

(No Model.)

G. L. IRWIN.

APPARATUS FOR THE MANUFACTURE OF WHITE LEAD.

No. 318,374.

Patented May 19, 1885.

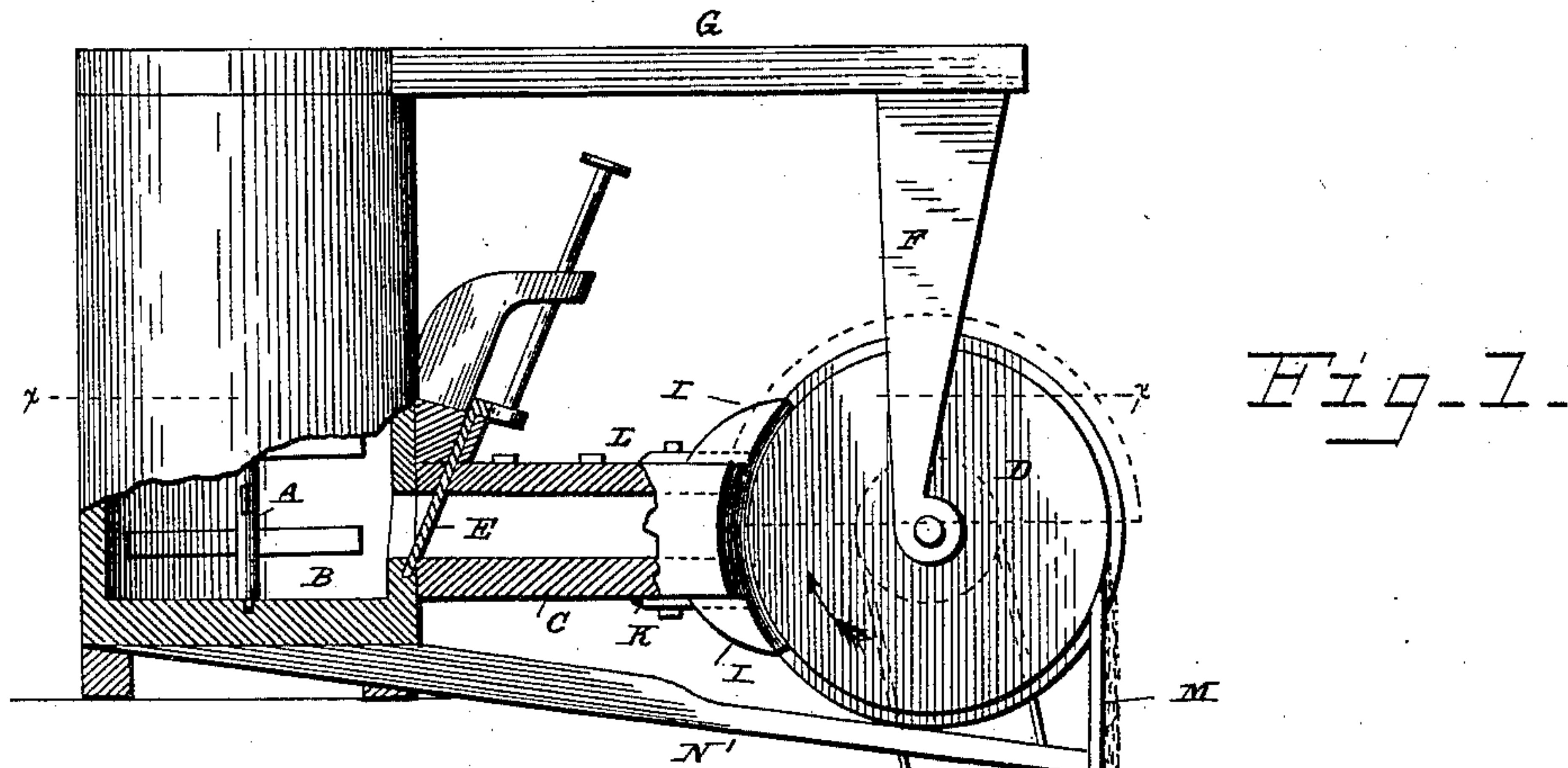


Fig. 1.

Fig. 3.

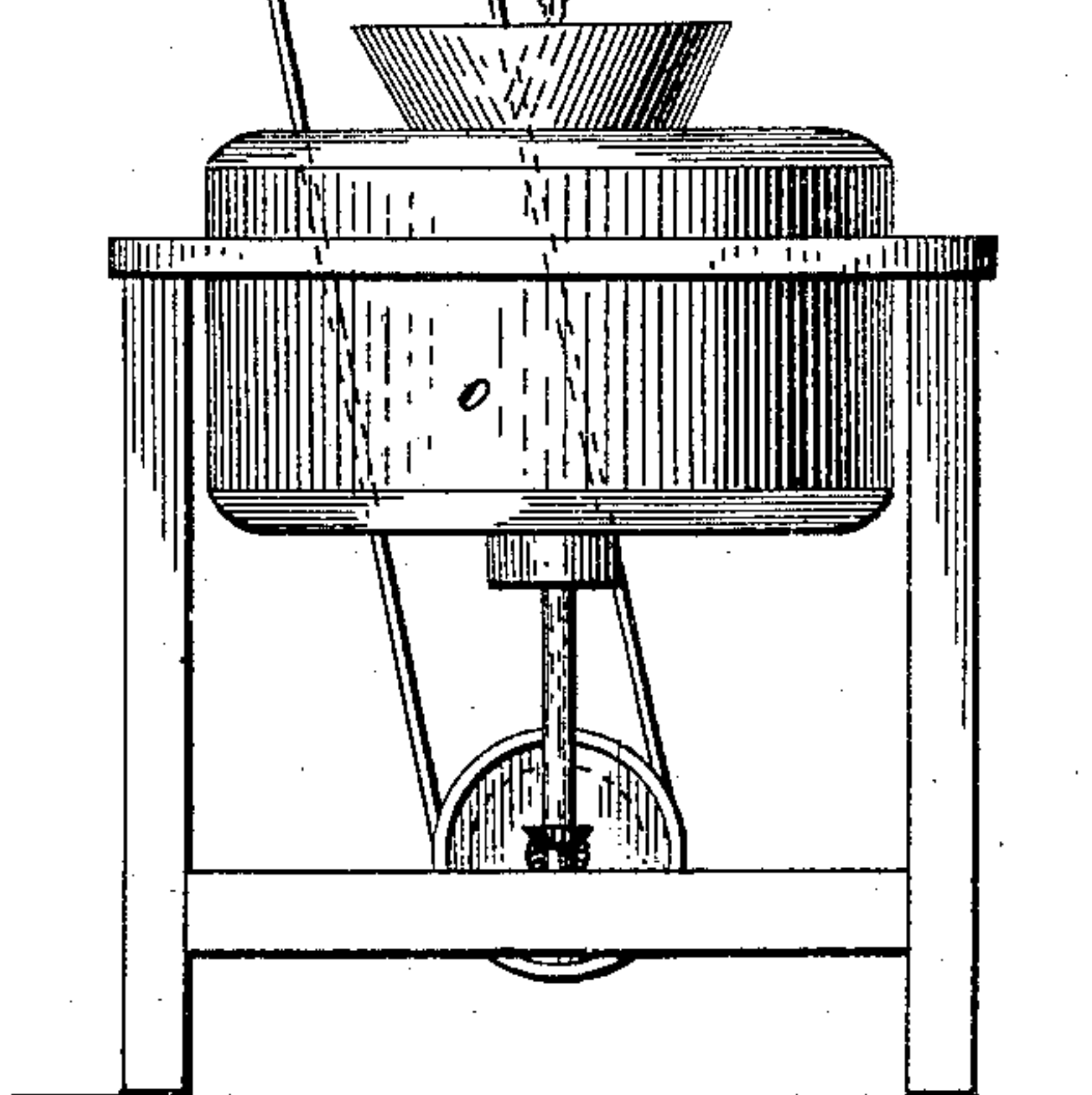
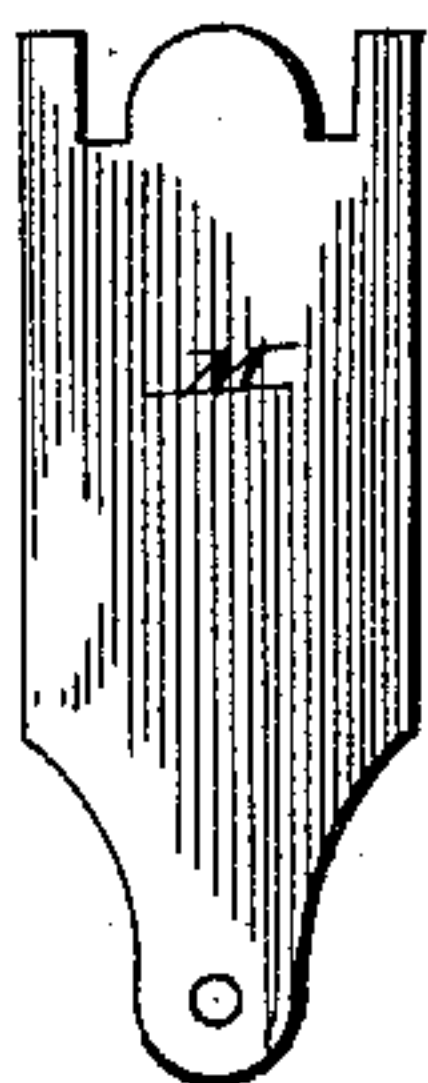
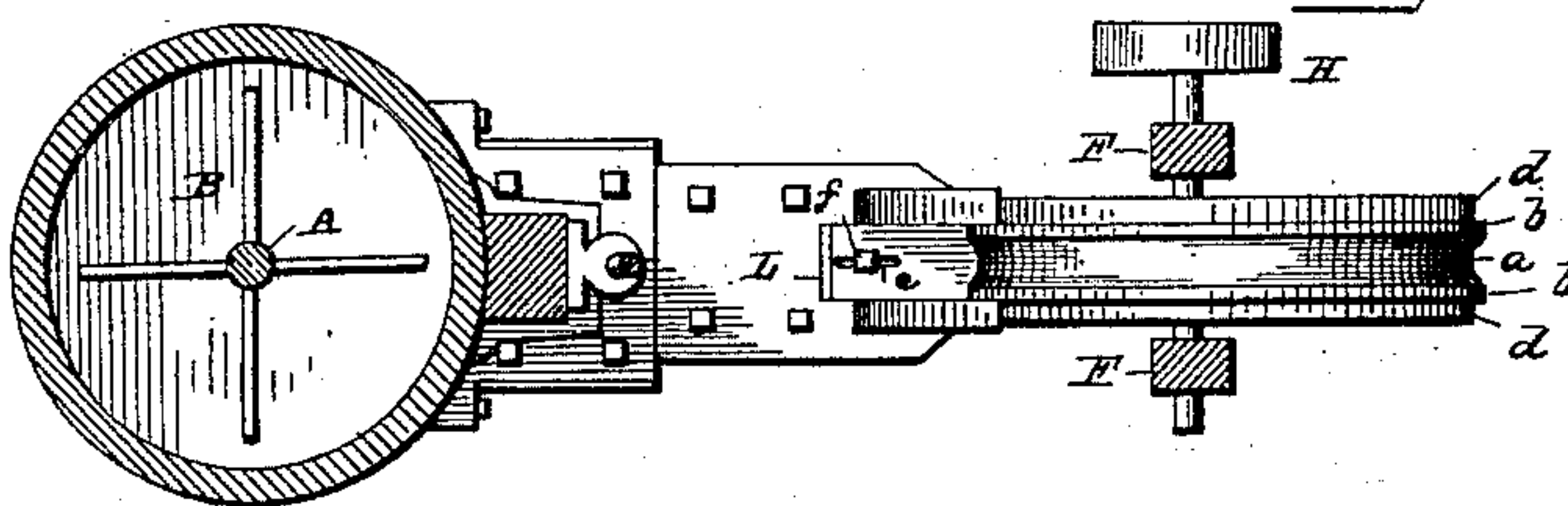


Fig. 2.



WITNESSES

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APPARATUS FOR THE MANUFACTURE OF WHITE LEAD.

SPECIFICATION forming part of Letters Patent No. 318,374, dated May 19, 1885.

Application filed March 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. IRWIN, a citizen of the United States, residing at Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Devices for the Manufacture of White Lead, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in devices for manufacturing white lead.

The object of my invention is to provide a device for conveying the crude lead from the mixing vat or tank to the grinding-mill, which will prevent the lead from becoming too much exposed to the atmosphere, and also prevent in a great measure the dissemination of the noxious and poisonous vapors or fumes arising from the lead.

My invention consists in providing the mixing tank or vat with a spout or conduit the outer end of which communicates with a grooved wheel, which carries the lead over and deposits it in uniform quantity to the grinding-mill, as will more fully appear.

Figure 1 is a side elevation, partly in section, of the mixing-tank, spout, feeding-wheel, and grinding-mill. Fig. 2 is a top or plan view of the mixing-tank, spout, and feeding-wheel. Fig. 3 is a detached view of the scraper which removes the lead from the feeding-wheel.

In the manufacture of white or other colored lead into pigments it is necessary to confine it as much as possible, so as to prevent noxious and unhealthy fumes from becoming disseminated to the injury and discomfort of the workmen. It is also important in producing a uniform product that the crude lead be supplied to the grinding-mill in a uniform manner. I accomplish this in the following manner, and with the devices which I will now proceed to describe.

A indicates the mixing vat or tank, which may be of the usual or any desired form, and is provided with stirrers or mixing-blades B, of any suitable kind.

C is a cast-iron box or spout leading from the mixing-tank A to the periphery of the grooved wheel D, and is provided with a gate or valve, E, which controls the flow of lead to the wheel D. The wheel D is made of cast-

iron and mounted in suitable supports, F, suspended from the bracket G, one end of which is secured to mixing vat or tank A; but in practice I may find it more convenient and desirable to mount the wheel D in a separate frame and impart motion thereto from any suitable source of power or by means of a band-pulley, H.

The periphery of the wheel D is provided with a groove, *a*, ribs *b*, and plain surfaces *d*.

The front of the spout C is concave, as shown, and is provided with wings or extensions I, which are also concave to fit the convex surface or periphery of the wheel D.

K is a guard secured to the under side of the spout C, the front end of which is of irregular form to correspond to the periphery of the wheel D. The function of this guard is to prevent the lead from running down and escaping at the end of the spout.

L is a gage-plate secured to the upper side of the spout C, the front end of which is made to conform to the periphery of the wheel D, and is made adjustable toward and from the wheel by means of the slot *e* and pin *f*, so that the amount of lead carried over by the wheel D can be regulated.

M is a scraper secured to the outer end of the bar N, the inner end of said bar being secured to the mixing-tank A; but in practice I may suspend the scraper from the framework of the grinding-mill O, or in any other suitable manner. The upper end of the scraper is made to conform to the periphery of the wheel D, and its office or function is to scrape the lead from the groove *a* and permit it to drop into the grinding-mill O, by which means a uniform quantity of lead can at all times be supplied to the mill.

The grinding-mill is of the ordinary or well-known construction, and does not require a detailed description in this connection.

As a further safeguard to prevent the fumes of the lead from escaping into the room, I may cover the upper portion of the wheel D with a hood, as shown in dotted lines in Fig. 1.

The operation of my device is as follows: The lead is properly mixed in the vat or tank A. The slide or gate E is raised and permits the lead to come in contact with the grooved portion *a* of the wheel D, and is carried over

by said wheel until it reaches the scraper M, which removes the lead from the groove *a*, and permits it to drop into the mill O, the supply of lead being regulated by the adjustable slide L, as before stated, and the lead automatically supplied to the mill.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is,—

1. In devices for conveying white lead or other pigments from the mixing vat or tank to the grinding-mill, a rotating wheel provided with a grooved periphery to receive the material from the spout of the mixing-tank and carry it over to the grinding-mill, as set forth.

2. In devices for manufacturing white lead or other pigments, a grooved wheel adapted to be revolved in close proximity to the spout of the mixing vat or tank to receive the lead therefrom and convey it in a uniform quantity to the grinding-mill, as set forth.

3. In devices for conveying lead or other

pigments from the mixing-tank to the grinding-mill, a valve-regulated spout for conveying the lead from the mixing-vat to a groove in the periphery of a revolving wheel, and a scraper adapted to remove the lead from said groove and permit it to fall into the grinding-mill located at the opposite side of the wheel from the mixing-tank, as set forth.

4. In a device for conveying lead or other pigments from the mixing to the grinding mill, a trough or spout having its front end concave to receive the convex periphery of a grooved wheel, in combination with an adjustable gage-plate, *e*, whereby the quantity of lead to be carried in the groove of the wheel can be regulated, as set forth.

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

GEORGE L. IRWIN.

Witnesses:

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CHAS. R. WEITERSHAUSEN.