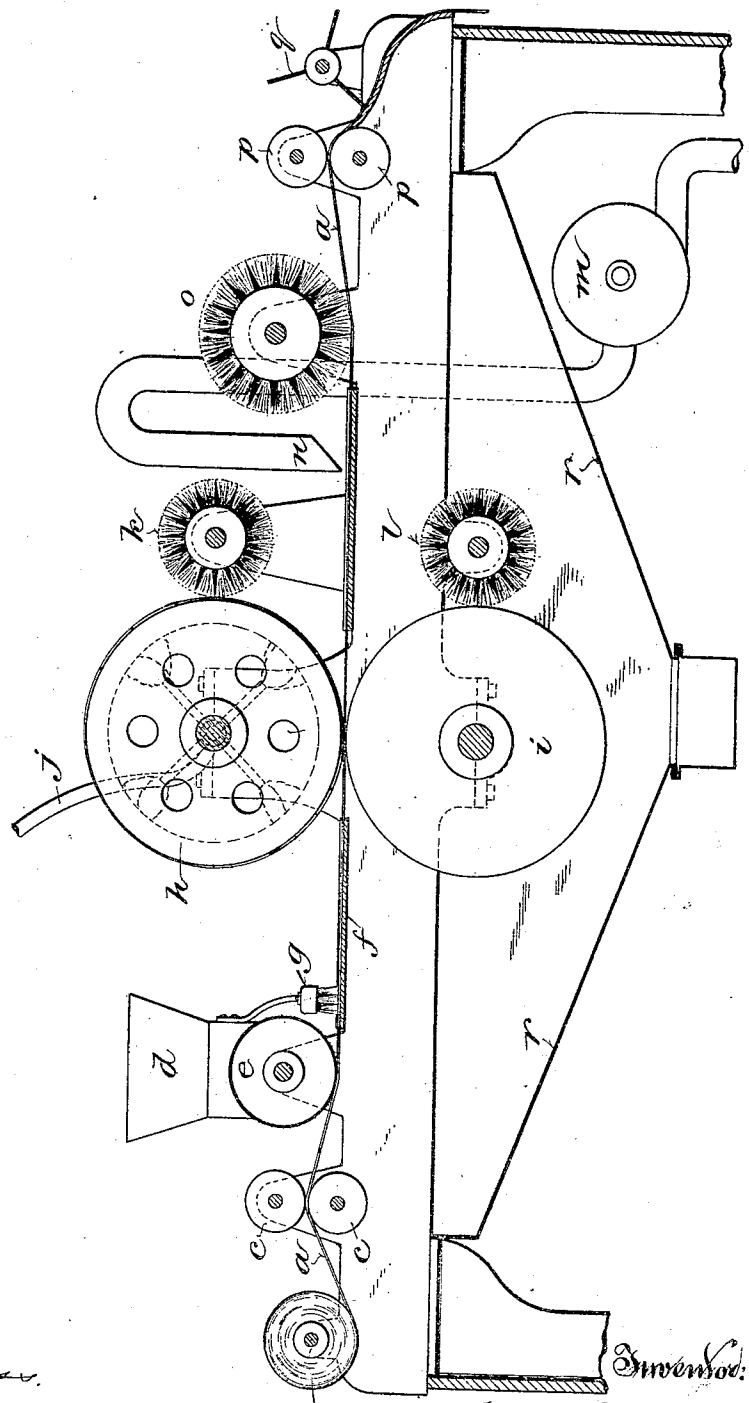
A. E. MUTH.

EMBOSSING MACHINE.

APPLICATION FILED JUNE 8, 1906.

921,438.

Patented May 11, 1909.



Witnesses:

Chas. L. Goss.

Bernard C. Roloff.

Inventor:

Arthur E. Muth

By Wm. Klauber Flansburgh Smith Bothum & Foulkrod

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARTHUR E. MUTH, OF MILWAUKEE, WISCONSIN.

EMBOSSING-MACHINE.

No. 921,438. Specification of Letters Patent. Patented May 11, 1909.

Application filed June 8, 1906. Serial No. 320,720.

To all whom it may concern:

Be it known that I, ARTHUR E. MUTH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Embossing-Machines, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

The main objects of this invention are to produce with bronze or metal powder, embossing having the luster, sharp outlines and appearance of metal leaf work; and to facilitate, reduce the cost of and generally improve this class of work.

It consists in certain novel features of construction and in the peculiar arrangements and combinations of parts as hereinafter particularly described and pointed out in the claims.

The machine herein described with little or no change is applicable to embossing various kinds of material, such as cloth, leather and the like, in various sizes and shapes, as in rolls, continuous or long bands or in separate strips or sheets.

Referring to the accompanying drawing, which shows partly in vertical longitudinal section and partly in side elevation a machine or apparatus for embossing embodying the present invention, the material to be embossed is fed in a continuous or long band or strip *a*, from a spool or reel *b*, on which it is wound between rollers *c* underneath a box or hopper *d*, which is supplied with bronze or metallic powder. A feed roller *e* covered as shown, with velvet, plush or similar material, which serves as a fine brush working in an opening in the lower part of this box or hopper, takes the powder therefrom and deposits it upon the upper face of the band or strip *a*. Passing from the feed roller upon the bed or guide plate *f*, the powder is spread and evenly distributed upon the band or strip *a*, by a brush *g*. From the bed or guide plate *f* the band or strip passes between rotary die and impression members or cylinders *h* and *i*. The die cylinder *h* is formed or provided on its periphery with the desired characters, figures or designs to be embossed in the band or strip *a*, and is heated and maintained at the desired temperature for embossing by an internal burner supplied with gas or oil through a hose or pipe *j* connected with the tubular shaft or hollow trunnion of the cylinder. This cylinder or the dies with which it is formed or provided, is preferably made of nickel bronze or of some alloy or metal which will prevent its becoming clogged with the metal powder. The opposing impression cylinder *i* against which the die cylinder works, may be made of or covered with fiber or similar material to receive the impression of the dies without injury thereto and to the material upon which they operate.

In passing between the cylinders *h* and *i* the desired characters, figures or designs are impressed by the dies upon the loose coating of metal powder into the band or strip *a*. The material to be embossed having been previously treated with a glue or other suitable size to which the metal powder will firmly adhere when applied thereto with heat, the pressure of the powder with the heated dies into or upon the material to be embossed will firmly fix the material thereto, producing characters, figures or designs having well defined sharp outlines and smooth lustrous surfaces closely resembling gold or metal leaf embossing.

The loose surplus bronze or powder adhering to the cylinders *h* and *i* is removed therefrom by rotary brushes *k* and *l*, and the loose surplus bronze or powder remaining on the band or strip *a* after it has passed the die cylinder is removed thereform and recovered for further use by a draft of air produced by a pump or fan *m* through a pipe or suction head *n* opening adjacent to the upper face of said band or strip. After leaving the suction pipe or head *n* the band or strip passes under a rotary brush *o*, which detaches and removes any remaining particles of bronze or powder adhering thereto. From the brush *o* the band or strip of material passes between feed and guide rollers *p* and as it leaves said rollers is subjected to the action of a winged wheel or beater *q*, which keeps it straight and prevents it from becoming tangled as it is delivered from the machine. The surplus bronze or metal powder escaping and removed from the band or strip *a* in its passage through the machine, is caught or deposited in a suitable receptacle *r* for further use.

I claim:

1. In an embossing machine the combination of coacting die and impression embossing members, means for heating one of said members, means for feeding the material to be embossed to said members, and means for dusting with bronze or metal powder the ma-

terial to be embossed as it is fed to said members, substantially as described.

2. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for guiding the material to be embossed between said members, a receptacle for bronze or metal powder and means for transferring the bronze or powder from said receptacle to the material to be embossed before it passes between said members, substantially as described.

3. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for guiding the material to be embossed between said members, a receptacle for bronze or metal powder adjacent to the path of the material passing to said members, means for transferring the bronze or powder from said receptacle to such material and means for evenly spreading the bronze or powder on said material before it is impressed therein by said members, substantially as described.

4. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for guiding the material to be embossed between said members, a receptacle for bronze or metal powder adjacent to the path of the material as it passes to said members, means for transferring the bronze or powder from said receptacle to such material, and means for feeding the material between said members, substantially as described.

5. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, a receptacle for bronze or metal powder adjacent to the path of the material to be embossed as it passes to said members, means for transferring the bronze or powder from said receptacle to the material, and a suction head adjacent to the path of the material as it leaves said members for removing loose surplus bronze or powder, substantially as described.

6. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, a receptacle for bronze or metal powder adjacent to the path of the material to be embossed as it is fed to said members, means for transferring the bronze or powder from said receptacle to the material, and means for removing loose surplus bronze or powder from the die member, substantially as described.

7. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for feeding the material to be embossed to and from said members, a receptacle for bronze or metal powder adjacent to the path of the material on its way to said members, means for transferring the bronze or powder from said receptacle to the material, a suction head adjacent to the path of the material for removing loose bronze or powder therefrom as it passes from said members, and a brush for loosening and removing surplus bronze or powder adhering to the material after it passes said suction head, substantially as described.

8. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for feeding the material to be embossed in continuous strips or pieces between said members, a receptacle for bronze or metal powder adjacent to the path of the material on its way to said members, and means for transferring the bronze or powder from said receptacle to the material, substantially as described.

9. In an embossing machine the combination of coacting die and impression members, means for heating one of said members, means for feeding the material to be embossed between said members in continuous strips or pieces, a receptacle for bronze or metal powder adjacent to the path of the material on its way to said members, means for transferring the bronze or powder from said receptacle to the material, and a beater arranged to act on the material as it passes from the machine, substantially as described.

10. In an embossing machine the combination of a hollow or chambered die cylinder provided with an internal burner for heating the die, an impression cylinder coacting with said die cylinder, rollers for feeding the material to be embossed between said cylinders, guides for directing the material to and from said cylinders, a receptacle for bronze or metal powder adjacent to the path of the material as it passes to the cylinders, and a roller for transferring bronze or powder from said receptacle to the material, substantially as described.

11. In an embossing machine the combination of a die cylinder provided with an internal burner for heating it, an impression cylinder coacting with the die cylinder, means for feeding the material to be embossed between said cylinders, a receptacle for bronze or metal powder adjacent to the path of the material as it passes to said cylinders, means for taking bronze or powder from said receptacle and spreading it on the material, brushes for removing loose surplus bronze or powder from the cylinders and from the material after it leaves the cylinders, and a receptacle arranged to catch the bronze or powder thus removed from the cylinders and material, substantially as described.

12. In an embossing machine the combination of a die cylinder having an internal

burner for heating it, an impression cylinder coacting with the die cylinder, feed rollers for moving the material to be embossed between said rollers, a receptacle for bronze or metal powder adjacent to the path of the material as it passes to the cylinders, a roller for transferring bronze or powder from said receptacle to the material, a brush for spreading the bronze or powder on the material, brushes arranged to remove bronze or powder from said cylinders, a suction head adjacent to the path of the material as it passes from said cylinders, an air forcing device connected with and arranged to produce a draft through said suction head, and a brush arranged to remove loose bronze or powder from the material after it passes said suction head, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

ARTHUR E. MUTH.

Witnesses:

CHAS. L. GOSS,

BERNARD C. ROLOFF.