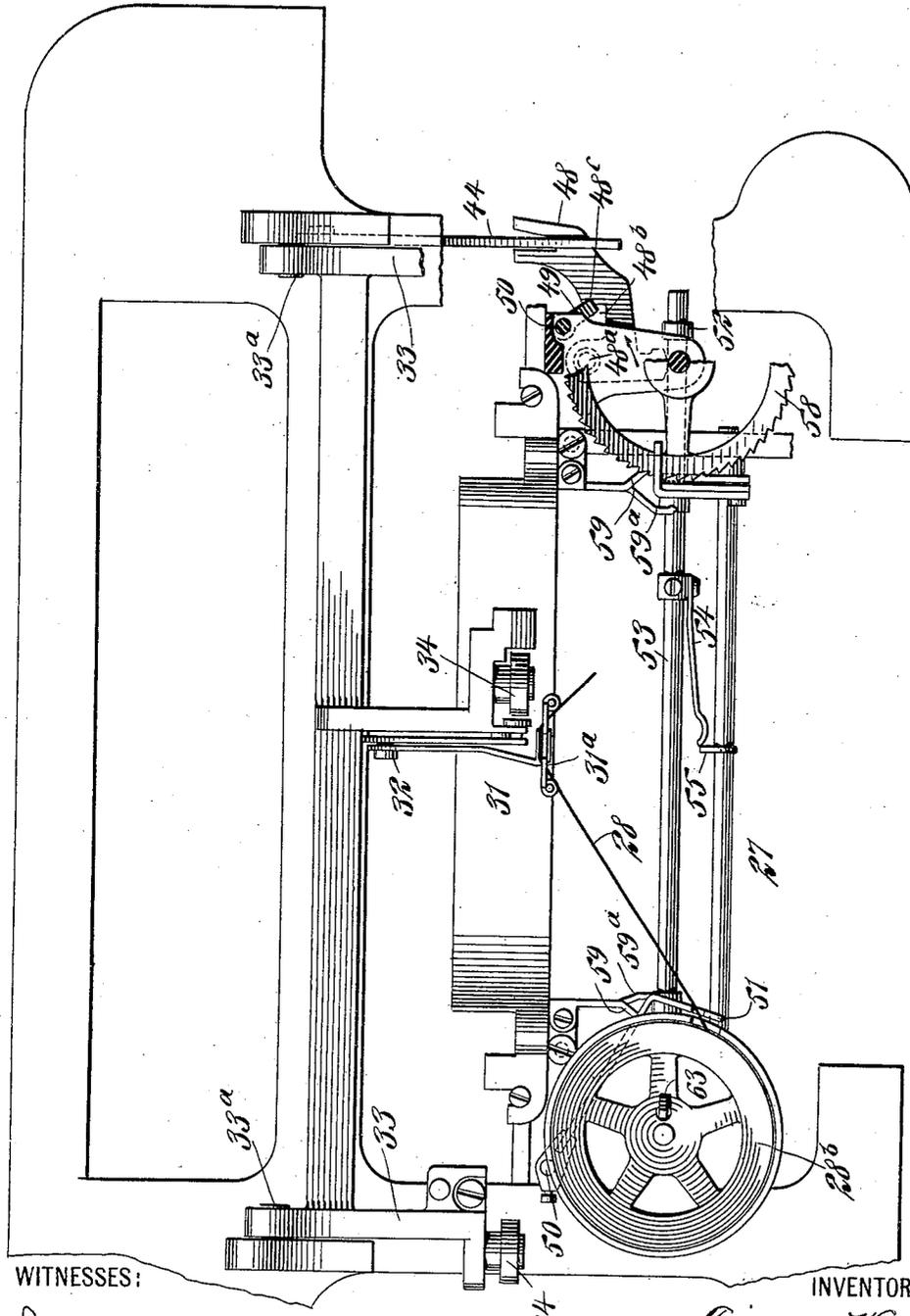
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NO MODEL.

4 SHEETS—SHEET 4.



WITNESSES:

John A. Stehlerbeck.
John Lotka

FIG. 5.

INVENTOR

Franz E. Wagner

BY
Reiser & Strauch
 his ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANZ X. WAGNER, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

RIBBON-REVERSE MECHANISM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 763,224, dated June 21, 1904.

Original application filed July 5, 1902, Serial No. 114,362. Divided and this application filed June 12, 1903. Serial No. 161,187. (No model.)

To all whom it may concern:

Be it known that I, FRANZ X. WAGNER, a citizen of the United States, residing in the borough of Bronx, city, county, and State of New York, have invented certain new and useful Improvements in Ribbon-Reverse Mechanism for Type-Writers, of which the following is a specification.

My invention relates to type-writers, and more particularly to those machines where a ribbon is employed for effecting the impression, and has for its object to provide a simple and efficient means for reversing the direction of the ribbon.

I desire it to be understood that while I have shown what I at present consider the best means for carrying my invention into effect various modifications may be made without departing from the nature of my invention.

This application is a division of one filed by me in the United States Patent Office July 5, 1902, Serial No. 114,362.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a front view of a type-writing machine provided with my improvement with parts in section. Fig. 2 is a central sectional elevation on the line 2 2 of Fig. 1. Fig. 3 is a sectional elevation on the line 3 3 of Fig. 1. Fig. 4 is a detail side elevation of the ribbon-guide and mechanism connected therewith with parts in section, and Fig. 5 is a plan view of the machine with the carriage removed.

10 represents the type-levers carrying the type 11, fulcrumed at 12 upon brackets 13, fastened to the frame 14 of the machine. The type-levers 10 are connected by a link 15 to the elbow-lever 16, fulcrumed upon the machine at 17, said elbow-lever 16 being connected by a pin-and-slot connection at 18 to a key-lever 19, fulcrumed upon the machine at 20 and carrying a key 20^a. The key-lever 19 is normally held in position by an adjustable spring 21. The key-lever 19 is also provided with a downwardly-projecting arm 22, which acts on the universal bar 23. This bar is mov-

able from front to rear. The universal bar is carried by an arm 24, pivotally connected at 25 with a lever 26, fulcrumed at 27. The rearward movement of the universal bar 23 is arranged to lift the central portion of the inked ribbon 28. This is done through the medium of a lever 29, pivoted at 30, which at its upper end has a loose connection with the carrier 31 and ribbon-guide 31^a and at its lower end is pivotally connected at 29^a to an arm of the universal bar 23. Ribbon shields or guides for holding the ribbon adjacent to the printing-point generally have a purely-vertical movement. In my construction, however, the ribbon moves not only up and down, but backward and forward at the same time. This is accomplished through the medium of the universal bar in its backward and forward movement swinging the arm 29 on its pivot 30, and thus throwing its upper end forward or backward, and through its loose connection with the carrier 31, which in turn is swung upward and downward and also backward and forward on its pivot 32. This avoids the danger of tearing the ribbon when the carriage travels or when the paper is released. The carrier 31 is fulcrumed at 32 upon a member 33, which also carries rollers 34. This member 33 is fulcrumed at 33^a and is drawn upward by a spring 35 to counteract the weight of the carriage. On each side of the machine is a bell-crank lever 36, fulcrumed at 36^a and provided with a pin 37, adapted to be engaged by a shift-key lever 38, also fulcrumed at 36^a. The shift-keys, of which there are two, one on each side of the machine, are indicated at 39. By depressing either of these shift-keys the bell-crank lever 36 will be moved forward and the rollers 34 will be raised so as to bring the front section of the carriage 40 in the upper position when desired. 41 is the platen. The carriage 40 is provided with rollers 42 at its rear portion, adapted to travel on a rod or track 43. With the member 33 is connected at each side of the machine a bar 44, which serves to wind or place under tension the spring 45, which is used to reverse the ink-ribbon 28.

This bar 44 is held down at its forward end by a spring 46 engaging a stationary pin 47. The bars 44 are provided at their forward ends with the slots 44^a, into which project the ends of levers 48, fulcrumed at 48^a. Each of these levers has a recess 48^b, within which is located an arm 49, which projects from a rock-shaft 50, the spring 45 tending to keep this arm 49 against the lever 48. The lever 48 is itself pressed in the direction indicated by the arrow by a suitable spring coiled around the pivot 48^a or otherwise arranged. The lever is thus normally kept against the arm 49 in the position shown in Fig. 5, where the said arm engages a shoulder 48^c at one side of the recess 48^b. The rock-shaft 50 carries at its upper end the ribbon-guide 51, which lies adjacent to the ribbon-spools 28^b, which will be of the customary construction. These ribbon-guides 51 are adapted to be engaged by a projection 28^a, secured to the ribbon near each end thereof, so that when the ribbon has been wound off one of the spools, as shown in Fig. 1, the said projection 28^a will engage the ribbon-guide 51 and will rock the shaft 50. This movement will throw the arm 49 out of engagement with the shoulder 48^c and will thus allow the lever 48 to move under the influence of the spring connected with it. This movement of the lever 48 serves to shift certain mechanism whereby the direction of the ribbon movement is reversed, as will be described hereinafter. Whenever the carriage is raised to its upper position, the bar 44 brings the lever 48 back to the position shown in Fig. 5, so that the said lever is again ready to operate the ribbon-reversing mechanism.

It will be understood that there is a lever 48 at each side of the machine and that the said levers move in opposite directions, each being thrown outward by its spring. The free ends of these levers are adapted to engage collars 52, secured upon a bar 53, which is also mounted to slide lengthwise in its bearings 27^a. A spring 54, which works in conjunction with a stationary collar 55, may be provided to prevent accidental movement of the bar 53. Upon the bar 53 are rigidly-mounted arms 56, which at their upper ends are pivotally connected with feed-pawls 57, adapted to engage toothed wheels 58, which rotate with the ribbon-spools 28^b. These pawls 57 are so arranged that only one of them is in driving engagement at a time. To prevent backward movement of the toothed wheel 58, there is provided a stationary pawl 59 for each wheel, and this pawl has an arm 59^a, which is adapted to be engaged by the pawl 57 when the latter is shifted, so that when the driving-pawl 57 is removed from engagement with the toothed wheel 58 the retaining-pawl 59 is also removed away from said wheel, leaving the latter free to turn in the opposite direction. The arms 56 are arranged to straddle and slide upon the shaft 27, the levers or links 26 being

mounted on the same shaft and carrying bearings 27^a, before mentioned. Since the links 26, as hereinbefore described, are connected with the universal bar 23, it follows that at each movement of the universal bar both pawls 57 will be moved forward and that pawl which is in engagement with the ribbon-spool will impart a partial rotation to the latter. When the projection 28^a of the ribbon comes into engagement with the ribbon-guide 51, said guide 51 being swung in the arc of a circle and partly rotating the shaft 50, thus throwing the arm 49 out of engagement with the shoulder 48^c and allowing the lever 48 to move under the influence of its spring, its lower end engaging the collar 52 and shifting the pawl-carrying bar 53 laterally in either direction, as the case may be, and throwing one pawl into engagement and the other out of engagement with the toothed wheel 58, and thus reversing the direction of the ribbon.

The space bar or key is secured to arms 60, pivoted at 61 and connected by a bar 62. When the space-bar is depressed, the bar 62 moves against the arms or links 26, and thus forces the universal bar 23 rearward to operate the ribbon-reverse, as hereinbefore described.

63 is a spring-latch forming part of the ribbon-spool holder 63^a and serves to hold the spool 28^b in engagement with the spool-holder 63^a, also preventing longitudinal movement of the spool. By depressing the spring-latch 63 to one side the ribbon-spool 28^b may be readily detached from the holder 63^a.

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

1. In a type-writing machine, the combination with the frame and the carriage, of a ribbon-guide arranged adjacent to the printing-point, said ribbon-guide being fulcrumed directly on the frame to swing about a horizontal axis, so that it will have a forward-and-rearward movement in addition to its upward-and-downward movement, and means for operating the support of said ribbon-guide at each impression.

2. In a type-writing machine, the combination with the carriage and means for shifting the platen into an upper or lower position, of a ribbon-reversing mechanism, an arm arranged to operate said ribbon-reversing mechanism, a stop arranged to normally hold said arm in an inactive position, means adapted to be operated by the end portion of the ribbon for throwing the said stop out of action so as to release the operating-arm, and a connection between the platen-shifting mechanism and the said operating-arm, for bringing the said operating-arm at each operation of the shifting mechanism into a position where it is locked by the said stop, in readiness for again acting on the ribbon-reversing device.

3. In a type-writing machine, the combination with the carriage and means for shifting

the platen portion of the carriage into an upper or lower position, of a ribbon-reversing mechanism, two spring-pressed operating-arms for said mechanism, a stop-arm for each
5 operating-arm, said stop-arm being arranged to hold the operating-arm in an inactive position against the tension of its spring, means controlled by the end portion of the ribbon for throwing the stop-arm so as to release the
10 operating-arm, and a connection from the shifting mechanism to each operating-arm for throwing the latter at each operation of the shifting mechanism, into locking engagement with the said arm.

4. In a type-writing machine or the like, the
15 combination with a ribbon-spool holder, of a spool axially engaged with said holder, and a latch for connecting the holder with the spool and preventing a longitudinal movement of
20 the spool.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANZ X. WAGNER.

Witnesses:

JOHN LOTKA,
JOHN A. KEHLENBECK.