

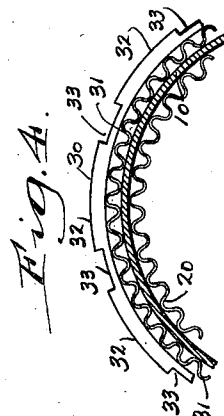
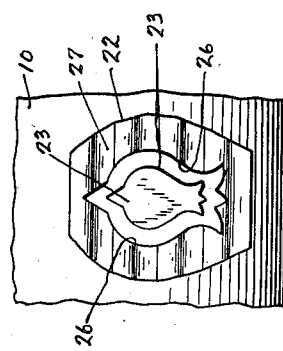
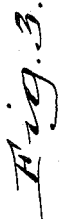
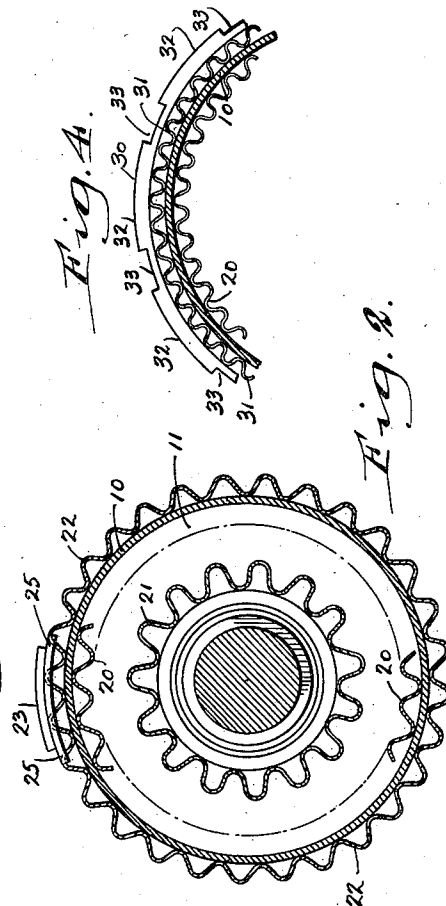
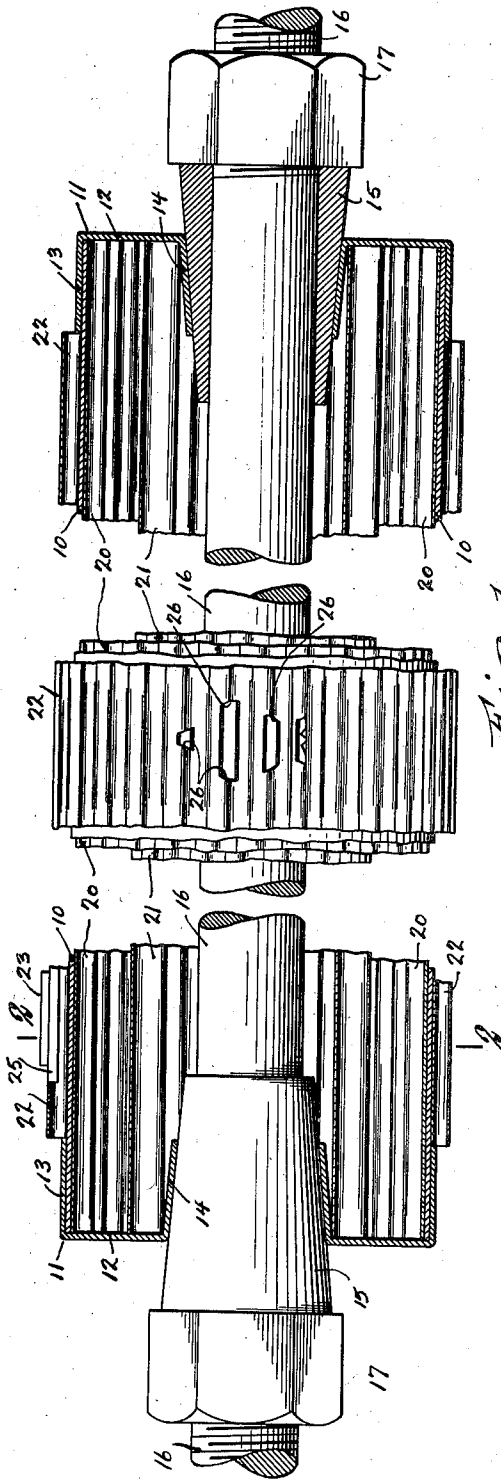
March 2, 1937.

S. F. DAMM

2,072,297

PRINTING ROLLER

Filed March 20, 1935



Inventor,
SAMUEL F. DAMM

J. W. Ellis

Attorney.

UNITED STATES PATENT OFFICE

2,072,297

PRINTING ROLLER

Samuel F. Damm, Niagara Falls, N. Y.

Application March 20, 1935, Serial No. 11,991

9 Claims. (Cl. 101—375)

My invention relates in general to rollers for printing paper and the like, and in particular to a printing roller for wall paper.

As is well known to those skilled in the art, the old wooden roller with the printing surfaces formed of inserts has been more or less replaced by a metal roller on the surface of which is routed the desired design. Not only are such metal rollers heavy and cumbersome to handle, but considerable labor is involved in routing the surfaces thereof to produce the necessary amount of relief around the printing designs which, of course, materially increases the cost of the roller.

The principal object of my invention has been to overcome the disadvantages of both forms of rollers and to provide a roller structure which shall be light in weight, cheap to manufacture; and strong and durable in construction.

My roller is of such a construction that the necessary relief between designs may be brought about without the necessity of routing out the material between such designs.

Moreover, parts of my roller are made of metal stampings which may be inexpensively formed.

The above objects and advantages have been accomplished by the device shown in the accompanying drawing, of which:

Fig. 1 is a side elevation of my device showing portions broken away and other portions thereof in section.

Fig. 2 is a transverse, sectional elevation taken on line 2—2 of Fig. 1.

Fig. 3 is an elevation of a fragmentary portion of my completed drum.

Fig. 4 is a fragmentary, transverse, sectional view of a modified form of my invention.

Referring to the form of invention shown in Figs. 1 to 3 inclusive, my device comprises a roller body 10 at each end of which is arranged a roller head 11. Each head is provided with a disk portion 12 at the outer periphery of which is formed an intumed flange 13. This flange is preferably designed to be extended over and secured to the roller body 10. The center of the disk 12 of each of the heads 11 is also provided with an intumed flange 14. This flange is preferably tapered in form so as to fit the conical centering bushing 15 usually employed in mounting wall paper printing rollers. These bushings are mounted upon the drive shaft 16 and they are adjusted to position and held in such position by means of nuts 17 which are screwthreaded to the shaft at each end of the roller.

The roller body 10 is preferably of light sheet metal, which in itself would not have sufficient

strength and which, therefore, is reinforced by means of an intermediate corrugated sleeve 20. This sleeve is mounted on the inside of the body and may be tightly forced into the body and may be otherwise secured to the body and to the heads 11.

So as to reinforce the roller through the center, an inner corrugated sleeve 21 is provided. This sleeve is preferably made of corrugations of greater pitch than the intermediate corrugated sleeve 20, and its ends extend to the heads 11 where they are secured about the inner flanges 14 thereof in any suitable manner, such as by soldering, brazing, welding, or the like.

By providing the intermediate and inner corrugated sleeves, the roller is made strong and at the same time light in weight.

An outer corrugated sleeve 22 is also provided on the outer surface of the roller body. This sleeve is disposed about the roller body 10 and extends preferably from the inner edge of the flange 13 of one of the heads 11 to the inner edge of the flange 13 of the opposite roller head. The designs 23, one only of which is shown in each of the figures, each have an attaching flange 25 and they may be placed on top of the corrugations or they may be set in, as shown in the drawing, by routing off the tops of the corrugations, where the design is to be placed and thus providing recesses of the required depth and forming registering shoulders 26, as shown in Fig. 1. The portions of the outer corrugated sleeve which remain under the designs after the intervening portions of the sleeve are routed away provide corrugated spacers or fillers between the designs and the roller body.

When placing the printing designs 23 upon the corrugated sleeve 22, the location of the recesses is suitably marked, either by placing the individual design where it is to go or by having a drawing which is wrapped about the corrugated sleeve, the outline of which being transferred to the drum. The drum for this purpose may be coated first with paint or other material upon which marks will be visible. After the recesses are made by routing, the designs are secured therein by any suitable means.

While I have shown in the central broken-off portion of Fig. 1 recesses cut out for the reception of the individual design, it is obvious that the design may simply be secured to the tops of the corrugations without cutting out, the height of the corrugations and the thickness of the individual designs being such that the printing surfaces of such designs will be properly located

on the body of the roller. After each individual design has been secured in place, either upon the top of the corrugations or in the recesses formed for such designs, the corrugated sleeve 22 is routed through down to the roller body 10 around the pattern 23, leaving a flange 27. Of course, during the routing operation, the flange 27 of the corrugated portion of the sleeve remaining under the printing design is secured to the roller body before it is entirely cut free of the surrounding sleeve. When the corrugated sleeve is thus cut away from the flange portion 27 remaining about the printing design, it is obvious that these large intervening portions of the corrugated sleeve may be easily removed from the roller body, thus providing the necessary clearance over the portion of the roller between the designs in a very simple, inexpensive, and rapid manner. The finished roller, after these intervening portions of the sleeve have been removed, is shown in fragmentary manner in Fig. 3.

Where my invention is to be applied to a roller having an over-all design or pattern with little space between the patterns, I preferably use a solid sleeve 30 for the printing surface. The corrugated sleeve 31 in this form of invention is not routed out but carries the sleeve 30 in contact with the upper corrugations thereof. The corrugated sleeve 31, therefore, is made of corrugations of such height that the printing surface will be properly located when the sleeve 30 is applied thereto. After the sleeve 30 has been secured in place upon the corrugated sleeve 31, the printing surfaces 32 are provided by routing away the top surface of the sleeve 30 in the shape of the desired design. Where I use the term "corrugations" or "corrugated" in the specification and claims, I mean a formation made from sheet metal and provided with alternate or parallel grooves and ridges, as clearly shown by the corrugated sleeves of the drawing.

Obviously, some modifications of the details herein shown and described may be made without departing from the spirit of my invention or the scope of the appended claims, and I do not, therefore, wish to be limited to the exact embodiment herein shown and described, the form shown being merely a preferred embodiment thereof.

Having thus described my invention, what I claim is:

1. A printing roller comprising a roller body of sheet metal, heads for said body, a corrugated sleeve for reinforcing the body, and an outer corrugated sleeve for receiving and holding the printing designs.

2. A printing roller comprising a roller body of sheet metal, heads for said body, each of said heads being formed to receive a drive shaft, a corrugated sleeve disposed around the inner periphery of the roller body, and a corrugated sleeve disposed about the shaft for reinforcing the roller.

3. A printing roller comprising a roller body of sheet metal, heads for said body, each of said heads being formed to receive a drive shaft, a corrugated sleeve disposed around the inner periphery of the roller body, a corrugated sleeve disposed about the shaft for reinforcing the roller, and an outer corrugated sleeve carried by the roller body for receiving and holding the printing designs.

4. A printing roller comprising a roller body of sheet metal, heads for said body, each of said heads having an inturned outer flange and an inturned inner flange, the outer flanges of said heads being secured to the roller body, and said inner flanges formed to support the roller shaft, a corrugated sleeve disposed on the inside of the roller body, a corrugated sleeve arranged about the inner flanges of the heads, and an outer corrugated sleeve carried by the roller body for receiving and holding the printing designs.

5. A printing roller comprising a roller body of sheet metal, heads for said body, and a separate, outer corrugated sleeve secured to the roller for receiving and holding printing designs on the top of the outer corrugations.

6. A printing roller comprising a roller body of sheet metal, heads for said body, and a separate, reinforcing, corrugated, sheet metal sleeve permanently secured on the inside of the body, the corrugations of said sleeve being longitudinal.

7. A printing roller comprising a roller body, a plurality of corrugated spacers permanently secured to the roller body, and a printing design carried by each of the spacers.

8. A printing roller comprising a roller body, a plurality of corrugated spacers permanently secured to the roller body, and a separate printing design carried by each of the corrugated spacers and set into a recess extending part way through the corrugations of the spacers and secured thereto.

9. A printing roller comprising a roller body of sheet metal, a corrugated sleeve secured to the inner side of the body for reinforcing the same, a plurality of corrugated, sheet metal spacers permanently secured to the roller body, and a printing design carried by each of the spacers.

SAMUEL F. DAMM.