

No. 677,666.

Patented July 2, 1901.

T. KENDRICK.

APPARATUS FOR COATING TIN, TERNE, OR LIKE PLATES.

(No Model.)

(Application filed Mar. 1, 1901.)

3 Sheets—Sheet 1.

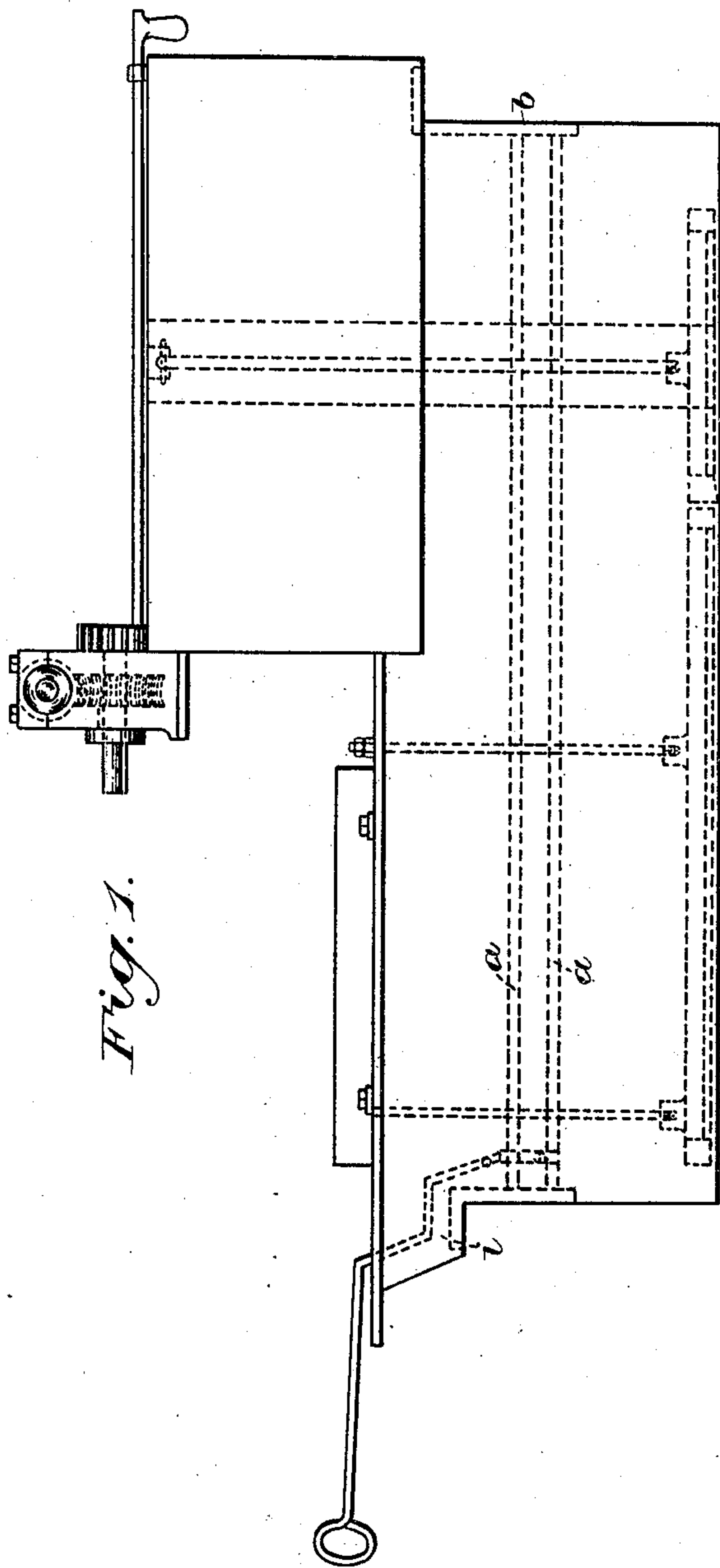


Fig. 1.

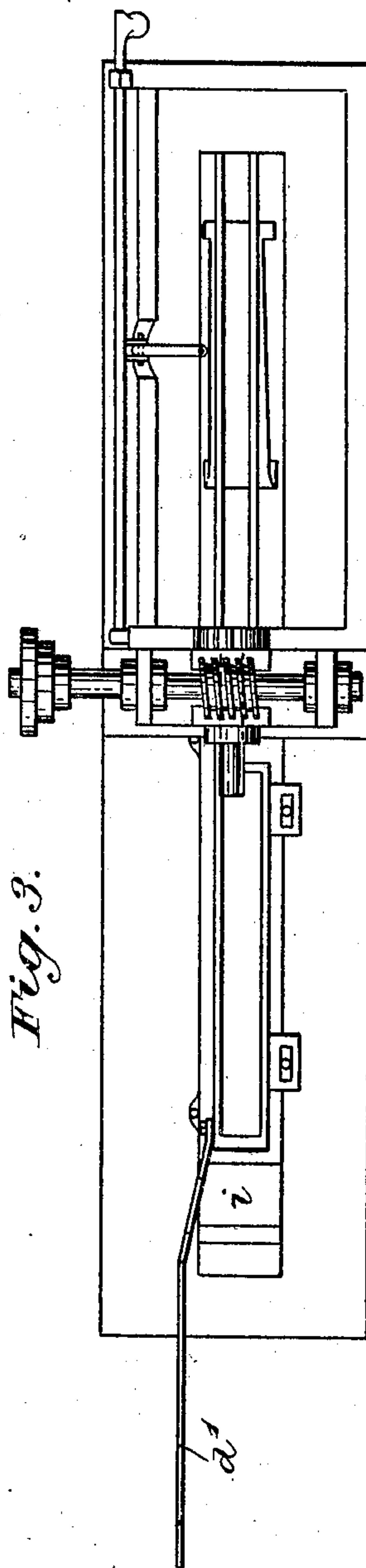


Fig. 3.

Witnesses.

Geo. C. Frech.

Chas. P. Bright.

Inventor.

Thomas Kendrick

by A. B. Pattison, Atty.

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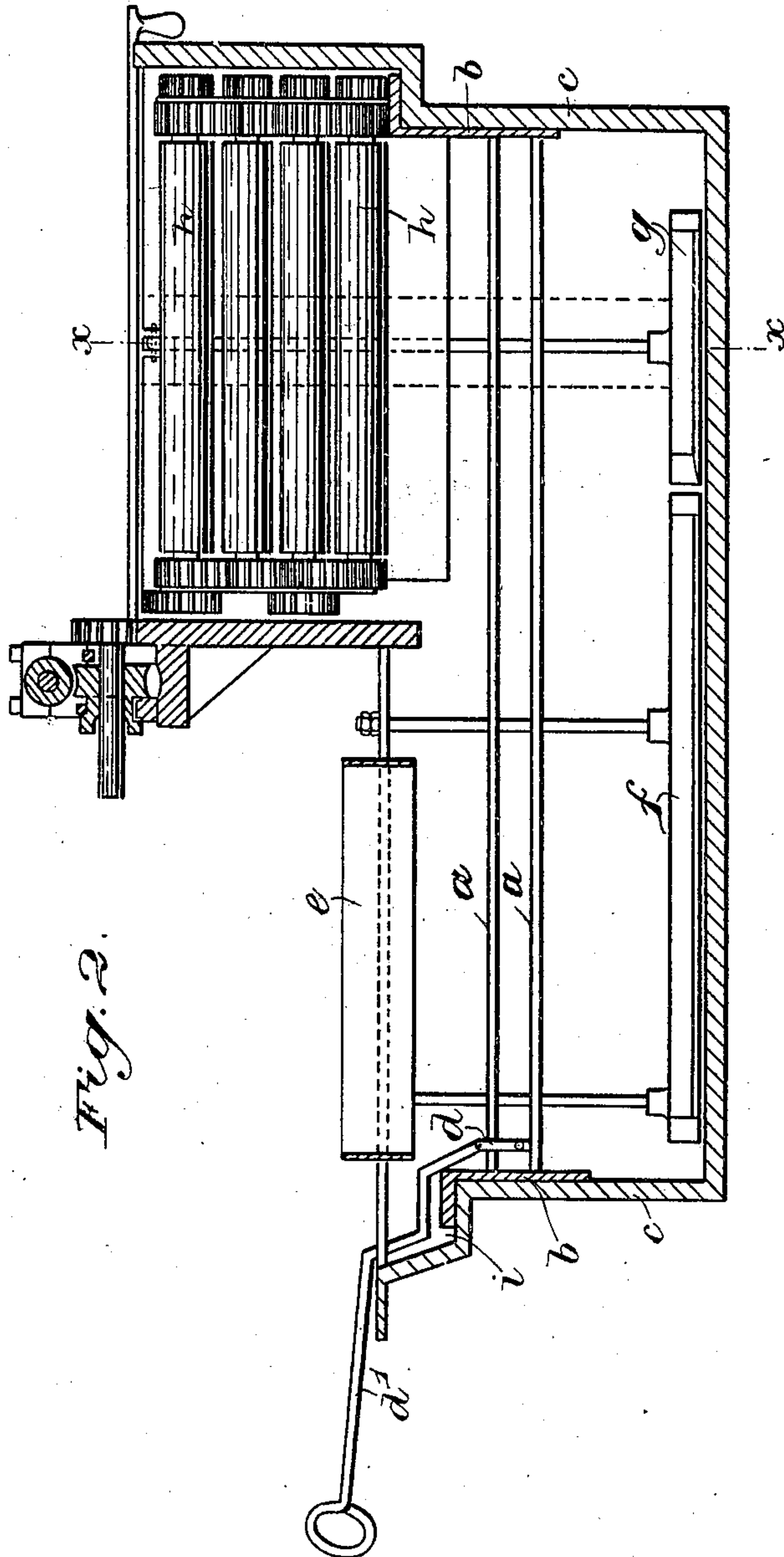


Fig. 2.

Witnesses

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Fig. 4.

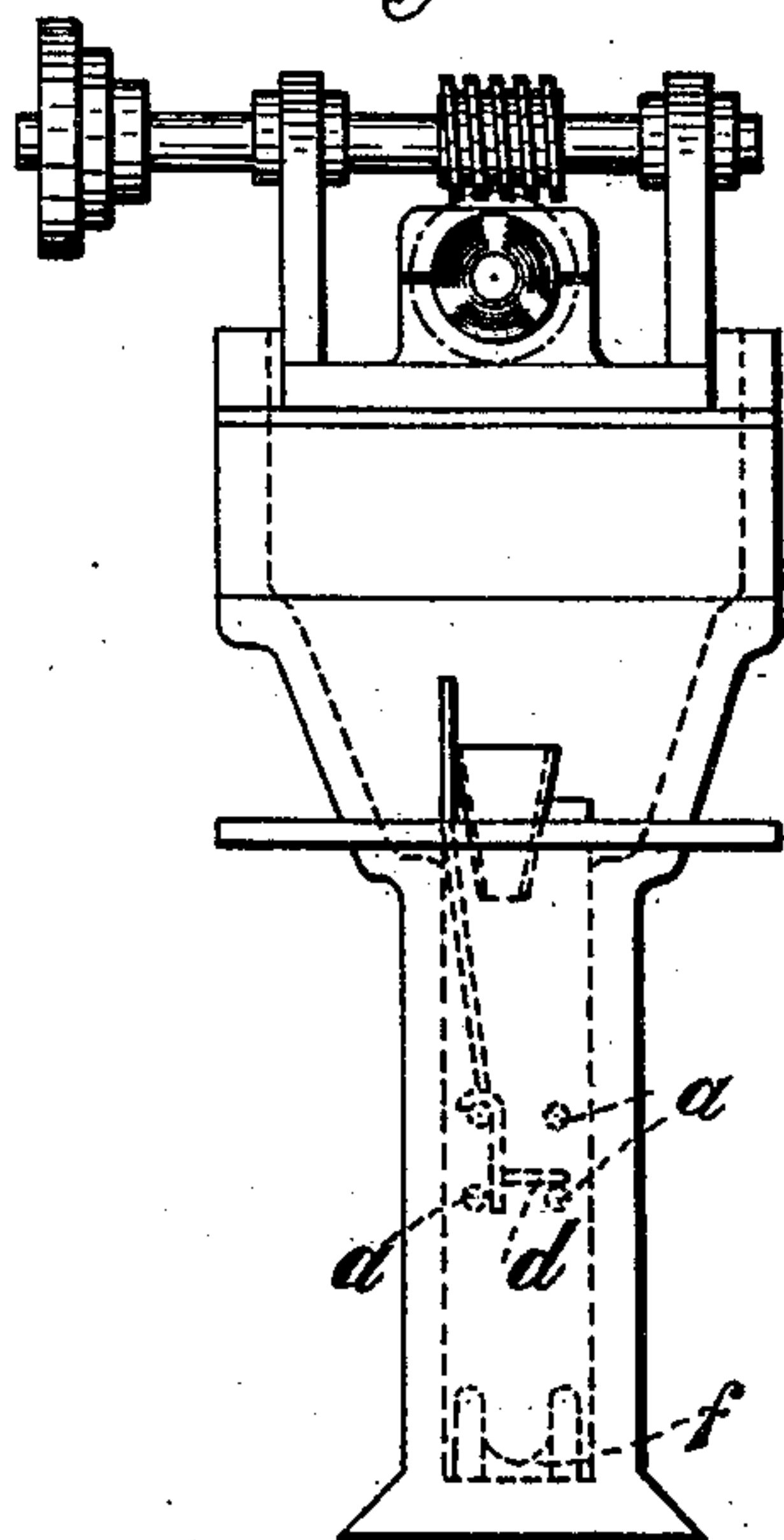
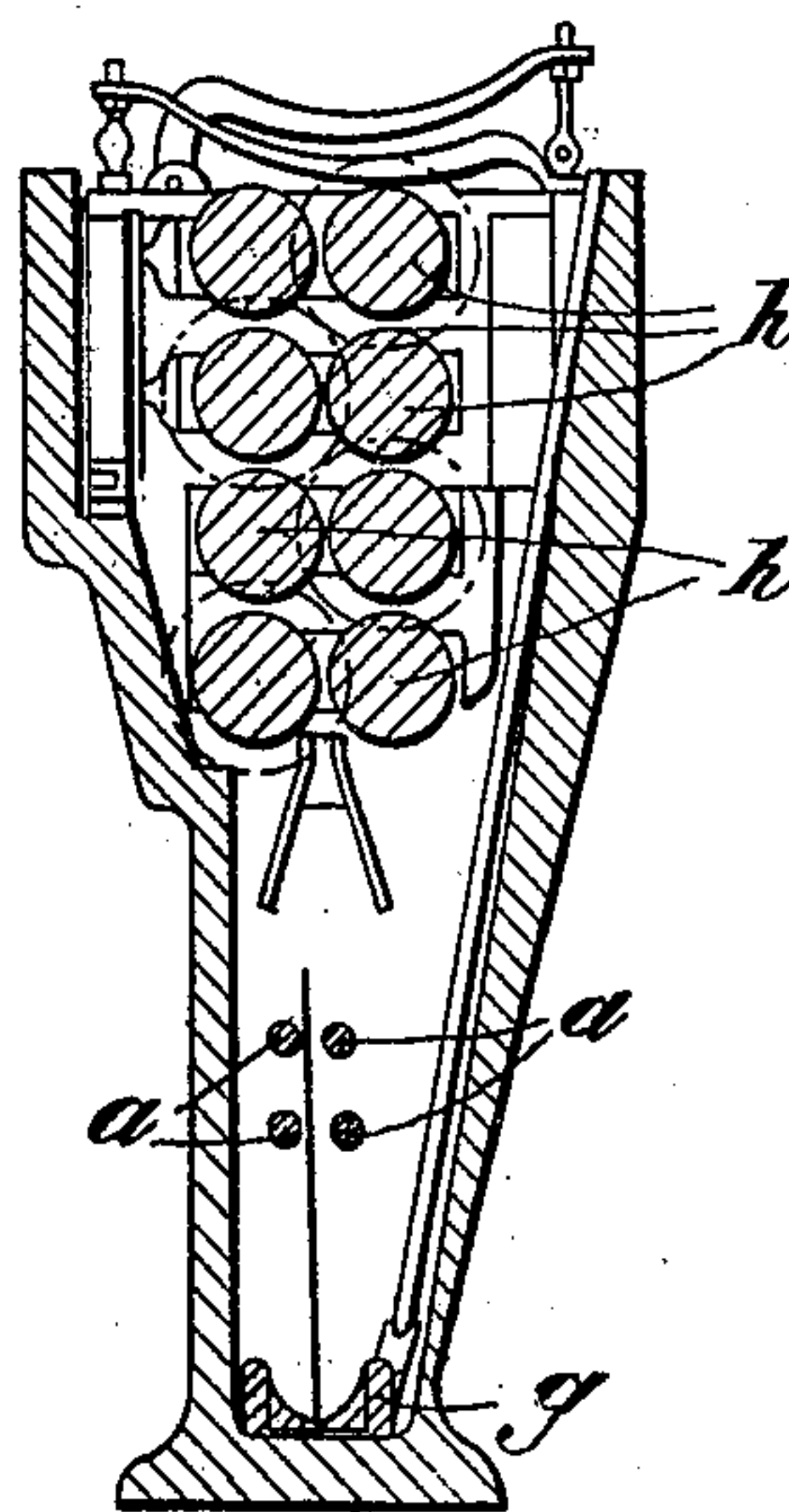


Fig. 5.



Witnesses.

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Chas. R. Knight.

Inventor.

Thomas Kendrick.

by A. J. Pattison, Atty.

UNITED STATES PATENT OFFICE.

THOMAS KENDRICK, OF SWANSEA VALLEY, ENGLAND, ASSIGNOR TO
GEORGE BROWN HAMMOND, OF NEATH, ENGLAND.

APPARATUS FOR COATING TIN, TERNE, OR LIKE PLATES.

SPECIFICATION forming part of Letters Patent No. 677,666, dated July 2, 1901.

Application filed March 1, 1901. Serial No. 49,499. (No model.)

To all whom it may concern:

Be it known that I, THOMAS KENDRICK, a subject of the King of Great Britain and Ireland, residing at Godriergraig, Swansea Valley, county of Glamorgan, England, have invented Improvements in the Manufacture of Tin, Terne, or Like Plates and in Machinery or Apparatus Therefor, of which the following is a specification.

10 This invention relates to the manufacture of tin and terne plates and like plates, and according thereto the plates which are being coated with tin, lead, or other metal or alloy are passed laterally through the bath of mol-
15 ten coating metal in a vertical or approximately vertical attitude and with one end or side, as distinguished from one of the broad faces, leading. Consequently in their pas-
20 sage through the bath the plates always present a vertically-disposed or approximately vertically-disposed cutting edge to the molten metal, and consequently the plates are not subjected to bending strains of the char-
25 acter which plates are exposed to when passed through a bath either "broad side on" or with faces more or less inclined.

A further advantage appertaining to this invention is that in plates manufactured in accordance therewith the coating is more uni-
30 form and more equalized on both faces and the surface is clearer from scruff.

Referring to the accompanying drawings, Figure 1 represents a side elevation of a tinning pot or bath constructed, arranged, and
35 fitted for coating tin, terne, and like plates in accordance with this invention. Fig. 2 is a longitudinal section; Fig. 3, a plan, without the delivery-rolls. Fig. 4 is an end view at the feeding end; and Fig. 5 is a transverse
40 section on the line $x x$, Fig. 2.

Extending longitudinally from one end of the pot to the other are rails a , secured at their ends in the end plates b , seated on the end walls c of the pot. Adapted to slide be-
45 tween the rails a and supported on the upper pair of them is a frame d , which for convenience in description may be termed the "pusher." Instead of being mounted on the upper rails the pusher d may be supported on
50 the lower rails or it may depend from or be otherwise adapted to travel on a guide ex-

tending longitudinally above the pot. To the pusher d is pivoted a rod d' , which extends back toward the feeding end of the pot and serves as a handle for moving the pusher. 55

Over the pot, at the feeding end thereof, is arranged the flux box or chamber e , which is movable. It is of ordinary type, and it may either rest at the ends on bearers or it may be otherwise supported. Below the flux-box
60 e and contained within the pot is a shoe or trough f , conveniently of U shape in cross-section and adjustable vertically in the pot. A similar shoe or trough g is placed below the delivery-rolls h , situated at the grease-box
65 end of the pot. The shoe g is capable of being readily lifted and lowered. The rolls h are supported in bearings provided in end frames and are driven through toothed gear-
70 ing or other convenient means.

The pot shown in the drawings is a single pot adapted to take only one plate at a time. By multiplication of the necessary parts and mechanism a pot may be made to receive
75 abreast two or more plates at a time.

The method of working with the pot or bath shown in the drawings is as follows: The plate to be coated is placed with one edge downward into the flux-box e and, passing
80 down between the rails a , is received in the shoe f . The pusher d , having been previously drawn back to the feeding end of the pot, is then moved toward the rolls, and in this way the plate is impelled "end on" along in the
85 bath and is transferred from the shoe f to the shoe g , the position of the plate in said shoe g being illustrated in Fig. 5. The guide-rails a are nearer together at the delivery end than at the feeding end and are so arranged that
90 as the plate passes under the rolls h its upper edge enters between the scruff-guides, so that as the plate is raised on the lifting-shoe g for entering the rolls h it cannot tilt far from the
95 vertical. When the plate has passed into the shoe g , the latter is lifted either manually or mechanically and the plate it carries is raised
with it until the upper end of the plate is gripped by the lowermost pair of rolls, from
100 which it passes to the next pair of rolls, and so on in succession to the uppermost rolls, when it is taken out either by hand or by mechanical means. When the plate has been

gripped by the lowermost rolls, the shoe *g* is lowered to receive the next plate.

Within the pot, at its feeding end, a shelf *i* may be provided, on which are deposited from
5 time to time ingots of tin, lead, or other coating metal of the same kind as that being used in the bath. The ingots being thus exposed to heat on the shelf melt, and the molten
10 metal flows from the shelf into the bath, replenishing it. Accordingly the danger liable to arise from depositing solid ingots in the bath is obviated, as well as possible injury to mechanism and fittings contained in the bath.

What I claim is—

15 1. Apparatus for coating tin, terne and like plates comprising a pot for containing molten coating metal, horizontal guide-bars extending through said pot, a plate-pusher which travels lengthwise of said bars and moves the
20 plates edgewise, and an adjustable plate-supporting shoe and a plate-lifting shoe, as set forth.

2. Apparatus for coating tin, terne and like
25 plates comprising a pot for containing molten coating metal, horizontal guide-bars extending through said pot, a plate-pusher which travels lengthwise of said bars, and moves the plates edgewise, a handle connected to said
30 pusher, a vertically-adjustable plate-supporting shoe and a plate-lifting shoe, as set forth.

3. Apparatus for coating tin, terne and like plates comprising a pot for containing molten coating metal, horizontal guide-bars extending through said pot, a plate-pusher which travels lengthwise of said bars and moves the
35 plates edgewise, a plate-supporting shoe and a plate-lifting shoe arranged end to end within the pot, a flux-box above said supporting-shoe and delivery-rolls above said lifting-shoe, as set forth.

4. Apparatus for coating tin, terne and like plates comprising a pot for containing molten coating metal, horizontal guide-bars extending through said pot and converging toward
40 one end, a plate-pusher which travels lengthwise of said guide-bars and moves the plates edgewise between said bars, a vertically-adjustable supporting-shoe beneath the diverging end portions of said bars, a flux-box above the diverging portions of said bars, a plate-
45 lifting shoe beneath the converging end portions of the guide-bars and delivery-rolls above said converging portions of said bars, as set forth.

Signed at Neath, in the county of Glamorgan, England, this 15th day of February, 1901.

THOMAS KENDRICK.

Witnesses:

H. P. CHARLES,

HENRY PARMINTER.