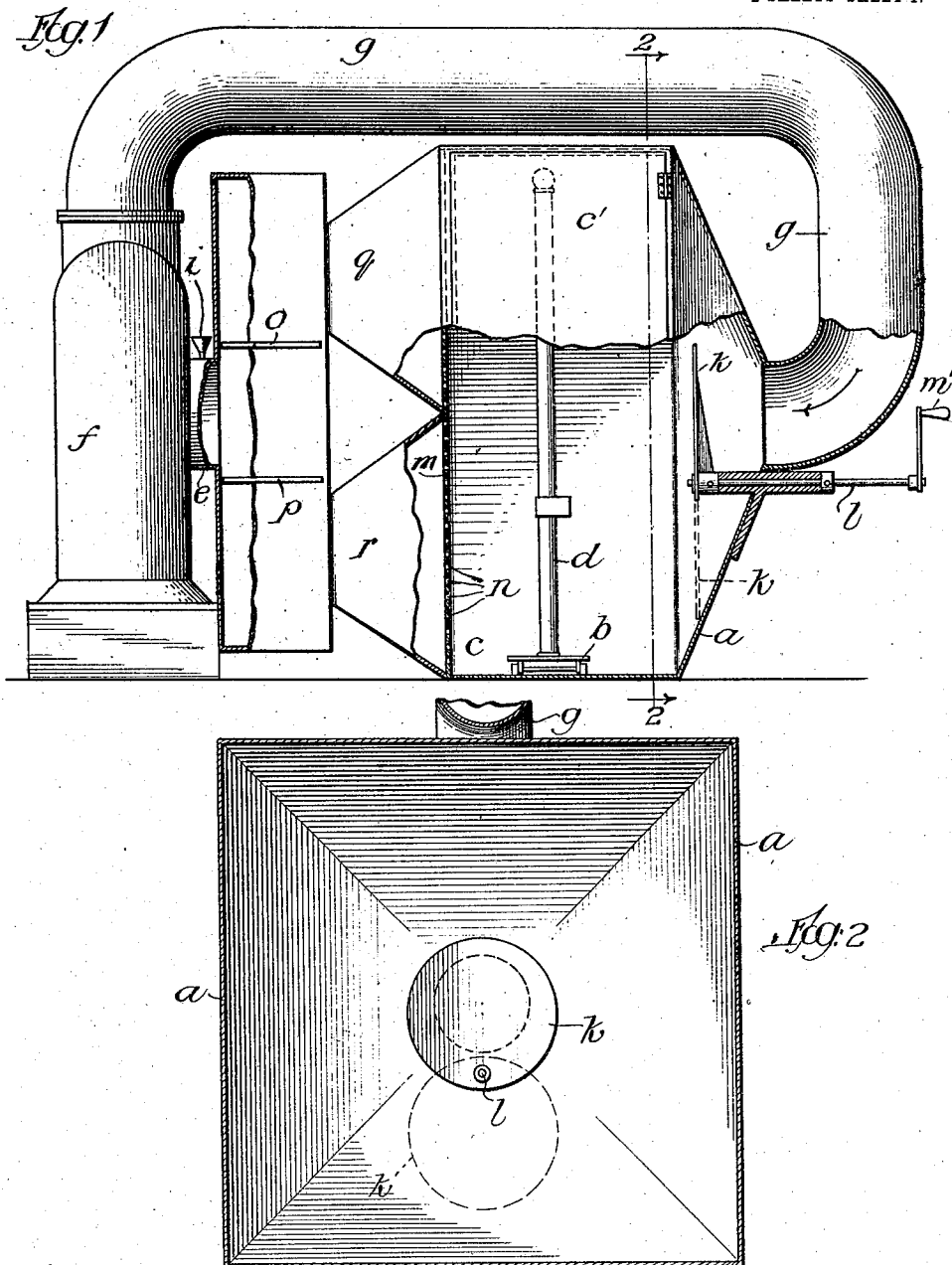


F. F. BRADLEY.
 PROCESS OF COATING OBJECTS WITH SUBDIVIDED MATERIAL.
 APPLICATION FILED MAR. 27, 1911.

995,999.

Patented June 20, 1911.

2 SHEETS—SHEET 1.



Witnesses:
 Geo. C. Davidson.
 Harold A. Barnett.

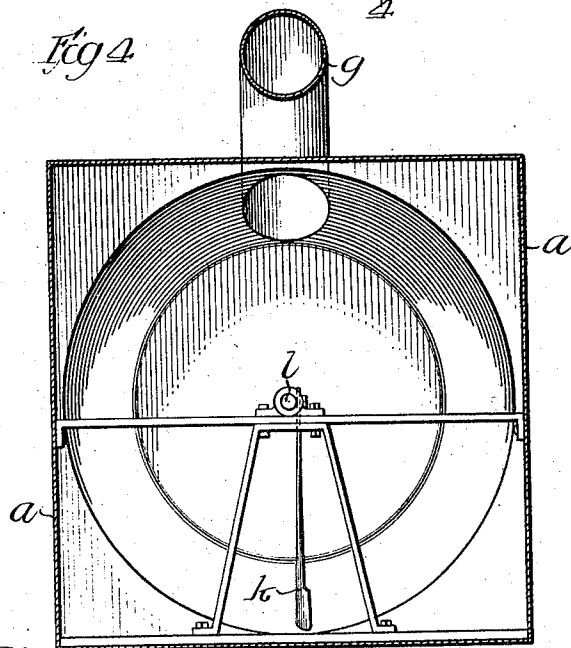
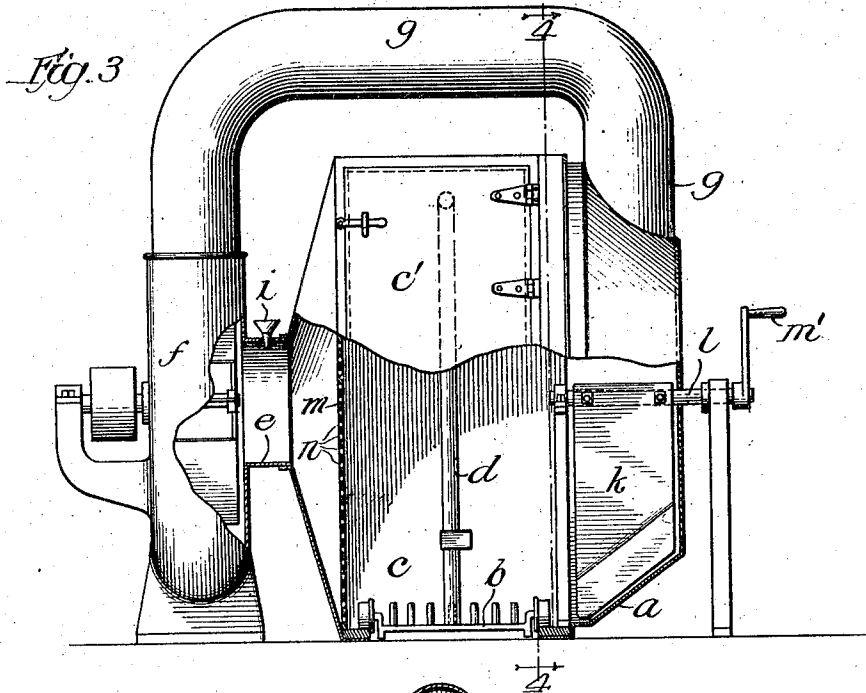
Inventor:
 Franklin F. Bradley,
 By *H. L. Cragg* Atty

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2 SHEETS—SHEET 2.



Witnesses:
E. J. Harrison.
Harold G. Barrett

Inventor:
Franklin F. Bradley
by C. L. Croft, Atty.

UNITED STATES PATENT OFFICE.

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

PROCESS OF COATING OBJECTS WITH SUBDIVIDED MATERIAL.

995,999.

Specification of Letters Patent. Patented June 20, 1911.

Application filed March 27, 1911. Serial No. 617,149.

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 Processes of 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 a process of coating objects, with subdivided material and more particularly to those processes wherein air or gas in which the subdivided material is adapted to float is forced to move in streams toward the objects to be coated with the subdivided material.

In practicing my invention the objects to be coated have adhesive material placed thereupon whereafter these objects are inserted in a receptacle which holds a body of gas in position to enable the objects to be enveloped by the body of gas. Gas, preferably air, carrying the subdivided material is caused to flow toward the objects to be coated. I deflect the subdivided material laterally of the general direction of movement of the stream of gas carrying the subdivided material, whereby the subdivided material is more effectively and speedily brought into contact with the surfaces that are to be coated therewith.

My invention is of particular utility in the coating of objects with bronze powder. A gas which is appropriate for enabling the bronze particles to float is air, and I will therefore describe my invention as it is used in connection with apparatus in which bodies of air are employed as means for floating bronze particles, though I do not limit myself to the use of air for this purpose.

The accompanying drawings illustrate two forms of apparatus that may be employed in the practice of my invention and in which drawings—

Figure 1 is a vertical elevation, partially in section, of one form of apparatus; Fig. 2 is a sectional view on line 2 2 of Fig. 1; Fig.

3 is a view of another form of apparatus that may be employed; and Fig. 4 is a sectional view on line 4 4 of Fig. 3.

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

Referring first more particularly to Figs. 1 and 2, the receptacle *a* is shaped suitably to the objects to be received therein, the construction illustrated 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 in position to be enveloped by the air. 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 *e* 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 complementary 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 *h*. The baffle or deflecting plate *k* is of disk formation, in the structure of Figs. 1 and 2, and is mounted near its periphery upon a horizontal rotatable shaft *l*, a hand crank *m* being employed to rotate the shaft. The object to be coated with the subdivided material has a coating of adhesive material first applied thereto and is thereafter inserted within the receptacle so as to be substantially clear of the receptacle walls whereupon the material-laden air is caused to move toward the object as a consequence of the operation of the fan. The object to be coated is thus enveloped by the body of gas and the moving gas is caused to convey the subdivided material to the object that is to be coated therewith, and in order to improve the result of the operation, the subdivided material carried by the flow-

ing gas is deflected laterally of the general direction in which the subdivided material is being carried by the gas. The portion of the gas that immediately surrounds the particles of subdivided material that are laterally deflected is also preferably deflected in a similar direction. By means of the handle m' the disk deflector may be brought immediately in front of the opening as indicated in full lines in Figs. 1 and 2, so as to enable said deflector to deflect the particles of subdivided material laterally or transversely. By turning the shaft the disk deflector may be brought into the position illustrated by the dotted lines where it is practically out of service. The disk deflector may be placed in various intermediate positions so that its effect upon the particles of subdivided material in moving them laterally may be graded. When the baffle or deflecting plate k is in the position illustrated by full lines, spaces intervene between its periphery and the contiguous wall portions of the receptacle, the material-laden air finding access to the interior of the receptacle through these spaces, some of the air striking the deflecting or baffle plate which deflects the material carried thereby laterally of the general direction in which such material is being carried by the 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 sub-compartment 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 sub-compartment r , through which sub-compartment air that finds passage through the lower half of the perfo-

rated 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.

The apparatus illustrated in Figs. 3 and 4 is similar, in many respects, to the apparatus shown in Figs. 1 and 2, and similar parts are given similar characters of reference. The deflector k' in the structure of Figs. 3 and 4 is adapted to be rotated in a plane that is at right angles to the plane of the deflector, instead of in a plane which is coincident with the plane of the deflector in the case of the structure in Figs. 1 and 2. In the structure of Figs. 3 and 4 the axis of rotation of the deflector is included within the plane of the axis of the right hand and incoming length of air conveying piping and is disposed at right angles to the axis of such incoming length of piping so that the subdivided material conveyed to the deflector by the incoming air may be deflected at various angles laterally of the general direction in which the air is moving within the receptacle as the deflector is turned by the hand crank m' . By means of the mechanism shown in Figs. 3 and 4 a very effective and desirable distribution of the subdivided material is occasioned within the receptacle interior so that all parts of the object that are provided with adhesive material are suitably coated with the subdivided material that is carried to the object by the air in which the subdivided material is adapted to flow.

I have broadly claimed a process of coating objects with subdivided material in my co-pending application Serial No. 614,001, filed March 13, 1911. I have also disclosed apparatus for coating objects with subdivided material in my applications Serial No. 543,215, filed February 11, 1910; Serial No. 550,115, 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. 603,726, filed January 20, 1911; Serial No. 609,203, filed February 17, 1911; Serial No. 611,042, filed February 27, 1911; and Serial No. 614,879, filed March 16, 1911.

While I have herein shown and particularly described two types of apparatus that may be used in practicing the method of my invention, I do not wish to be limited to such apparatus for the purpose of practicing my improved process.

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

The process of coating objects with subdivided material which consists in placing adhesive material upon the object to be

coated; inserting said object in a receptacle
which holds a body of gas in position to
enable the object to be enveloped by said
body of gas; causing the flow of gas toward
5 the object to be coated; causing said gas to
convey subdivided material to the object
that is to be coated therewith; and deflect-
ing the gas transversely of its general direc-
tion of movement thereby to deflect the sub-
10 divided material transversely of the general

direction in which it is being carried by
the gas.

In witness whereof, I hereunto subscribe
my name this 10th day of March A. D.,
1911.

FRANKLIN F. BRADLEY.

Witnesses:

G. L. CRAGG,
GEO. C. DAVISON.