Feb. 14, 1928. 1,659,243

J. C. COON

ATTACHMENT FOR PLATELESS ENGRAVING MACHINES

Filed Feb. 20, 1925

Fig. 3.

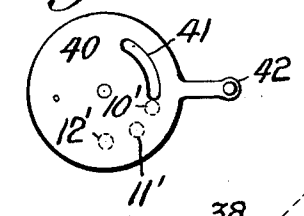


Fig. 1.

Fig. 2.

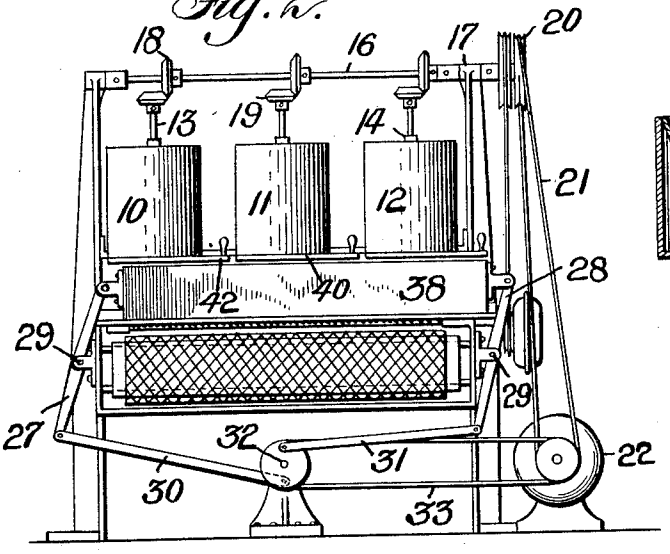


Fig. 4.

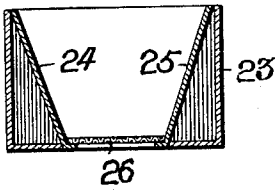
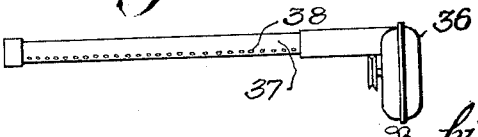


Fig. 5.



Inventor

James C. Coon.

By his Attorney

Herbert H. Thompson

Patented Feb. 14, 1928. 1,659,243

UNITED STATES PATENT OFFICE.

JAMES C. COON, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE COONWAY MACHINE COMPANY INCORPORATED, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

ATTACHMENT FOR PLATELESS ENGRAVING MACHINES.

Application filed February 20, 1925. Serial No. 10,503.

This invention relates to the art of so called plateless engraving or embossing in which it is the practice to create raised letters by means of treating ordinary type printing while the ink is still wet with a special substance generally in the form of a powder and then heating the print in a special machine. The great majority of machines on the market perform the last named function only, so that the printed sheets or cards must be sprinkled by hand with the powder, then the excess powder shook off and finally the cards fed into the heater.

The principal object of the invention is to provide an attachment for existing heaters of the type specified which will automatically apply the powder, remove the excess and feed the work to the heater.

Referring to the drawings in which what I now consider the preferred form of my invention is shown,

Fig. 1 is a vertical section through the attachment, showing how it is attached to the heater.

Fig. 2 is an end elevation of the same.

Fig. 3 is a detail view of a portion of a container for the powder.

Fig. 4 is a sectional view of the shaker or distributor for the powder.

Fig. 5 is a side view of the blower for removing the excess powder.

A portion of a typical "plateless engraving" machine or heater is shown at 1. Said machines usually have a traveling belt 2 on which the printed sheets or cards are carried into the machine. Said belt is shown as passing around a roller 3 which is rotated by means not shown. From a pulley 4 on said roller, I drive a similar roller 5 on my improved attachment through means such as a belt 6 and pulley 7. Around said roller, I pass a perforated or open work belt which may take the form of an open wire, mesh or chain. Said belt passes over a second roller 9.

Above the belt I mount one or more containers 10, 11 and 12 for the powder to be sprinkled on the print. Said containers are shown in the form of cans, each having a vertical shaft 13 journaled in a bracket 14 adjacent the top of the can and also journaled at the bottom. On each of said shafts is a paddle 15 designed to stir or agitate the powder continuously, to cause uniform flow from the can. Said shafts are shown as rotated from a cross shaft 16 journaled in brackets 17 by means of bevel gears 18 and 19. Shaft 16 may be rotated by any suitable means, such as by a pulley 20 mounted thereon, driven by a belt 21 from a motor 22 or other source of power.

At their bottoms the cans are provided with a plurality of apertures 10′, 11′ and 12′, and also preferably with an adjustable disc or plate 40 having an annular slot 41 therein. Said disc is turned by a handle 42 to uncover more or less of apertures 10′, 11′ and 12′ by bringing more or less of slot 41 under the same. By this or equivalent means the amount of powder escaping from the cans may be regulated to a nicety. From the cans the powder drops into a distributor or sieve 23 in the form of an elongated trough having inclined side walls 24 and 25 and perforated bottom 26. Said distributor is agitated by means such as one or more levers 27, 28 pivoted on the framework at 29 and linked at their tops to the distributor and at their bottoms to links 30, 31 connected to crankshaft 32 shown as driven from motor 22 by belt 33. From the distributor, the powder drops directly on the work 34 on belt 35. Between this point and the heater, I place a device for removing the excess powder from the work. Said device is of such a form as not to disturb the paper or cards being printed. Preferably I provide a blower 36 having a tube 37 extending therefrom over the belt and provided with a plurality of perforations 38 so placed as to blow the air downwardly and backwardly against the travel of the work. The powder thus removed, falls through the open meshes of belt 6 and into container 39 from which it may be replaced in the cans.

From the foregoing, the operation of my invention will be apparent. The printed cards or sheets in the printing machine may be dropped directly by hand onto the traveling belt 35. From there they are carried first under the shaker or distributor 23 by which deposits on the same, as it passes thereunder, a layer of powdered rosin or other material. The sheet is then carried forwardly under the blower, the air from which removes all the powder except that which sticks to the moist ink of the print. The work then slides down chute 43 onto

the traveling belt 2 of the heater 1 where the print is heated and the rosin melted and dried to create the so-called plateless engraving. The rate of deposit of the powder may be readily regulated by the handle 42 and the distribution of the powder may be equalized by adjusting the handle 42 on the several cams. It will readily be seen that the employment of my attachment will not only perform automatically what has heretofore been done by hand but will be able to perform the operation in a much more rapid rate and much more effectively than has heretofore been done by hand.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. An attachment for plateless engraving heating machines, comprising a traveling belt, means for revolving the same, a container for the print powder above the same from which the powder flows, an oscillatory distributing member between the container and belt, and a blower between the said member and the delivery end of said belt for blowing the excess powder from the paper before it enters the heating machine.

2. An attachment for plateless engraving heating machines, comprising a traveling perforated belt, means for revolving the same, a container for the print powder above the same having apertures in the bottom thereof, an oscillatory sieve-like member between the container and belt, a blower between the said member and the delivery end of said belt for blowing the excess powder from the paper before it enters the heating machine, and a catch pan under said belt for catching said excess powder.

3. An attachment for plateless engraving heating machines, comprising a traveling belt, means for revolving the same, a perforated container for the print powder, means for agitating the powder therein, means on said container for varying the rate of flow of the powder therefrom, an oscillatory member between the containers and belt, and a blower between the said member and the delivery end of said belt for blowing the excess powder from the paper before it enters the heating machine.

4. An attachment for plateless engraving heating machines, comprising a traveling perforated belt, a container for the print powder above the same, a sieve between the container and belt, a blower having an outlet member extending across said belt provided with a plurality of downwardly facing apertures, said member being located between the said member and the delivery end of said belt for blowing the excess powder from the paper before it enters the heating machine, and a catch pan under said belt for catching said excess powder.

5. A powdering attachment for printing or engraving machines, comprising a traveling belt, means for revolving the same, a container for the powder above the same, means for agitating the powder in said container, an oscillatory sieve between the container and belt, and a blower between the said member and the delivery end of said belt for blowing the excess powder from the paper before it leaves the machine.

6. A powdering attachment for printing machines or the like, comprising a traveling belt, means for revolving the same, a container for the print powder above the same, means for agitating the powder in said container, an oscillatory member between the container and belt, a blower between the said member and the delivery end of said belt for blowing the excess powder from the paper, and a common means for driving said agitating means and oscillatory member.

7. A powdering attachment for printing machines or the like, comprising a traveling belt, means for revolving the same, a perforated container for the powder, means for uniformly distributing the flow of the powder therefrom, and a blower having an outlet member extending across said belt and provided with a plurality of apertures adapted to direct the air downwardly and against the travel of the belt, said member being located between the said member and the delivery end of said belt for blowing the excess powder from the paper.

8. An attachment for plateless engraving machines comprising a traveling belt, means for sprinkling powder on the work on said belt, and means for blowing off excess powder including a pipe extending across the belt and provided with a plurality of apertures adapted to direct the air generally downwardly and against the travel of the work.

In testimony whereof I have affixed my signature.

JAMES C. COON.