E. A. KLABER.

LETTER COPYING APPARATUS.

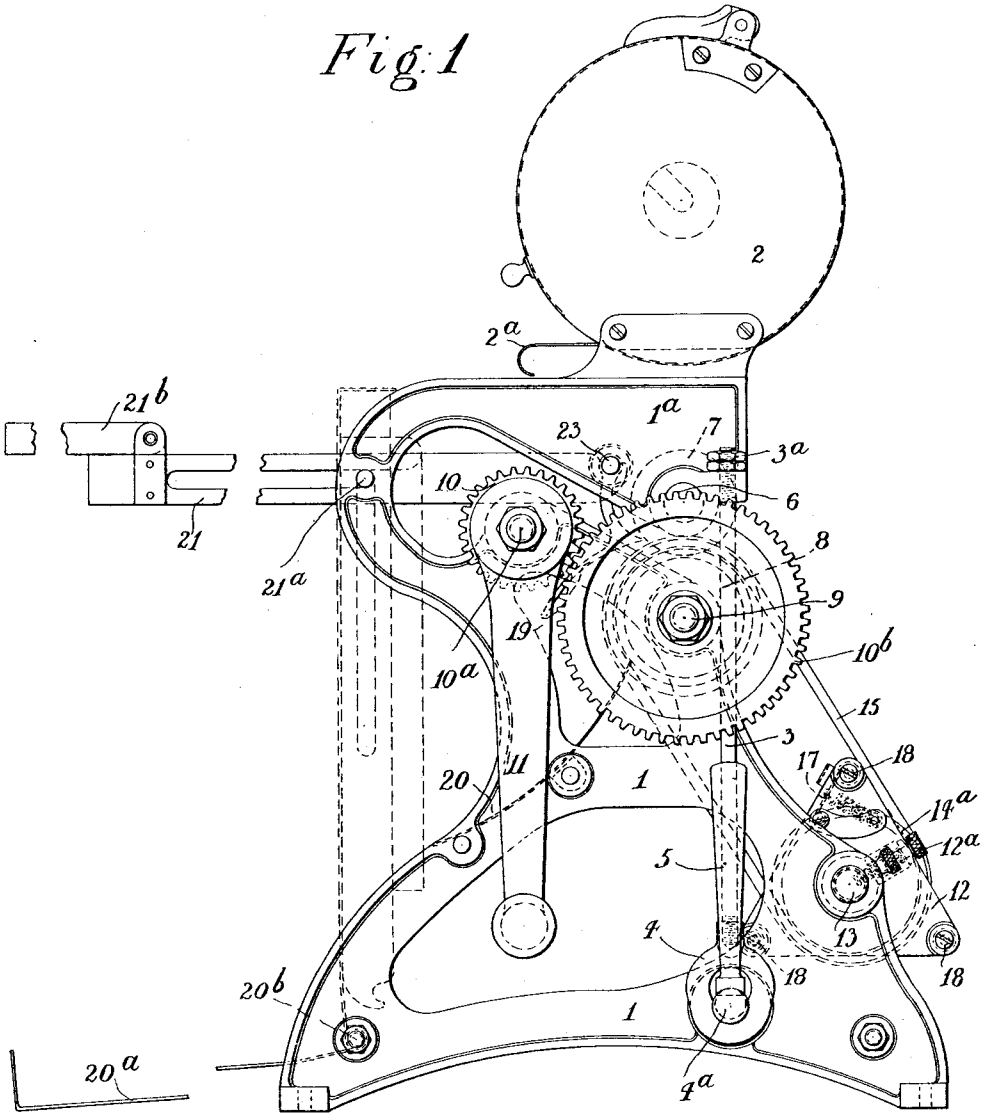
APPLICATION FILED JUNE 16, 1911.

1,028,885.

Patented June 11, 1912.

4 SHEETS—SHEET 1.

Fig. 1




WITNESSES:

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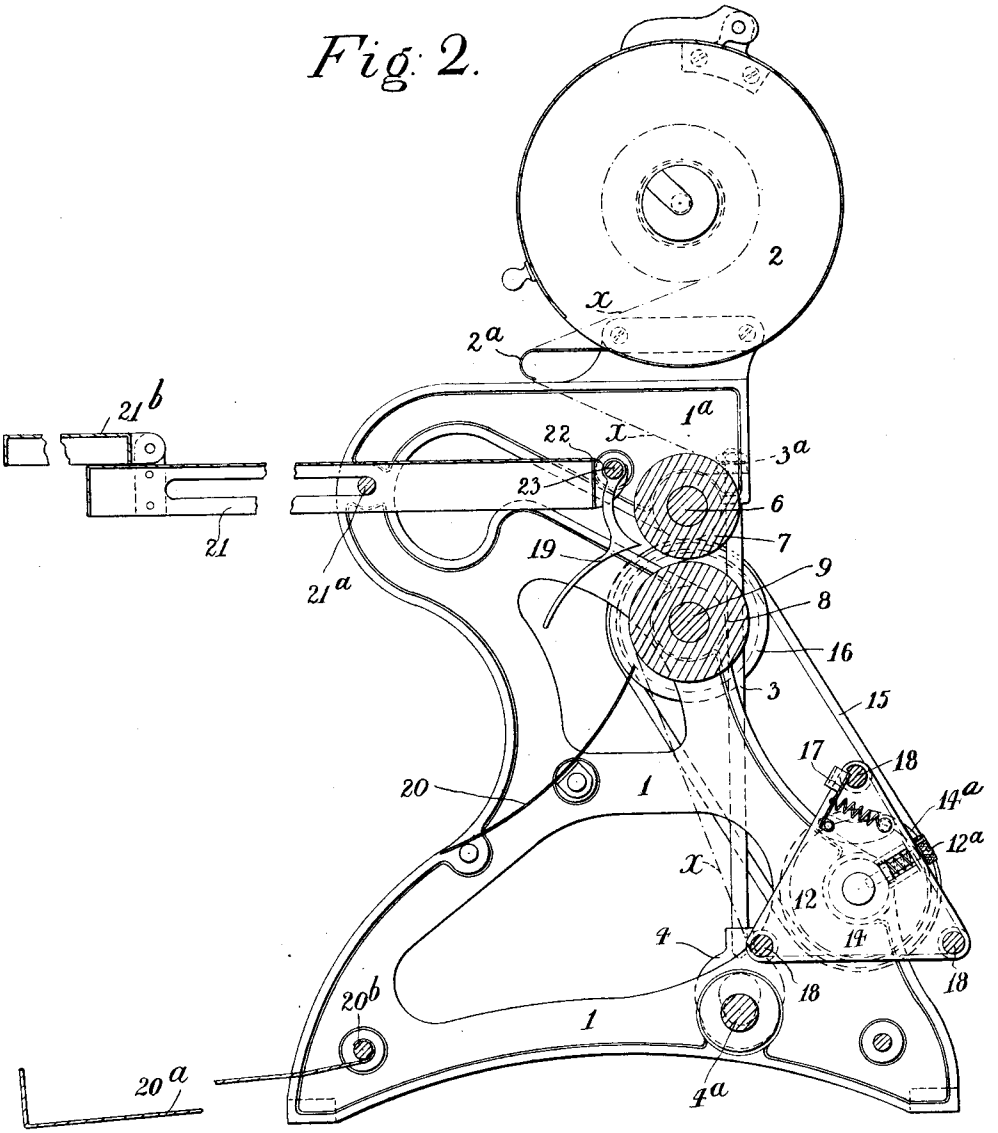
4 SHEETS—SHEET 2.

*Fig. 2.*

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4 SHEETS—SHEET 3.

Fig. 3.

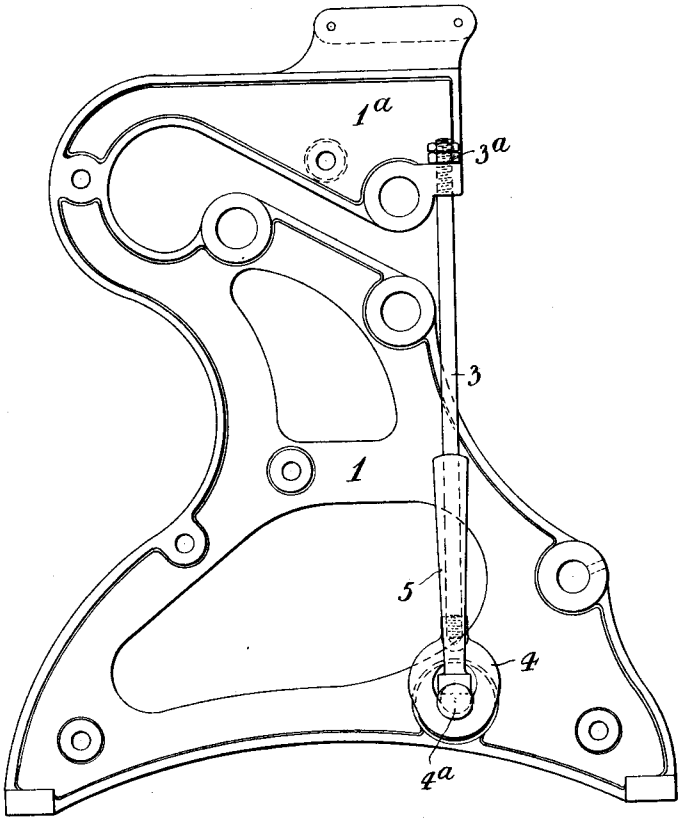
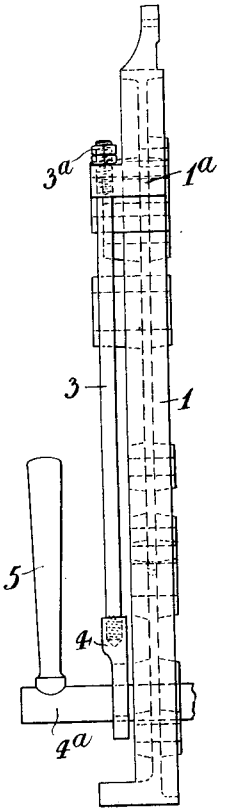



Fig. 4.

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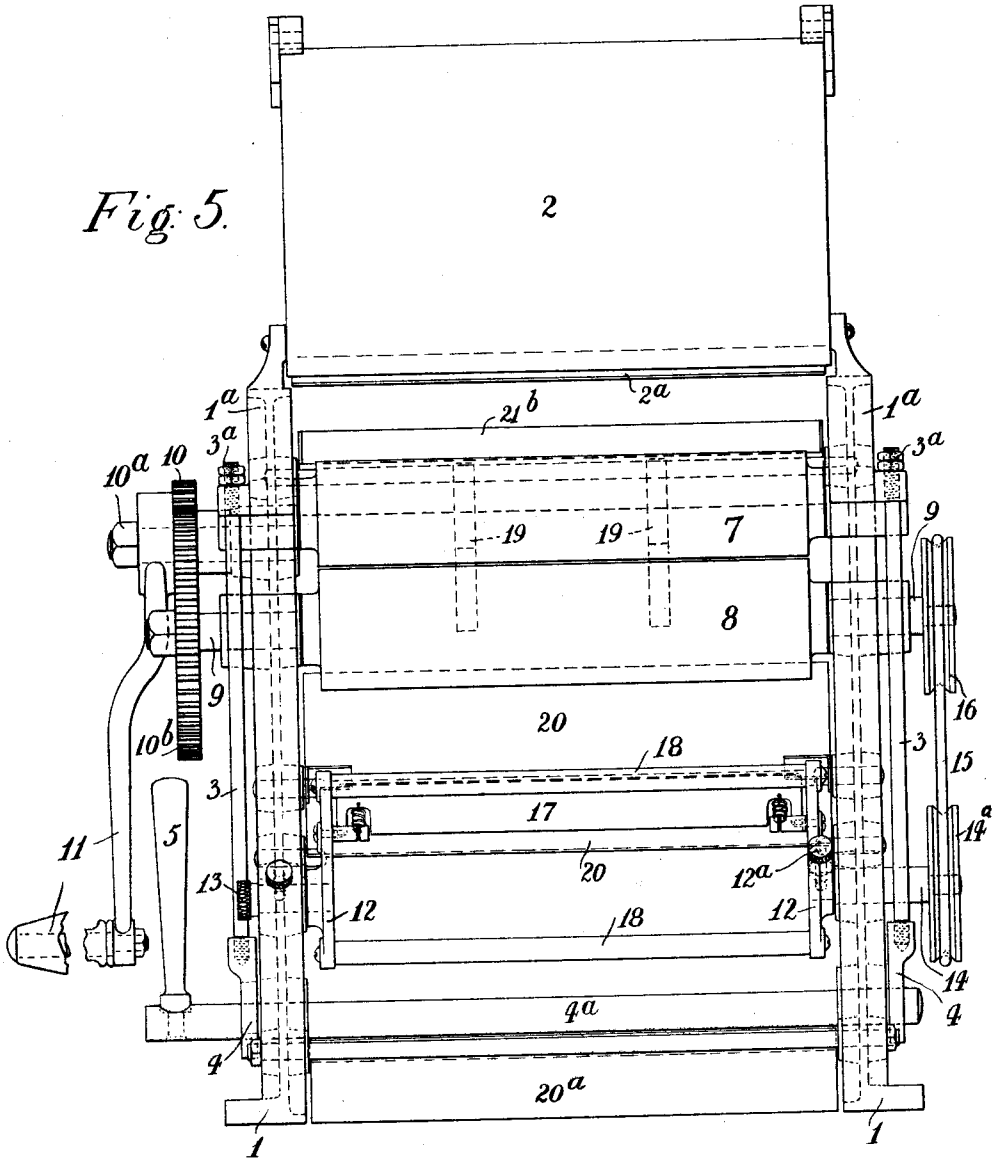
4 SHEETS—SHEET 4.

Fig. 5.

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# UNITED STATES PATENT OFFICE.

EMILE AUGUSTUS KLABER, OF NEW YORK, N. Y.

## LETTER-COPYING APPARATUS.

1,028,885. Specification of Letters Patent. Patented June 11, 1912.

Application filed June 16, 1911. Serial No. 633,585.

*To all whom it may concern:*

Be it known that I, EMILE AUGUSTUS KLABER, citizen of the United States of America, residing at 371 Broadway, New York, N. Y., have invented new and useful Improvements in Letter-Copying Apparatus, of which the following is a specification.

This invention relates to improvements in and relating to letter copying machines and it has for its primary object to construct a machine for the purpose stated which shall be of much simpler form than machines of this kind as hitherto constructed.

With this object in view the invention provides for the simplification of the apparatus by dispensing with the more or less complicated mechanism for bringing the pressure rollers together to act upon the letters and the tissue and constructing the frame of the apparatus in a manner such that the natural resiliency of the metal itself may be utilized for separating the rollers when they are not in use.

The invention further provides the various other improvements in apparatus of this class as hereinafter more fully described and pointed out in the claims.

In order that the invention may be the better understood, drawings are appended in which:—

Figure 1 is a side elevation of improved apparatus constructed in accordance with the present invention. Fig. 2 is a transverse section of the apparatus shown in Fig. 1. Fig. 3 is a side elevation of one of the side frames. Fig. 4 is an end view. Fig. 5 is a front elevation.

In carrying the invention into effect, I employ a frame composed of two side members 1 connected together by means of suitable stay rods or the like $1^a$, said frames at their upper ends having provision for the support of a case or container 2 of any well known form in which is placed the roll of tissue or like paper upon which the copies are to be made. The frames just referred to are each of such outline that advantage may be taken of the natural spring in the metal to separate the rollers 7 and 8 between which the tissue and the letters are passed in order to secure the copy. With this object the frames or the upper parts of the said frames, $1^a$, are of approximately U shaped or of horse shoe outline, and connected to the more resilient of the two members of the frames in each case is the upper end of a rod 3, the lower end of which is provided with a slotted head 4, which slot engages an eccentric or cam mounted upon a spindle $4^a$ running transversely of the frames and provided at one end with a handle 5 or other means whereby the said spindle $4^a$ may be readily rotated. Provision is made by means of nuts $3^a$ for the adjustment of the effective length of the rod for pulling the spring member $1^a$ of the frame down. Running transversely of the frames and supported in suitable bearings in the spring members of said frames is a spindle 6 upon which is mounted one of the pressure rollers comprising a rubber covered or coated body 7. A second pressure roller 8 is provided on a spindle 9 mounted upon the main portion of the frame. The second roller is actuated by means of a pinion 10 provided with a handle 11 and mounted on a stub shaft $10^a$ on the frame which pinion gears with a pinion $10^b$ on the spindle 9 of the roller 8.

The paper indicated by $x$ is taken up after the copies are made by a take up roller comprising two plates 12 which may be of triangular outline and which plates are provided with bosses whereby they are supported upon pins 13 and 14 mounted in bearings on the frames 1. One of the pins 13 is removable, while to the other 14 the plate 12 is secured in any convenient manner, but preferably by means of a spring or other catch $12^a$. The second pin 14 just referred to has upon its outer end a sheave or pulley $14^a$, around which passes a belt 15 whereby motion is transmitted to the take up roll from a pulley or sheave 16 upon the end of the spindle of the aforesaid second pressure roller 8. The means of attachment for the paper to the take up roller may comprise a spring pressed plate 17, Fig. 2, designed to secure the end of the paper to one of the transverse bars or rods 18 comprising the body of the roller and which rods or bars are secured to the aforesaid triangular plates 12.

In order to avoid the employment of a knife for cutting up the paper when on the take up roller, the paper is perforated transversely at intervals each suitable for one letter.

In order to insure the feeding of the letters at the proper intervals so that they shall not overlap on the tissue, I employ the

arrangement described in my co-pending application for Letters Patent Number 660,262 in accordance with which I provide the web of paper at the side or at any other convenient point with a series of suitably spaced holes. The tissue $x$ as it leaves the case is drawn over a transverse member $2^a$ which at a point of its length corresponding with the hole in the web is colored with a distinctive color, red for instance, so that when the color is visible the operator knows that the moment has arrived when the next letters should be introduced.

In order to prevent the letters being carried right around the second roller, I provide guards preferably in the form of curved plates 19 pivotally supported on a transverse bar 23 at their ends supported in the sides of the frame. A deflecting plate 20 is also provided to direct the letters after they are copied into a tray or receptacle $20^a$ which is also pivotally mounted at $20^b$ on the frames of the machine. A table or support 21 is also provided upon which the letters to be copied may be placed ready for feeding to the machine and this table comprises a tray like body having its side members slotted at 21 and through the slots is passed a bar $21^a$ running between the frames. The body just referred to is provided with a hook like extremity 22 designed to engage the cross bar 23 whereby it may when in use be supported in a horizontal position. The support is provided with a hinged extension $21^b$, which, when the table is not required, is folded into the aforesaid tray like body and it and said body may then be brought into a vertical position when they lie between the frames of the machine. The tray $20^a$ for receiving the letters after they have been copied may also be brought into a position parallel to the aforesaid table, when it lies within the limits of the frames 1 as indicated in dotted lines in Fig. 1.

Claims.

1. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames being provided with members capable of movement toward and away from the main body, pressure rollers one of which is mounted on the movable members between which the tissue and the letters to be copied are passed, means for pulling the movable members of the frames down to cause the pressure rollers to come together, a support for the letters and a receptacle for said letters after they are copied, a take up roller for the tissue and means for actuating the pressure roller and the take up roller.

2. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted on the spring members and between which rollers the letter to be copied and the tissue are passed, means for pulling said spring members down to bring the rollers together, a support for the letters to be copied, a receptacle for said letters after they are copied, a take up roller for the tissue and means for actuating the take up and pressure rollers.

3. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted on the spring members, rods connected at their upper ends to the spring members, plates at the lower ends of the rods, slots in the plates, eccentrics engaging the slots, a shaft carrying the eccentrics and mounted in bearings on the main body of the frame, a handle for operating said shaft, a support for the letters to be copied, a receptacle for the letters when copied, a take up roller for the tissue and means for actuating the take up and pressure rollers.

4. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted in the spring members, rods connected at their upper ends to the spring members, said rods at their lower ends being provided with slotted plates with the slots in which engage eccentrics upon a shaft mounted in bearings on the main body of the frames a handle for operating said shaft, a support for the letters to be copied, said support comprising a tray like device having slots on the sides thereof, a transverse bar engaging said slots, a hook shaped extremity on the ends of the sides of the tray like device, an extension pivotally connected to the tray like device, a receptacle for the letters when copied, a take up roller and means for operating the take up roller and the pressure roller.

5. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted in the spring members, rods connected at their upper ends to the spring members, plates at the lower ends of the rods, slots in the plates, eccentrics engaging the slots, a shaft carrying the eccentrics and mounted in bearings on the main body of the frame, a handle for operating said shaft, a support for the letters to be copied, said support comprising a tray like device having slots on the sides thereof, a transverse bar engaging said slots, a hook shaped extremity on the ends of the sides of the tray like device, an extension pivotally connected to the tray like device, a receptacle for the letters when

copied, said receptacle comprising a plate pivotally mounted in the side frames and means for operating the pressure roller and take up roller.

6. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted in the spring members, rods connected at their upper ends to the spring members, plates at the lower ends of the rods, slots in the plates, eccentrics engaging the slots, a shaft carrying the eccentrics and mounted in bearings on the main body of the frame, a handle for operating said shaft, a support for the letters to be copied, said support comprising a tray like device having slots on the sides thereof, a transverse bar engaging said slots, a hook shaped extremity on the ends of the sides of the tray like device, an extension pivotally connected to the tray like device, a receptacle for the letters when copied, said receptacle comprising a plate pivotally mounted in the side frames, a stub shaft mounted on one of the side frames, a pinion on said shaft, a handle on said pinion, a pinion on the pressure roller on the main frame, a take up roller, a pulley on the spindle of the take up roller, a second pulley on the spindle of the pressure roller on the main frame and a belt passing around said pulleys.

7. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted in the spring members, rods connected at their upper ends to the spring members, plates at the lower ends of the rods, slots in the plates, eccentrics engaging the slots, a shaft carrying the eccentrics and mounted in bearings on the main body of the frame, a handle for operating said shaft, a support for the letters to be copied, said support comprising a tray like device having slots on the sides thereof, a transverse bar engaging said sides, a hook shaped extremity on the ends of the sides of the tray like device, an extension pivotally connected to the tray like device, a receptacle for the letters when copied, said receptacle comprising a plate pivotally mounted in the side frames, a stub shaft mounted on one of the side frames, a pin on said shaft, a handle on said pinion, a pin on the pressure roller on the main frame, a pulley on the spindle of the take up roller, a belt passing around said pulley and a second pulley upon the spindle of a take up roller, said take up roller comprising end plates, one of which engages a pin which is removable from the plate, means for securing said pin, a second pin, means for connecting the plate with said pin and upon which pin is mounted the driving pulley.

8. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted on the spring members and between which rollers the letter to be copied and the tissue is passed, means for pulling said spring members down to bring the rollers together, a support for the letters to be copied, a receptacle for said letters after they are copied, a take up roller for the tissue and means for actuating the take up and pressure roller, and means for indicating when the next letter should be fed to the pressure rollers.

9. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted on the spring members and between which rollers the letter to be copied and the tissue is passed, means for pulling said spring members down to bring the rollers together, a support for the letters to be copied, a receptacle for said letters after they are copied, a take up roller for the tissue and means for actuating the take up and pressure rollers and means for indicating when the next letter should be fed to the pressure rollers, comprising perforations in the tissue, a surface over which the tissue passes, a colored spot upon said surface visible through said perforation.

10. Letter copying apparatus comprising a holder for a roll of tissue or like paper, frames supporting said holder, said frames having spring members, pressure rollers, one of which is mounted on the spring members and between which rollers the letter to be copied and the tissue is passed, means for pulling said spring members down to bring the rollers together, a support for the letters to be copied, a receptacle for said letters after they are copied, a take up roller for the tissue and means for actuating the take up and pressure rollers and means for indicating when the next letter should be fed to the pressure rollers, comprising perforations in the tissue, a surface over which the tissue passes, a roller mounted in the frames, a colored band on said roller, said band being visible through the perforations.

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

EMILE AUGUSTUS KLABER.

Witnesses:
B. WELCOUTT,
H. D. JAMESON.