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C. M. OLIVER.

MACHINE FOR OXIDIZING MATRICES FOR ELECTROTYPING.

APPLICATION FILED AUG. 26, 1902.

NO MODEL.

FIG. 1.

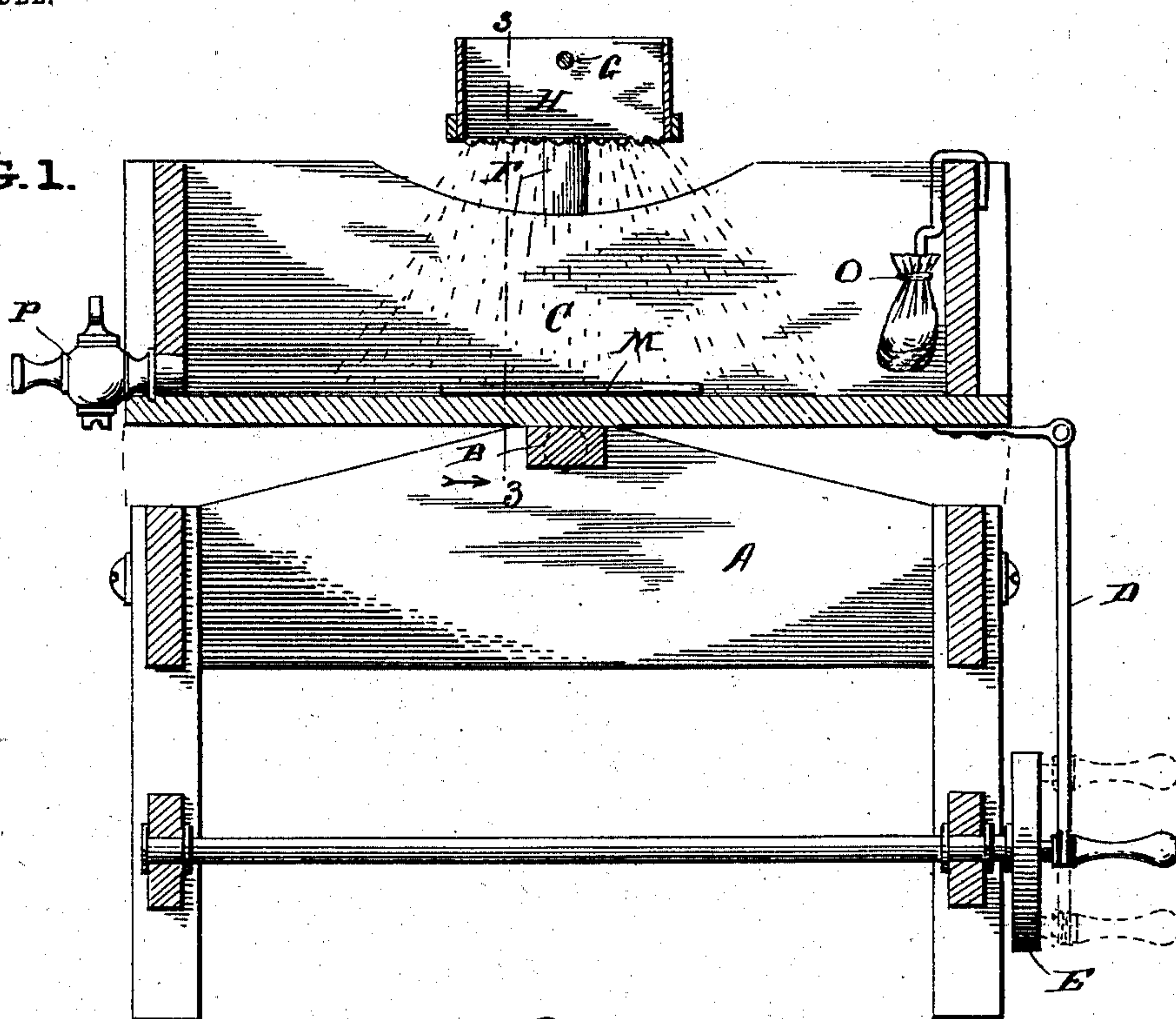


FIG. 2.

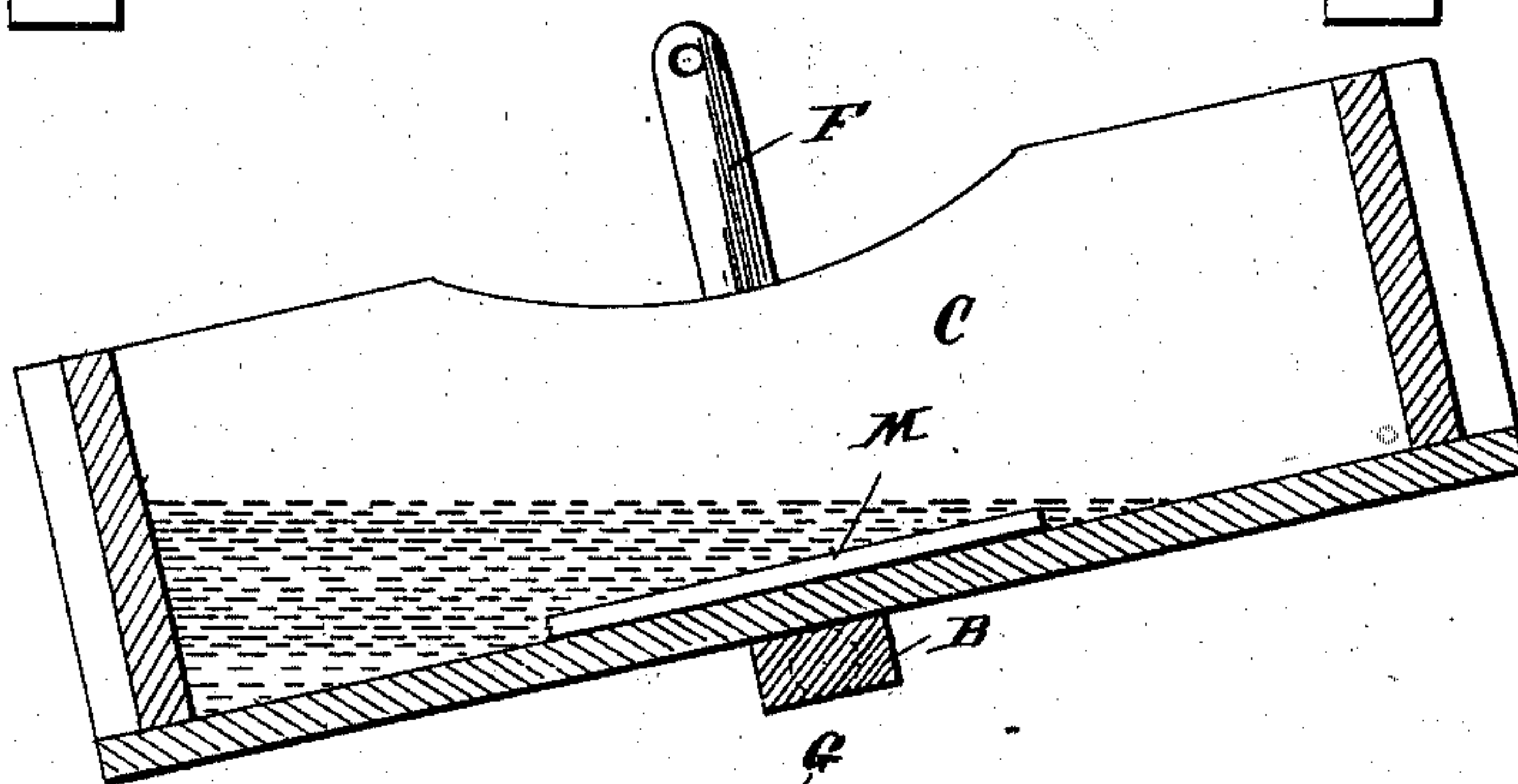
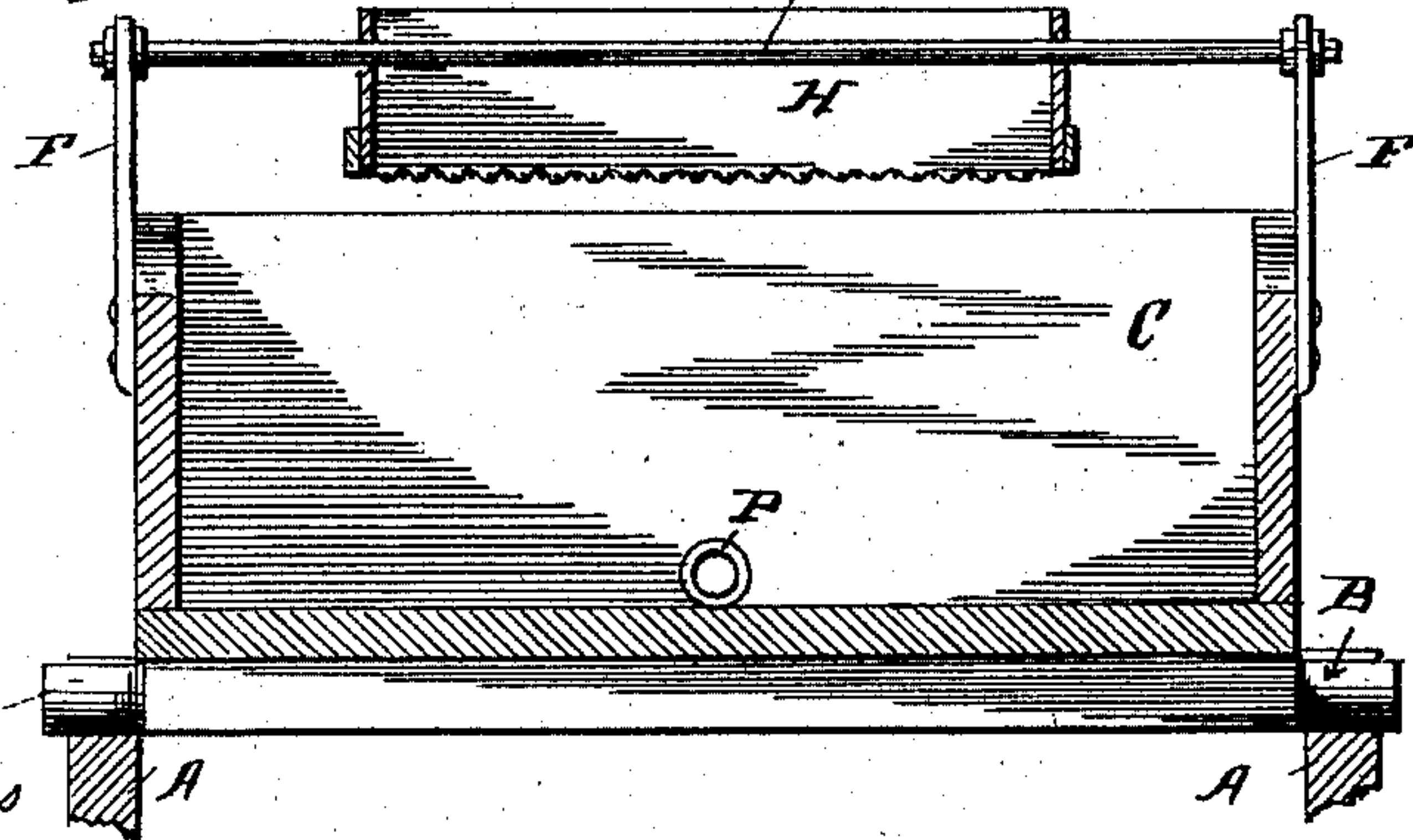


FIG. 3.



Witnesses.

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CHARLES M. OLIVER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-THIRD
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MACHINE FOR OXIDIZING MATRICES FOR ELECTROTYPING.

SPECIFICATION forming part of Letters Patent No. 719,953, dated February 3, 1903.

Application filed August 26, 1902. Serial No. 121,081. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. OLIVER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Machines for Oxidizing Matrices for Electrotyping, of which the following is a specification.

This invention relates to machines for the oxidation of molds or matrices preparatory to electrotyping.

The object of the invention is to apply iron-filings or other fine-metallic particles to the face of molds or matrices and to spread or distribute the same more promptly and uniformly than has been feasible heretofore.

The invention consists in the constructions and combinations hereinafter pointed out and claimed.

Figure 1 is a section through the sieve, trough, and support, showing mold in trough. Fig. 2 is a section of trough in different position, showing mold and liquid. Fig. 3 is a cross-section on line 3 3, Fig. 1, parts being omitted.

The frame A is of any suitable form to support the axle or trunnions B B, which axle or trunnions support the trough C. The trough C is so balanced on the trunnions as to swing or rock easily thereon. A pitman D, as shown, is connected to a pivot or pin on the trough and to a crank wheel or disk E, mounted on the frame, which disk is caused to rotate by any suitable power. This swings or rocks the trough C, one end being depressed and the other elevated alternately. Any other mechanism for rocking the trough is considered equivalent mechanism, as it is quite immaterial by what means the trough is rocked.

The trough C has standards F F, and a cross-bar G extends from standard to standard. On this cross-bar G, which preferably is a round rod, a sieve H is arranged, so as to both slide and swing on the rod.

The mold or matrix M which is to be electrotyped is supposed to have been black-leaded or otherwise prepared for oxidation before it is placed in the trough C with its face upward. Then sieve H is shaken or vi-

brated and iron-filings or other particles of metal are shaken down through the reticulated or perforated bottom thereof onto the mold M in the trough C. The trough C is open from end to end and contains a liquid, and it may also contain a bag O of metallic salts of a character calculated to attack the iron-filings. Sulfate of copper is the agent usually employed in this bag. When the trough is rocked, any liquid therein contained is "swashed" back and forth over the mold, carrying with it the particles of metal shaken down onto the mold. The waves of liquid wash the particles of metal back and forth over said mold, and the chemical in the liquid is brought into position to act with great efficiency on the metallic particles. The metal particles are thus spread out or distributed over the face of the mold, thereby producing a more complete oxidation of the mold than has been effected by other mechanism, so far as I am aware. The swashing of the liquid back and forth in the trough causes it to come in contact with and percolate through the porous material of bag O, and the liquid may thus wash out some of the soluble material from the bag. The bag, being preferably suspended at one end of the trough, will be lifted out of the liquid when that end of the trough to which it is attached is lifted in its rocking movement.

Metallic particles or iron-filings are usually spread onto a mold or matrix of the character described by means of a brush. The brushing is liable to injure the fine lines of the mold, and the metallic particles are not so thoroughly and evenly distributed as is desirable. By washing or distributing with a liquid the oxidizing metal or material a much more uniform coating is effected without danger of injury to the mold. Furthermore, the "swashing" of the liquid back and forth in the trough tends to dissolve the chemical substance in bag or receptacle O and to mix and maintain a practically uniform strength or density of the chemical solution contained in the trough.

The liquid may be withdrawn from the trough through cock P, and the undissolved iron-filings can then be strained out and

again used. The chemical agent can be purified and regenerated in any usual way.

What I claim is—

1. The combination, in a machine for oxidizing molds or matrices, of a trough suitably supported so as to be oscillated, and a sifter supported by said trough.

2. The combination of a rocking trough for containing molds or matrices, means for moving said trough, and means for shifting the metallic particles on the mold or matrix in the trough.

3. The combination of the supporting-frame, a flat-bottomed trough open from end to end, trunnions supporting said trough from the frame, and means for rocking the trough on its trunnions.

4. The combination of the frame, an open trough trunnioned thereon, a porous receptacle suspended for rocking said trough, and

means within the trough for adding to the chemical supply in the trough.

5. The frame, open trough trunnioned thereon, and the sifter supported from said trough by a transverse bar extending across the trough, all combined substantially as described.

6. In a machine for oxidizing molds or matrices, a rocking trough, a liquid contained therein to flow across the mold or matrix when said mold or matrix is in the trough, and means for supplying metallic powder to the mold or matrix while in the trough.

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

CHARLES M. OLIVER.

Witnesses:

MAURICE JOYCE,
CHAS. K. DAVIES.