

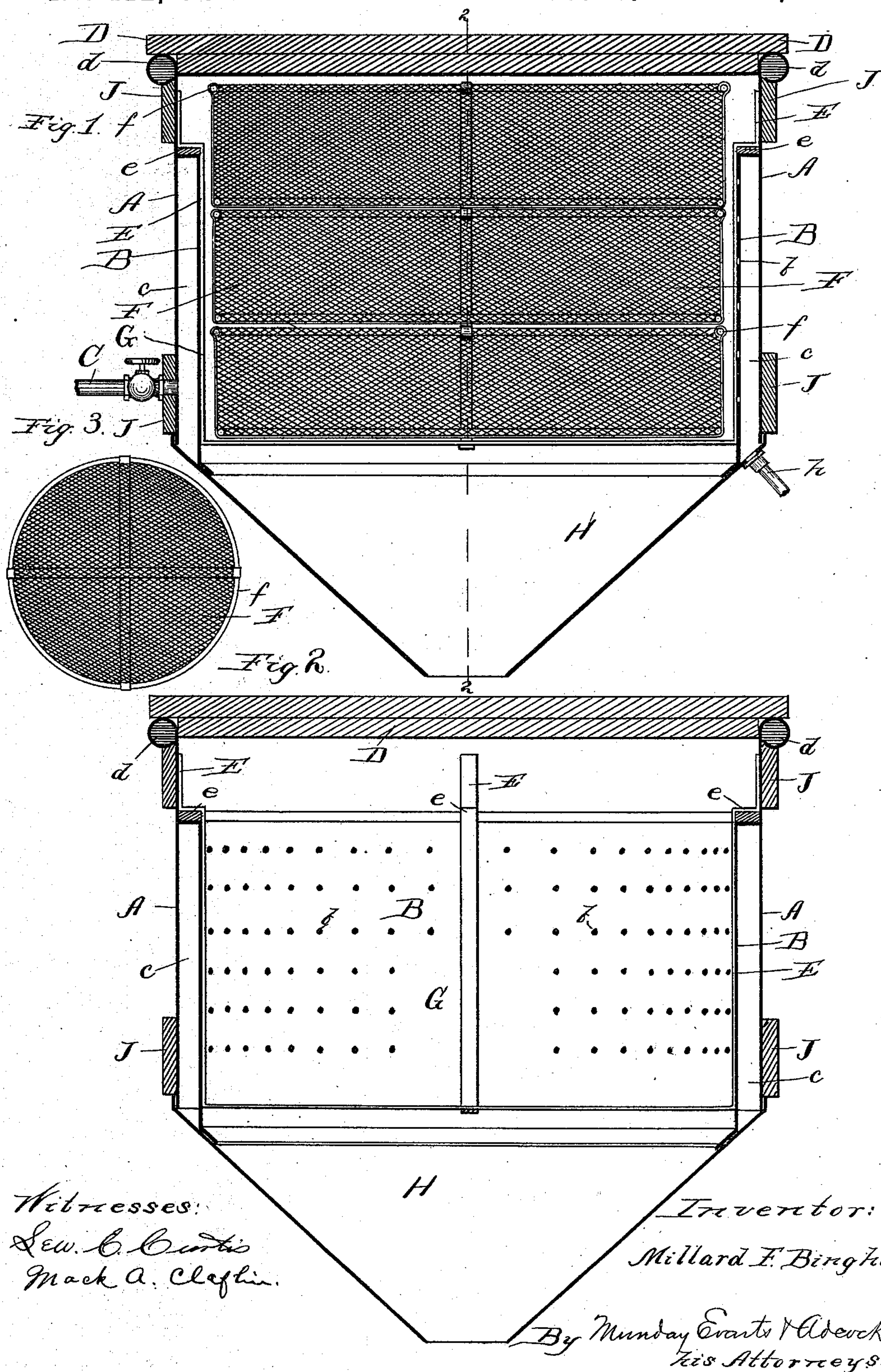
(No Model.)

M. F. BINGHAM.

APPARATUS FOR MELTING GLUE.

No. 412,720.

Patented Oct. 15, 1889.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MELTING GLUE.

SPECIFICATION forming part of Letters Patent No. 412,720, dated October 15, 1889.

Application filed March 8, 1889. Serial No. 302,509. (No model.)

To all whom it may concern:

Be it known that I, MILLARD F. BINGHAM, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Apparatus for Melting Glue, of which the following is a specification.

This invention relates to apparatus to be used in melting or reducing to a fluid condition the glue used in printers' rollers, and more especially for use in the practice of the process of preparing the glue for the casting operation set forth in a companion application filed herewith.

The apparatus consists of a steam-chamber, and is formed of a covered outer cylinder, an interior perforated partition, preferably in the form of an inner cylinder, a steam-space being formed between the two, and a steam-inlet, in combination with open-work trays for the glue, adapted to be suspended in the chamber. These and other features of the invention will be fully understood from the following description and the accompanying drawings, in which—

Figure 1 is a central vertical section of the apparatus; and Fig. 2, a section upon the line 2 2 of Fig. 1, the glue-holding trays being omitted. Fig. 3 is a plan of one of the glue-holding trays.

In said drawings, A represents the exterior cylinder, forming a steam-chamber, in which the glue is liquefied.

B is an interior partition or cylinder, perforated at *b*, for diffusing the steam.

C is a pipe admitting steam to the space *c* between the two cylinders.

D is a cover which rests upon the circular rod *d*, running around the upper edge of the cylinder A. The interior of the chamber is provided with metal straps E, resting upon the interior ledge *e* and sustaining the perforated glue screens or trays, of which there may be one or a series placed one above the other. The glue trays or screens, which are indicated by F, are preferably formed of wire-cloth throughout, stiffened at their top edges by a wire *f*; but they may be made of perforated metal or other material. They should preferably give as free access by the steam to the glue as possible, to the end that all portions of the latter may be speedily af-

fectured. The steam taken in at the inlet C passes to the interior of the chamber through the perforations *b* of the partition B and quickly fills the entire chamber, thus gaining access to the glue at the top, bottom, and sides of each of the trays. That portion of the partition opposite the steam-inlet is preferably not perforated, as shown at G, the object of such feature being to prevent direct access by the steam to the glue before it has been deprived of the projecting force with which it passes out of the inlet. It is thus caused to diffuse itself through the space *c* and to gently permeate the chamber without being forcibly blown thereinto, avoiding injury by overmoistening of any portion of the glue, upon the one hand, and producing a uniform condition throughout the mass, upon the other hand. By providing the chamber with this interior perforated cylinder or partition another useful result is obtained, in that much of the water of condensation is prevented from passing into and mixing with the glue, whereby I avoid overmoistening; and the water of condensation thus excluded falls down to the bottom of the space *c*, and is conducted therefrom by the drain-pipe *h*. As the glue liquefies it drops from the trays and is caught by the funnel-shaped bottom H, by which it is conducted into any appropriate receiver. This bottom, being open, allows the steam as it becomes cooled to pass out and give way to fresh hot steam from the inlet, thus avoiding much of the condensation which would otherwise take place and become mixed with glue, while the heat is kept up to an effective point during the whole operation. The glue may be placed in the perforated trays to the depth of four inches, or any depth which will not prevent the active operation of the steam upon all the mass or interfere with the flowing off of the fused portions. The chamber may be strengthened by the bands J, and the trays may rest upon each other or be independently supported, as preferred.

By the use of this apparatus the fusing of the glue is very much quickened from the old method and the glue is not injured by long-continued heating.

I claim—

1. The apparatus for melting glue, consisting of the covered steam-chamber A, having

- an interior perforated partition for diffusing the steam, and a steam-inlet, in combination with open-work trays for the glue, adapted to be suspended in said chamber, substantially as set forth.
2. The apparatus for melting glue, consisting of the covered cylinder A, an inner perforated cylinder B, the two forming a steam-space c, and a steam-inlet, in combination with open-work trays for holding the glue, adapted to be suspended within the inner cylinder, substantially as set forth.
3. The apparatus for melting glue, consisting of the covered chamber A, having a steam-inlet, and means for diffusing and breaking up the current of the steam, in combination with one or more trays for holding the glue and adapted to be suspended in said chamber, substantially as set forth.
4. The apparatus for melting glue, consisting of a covered chamber having a steam-inlet and provision for catching the melted glue as it drops from the trays, in combination with open-work trays, in which the glue may be suspended in said chamber, substantially as set forth.

5. The apparatus for melting glue, consisting of a chamber covered at the top and permanently open at the bottom, and having a steam-inlet, in combination with one or more trays, in which the glue may be suspended in said chamber, substantially as set forth.

6. The combination, with the chamber A and its steam-inlet, of an interior partition for diffusing and breaking up the current of steam, such partition being perforated except in that portion opposite the inlet, and trays for holding the glue, substantially as set forth.

7. The combination, with the chamber A and its steam-inlet, of the inner perforated cylinder B, the two forming the space c, wherein the steam is diffused around the chamber and its currents broken up, the drainage-pipe h, for draining off the water of condensation from such space c, and trays for holding the glue, substantially as set forth.

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Witnesses:

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