Sept. 6, 1927. 1,641,828

D. A. SANDIN

DECORATING DEVICE FOR AUTOMATIC BAG MACHINES

Filed Oct. 25, 1922 2 Sheets-Sheet 1

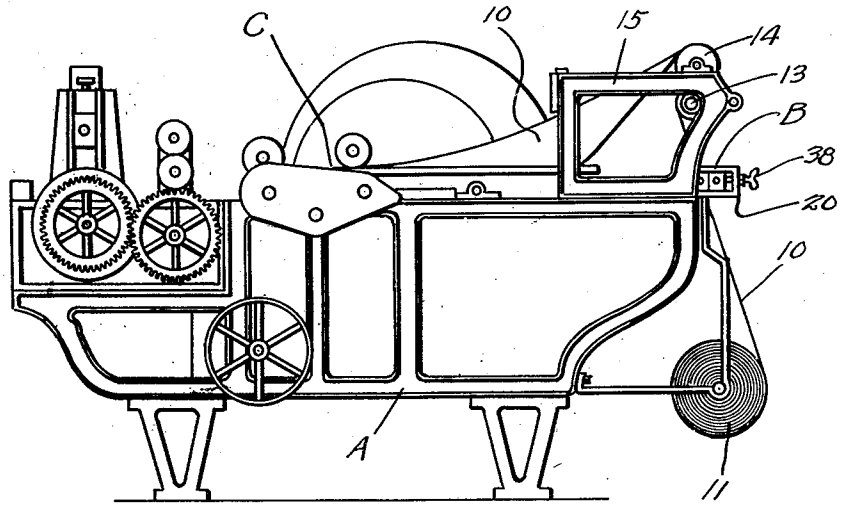


Fig. 1

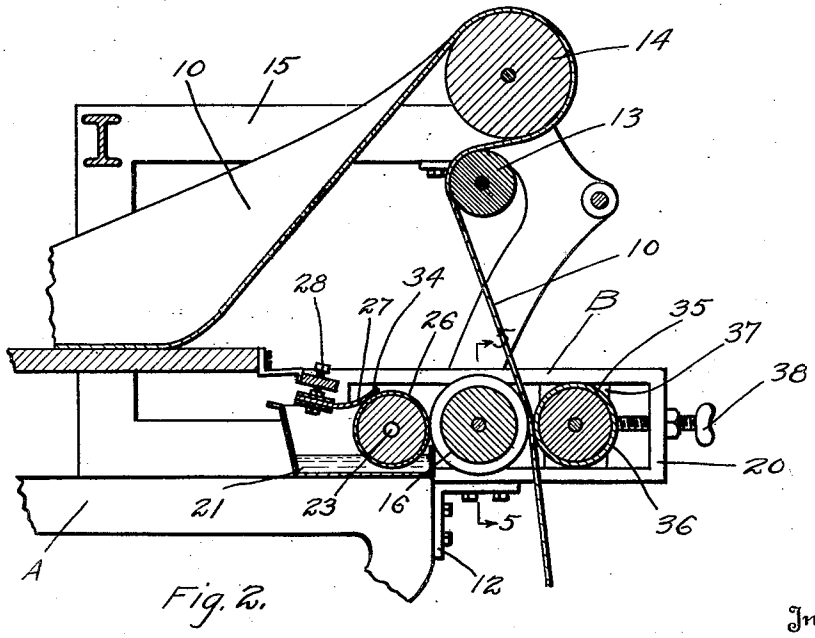


Fig. 2.

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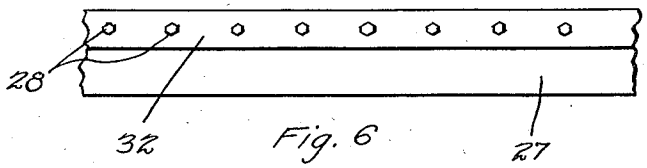


Fig. 6

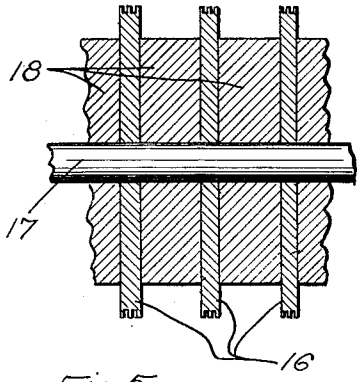


Fig. 5

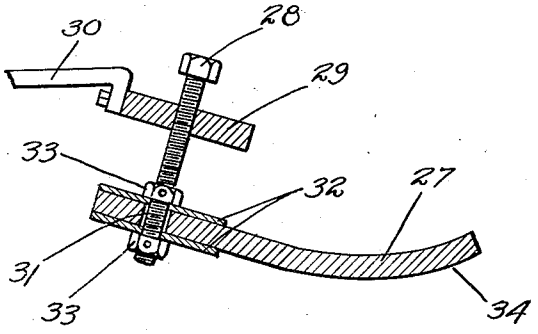


Fig. 4

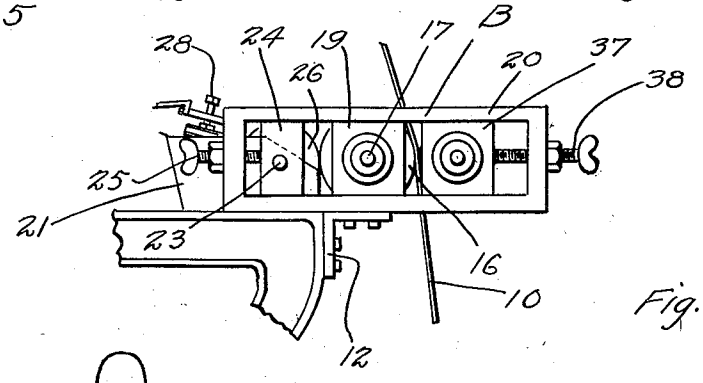


Fig. 3

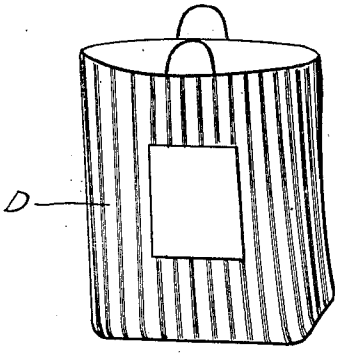


Fig. 7

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UNITED STATES PATENT OFFICE.

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DECORATING DEVICE FOR AUTOMATIC BAG MACHINES.

Application filed October 25, 1922. Serial No. 596,868.

My invention relates to machines which are designed to automatically make paper bags from a roll of paper carried by the machine which passes through the same in a continuous strip which is cut off at intervals and bags are formed automatically and continuously during the operation of the machine.

A feature of the invention consists in applying a decorating configuration to the surface of the paper forming the bags. The decorating means is operated automatically by the passage of the paper through the same and applies the decoration to the surface which forms the outer face of the bags. This means of applying a decoration to the surface of the bags has the advantage of providing a bag with a very pleasing appearance and more particularly is of an important nature by reason of the fact that bags made up in this manner are used as shopping bags and it is very desirable to have a well appearing, attractive, pleasing design on the bags.

This invention permits the bags to be decorated automatically at such a low cost as to permit the sale of the same at the same prices as if they were not decorated. It is with this in mind that I have developed the application of this decorating means as associated with an automatic bag making machine. A great number of these bags have been distributed to all parts of the Uuited States and used as shopping bags and I find that it is very desirable to have the surface of the same decorated so that the bags will not have the appearance of an ordinary cheap paper bag and more prticularly for the reason that these bags are made of a dark colored paper which has a tough consistency to provide the necessary wearing qualities.

The invention further includes means for applying a decoration to a surface very rapidly permitting the use of a dye or coloring which is easily absorbed by the bag material in place of printers' ink which is slow drying. The means employed to apply the decorating configuration to the surface of the bag material is especially designed to permit the use of a thin dyeing liquid. It is an essential feature of this invention to have the decoration which is applied to the surface thoroughly dry so that it will not smear or rub off in the course of making the bag. The bags are made very rapidly in the machine and it is apparent that this is an important detail of the invention, because it is cheaper to use a thin liquid dyeing material than it would be to use ordinary printing ink.

In the drawings forming a part of this specification:

Fig. 1 is a side elevation of an automatic bag making machine with my invention attached thereto.

Fig. 2 is an enlarged sectional detail of my decorating means.

Fig. 3 is a detailed end view of a portion of the same.

Fig. 4 is an enlarged sectional view of a portion of the decorating device.

Fig. 5 is a section on the line 5—5 of Fig. 2 in an enlarged form.

Fig. 6 is a plan view of that portion illustrated in Fig. 4 of the decorating device.

Fig. 7 is a perspective view of a shopping bag decorated by my device which is applied automatically when the bag is made.

In the drawings, I have illustrated a machine A which is adapted to automatically make bags from a continuous strip of paper 10 which is supplied from the roll 11 carried at the rear end of the machine A. The machine illustrated is of the ordinary well known type of bag making machines. The machine A is only illustrated diagrammatically in its side elevation, it being obvious that the details of construction of the bag making machine are not essential in the application of my invention excepting in so far as the making of bags from a continuous strip of sheet material.

My decorating device B is positioned above the roller 11 and is secured by means of brackets 12 to the machine A. The continuous strip of paper 10 extending from the roller 11 is passed up over the idle rollers 13 and 14 positioned on the upper frame structure 15 of machine A in a manner to feed the paper into the bag forming mechanism C of the machine. My decorating means B is positioned between the rollers 13 and 14 and the roll of paper 11.

The decorating mechanism consists of the decorating or applying rolls 16 which are mounted on the shaft 17 and are spaced apart by the spacing members 18, as illustrated in Fig. 5 of the drawing. The ends of the shaft 17 are journaled in the blocks 19 which are held in the cross head frame 20.

The frame 20 is rigidly secured to the machine A by means of the brackets 12.

A font or reservoir 21 is provided for carrying the supply of ink dye or other decorating material and is positioned adjacent the rollers 16. The applying roller or cylinder 22 is journaled on the shaft 23 and adjustable in the cross head frame 20 by means of the slidable boxes 24 and the adjusting screws 25. This cylinder is provided with a soft or appliable surface 26, of any suitable nature, and the cylinder is positioned so as to be partly immersed within the liquid in the font 21.

The applying cylinder is adjusted into position to contact with the surfaces of the rollers 16 under suitable tension to apply a sufficient decorating material to the rollers or decorator 16 so as to apply an even decorating configuration to one side of the paper or material 10 which forms the bags.

During the operation of the decorating means B, the decoration rollers 16 are turned in the direction of the travel of the paper or material 10 which travels from the roll 11 at the back of the machine. Thus the cylinder 22 rotates toward the decorating wheels 16, as is indicated, and a suitable flexible guard or scraper 27 is positioned so as to contact longitudinally with the surface of the cylinder 22 under the spring tension of the guard 27 and is adapted to be adjusted at intervals by means of the screws 28 which are threaded and supported in the cross member 29 attached to the frame by the bracket 30. The screws 28 extend freely through the opening 31 formed in the member 27 and are provided with strips 32 which extend on either side of the member 27 along the openings 31. Suitable stop shoulders are formed by the nuts 33 which are held by a pin extending through the screws 28. In this manner the screws 28 are held in connection with the member 27 so that the tension of the free end 34 of the member 27 against the surface of the cylinder 22 can be varied so that an even application of the decorating material can be transmitted to the decorating rollers 16.

The paper 10 is held in close contact with the decorating roller 16 by means of tension cylinder 35 which is provided with a resilient surface 36 so as to apply the desired compression and tension against the surface of the paper 10 to compensate for the inequalities and thickness of the same as the paper passes between the roller 35 and the decorating wheel 16. The cylinder 35 is adjustably held in the cross head frame 20 by the slidable boxes 37 which are engaged by the adjusting screws 38. In this manner the tension can be varied to suit the occasion against the material 10 passing though the decorating mechanism B.

In the drawings, I have illustrated a series of decorating wheels 16 which are provided with a surface adapted to apply a straight line design to the outer face of the bags D, as illustrated in Fig. 7, but it is obvious that any suitable form of decorating wheels 16 can be used and that the outer surface of the bag may be decorated, as desired, to provide the most effective design to the bags made in the machine A.

The machine operates quite rapidly and automatically folds the paper, cuts it off and turns in the end so as to form the bottom of the bag and deliver it in a folded flat state, ready to be used. By the application of my invention in combination with this machine, bags are decorated at a very low cost yet their value is greatly increased over the ordinary plain bag particularly for the reason that these bags are used to be carried as shopping bags and the user prefers an attractive, neat looking article. This is of such importance that, in the manufacture of these bags, it has been found of great value to apply a picture to the bag which increases the selling value very much; therefore it will readily be apparent that, by decorating the surface in an economical way, the bag is much more valuable because it can be more readily sold than a plain undecorated bag. The entire operation is automatic and continues during the operation of the machine and, while the device is of a simple nature, yet the importance is readily apparent in the manufacture of shopping bags.

In accordance with the Patent Office statutes, I have described the principles of operation of my invention and while I have illustrated a particular form and construction of device, I desire to have it understood that this is only illustrative and that the invention can be carried out by means other than those set forth within the scope of the following claim:

I claim:

In combination with a high speed continuously operating bag machine, a pair of slotted cross head supports, an inking roller, a decorating roller, a tension roller, bearings for said rollers disposed in the slots of said cross heads and adjusting means for the bearings of the inking roller and the tension roller whereby the pressure applied by the decorating roller to the stock passing through the machine may be regulated.

DAVID A. SANDIN.