No. 777,097. PATENTED DEC. 13, 1904.

R. HERMAN.

BLUE PRINTING MACHINE.

APPLICATION FILED MAR. 14, 1904.

NO MODEL.

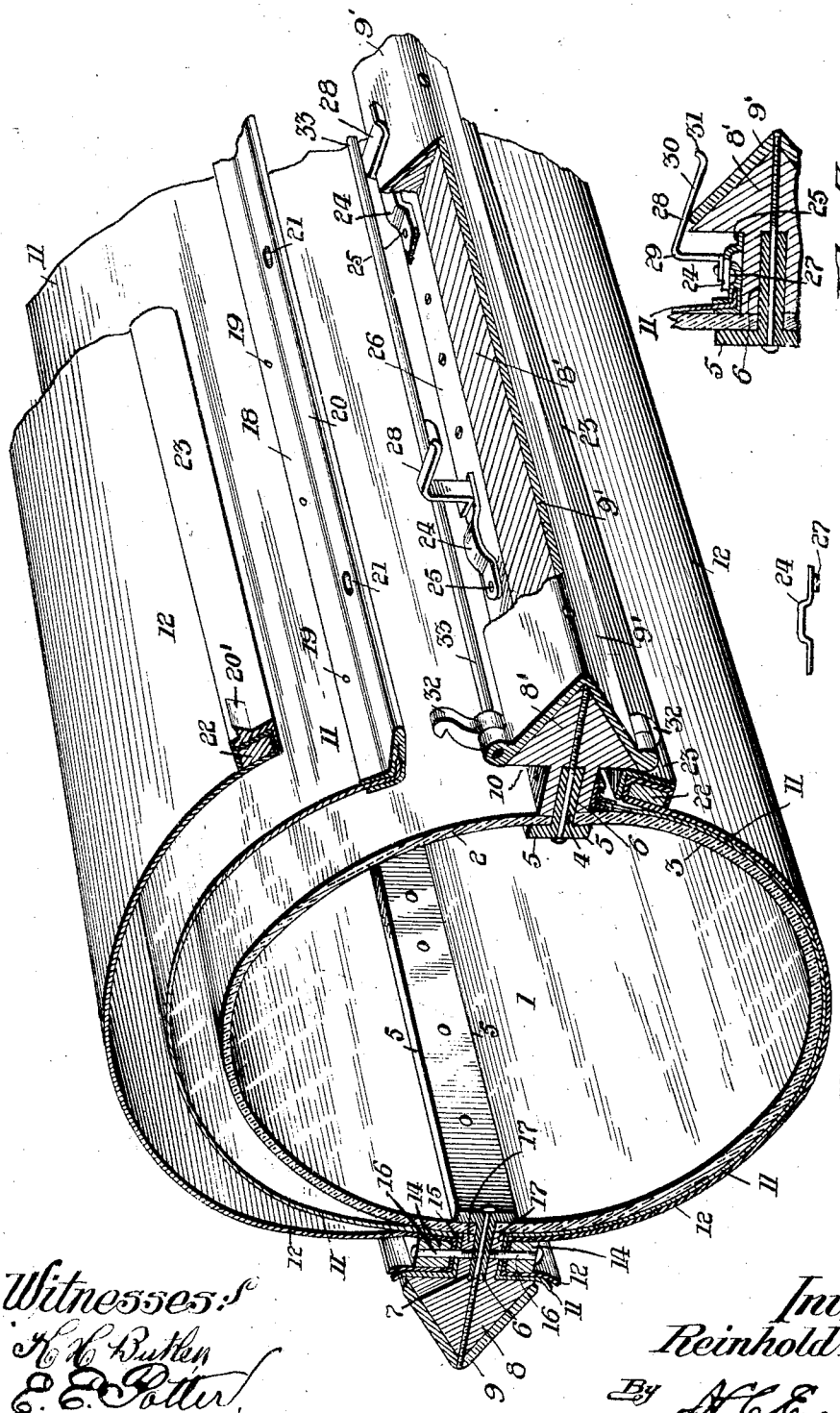


Fig. 1.

Fig. 2.

Fig. 3.

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No. 777,097. Patented December 13, 1904.

UNITED STATES PATENT OFFICE.

REINHOLD HERMAN, OF CRAFTON, PENNSYLVANIA.

BLUE-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 777,097, dated December 13, 1904.

Application filed March 14, 1904. Serial No. 198,050. (No model.)

To all whom it may concern:

Be it known that I, REINHOLD HERMAN, a citizen of the United States of America, residing at Crafton, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Blue-Printing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in blue-printing machines, and relates more particularly to that class of blue-printing machines whereby blue-prints, reproductions of drawings, characters, and the like are reproduced or copied by means of artificial light.

The present invention has for its object the provision of novel means whereby a tracing, drawing, or original drawing from which duplicates are to be printed will be securely retained in position during the process of reproducing or copying a number of prints from the drawing.

In blue-printing machines and blue-printing frames when a number of copies are made from a drawing, photograph, or the like the original drawing must be placed in proper position when another blue-print is made. This operation upon machines of this character requires considerable time and labor; and it is the object of the present invention to overcome this difficulty and to provide means whereby the machine may be more readily reloaded in case it is desired to make a number of duplicate copies.

A still further object of my present invention is to provide a novel form of fastening means whereby the parts may be easily secured together.

My invention broadly consists in the employment of a transparent apron which is used in combination with a transparent support, between which is placed the tracing or drawing that is to be reproduced and firmly held therein, and a second apron arranged over the transparent apron, between which the sensitized paper is secured, with means for independently operating and locking each of said aprons.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described and claimed.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this application, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a perspective fragmentary view of a blue-print cylinder provided with my improvements. Fig. 2 is a detail side elevation of one of the spring-clips comprising the locking mechanism of the transparent apron. Fig. 3 is a detail fragmentary vertical sectional view showing the transparent apron locked in a closed position.

This invention is an improvement over my prior patent, No. 721,041, granted to me February 17, 1903, wherein a transparent cylinder is used and an apron for covering the same. In this patent means is shown for supporting the two semicylindrical halves of the cylinder, also means for locking the apron around the cylinder, and in illustrating this invention I have shown a similar cylinder, as designated by reference-numeral 1, this cylinder comprising two semicylindrical halves 2 and 3, which are securely joined together to form the cylinder. These semicylindrical halves of the cylinder are held together by substantially T-shaped strips 4, the flanges 5 of which overlap on the inner face of the cylinder at the adjacent edges of the halves and the flange 6 of which is engaged by the adjacent edges of the two halves of the cylinder. This flange 6 of the T-shaped binding-strip projects into a groove 7, provided therefor throughout the entire length of the inner face of the two oppositely-disposed side strips 8 and 8′, these strips on their outer faces being shaped so as to fit neatly in the angle-bars 9 and 9′, the latter being fastened at suitable points throughout their length to the strips 8 and 8′. The inner faces of these strips 8 and 8′ are cut away, forming angled recesses 10 their entire length, and upon the strip 8 and within the space formed between these angled

recesses and the sides of the cylinder I mount transparent aprons 11 and opaque aprons 12. These aprons 11 and 12 are secured in the angled recesses 10 by strips 14, which extend the entire length of the said recesses and are secured therein upon the horizontal shoulders 15 of said recesses by screws 16, which pass down through the strips 14 and engage in the flanges 17 of the strip 8.

The transparent apron, which is made of celluloid, tracing-cloth, or any other suitable transparent material, carries upon its outer edge a metallic strip 18, which extends the entire length of the apron, this strip being secured to the apron by rivets 19, and the outer edge of the strip is preferably bent at right angles to the apron, as designated at 20, and in this angled portion are formed recesses 21, the purpose of which will be hereinafter more fully described. The opaque apron 12, which is preferably made of canvas, has secured on its outer edge a strip 22, the canvas being wrapped around said strip and secured thereto by any suitable means, and upon the outer face and edge of this strip is secured an angle-plate 23, which carries a tooth 20′ upon each end thereof, these teeth being employed to lock the apron in the closed position. The strip 8′, opposite to the strip upon which the aprons have been secured and hinged, carries a locking means for the aprons 11 and 12, and the locking means for the transparent apron comprises a spring-clip 24, which is pivotally mounted, as at 25, upon the horizontal shoulder 26 of the strip 8′. This spring-clip upon its outer end carries a downwardly-projecting lug 27, and secured to the upper face of this end of the clip is an angled lever 28, this lever extending upwardly a short distance and being bent at an acute angle, as designated at 29, the angled portion extending outwardly over the strip 8′ and the angle-iron 9′, as designated at 30, the extreme outer end of the lever being bent upwardly, as designated at 31.

When it is desired to lock the transparent apron 11 upon the cylinder 1, the apron is drawn tightly against the surface of the cylinder and the spring-clip is turned upon its pivot 25 by the lever 28 until the downwardly-projecting lug 27 engages in the recess 21 of the angle-strip 18. It will of course be understood that a plurality of these spring-clips may be employed to lock the transparent apron upon the cylinder, whereby the apron will be firmly held in engagement therewith and prevented from becoming disengaged from the cylinder unless released by the lever 28. The transparent apron having been secured upon the cylinder, the apron 12 is locked around the cylinder in the manner described in my prior patent, No. 721,041, this locking means consisting of a plurality of pawls 32, carried by a rod 33, these pawls being adapted to engage the teeth 20 of the angle-bar 23.

When it is desired to make a duplicate or more than one blue-print of a drawing, tracing, or the like, the tracing or drawing is secured upon the surface of the cylinder by the transparent apron, the apron being locked around the cylinder by spring-clips 24, this apron firmly securing and holding the tracing or drawing against the cylinder and preventing the same from moving or becoming displaced during the operation of printing the same. The blue-print paper upon which the drawing or tracing is to be reproduced is placed upon the surface of the transparent apron and held in this position by locking the apron 12 upon the same, this apron, as hereinbefore stated, being held in engagement with the surface of the transparent apron by locking mechanism comprising the pawls 32 and the rod 33 and their appurtenant parts. It will thus be seen by this construction that the opaque apron 12 may be removed without disturbing or displacing the tracing or drawing that is being reproduced, and while I have herein shown one transparent apron it is obvious that I may employ any number of these aprons, whereby a plurality of prints or duplicates of a drawing or tracing may be obtained at one printing operation.

In Fig. 1 of the drawings I have illustrated one side of the cylinder as being closed, the aprons being shown as locked in this closed position, while the other side of the cylinder is shown with the aprons partly opened and in the unlocked position.

It will be obvious that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a blue-printing machine, the combination of a transparent support, a transparent apron, and a suitable apron covering the first-named apron, and means whereby said aprons may be independently secured.

2. In a blue-printing machine, the combination of a transparent cylinder, a transparent apron secured to said cylinder, an apron arranged over said last-named apron, securing means carried by said cylinder for independently locking each of said aprons, substantially as described.

3. In a blue-printing machine, the combination of a transparent cylinder, a transparent apron adapted to retain drawings in position, and an outer apron adapted to retain sensitized paper or the like, and means carried by the cylinder for independently locking each of said aprons, substantially as described.

4. In a blue-printing machine, the combi-

nation of a transparent cylinder, a transparent apron secured thereto, means to lock said transparent apron, means to retain sensitized paper to said apron, an independent means to remove the said sensitized paper without disturbing said transparent apron, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

REINHOLD HERMAN.

Witnesses:
H. C. EVERT,
E. E. POTTER.