

No. 709,678.

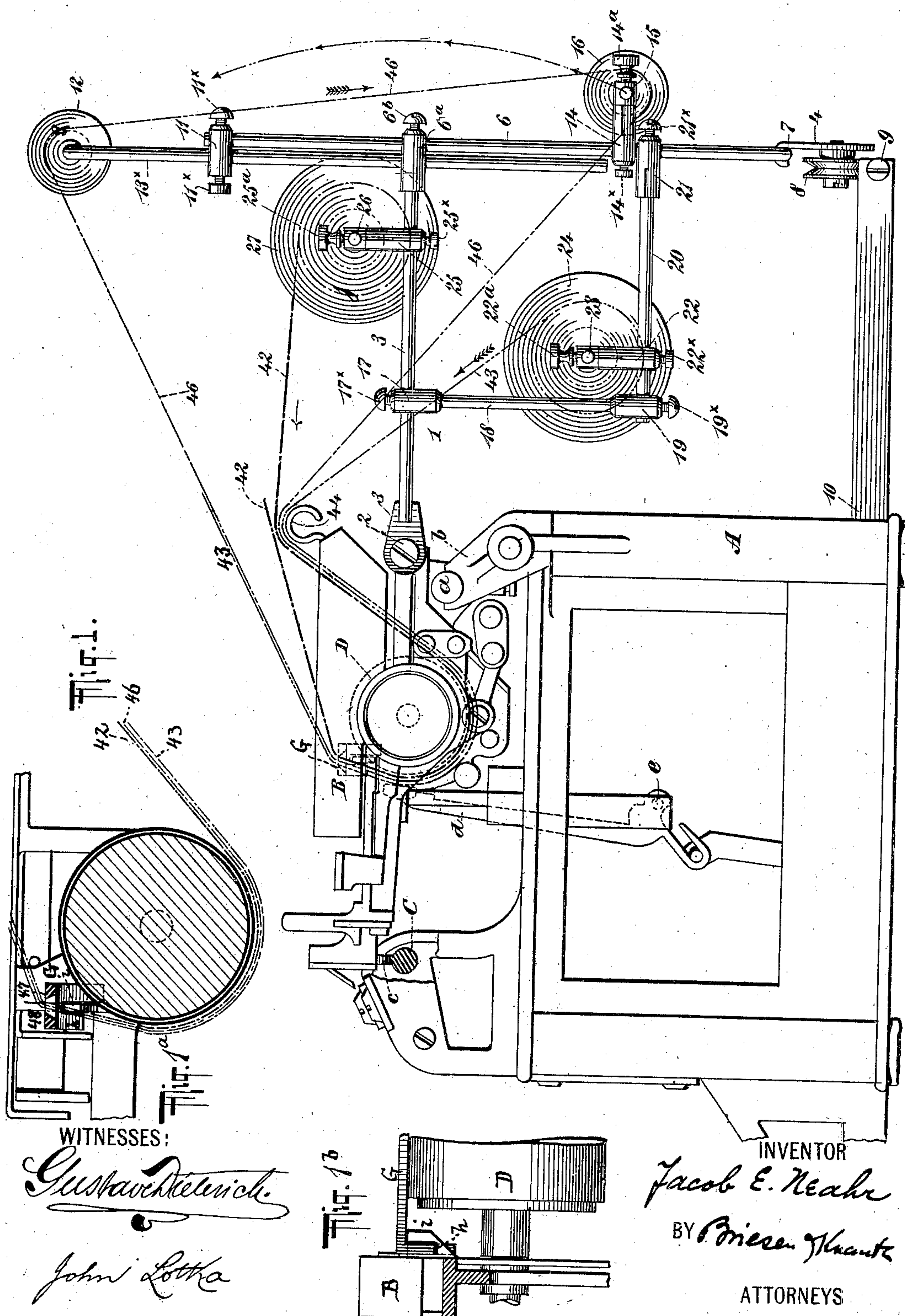
Patented Sept. 23, 1902.

J. E. NEAHR.
TYPE WRITER.

(Application filed Aug. 3, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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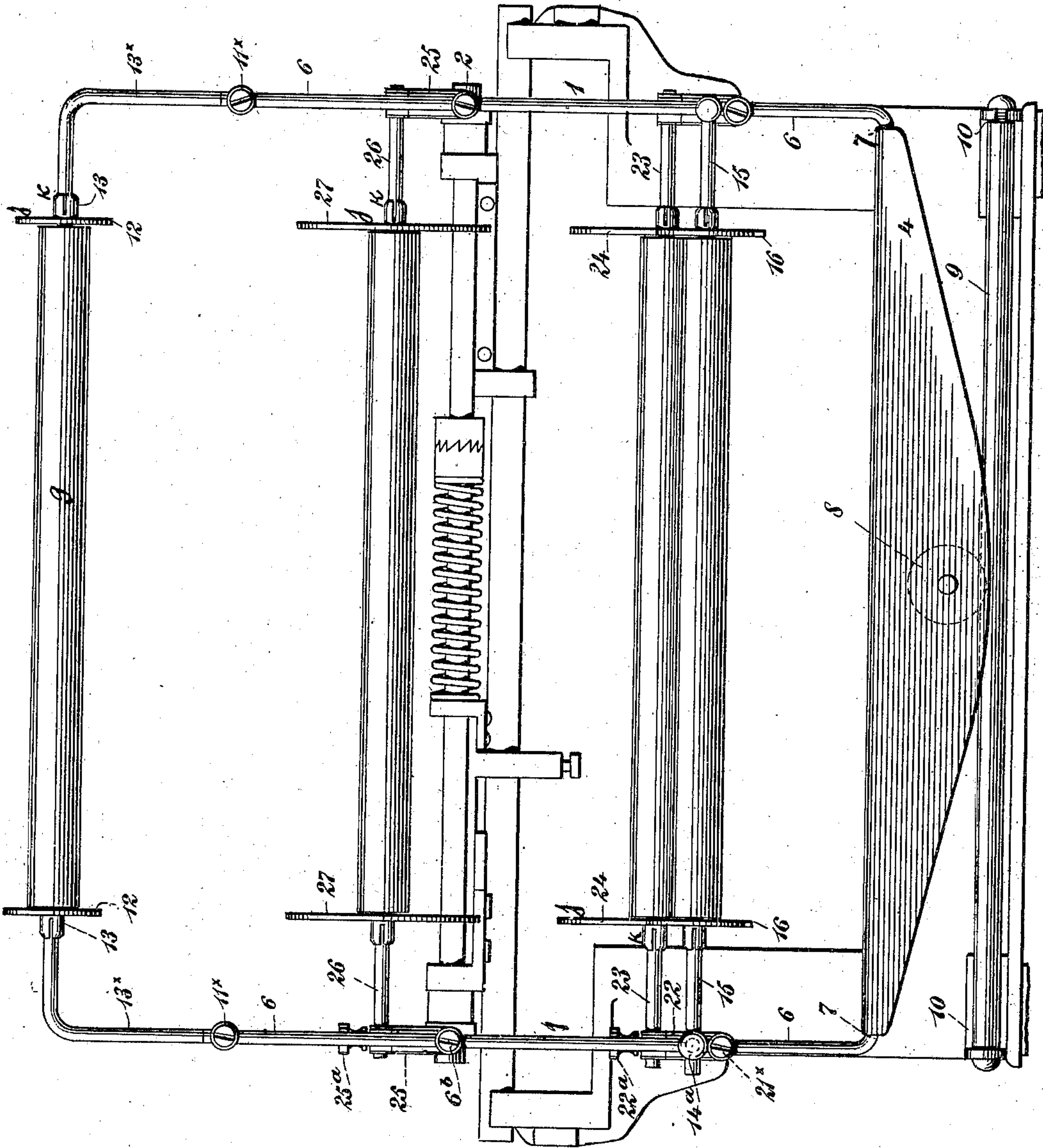
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3 Sheets—Sheet 3.



WITNESSES:

Gustav Dietrich
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Fig. 3.

INVENTOR

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ATTORNEYS

UNITED STATES PATENT OFFICE.

JACOB E. NEAHR, OF BUFFALO, NEW YORK, ASSIGNOR TO THE WAGNER TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 709,678, dated September 23, 1902.

Application filed August 3, 1901. Serial No. 70,748. (No model.)

To all whom it may concern:

Be it known that I, JACOB E. NEAHR, a citizen of the United States, and a resident of Buffalo, Erie county, New York, have invented certain new and useful Improvements in Type-Writers, of which the following is a specification.

My invention relates to type-writing machines, and more particularly to mechanism for carrying rolls of paper which will be written on by the machine and on which a copy of the written matter may be produced.

The object of my invention is to provide readily-adjustable means for holding the paper-rolls in their proper positions and also to provide a knife and guide for displaying the printed matter to the eye of the operator and for permitting the original and also the duplicate to be cut from the roll at any desired place.

The invention consists in the new combination of parts that are hereinafter more fully described.

In the accompanying drawings, Figure 1 is a side view of the main portion of a type-writing machine carrying my improvements. Fig. 1^a is an enlarged vertical cross-section through the platen and the double-knife guide near it. Fig. 1^b is a face view, partly in section, of one end of the platen and one end of the knife-guide. Fig. 2 is a plan view of the machine. Fig. 2^a is an enlarged vertical section through the bearing of one of the paper-carriers, a line drawn from the part 22^a to 22^x, Fig. 1, indicating the plane of section. Fig. 3 is a rear view of the machine.

A is the case or framing of the machine, to which is secured a traverse-rod *a*, held in studs *b*, that supports the rear portion of the carriage B. At the front end of the carriage is located a roller *c*, adapted to bear and to travel upon a rail C, fixed to the frame of the machine. On the carriage is supported a platen D of the usual cylindrical construction. The type-bars *d*, as shown, are pivoted at *e* and move toward the front of the platen, so that what is known as a "front-strike" machine is produced. Any approved mechanism can be applied for operating the type-bars.

Operatively connected with the carriage B is a frame 1, which may be termed a "paper-roll holder." This frame is connected with the carriage by means of screw-pivots 2, which take into sockets at the ends of the carriage and receive loosely the side bars 3 of the frame 1, so that the frame can swing on said pivots. To each of the side bars 3 is secured adjustably in a vertical direction an upright bar 6, the adjustment being effected, for instance, by means of a guide-sleeve 6^a and a clamping-screw or set-screw 6^b. The lower ends of the upright bars 6 are united by a cross-bar 7, to which is secured a plate 4, carrying a roller 8. This roller is adapted to travel on a rail 9, secured at 10 to the frame A of the machine. The upper ends of the uprights 6 are connected with holders or guides 11 in the nature of sleeves, each guide or sleeve having two parallel apertures and two set-screws 11^x. One of said set-screws serves to clamp the holder or sleeve in position upon the upright 6, while the other set-screw is used to fasten the vertical member of an inverted-U-shaped frame 13^x, which also passes through an aperture in the guide-sleeve 6^a. It will therefore be understood that the frame 13^x is adjustable vertically. On this frame is carried at the top a spool *g*, having friction-clamps 13 and heads 12.

Upon the lower portion of the upright bars 6 is adjustable vertically a holder 14, held by a screw 14^x and provided with a horizontal socket or aperture adapted to receive the spindle 15 of the spool or roller 16. A set-screw 14^a normally holds the spindle 15 in position; but when said set-screw is loosened the spindle may be moved lengthwise—that is, horizontally—thus adjusting the roller 16 to one side or the other.

On the side bars 3 upright clamping-sleeves 17, provided with set-screws 17^x, are adjustable from front to rear, and the said sleeves carry upright rods 18, provided at their lower ends with similar sleeves 19, having set-screws 19^x. These sleeves 19 receive horizontal rods 20, also supported on the bars 6 by means of sleeves 21, having set-screws 21^x. On the rods 20 are carried uprights 22, held in place by set-screws 22^x and having socket-pieces

22^y for the reception of a spindle 23 of a roller 24. A set-screw 22^a holds the spindle 23 normally against lateral movement, but permits it to be shifted sidewise in the same manner as described with reference to the set-screw 14^a. Fig. 2^a shows the construction of one of these parts, which I have called "upright 22," more in detail, and from it it will be seen that a socket-piece 22^y, which holds the shaft 23, has a downwardly-projecting spindle 22^z, which enters a proper socket in the upright 22, so that at any time the roll 24 may be lifted out, together with its shaft 23 and its socket-piece 22^y of the supporting-piece 22. This is very desirable when it is intended to replace one roller by another, and for quickness of action each newly-inserted roll may carry the corresponding parts 22^y, so as to be readily slipped into the supports 22. Substantially the same construction as that just referred to and illustrated in Fig. 2^a applies to the holder 14, only that that is horizontal, as shown in Fig. 1, while the holder 22 is vertical; but the shaft 15 or spindle can be removed with the portion carrying the clamping-screw 14^a without disturbing the socket 14 in its relation to the rod 6.

On the side bars 3, between the guide-sleeves 6^a and the sleeves 17, are secured sleeves 25, adjustable lengthwise of said bars and held in position by set-screws 25^x, said sleeves being provided with holders, in which are received the ends of the spindle 26 of the roller 27. These sleeves 25 are also provided with set-screws 25^a, having the same function as the set-screws 14^a and 22^a. In fact, the construction of the sleeve 25 and its appurtenances is the same as that of the sleeve 22 and its appurtenances, as illustrated in Fig. 2^a.

It will thus be seen that on the swinging frame 1, which follows the carriage of the type-writer machine during its movements to the right and left, there are carried four rollers or spindles—to wit, the roller *g*, the roller 27, the roller 16, and the roller 24. Of these the roller *g* is vertically adjustable on its vertically movable frame 13^x. The roller 27 is horizontally adjustable on the bars 3 and can be entirely removed by being lifted off the sleeves 25. The roller 24 is horizontally adjustable on the bars 20 and can also be vertically removed from off the sleeves 22. The remaining roller 16 is vertically adjustable on the rods 6 and can be horizontally removed from off the sleeves 14.

46 represents an endless copying-ribbon, which is represented to pass around the rollers *g* and 16, over a suitable guide 44, which is held by the carriage, down under the platen D, and thence up in front of the platen, this endless ribbon being held in tension by a proper adjustment vertically of the roller *g* and, if desired, also by a vertical adjustment of the roller 16. The main paper 43, which is to receive the direct imprint from the type-levers *d*, is wound in a considerable length

upon the spool or roller 24, then passes over the guide 44, beneath the copying-ribbon 46, thence under the platen D, and thence up. The spool 24 can be adjusted horizontally, so as to prevent the roll of paper it carries from interfering with the copying-ribbon, which passes from the spool 16 to the guide 44. The paper for receiving the duplicate imprint is held on the spool 27, upon which it is wound in the form of a long strip, is passed thence over the guide 44, above the copying-ribbon 46, thence under the platen, and thence up, as shown in Fig. 1. It follows that the platen is in contact directly with the paper 42, outside of which lies the copying-ribbon 46 and outside of that the main paper 43, which is to receive the imprint from the type-levers. The spool 27 is horizontally adjustable, so that the roll of paper it carries may not interfere with the copying-ribbon. It will be understood that by the usual rotation of the platen D the three fabrics 42, 43, and 46 will be simultaneously fed in the usual manner. Where the three fabrics leave the platen at some distance above the same by preference, I have placed a slotted guide-bar G, through the slot of which the papers to be imprinted and the copying-ribbon pass, as is more clearly indicated in Fig. 1^a. This slotted guide-plate holds the paper in a substantially upright position in front of the platen, so as to make it exceedingly convenient for the operator to read what has been printed. As will be best seen by reference to Fig. 1^a, the opening in the guide-plate is located somewhat in the rear of the front portion of the platen, so that the copying-ribbon as well as the paper will be inclined rearwardly from the point at which they leave the platen to said guide-plate, and thus the portion of the paper 43 above the guide will have a tendency to fall rearward and will be kept in the operator's sight and prevented from falling forward. This rearwardly-slanting arrangement is of further advantage for the reason that the paper 43 will lean back against the copying-ribbon 46, so that the paper will be supported by the said copying-ribbon and prevented from sagging or falling downward. The guide-plate G is carried by downwardly-projecting forked prongs *h* on the lugs *i*, that project inward from the carriage B, and may be vertically adjusted, if desired, by lifting it more or less on the lugs *i*. It may also, if desired, be entirely removed if the machine is to be used for other purposes than those herein indicated. The prongs or arms *h* are elastic, so as to clamp the lugs *i* between them and hold the guide-plate stationary in any position to which it may be adjusted. The front and rear bars 48 and 47 of this guide-plate G constitute on their inner sides knife-edges, as clearly shown in Fig. 1^a, to permit the cutting at any desired place of the paper 43 and of the paper 42 without in any wise, however, injuring the endless ribbon 46.

Preferably in order to facilitate taking hold of the two paper strips one of them is wider than the other, as clearly shown in Fig. 2.

I have shown the two knives 47 48 as integral with each other; but it will be understood that this is not an essential feature and each knife may be constructed separately, which construction, indeed, would present the advantage of a more rapid renewal of the knives and of allowing them to be adjusted relatively to each other. It will be understood that the advantage of the knives arranged as described consists in the fact that while the writing is continuous any desired portion of the matter written may be detached and forwarded or filed away in its respective department whenever desired. This would be of particular advantage, for instance, in stores having numerous departments, as orders for the several departments could be written continuously on one machine and the orders torn off and forwarded to the several departments separately, or, if desired, one copy might be preserved complete in the form of a ribbon, while the other copy would be cut or torn into separate slips. Thus, supposing such a machine to be used in a store where numerous bills are to be printed and a record thereof kept, each bill may be printed upon the upper portion of the paper 43 and may then be cut off by the knife 48 and handed to the customer, while the copy of the bill on the sheet 42 remains in the machine and the duplicates of several bills remain together until it is found desirable to detach those by cutting with the aid of the knife 47.

In the drawings I have shown a construction in which only one carbon copy is produced. I desire it to be understood, however, that, if desired, the copying-ribbon and copying-paper might be duplicated, so as to obtain one original and two copies, or with a still greater number of copying-ribbons further copies might be obtained.

In order to make each roller or spindle adaptable to receive paper or ribbons of greater width than the exact length of the spool, I have provided the spindle carrying such a spool with an adjustable flange *j*, which is held by the spring-jaws *k* on its shaft. Fig. 2^a shows this clearly where the flange *j* is held by the spring-jaws *k* adjustable on the shaft 23, so that it can be moved farther off or nearer to the spool 24. This adjustment also permits of the flange *j* being entirely removed whenever it is desired to get at the spool endwise, either for filling it, for emptying it, or for repair. This adjustable spring-held-flange arrangement applies, if desired, to all spools that are used for the carriage of papers in this machine, as is clearly indicated in Fig. 2.

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

1. In a type-writing machine, the combination of a carriage having a platen, means for supporting a plurality of paper strips, an endless copying-ribbon adapted to be received between said paper strips, a guide located near that portion of the platen at which the paper strips and endless copying-ribbon leave it and through which guide all of said paper strips and the endless copying-ribbon pass, said guide consisting of two knives by means of which portions of said paper strips may be detached, and additional guides whereby the endless copying-ribbon is continuously directed between the paper strips and around the platen.

2. In a type-writing machine, the combination of a platen, the carriage having lugs, and a longitudinally-slotted guide-plate located on the delivery side of the platen and provided with arms that ride on the lugs of the carriage.

3. In a type-writing machine, the combination of a carriage having a platen, with a frame connected to move with said carriage, guides adjustable vertically on said frame, an endless copying-ribbon extending around the platen and said vertically-adjustable guides, and roll-holders carried by said frame and adjustable forward and rearward, said roll-holders being adapted to carry rolls of paper.

4. The combination, in a type-writing machine, of a carriage provided with lugs, and a guide-plate slotted for the passage of the paper and provided with arms arranged to embrace the said lugs of the carriage and to ride thereon.

5. The combination, in a type-writing machine, of a carriage, a platen, and a slotted paper-guide mounted to slide up and down on the carriage on the delivery side of the platen.

6. The combination, in a type-writing machine, of a carriage having lugs projected therefrom, and a longitudinally-slotted paper-guide having spaced arms which embrace the said lugs of the carriage and ride thereon.

7. In a type-writing machine, the combination with a platen, means for supporting a plurality of paper strips, and an endless copying-ribbon adapted to be received between said paper strips, of a guide located above the platen and somewhat in the rear of the forward portion thereof, the said copying-ribbon passing through the said guide, and additional guides whereby the endless copying-ribbon is continuously directed between the paper strips and around the platen, the copying-ribbon being thus rearwardly inclined from the point at which it leaves the platen so that it will serve as a support for the original paper strip which is similarly inclined.

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Witnesses:

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W. A. WHEELER.