F. F. BRADLEY.

APPARATUS FOR COATING OBJECTS WITH SUBDIVIDED MATERIAL.

APPLICATION FILED FEB. 27, 1911.

1,068,735.

Patented July 29, 1913.

Fig. 1.

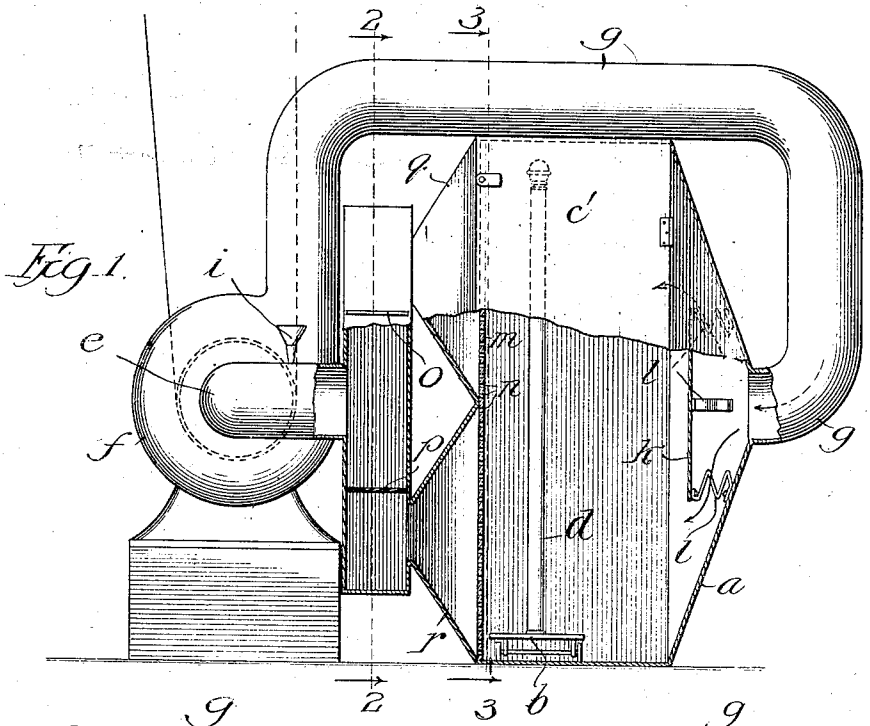


Fig. 2

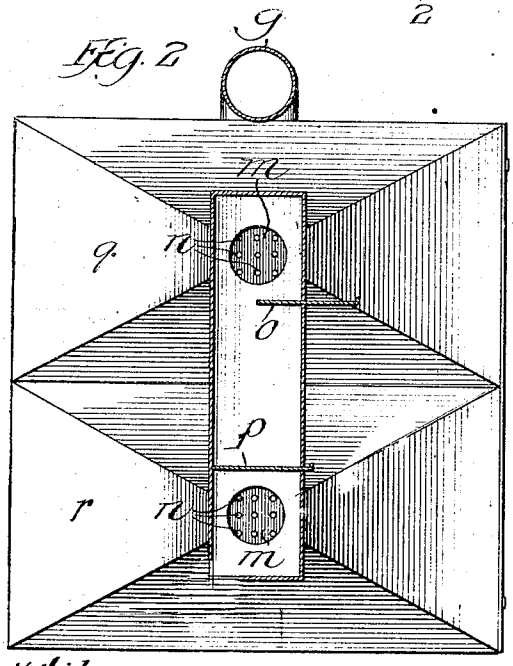
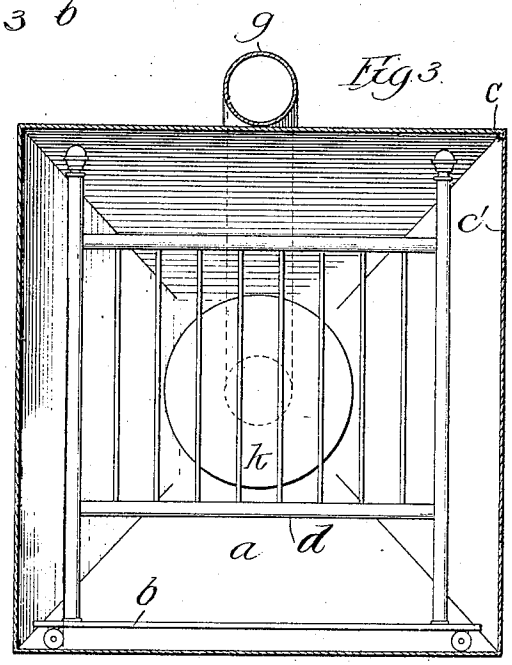


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANKLIN F. BRADLEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO BRADLEY AND VROOMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

APPARATUS FOR COATING OBJECTS WITH SUBDIVIDED MATERIAL.

1,068,735. Specification of Letters Patent. Patented July 29, 1913.

Application filed February 27, 1911. Serial No. 611,042.

To all whom it may concern:

Be it known that I, FRANKLIN F. BRADLEY, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Apparatus for Coating Objects with Subdivided Material, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to apparatus for coating objects with comminuted, subdivided or powdered material and is of particular service in spreading bronze powder upon objects whose surfaces to be coated are covered or painted with suitable adhesive material or paint which in its fresh state holds the powder scattered thereupon and in its dry state firmly fixes the powder in place.

In the preferred way of practising my invention, I employ a receptacle for containing the object that is to be coated with the powdered material, a fan or blower for effecting forced circulation of air through the receptacle, and piping which desirably includes the blower and receptacle in serial relation to establish a closed local path or circuit for the circulating air, though I do not limit myself to this construction.

I have filed application for patents upon apparatus for coating objects with subdivided material as follows: Serial No. 543,215, filed February 11, 1910; Serial No. 550,415, filed March 18, 1910; Serial No. 569,428, filed June 29, 1910; Serial No. 588,730, filed October 24, 1910; Serial No. 588,731, filed October 24, 1910; Serial No. 603,251, filed January 18, 1911; Serial No. 603,726, filed January 20, 1911; Serial No. 609,203, filed February 17, 1911, and Serial No. 609,204, filed February 17, 1911. Serial No. 609,204, filed February 17, 1911, shows the method of my invention.

In practising my invention I employ apparatus for coating objects with subdivided material carried by air including means for effecting the forced passage of air toward the object to be coated, and an air deflecting formation for causing movement of powder laterally of the general direction in which it is being carried by the air.

I will explain my invention more fully by reference to the accompanying drawings showing the preferred embodiment thereof and in which—

Figure 1 is a view partially in section of the preferred form of the apparatus; Fig. 2 is a vertical section on line 2 2 of Fig. 1; Fig. 3 is a vertical section on line 3 3 of Fig. 1.

Like parts are indicated by similar characters of reference throughout the different figures.

The receptacle *a* is shaped suitably to the objects to be received therein, the construction illustration being well adapted to receive metal bedstead parts that are moved into and out of the receptacle upon a truck *b* through a doorway *c*, a bedstead part *d* being illustrated within the receptacle. The doorway constitutes an opening through which the objects to be coated may be passed into the receptacle interior in position to enable the air to be circulated around and toward the objects, and the door c^1 constitutes a closure for said opening for preventing escape of material laden air therethrough while the objects are being coated. A section *e* of suitable piping leads from the air exit side of the receptacle to a power driven fan *f*, the complemental section *g* of the piping leading from the fan to the air entrance side of the receptacle located opposite the air exit side. The powdered or subdivided material, such as bronze powder, is admitted to the piping preferably through an upright funnel *i*. The baffle or deflecting plate *k* is disposed immediately before the opening at the end of the pipe section *g* adjacent to the receptacle opening through which opening air is received into the receptacle.

In the embodiment of the invention illustrated, the baffle plate is in the form of a disk, space intervening between the periphery of the disk like baffle plate and the contiguous wall portions of the receptacle. The baffle plate is carried by ends of legs *l*, the other ends of said legs being mounted upon the receptacle interior as illustrated. The legs *l* are flexible so that the position of the deflecting plate may be adjusted toward and from the air entrance opening and also the plane of the deflecting plate, the legs remaining in the shape to which they are flexed. Material-laden air finding access to the interior of the receptacle will encounter

the baffle plate *k* and will be deflected by the baffle plate toward the adjacent receptacle wall portions and will find passage into the portion of the receptacle in front of the baffle plate through the spaces that intervene between the legs *l* and the space that intervenes between the periphery of the baffle or deflecting plate and the adjacent receptacle wall portions. The deflecting formation causes movement of the subdivided material laterally of the general direction in which such material is being carried by the stream of air moving within the receptacle. The material-laden air that strikes the deflecting plate or formation and which passes into the space in front of the baffle plate also impinges upon other receptacle wall portions and upon the perforated wall portion *m*, whereby the air is caused to move in a multiplicity of directions and to flow in minor currents and eddies, and the material with which the air is laden is, as a consequence, carried to the exposed parts of the object to be coated that have previously been covered with suitable adhesive material such as wet varnish. The wall *m* has a number of perforations *n* throughout the same which cause the air to spread in seeking its outlet from the receptacle, thereby further to insure the carriage of the material with which the air is laden to exposed parts of the object to be coated. These perforations cover an aggregate area that is not in excess of a right cross section through the pipe *e*. The air is caused to have a general movement through the receptacle interior and the place where the air has fullest flow is preferably arbitrarily governed by means of hand valves *o p*, the upper valve *o* being interposed between the fan *f* and the subcompartment *q* through which air is conveyed toward the fan that passes through the upper half of the perforated wall portion *m*. The lower valve *p* is interposed between the fan and the subcompartment *r* through which subcompartment air that finds passage through the lower half of the perforated wall *m* is passed. By opening one valve and closing the other the place where the air has fullest flow through the receptacle is altered and by opening and closing the valves alternately the air may be guided through the receptacle to suit the needs of the work.

While I have used the term "air" throughout the specification and claims, it is obvious that any inert elastic fluid may be used and I use the term "air" in the claims in this broad sense.

While I have located the baffle plate in the place indicated, I do not wish to be limited to such location as other locations may be selected without departing from the spirit of my invention. While I have shown a type of machine in which the baffle plate has been disposed, I do not wish to be limited to this type of machine.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:—

1. Apparatus for coating objects with subdivided material carried by air including a receptacle for the objects; mechanism for forcing passage of air in the receptacle in a stream; and an air deflecting formation for causing movement of subdivided material laterally of the general direction in which it is being carried by the stream of air moving within the receptacle.

2. Apparatus for coating objects with subdivided material carried by air including means for effecting the forced passage of air toward the object to be coated; and an air deflecting formation for causing movement of the subdivided material laterally of the general direction in which it is being carried by the air.

3. Apparatus for coating objects with subdivided material carried by air including a receptacle for the objects; mechanism for forcing passage of air in the receptacle and an air deflecting formation for modifying the direction of movement of the air to convey material with which the air is laden to exposed parts of the object that are to be coated therewith.

4. Apparatus for coating objects with subdivided material carried by air including a receptacle for the objects that serves to cause air forced to move therein to flow in a stream, said receptacle having an opening through which objects to be coated may be passed into the receptacle interior; mechanism for forcing passage of air within the receptacle which receptacle operates upon the air to cause the air to move in a stream to convey the material with which the air is laden to exposed parts of the object that are to be coated; and an air deflecting formation for causing movement of subdivided material laterally of the general direction in which it is being carried by the stream of air within the receptacle.

In witness whereof, I hereunto subscribe my name this twenty fifth day of February A. D., 1911.

FRANKLIN F. BRADLEY.

Witnesses:
G. L. Cragg,
E. L. White.