

E. B. MILLER.
FEEDING DEVICE FOR FURNACES.
APPLICATION FILED FEB. 2, 1911.

1,064,516.

Patented June 10, 1913.

2 SHEETS—SHEET 1.

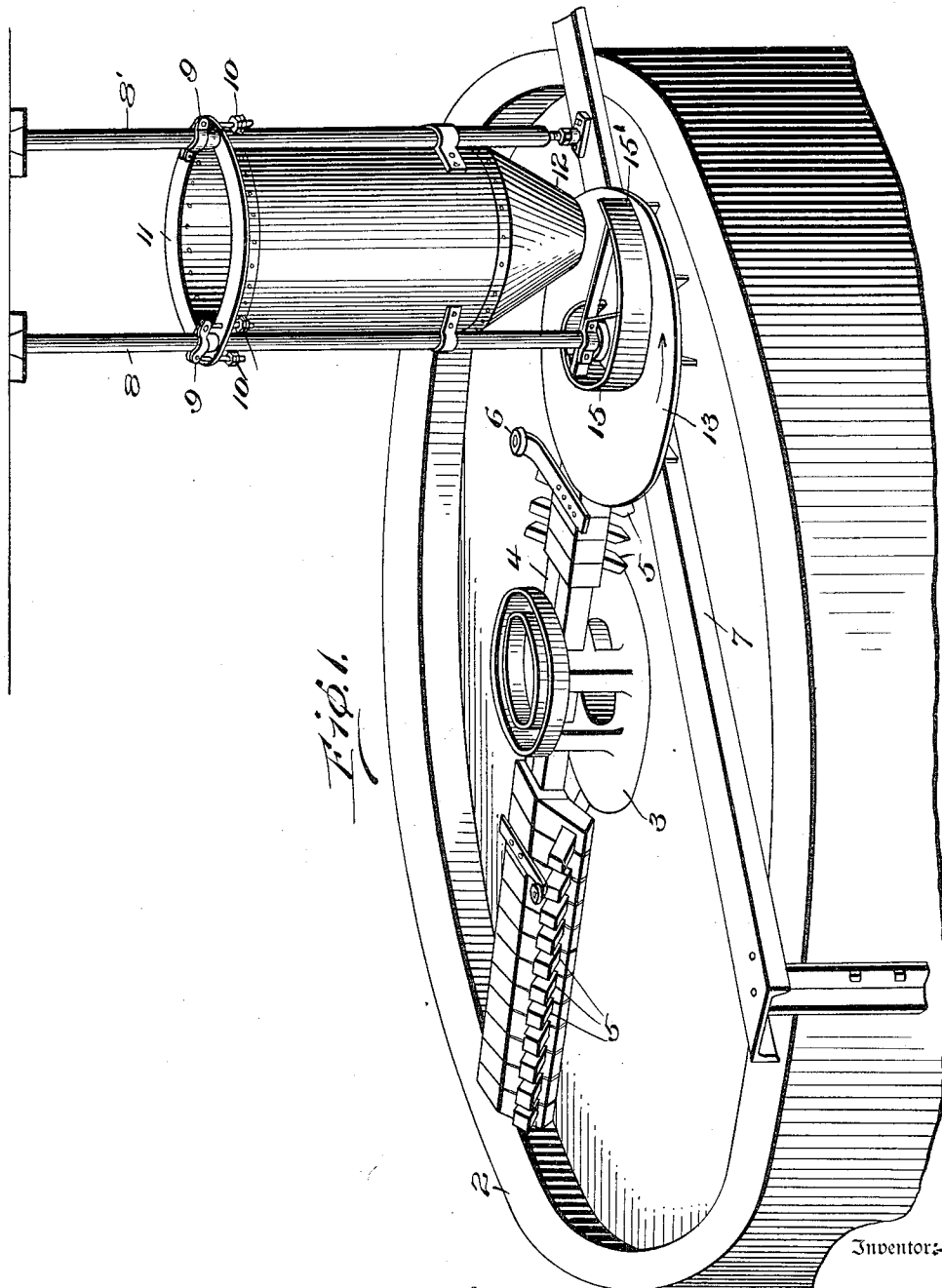


Fig. 1.

Witnesses

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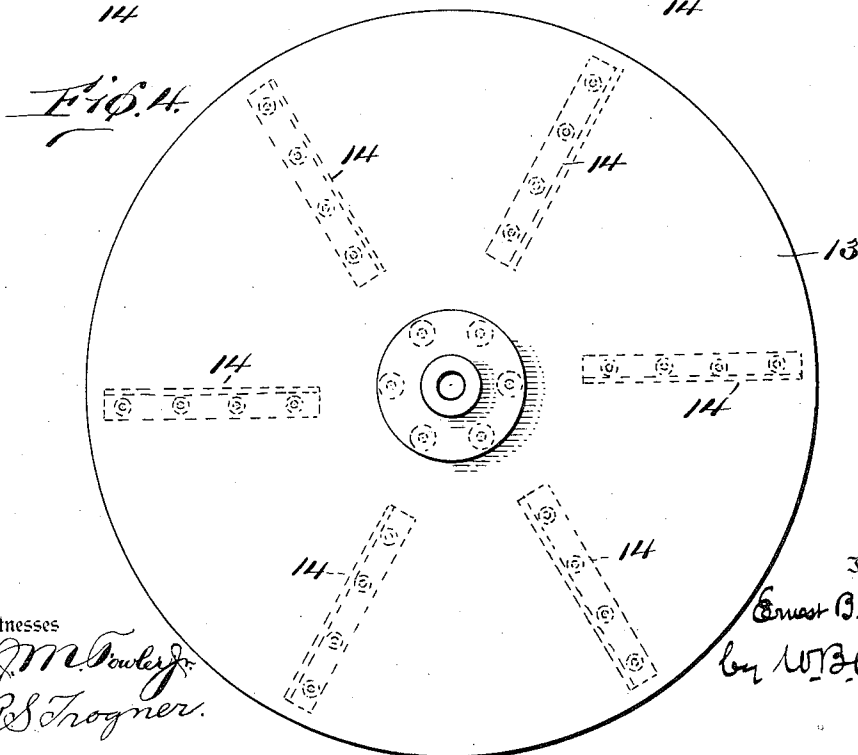
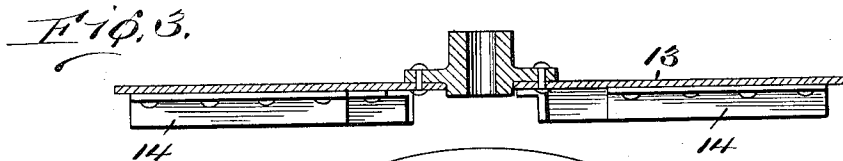
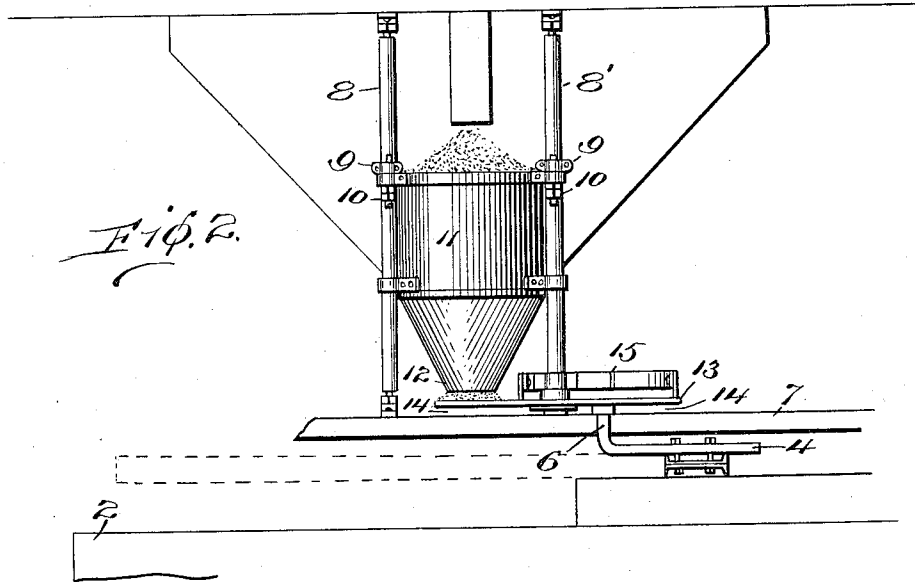
Attorney.

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UNITED STATES PATENT OFFICE.

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FEEDING DEVICE FOR FURNACES.

1,064,516.

Specification of Letters Patent.

Patented June 10, 1913.

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To all whom it may concern:

Be it known that I, ERNEST B. MILLER, of the city of Baltimore and State of Maryland, a citizen of the United States of America, have invented a new and useful Improvement in Feeding Devices for Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view, showing the top of a furnace with my improved feeding device applied thereto; Fig. 2 is a side elevation of the feeding device; Fig. 3 is a vertical central section of the feed table; and, Fig. 4 is a top plan view of the same.

Like symbols of reference indicate like parts in each of the several figures. It will be understood that the scale is not the same in the several figures of the drawing, as they are not drawn to scale, but are merely illustrative of the invention.

The object of my invention is to accomplish a saving in labor and to render the operation of the furnace uniform so as to obtain a better product with less expenditure of fuel and with less waste.

My improvement is especially designed for use with furnaces for burning iron pyrites in the production of sulfuric acid; although it will be readily apparent to those skilled in the art that it may be applied with the same beneficial results to other forms of furnaces.

Referring to the drawings, 2 represents the top of the casing of an ordinary furnace for burning iron pyrites for the purpose above mentioned. Extending from the bottom of the furnace to the top thereof is a central hollow rotatable shaft 3. Fixedly connected to the top of this shaft 3, and extending centrally across the top of the furnace 2, is a rabble or plow arm 4, to which are attached the plows or rabbles 5, for stirring the stock fed to the furnace. The parts so far described are common and well known in the art and form no part of my invention.

Fixedly attached to the rabble arm 4, are two driving lugs or catches 6, the function of which will hereinafter appear.

Extending transversely across the top of the furnace 2, at one side thereof, is a supporting beam or girder 7. Mounted on the beam 7 and extending upwardly therefrom

and suitably supported above, are two posts or pillars 8, 8', upon which is adjustably and slidably supported, by means of the clamps 9 and screw nuts 10, a hopper 11 for feeding the material or stock to the furnace. Below the mouth 12 of the hopper is situated a feed table 13 loosely mounted on the post or column 8. Secured to the under side of the table 13 are angle pieces 14, six being shown in the drawing, although it will be understood that the number of angle pieces may be varied from that shown.

Fixedly clamped to the post 8, at its lower end, is a sweep piece 15, preferably of a spiral shape as shown in the drawing, the outer end 15' of the same extending to the periphery of the feed table or plate 13.

The operation of the device is as follows: The material to be burned in the furnace is fed into the top of the hopper 11 either by hand or by mechanical means as may be deemed preferable. Passing through the hopper it finds its exit at the lower end 12 thereof and falls onto the top of the table 13. The table 13 is intermittently rotated by means of the driving lugs or catches 6, mounted on the rotating rabble arms 4, striking against the angles 14 on the under side of the table. The table is thus regularly and intermittently moved and the material thereon flowing from the hopper is brought against the fixed sweep 15, gradually reaching the end 15' and being pushed, by the motion of the table under the sweep, off the table into the furnace.

The rapidity of the discharge of the material from the hopper 11 may be regulated, as desired, by varying the distance of the lower end 12 thereof from the top of the table 13, by means of the adjusting nuts 10. By raising the hopper the flow of material will be increased; by lowering the hopper it will be lessened.

It will be understood that the table 13 may be intermittently rotated by other means or mechanism than that described; and also that its rotation may be made continuous instead of intermittent if preferred. Changes and mechanism to effect these results will suggest themselves readily to the skilled workman.

I claim:—

1. In a furnace feeding mechanism, a horizontal feed table mounted above the furnace, devices for intermittently rotating

said feed table, a feed hopper mounted above the said feed table and eccentrically of the axis of the same, and a fixed sweep or blade of a helical form mounted above said table and on the axis thereof and adapted to force substantially all the material fed from the hopper on to the table into the furnace.

2. In a furnace feeding device, a feed hopper, a rotatable feed table mounted underneath the same, a rabble arm extending transversely of the top of the furnace and carrying means for contacting with and intermittently rotating said table, and a fixed spiral sweep mounted above said table and adapted to force the material therefrom into the furnace.

3. In a furnace feeding device, a feed hopper, a rotatable feed table mounted beneath the same and having angle pieces attached to the bottom, a rabble arm extending transversely of the top of the furnace, driving catches connected to said arm for contacting with and intermittently rotating the table, and a fixed spiral sweep mounted above said table and adapted to force the material therefrom into the furnace.

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

ERNEST B. MILLER.

Witnesses:

JOHN LUNTZ,

GEO. W. DAVISON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."