March 15, 1927. H. H. KONERMAN ET AL 1,620,666

FEEDING DEVICE FOR ROLL STATIONERY

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Fig. 1

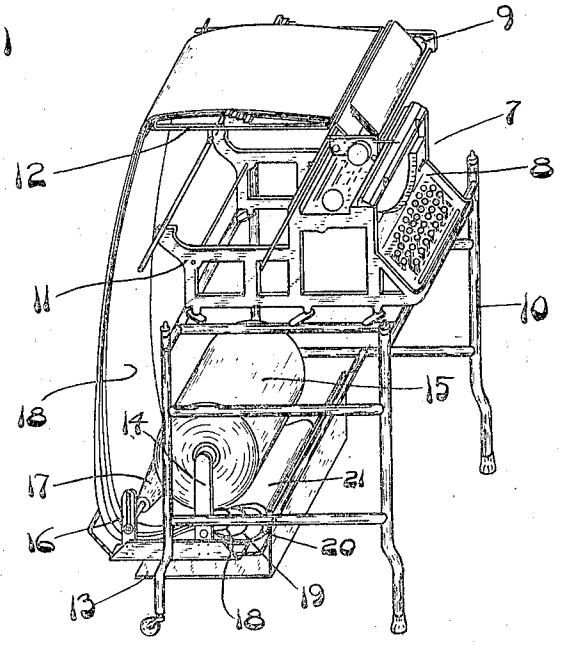


Fig. 2

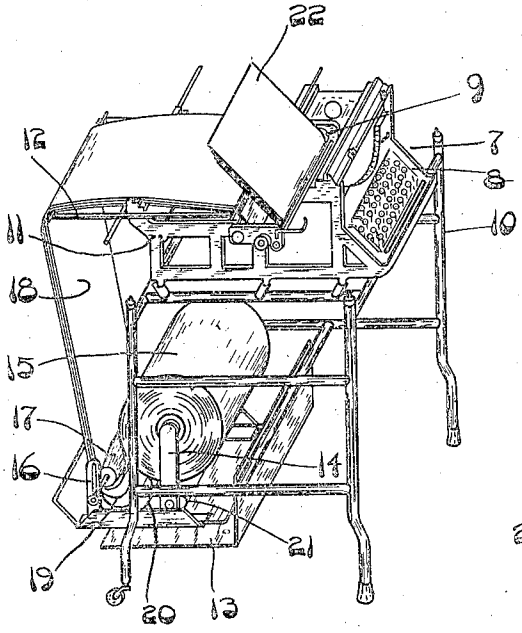
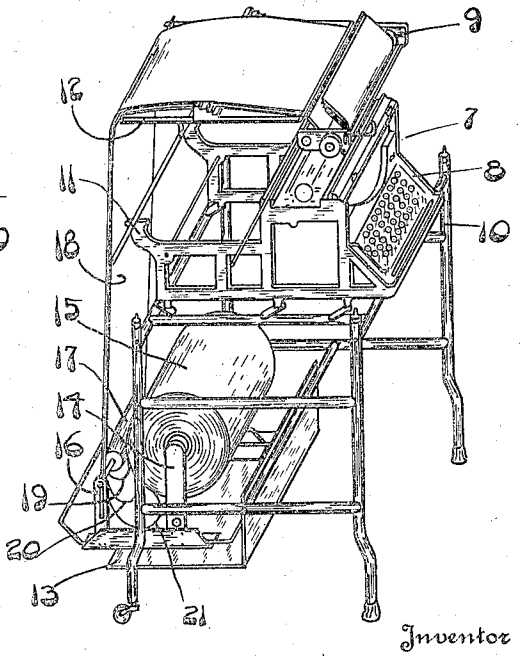


Fig. 3



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FIG. 4

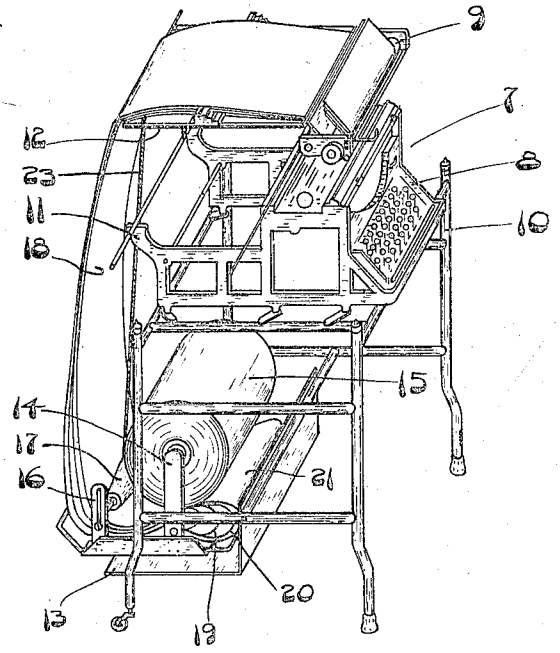


FIG. 5

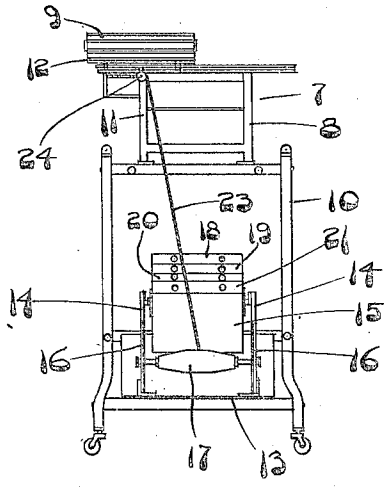
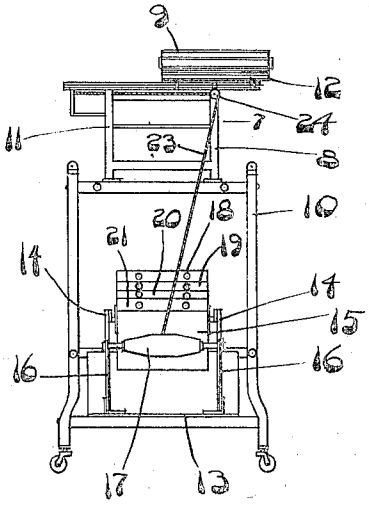


FIG. 6



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UNITED STATES PATENT OFFICE.

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FEEDING DEVICE FOR ROLL STATIONERY.

Application filed September 3, 1925. Serial No. 54,276.

This invention relates particularly to a device for feeding roll type stationery to a typewriter or other machine adapted to its use, in which an object has been to introduce a means of feeding paper from rolled stationery in a manner such that there will be no drag or tension upon the paper in the typewriter as it is used, and in which there is effected from time to time, as required, an automatic unwinding of the rolled stationery to a sufficient amount each time to permit unrestricted use of the paper throughout the writing or filling in of sections of the unwound portions.

This and other objects are attained in the feeding device described in the following specification and illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of a typewriter of conventional type mounted on a stand and ready for use, with a feeding device embodying my invention located in cooperation with it and a roll of stationery, the stationery also being in condition for use.

Fig. 2 is a perspective view similar to Fig. 1, but showing the typewriter and stationery after they have been used, with the feeding device ready for a repetition of the paper feeding operation.

Fig. 3 is a perspective view similar to Figs. 1 and 2, but showing the typewriter ready for use and the feeding device just in the act of bringing about a feeding of stationery from the roll.

In the illustrated disclosure of our invention we have shown a typewriter of the shifting platen type, but it will be perfectly obvious that our invention may be as readily applied to any writing or record making machine in which relative movement of some element of the machine in any direction relatively to the rolled web is had during the machine's operation.

To illustrate the adaptability of the invention to bring out this feature we have shown in Figs. 4 to 6 inclusive a modification which will be described hereinafter.

The typewriter 7 is provided with a stationary frame 8 which carries the principal elements of the machine, as in all typewriters of this type, while mounted for transverse reciprocatory movement in the frame is the platen carrying carriage 9. As is frequent with this type of typewriter a stand 10 of metal framework is shown. The exact type of typewriter disclosed is one having a rearward frame extension 11 upon which a rearward carriage extension 12 travels transversely.

And now, we will describe the web feeding device which constitutes the feature of novelty of our invention. On a tray 13 which may be placed on the floor beneath the stand 10 or which may be secured thereto in somewhat the position shown, are uprights 14 affording bearings in which a roll of stationery 15 may be rotatively mounted. To the rear of these uprights are vertically slotted uprights 16 in which the ends of a roller 17 may rotate and yet permit of vertical movement of the roller in the slots.

The roll of stationery is placed in position between its journal uprights 14 in such a manner that the end of the web or webs of the roll are drawn off from the top of the roll toward the back. After being drawn from the roll sufficiently far the web or webs are passed beneath roller 17 and then upward from the rear of the roller, being then passed over carriage extension 12 and around the platen of carriage 9 in the conventional manner as shown. In the event multiple wound roll stationery is used, which is contemplated in this invention, and which has been illustrated, the outermost ply 18 which comes from the roll 15 is the only one which contacts roller 17. The remaining plys are looped with relation thereto as shown at 19, 20 and 21 in the manner contemplated in the method described for using this stationery in copending application Serial No. 740,869, filed September 30, 1924, by Alphonse E. Imbus. Thus web 18 is the ply which is employed for directly effecting the unwinding of roll 15 and the operation of roller 17.

The operation of the device will now be described. The webs having thus been arranged in the apparatus the carriage is drawn to the right as far as it will go, as shown in Fig. 1. This places the stationery in condition for use by an unwinding operation which we will describe. It will be well to assume at the start that roll 15 has been unwound sufficiently to form relatively large loops in all the webs in which none of them contact the roller 17 when it is in its lower position as shown in Fig. 1. By now using the typewriter until the surplus in the loops is used up, the condition brought about will be somewhat as shown in Fig. 2 in which the

contemplated movement of the platen carriage to the left, will have extended the written or filled in lengths 22 above the platen ready to be torn off if desired. The loops will have then been shortened until web 18 contacts roller 17 as shown, the remaining loops also having been reduced to as short lengths as it is possible to bring them, but in which only web 18 has contacted roller 17. The next operation will then be to tear off the filled in portions of the webs if it is so desired, after which the carriage 9 is shifted completely to the right as shown in Fig. 3. The movement exerts sufficient tension upon web 18 to draw the relatively light weight roller 17 to the top of the slots in uprights 16 against the inertia of rest of roll 15. The roller however, in this position, being held against dropping by the platen-held ends of the webs, will exert a downward pull on the web portions coming from the roll and thus overcome the inertia of rest of the roll, causing it to unwind until the downward movement of the roller has been halted by its arriving at the bottom of the slots in its mounting uprights. When this occurs the inertia of movement in the roll, which has been brought about by the roller, continues for a time after the roller has reached the bottom of its mounting slots, thus causing the plies of webs to form surplus loopage as shown in Fig. 1, at which time the apparatus is again ready for operation as shown in Fig. 1 and as has already been described. This operation repeats itself from time to time as the typewriter platen and carriage are shifted, so that no thought need be taken as to the proper functioning of the apparatus, the movements taking place automatically.

In Figs. 4, 5 and 6 we have shown a modified form of the invention, which is identical with the form shown in Figs. 1, 2 and 3 except for the addition of means for controlling the movements of the roller directly from the platen carriage instead of depending upon the use of a propelling web for this purpose. This addition consists of a cable or chain 23 which is attached at its lower end to a point midway between the ends of the roller, from which it extends upwardly, passing over a pulley 24 on the platen carriage, the upper end being attached to the frame extension at the right of the machine. Thus, at the start of the operation the roller will occupy a lowered position so that the webs from roll 15 will be completely looped and free from the roller as shown in Fig. 4. The position of the roller 17, pulley 24 and cable 23 when in this condition, is more clearly shown in Fig. 5. As the end of each line of printed matter is reached the roller will have been completely lifted when the carriage has reached the left hand limit of its movement as shown in Fig. 6. This movement provides for the shortening of the looped plies of stationery and conditions the roller for repetitions of its roll unwinding operation at each complete shifting or return movement of the carriage. Thus no direct pull is ever exerted on the webs of the roll by the shifting of the platen carriage, because the lifting of the roller is through the agency of cable 23 instead of the webs of stationery.

In the invention we have described above there is a feature to which we call attention. It will be seen that the roller 17 is so shaped that it is of larger diameter between its ends than it is at its ends. This gives the roller a barrel shape. The purpose of this is to permit of the side wise movement of the webs when the typewriter platen and carriage are moved, without causing the roller to become lifted too high on one end with relation to its other end when the platen and carriage are in either of their extreme positions, and, furthermore, to still enable the roller to exert a pull upon the webs at a point between their longitudinal edges, approximating a center pull thereon for any position occupied by the webs. This saves tearing of the edges of the webs and, in addition to preventing cocking or binding of the roller in its mounting ways, also enables the web to be fed with more of a straight line central pull thereon than would be otherwise possible.

Having thus described our invention what we claim is:

1. In combination with a record making device, a feeding device for roll stationery comprising a rack to support a roll of stationery beneath the record making device, substantially vertically slotted supports back of the rack, a roller mounted rotatively in the slots for substantially vertical movement therein, said record making device having a web carrying part located above and adapted to receive the web from the roll, said roll being so positioned that the web in its passage therefrom leaves the top of the roll, passes beneath the roller and upwardly to the web carrying part of the record making device, said web carrying part having reciprocatory movement in a direction transversely of the direction of web travel, movement of said part in one direction being adapted to lift the vertical portion of said web, whereby the roller will be lifted, cessation of movement of said vertical portion of the web permitting the roller to drop, whereby the portion of the web between the roller and the roll will be drawn upon to unwind the web from the roll to form a loop between the roller and the roll.

2. A feeding device for roll stationery comprising in combination with a record making device having a web carrying part transversely movable with relation to the body thereof, a roll support located adjacent

to the transversely movable part and stationary relatively thereto, and a barrel shaped roller adapted to receive a web from a roll on the roll support, located in the path of travel of the web from the roll to the web carrying part and reciprocally movable in the path of travel for a limited distance, roller movement in the direction of web travel taking place periodically and substantially simultaneously with the movement of the web to the web carrying part, opposite roller movement taking place periodically and during periods of rest of the web to the web carrying part, said web having a direction of travel imparted to it longitudinally of the web and from side to side upon feeding movement of the web carrying part in the first instance and upon transverse movement of the web carrying part in the second instance, whereby during said second mentioned movement of the web the barrel shape of the roller will accommodate itself to the angle assumed by the web as it is drawn from the roll.

In testimony whereof we have hereunto affixed our signatures.

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ALPHONSE E. IMBUS.