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C. Thomas

Paint Mill.

No. 20,102.

Patented Apr. 27, 1858.

Fig. 3

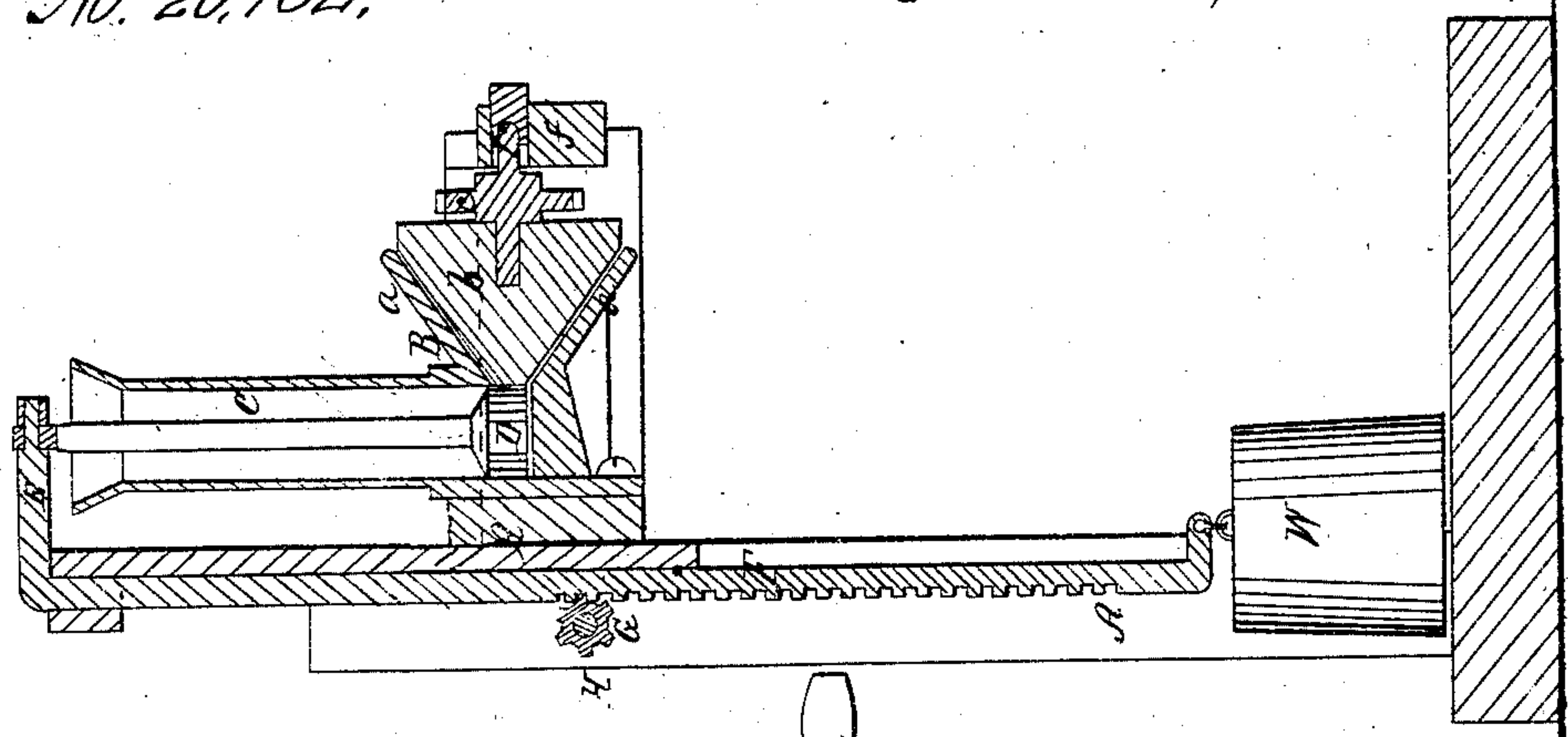


Fig. 2

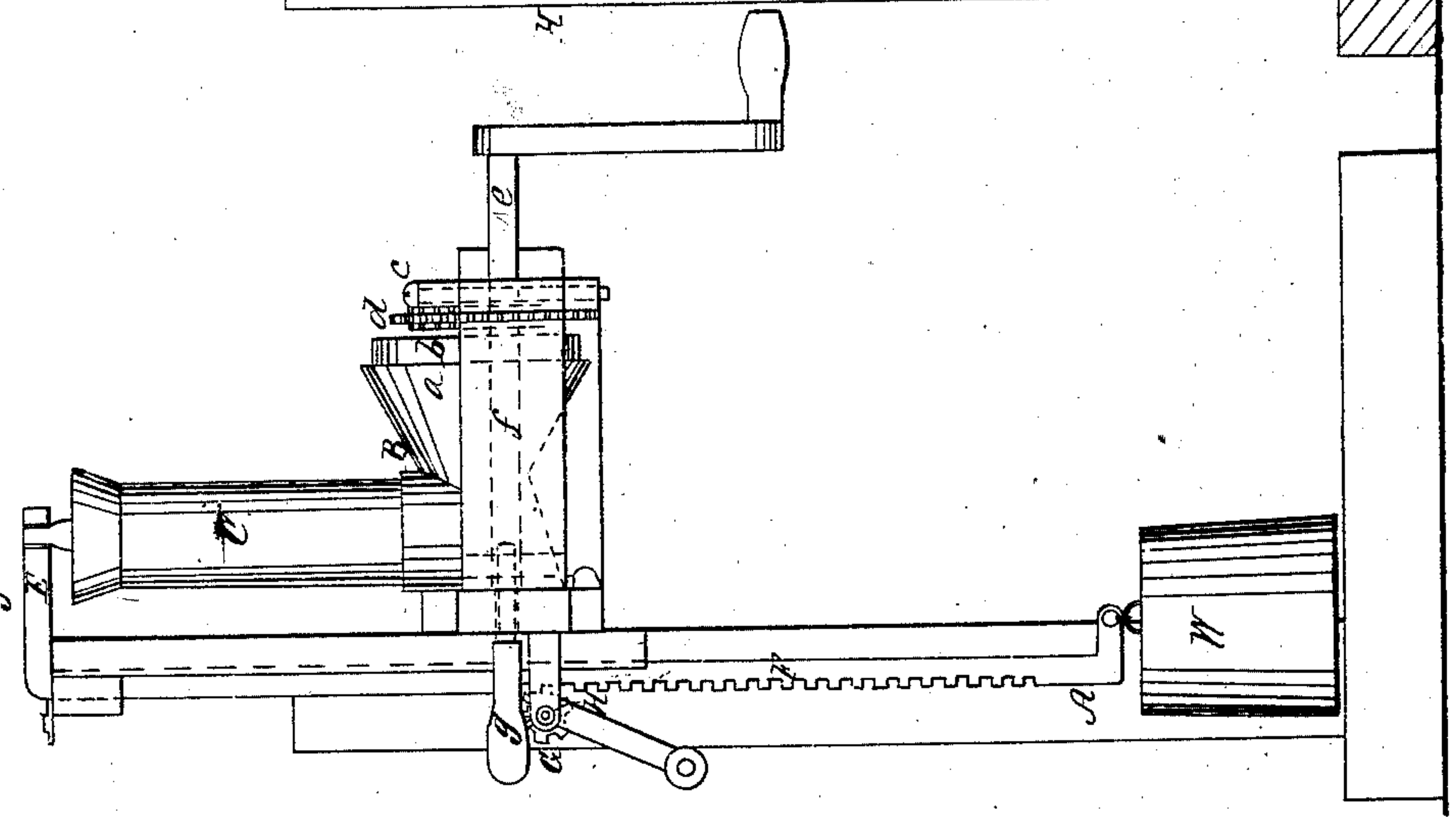
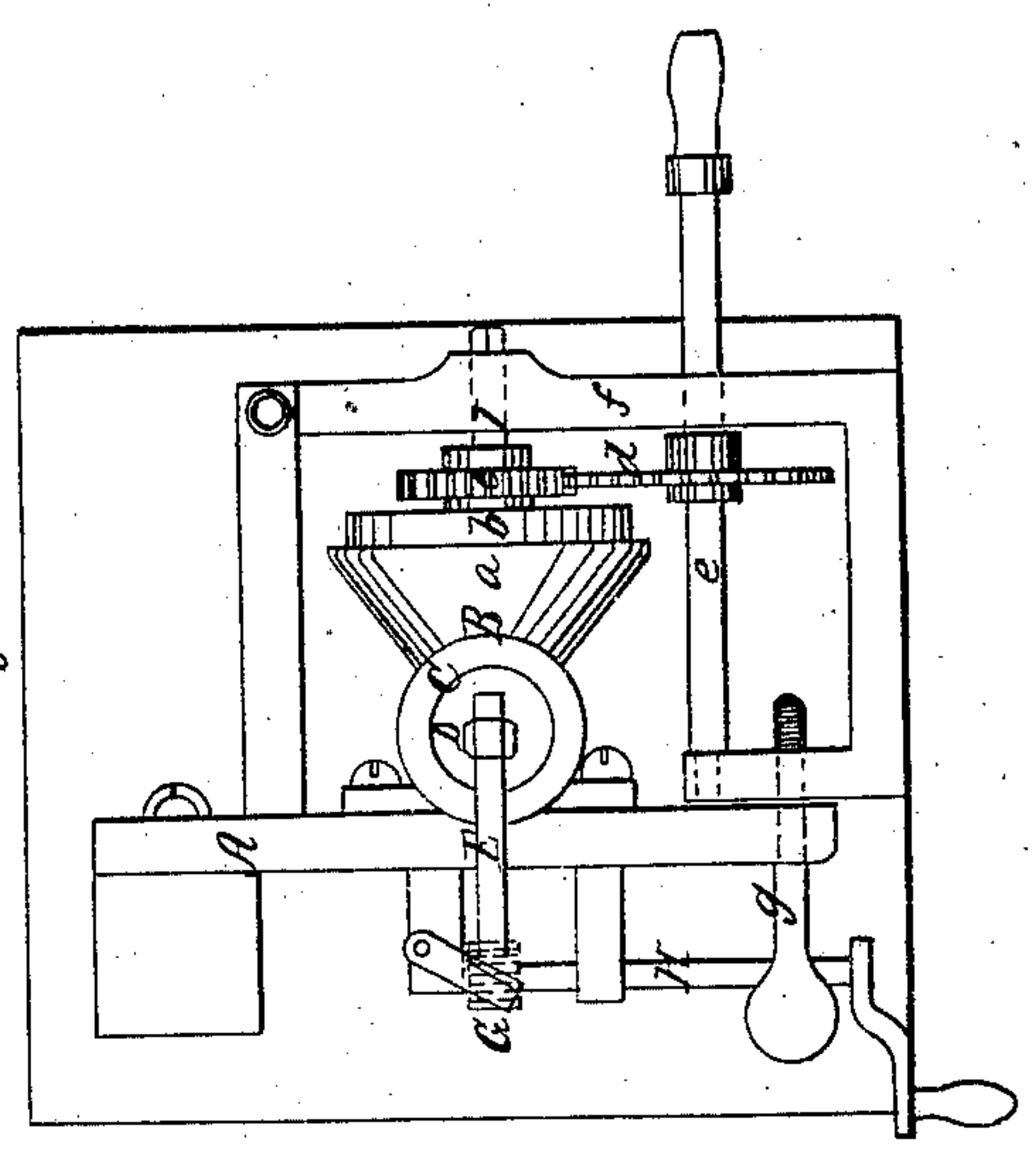


Fig. 1



# UNITED STATES PATENT OFFICE.

CHAUNCEY THOMAS, OF WEST NEWBURY, MASSACHUSETTS.

## MILL FOR GRINDING PAINT.

Specification of Letters Patent No. 20,102, dated April 27, 1858.

*To all whom it may concern:*

Be it known that I, CHAUNCEY THOMAS, of West Newbury, in the county of Essex and State of Massachusetts, have invented an Improved Mill for Grinding Paint; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

10 Figure 1, is a top view. Fig. 2, a side elevation, and Fig. 3, a vertical section of it.

In the drawings, A denotes the stand or frame for supporting the operative parts; B, the mill composed of a stationary hollow cone, *a*, and a conical rotary grinder, *b*.

15 Instead of employing a hopper to receive the semifluid material or paint to be ground and to introduce it into the grinder, I make use of a force pump or equivalent apparatus. The barrel of such force pump is shown at C, as affixed to and extended above and made to open at its lower end into the rear part of the hollow grinding cone, *a*. With this barrel, C, a piston, D, operates. 25 This piston is hinged or jointed to a bent bar or arm, E, which extends from a toothed rack, F, and over the pump barrel as shown in the drawings, the connection of the piston with such arm being in the nature of a hinge 30 or such as will allow the piston to turn or swing on or under the arm, and so as to enable the piston after being raised out of the pump to be swung or moved out of the way in order to allow the pump to be supplied 35 with the paint or material to be ground. The rack slides freely up and down and engages with a pinion, G, fixed on a cranked shaft H. By rotating the shaft H, the rack will be put in motion. Furthermore, a 40 weight, W, of the necessary size is hung or affixed to the rack—such weight by its gravitating power serving to depress the piston in the pump barrel or cylinder and to force from the same and into the grinder or mill 45 the liquid paint during the process of grinding.

The part, *b*, of the grinder is pivoted against one end of a rotary shaft, I, which carries a gear, *c*, that engages with another 50 gear, *d*, fixed on a cranked driving shaft, *e*. By turning the shaft, *e*, the shaft, I, will be

put in revolution. Such driving shaft is supported in a movable frame, *f*, one end of which is hinged to the grinder frame, A, while its other end is drawn toward such 55 frame by a screw, *g*. The frame, *f*, sustaining the outer end of the shaft, I, such shaft being so applied to the part, *b*, of the mill, as to cause it to revolve when such shaft is put in revolution. 60

By means of the above described improved mill, a thick semifluid matter or composition of oil or a fluid and a pigment can be ground much faster and in a better manner than in a common paint mill provided with a hopper and no forcing apparatus or pump. Furthermore, I am enabled to employ the expansion of air in driving the material out of the pump barrel and through the grinder for after any portion 70 of the material has been forced from the pump barrel into the grinder, if I raise the piston out of the barrel and again introduce it therein, there will be a quantity of compressed air between the piston and the 75 mass of paint in the barrel. This air will not only operate to advantage in expelling the material from the pump barrel, but afterward may be made to perform a useful function, viz., that of causing most, if 80 not all the paint left in the grinder to be driven out of the same while the grinder is in operation.

I claim—

1. The combination of the forcing pump 85 (or its equivalent) with the grinder or mill for grinding paint, and so as to operate therewith substantially as described.

2. I also claim the mode of combining the piston with the mechanism or means of elevating and depressing it, that is to say, by such a mechanical device or devices as will not only allow the piston to be elevated out of the pump, but swung laterally out of the way or beyond the mouth of the pump, when 95 receiving the material to be ground.

In testimony whereof I have hereunto set my signature.

CHAUNCEY THOMAS.

Witnesses:

JOHN C. CARR,

HARRIET N. BAILEY.