Dec. 12, 1933. G. J. PRAGER 1,939,081

MACHINE FOR DECORATING AND/OR TRADE-MARKING PAPER, CARDBOARD, AND THE LIKE

Filed June 28, 1933

Fig. 1

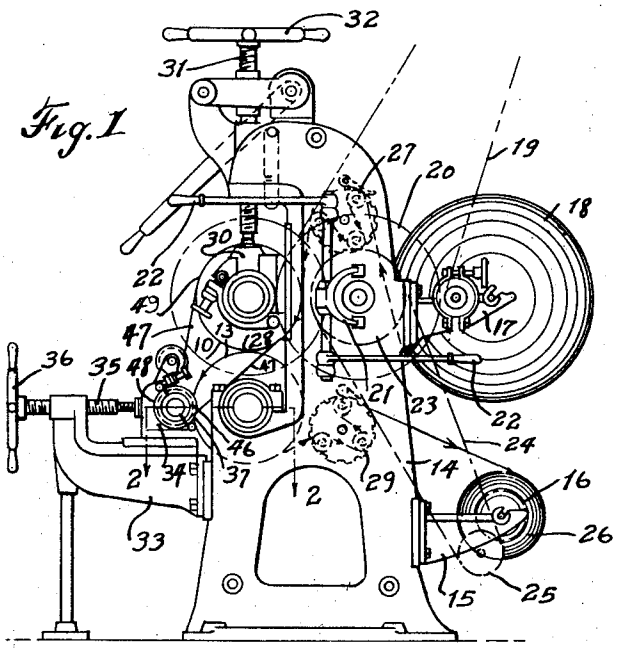


Fig. 5

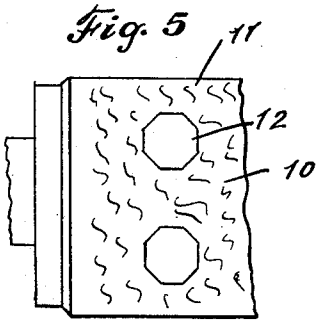


Fig. 6

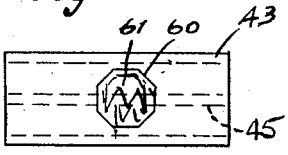


Fig. 4

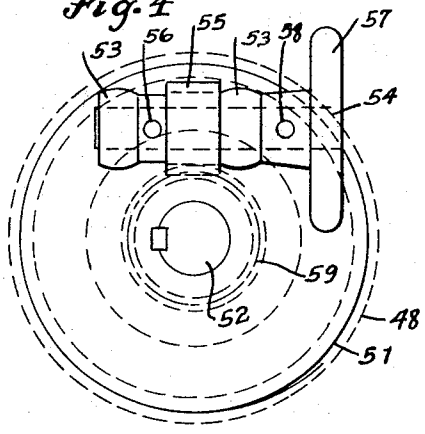


Fig. 3

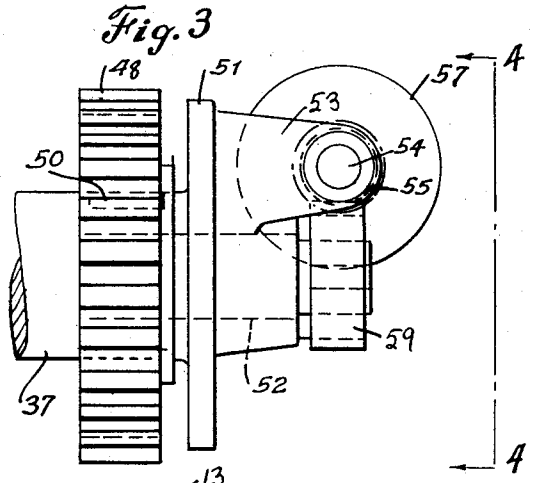
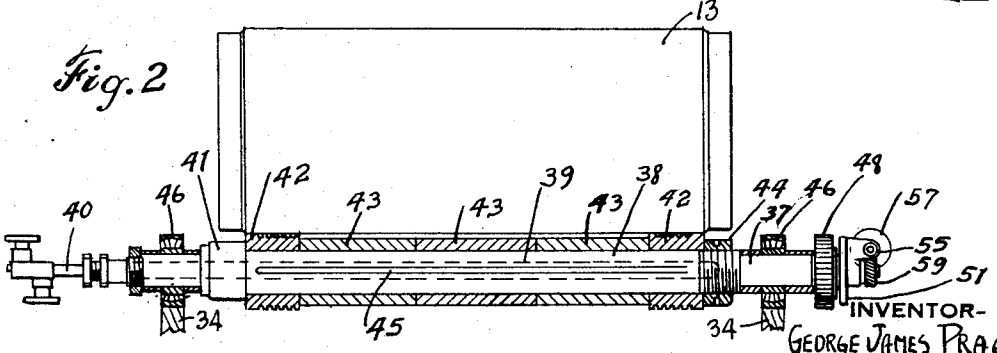


Fig. 2



INVENTOR-
GEORGE JAMES PRAGER
BY
ATTORNEY-

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UNITED STATES PATENT OFFICE

1,939,081

MACHINE FOR DECORATING AND/OR TRADE-MARKING PAPER, CARDBOARD, AND THE LIKE

George James Prager, New York, N. Y.

Application June 28, 1933. Serial No. 677,960

7 Claims. (Cl. 101—3)

This invention relates to a machine for decorating and/or trade-marking paper, cardboard and the like.

The invention has for an object the construction of a machine to decorate and trade-mark papers of various weights, particularly wrapping paper with all-over designs and individual trade-marks.

Still further the invention contemplates an arrangement whereby the all-over designs are of a two-tone or transparent effect with certain sections blank and trade-marking imparted within said blank sections.

Still further the invention proposes a process of the class mentioned which is characterized by causing a large engraved or embossing element to decorate by embossing and/or heat embossing the material, associating a small replaceable engraved or embossing element with said large engraved or embossing element, and causing said small replaceable engraved or embossing element to trade-mark said material, in synchronized relation with the decorated portions from said enlarged engraved element.

Furthermore as another object of this invention it is proposed to provide an embossing machine with a large engraved roller and an opposed large roller, and a variable engraved small trade-marking roller associated with said embossing machine and said opposed roller, and synchronizing with the operation of said large engraved roller.

As another object, it is proposed to so arrange the trade-marking roller on the embossing machine and either the trade-marking roller and the embossing machine may be used selectively separately, or together.

Still further the invention contemplates an arrangement whereby the large engraved roller produces a two-tone effect upon the material treated except at certain areas left blank purposely for trade-marking purposes, and whereby the small roller trade-marking within said blank areas.

Still further the invention proposes a novel construction of the variable engraved small trade-marking roller wherein the roller is provided with a plurality of removable relays or shells engraved or in any other manner formed with a trade-mark and arranged adjustable and interchangeable along the widths of said large engraved roller.

A very important feature of this invention is the economical trade-marking of papers and other material in comparison with embossing methods now used wherein the design rollers are engraved with all-over design and are also engraved with the trade-mark pattern. This old method of decorating papers is very expensive in that the manufacture of the large roller with the all-over design and the trade-mark patterns limits the use of this roll to the individual owner of the trade-mark a separate roll being required for each user therefore production of small quantities of material cannot be economically produced. For this reason small users of paper cannot be supplied with trade-marking impressions in processes which decorate and trade-mark substantially in one operation. The invention method of decorating papers affords the paper manufacturer an opportunity to solicit business from small users in that it is merely necessary to provide individual small shells for engagement upon the trade-marking roller to actually impart the trade-mark upon the material. In other words, with the present invention it is possible to manufacture the large engraving rollers with all-over designs left blank on certain areas for receiving the trade-mark impressions and from another source supplying the trade-mark impressions.

A further point of importance according to this invention is that the engraved relays or shells can be used separately without the decorating where simply trade-marking is required without an all-over background design or the decorating embossing may be done without trade-marking.

Still further the invention proposes the construction of a machine as mentioned which is simple and durable and which may be manufactured and sold at a resonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of an embossing machine with a trade-marking device constructed according to this invention.

Fig. 2 is a fragmentary horizontal sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary enlarged detailed view of the right hand end of Fig. 2.

Fig. 4 is an elevational view looking in the direction of the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary elevational view of the large engraved roller of the embossing machine, per se.

Fig. 6 is an elevational view of one of the replaceable or exchangeable, relays or shells upon the trade-marking roller according to this invention.

The machine according to this invention comprises a conventional embossing machine having a large roller 10 engraved with an all-over design 11 and having blank areas 12 so as not to produce any impressions at certain areas. The large roller works in conjunction with an opposed roller 13. The embossing machine is shown to have a rewinding roll 16 supported at each end on a bracket 15 mounted on the main frame 14. A material supply roll is supported at each end upon a bracket 17 mounted on the frame 14.

A driving belt indicated by the dot and dash lines 19, connects with a main pulley 20 of the machine which is associated with the clutch mechanism 21 operated by the control levers 22. A gear 23 is associated with the pulley 20 and is provided with a belt 24 driving a wheel 25 connected by gear mechanism 26 with the shaft of the rewinding roll 16. The web of the material from the roll 18 passes over the tensioning mechanism 27 and then at the point 28 passes between the rollers 10 and 13 continuing around a portion of the roller 13 to another tensioning mechanism 29 and from there to the rewinding roll 16.

The large engraved roller 10 is mounted at each end upon a standard 30 adjustably mounted on the frame 14 and adapted to be adjustable by reason of an adjustably mounted screw 31 connected therewith and provided with a control hand wheel 32. The other details (as for example the heating means for the rollers 10, etc.) of the embossing machine are not given in this specification since such details are generally known in the art at the present time and form no part of the invention. The embossing machine will readily be recognized by the cursory description given.

According to this invention an attachment is associated with the embossing machine to accomplish the trade-marking and comprises a trade-marking roller 37 supported at each end on a bearing 34 adjustably mounted on a bracket 33 attached upon the frame 14 of the machine. An adjustably mounted screw 35 is associated with each bearing 34 and is provided with a hand wheel 36 so that the position of the standards 34 may be adjusted. The trade-marking roller is small, engraved and is adapted to act against that portion of the web of the material which is upon the roller 13.

The variable trade-marking roller 37 comprises a mandrel 38 which is formed with a central hollow or bore 39 connected with a steam control system 40 to produce the necessary heat for the trade-marking. Details of the steam control system will not be given here since the system does not involve invention and is according to the customary form. The mandrel 38 is formed with an enlarged portion 41 near one end. Traction collars 42 are mounted upon the mandrel and between these collars several interchangeable and removable engraved relays or shells 43 are mounted. A removable collar 44 is threadedly engaged upon the mandrel 38 at the other end and together with the enlarged portion 41 serves to hold the shells 43 and the collars 42 in place. The mandrel 38, the traction collars 42 and the shells 43 are provided with a key arrangement 45 so as to cause unitary rotation of these parts. The relays or shells 43 may assume various positions upon the mandrel by inserting collars between the shells, said intermediate collars not being shown on the drawing. Each standard 34 is provided with a conventional split bearing 46 which allows the removal of the trade-marking roller when desired.

The trade-marking roller is synchronized with the operation of the engraved roller 10 by reason of a chain 47 engaged respectively over a gear 48 mounted upon the trade-marking roller and another gear 49 mounted upon the engraved roller 10. A mechanism is provided for varying the relation of the gear to the shells 43 so that the registering of the trade-marking may be adjustable. More particularly the gear 48 is keyed at 50 upon a bracket 51 which is rotative on a reduced portion 52 of the trade-marking roller 37. A pair of spaced lugs 53 projects from the bracket 51. A shaft 54 is rotatively mounted through the lugs 53. A worm pinion 55 is fixed upon the shaft 54 by a pin 56. A handle 57 is fixed upon the shaft 54 by a pin 58. The worm pinion 55 is in mesh with a worm wheel 59 fixed upon the reduced portion 52 of the trade-marking roller 37.

Each of the relays or shells 42 are provided with one or more raised portions 60 engraved with the trade-marks 61 adapted to register with the blanks on the material left by the areas 12 in the large engraved roller. The traction collars 42 are adapted to be in continuous contact with the enlarged engraved roller 10 so as to prevent concussion as the raised areas 60 move away from contact with the engraved roller 10.

The operation of the machine is as follows: Rotations from the belt 19 are transmitted to cause the material to pass between the large engraved roller 10 and the opposed roller 13. The large engraved roller 10 by ordinary heat embossing imparts its design upon the material except at the areas due to areas 12 of the large roller 10 which are left purposely blank for trade-marking. The raised areas 60 of the trade-marking shells 43 are arranged to register with the blank areas upon the material and so impress by ordinary heat embossing the trade-mark upon the material. It is thought that a detailed explanation of the exact operation of the embossing machine is not necessary in view of the well known state of the art of embossing machine.

The main feature of this invention resides in the fact that small paper users may be economically served with this machine to trade-mark their papers. It is not necessary that a large engraved roller 10 be used for each customer. It is merely necessary that the small relay shells 43 be supplied for changing the trade-marking being imparted upon the material while the same large engraved all-over design roller be used for different customers.

According to this invention, for small and large customers individual relays or shells are supplied, which are of inexpensive construction. The entire machine is so constructed that these shells may be readily and easily removed, exchanged, and replaced when desired. Exact registration between the trade-marking impressions and the all-over design is possible by rotating the hand wheel 57. This causes the worm pinion 55 to turn and correspondingly turn the worm wheel 59 fixed upon the trade-marking roller. Consequently the relation between the gear 48 and the trade-marking roller is adjustable so that the synchronization of the trade-

mark impressions and the all-over design can be readily controlled.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made. I therefore reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlated parts without departing from the spirit or the scope of the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller, and a small trade-marking roller having interchangeable and replaceable cylindrical shells and associated with said embossing machine and said opposed roller and synchronizing in operation with said large engraved roller.

2. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller and a small trade-marking roller having interchangeable and replaceable cylindrical shells and associated with said embossing machine and said opposed roller synchronizing in operating with said large engraved roller, said large engraved roller having an all-over design except at predetermined areas, and said small trade-marking roller being adapted to impress upon blank areas on material treated by said large roller.

3. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller, and a small trade-marking roller associated with said embossing machine and said opposed roller and synchronizing in operation with said large engraved roller, said small roller comprising a hollow mandrel, heat means associated with the hollow of said mandrel, replaceable cylindrically engraved shells variably fixed upon said mandrel, and means for connecting the mandrel and the said large embossing roller for synchronized operation.

4. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller, and a small trade-marking roller synchronizing in operating with said large engraved roller, said small roller comprising a mandrel having removable shells mounted thereon said shells being engraved with the trade-marks.

5. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller, a small trade-marking roller and synchronizing in operation with said large engraved roller, said small roller comprising a mandrel having removable and replaceable annular shells mounted thereon said shells being engraved with the trade-marks, and threaded collars mounted upon said mandrel for holding said shells in place.

6. A machine for decorating and/or trade-marking paper, cardboard and the like, comprising an embossing machine having a large engraved embossing roller and an opposed roller, and a small trade-marking roller and synchronizing in operation with said large engraved roller, said small roller comprising a mandrel having removable and replaceable annular shells mounted thereon said shells being engraved with the trade-marks, threaded collars mounted upon said mandrel for holding said shells in place, and traction collars mounted upon said mandrel for engaging against said opposed roller.

7. In a machine of the class described, a large engraved roller, and a small trade-marking roller associated with said machine and synchronizing in operation with said engraved roller, said small engraved trade-marking roller comprising a mandrel, and removable engraved trade-marking annular shells mounted upon said mandrel.

GEORGE JAMES PRAGER.