

No. 665,802.

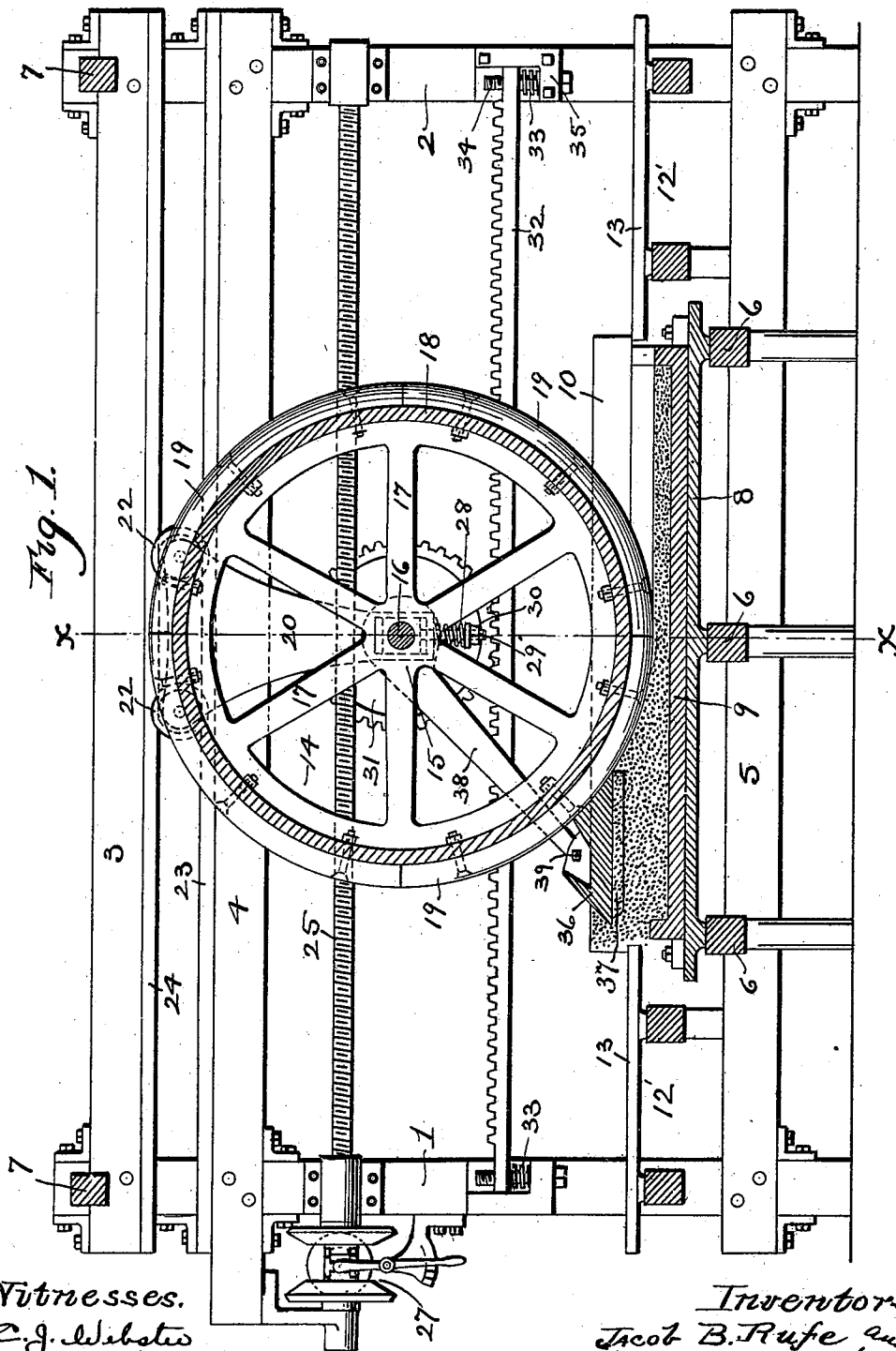
Patented Jan. 8, 1901.

J. B. RUFÉ & P. J. TRÜB.
MEANS FOR FORMING MOLDS.

(Application filed June 14, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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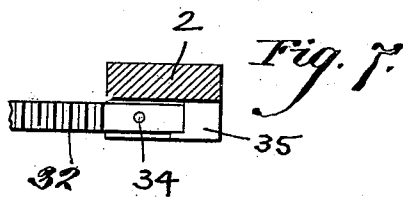
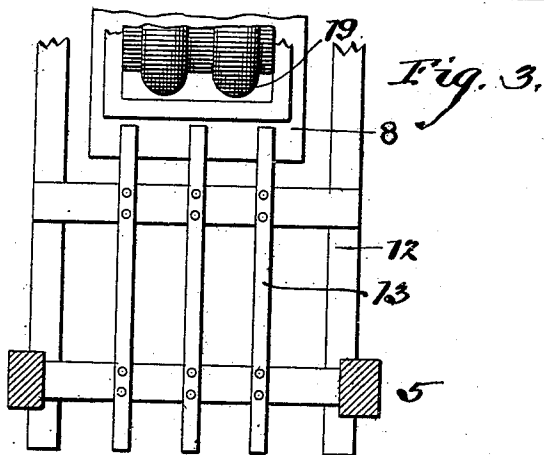
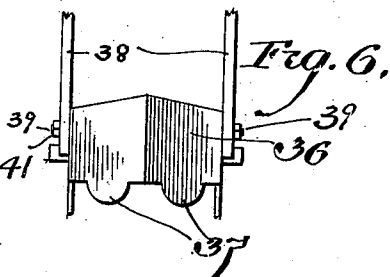
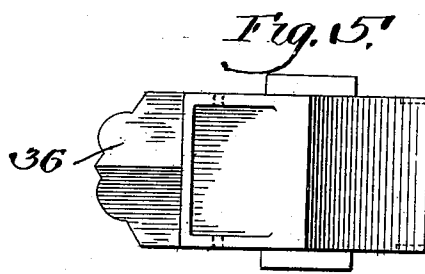
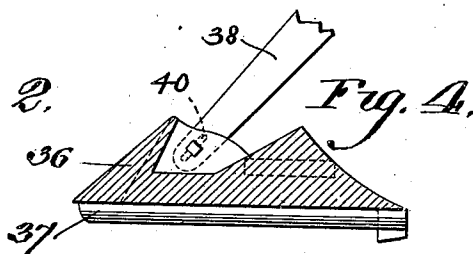
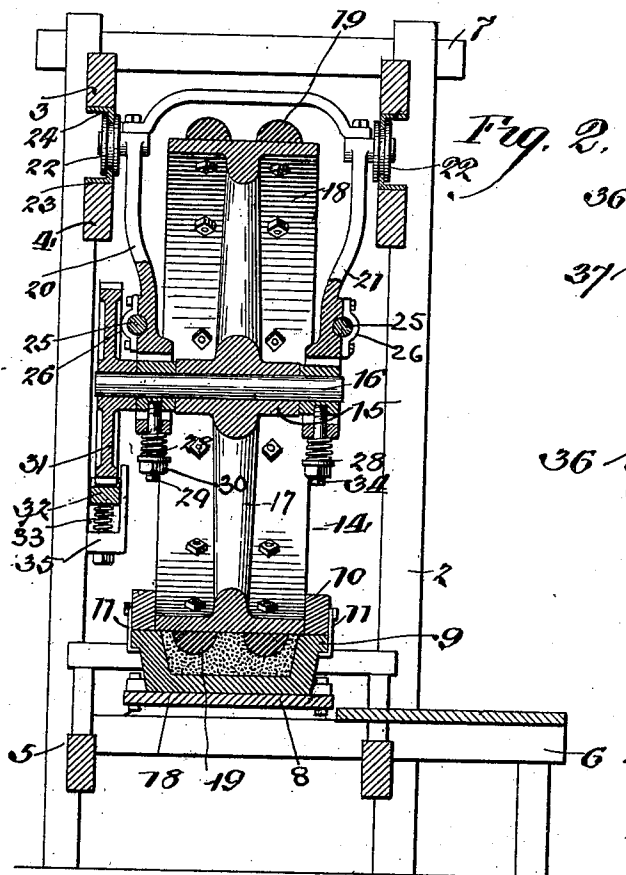
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JACOB B. RUFÉ AND PHILIP J. TRÜB, OF LANSDALE, PENNSYLVANIA.

MEANS FOR FORMING MOLDS.

SPECIFICATION forming part of Letters Patent No. 665,802, dated January 8, 1901.

Application filed June 14, 1900. Serial No. 20,253. (No model.)

To all whom it may concern:

Be it known that we, JACOB B. RUFÉ and PHILIP J. TRÜB, citizens of the United States, residing at Lansdale, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Means for Forming Molds, of which the following is a specification.

Our invention relates to means for forming molds, and has for one object to provide an automatic mechanism for forming the mold within the flask whereby the sand is fully compressed within the flask mechanically to form the mold, thereby dispensing with the manual labor usually employed.

A further object is to employ mechanical means for forming molds in which the amount of compression is readily adjusted and in which the body of the sand to be compressed is equalized prior to compression, whereby the sand when compressed in the mold shall be of uniform density.

A final object is to provide inexpensive and convenient means for compressing sand molds to any desired density with convenience for insertion and removal of the flask.

The invention consists in the parts and combination of parts hereinafter described, and pointed out in the claims, reference being made to the drawings, in which—

Figure 1 is a central longitudinal vertical section of the mechanism. Fig. 2 is a transverse view on lines *xx*, Fig. 1. Fig. 3 is a top plan view of one of the end platforms, showing the tracks upon which the molding-wheel runs after passing from the flask, a section of the molding-wheel being also shown. Fig. 4 is a longitudinal vertical section of the scraper. Fig. 5 is a top plan view of the same. Fig. 6 is an end view of the scraper, and Fig. 7 is a sectional detail view showing one of the guide-bolts for the spring-pressed rack-bars.

We have illustrated our invention as adaptable for forming pipe and plumbers' supplies, although it will be understood as being equally well adapted for use in forming a variety of different kinds of molds.

In carrying out our invention we erect a strong framework comprising uprights 1 2, to which are firmly secured side bars 3 4 5 and

lower cross-sills 6 and upper cross-bars 7, all the parts of the frame being adapted to resist the great strain incident to forming the molds.

8 designates a platform upon which the flask 9 rests, and 10 supplemental side bars detachably secured to the longitudinal sides of the flask by hooks 11, and 12 is a table having tracks 13 thereon, upon which the molding-wheel is run at either end of the platform to allow of insertion and removal of the flasks 9.

14 designates the molding-wheel, which comprises a hub 15, journaled upon shaft 16, radial spokes 17, and a rim 18, perforated to allow of attaching segmental formers 19 of any desired contour thereto.

Wheel 14 is suspended in hangers 20 21, the shaft being journaled in the lower ends of the hangers and the upper ends of the hangers having grooved rollers 22 journaled upon their upper ends, the rollers 22 running upon tracks 23, secured upon side bars 4, and confined by tracks 24 upon upper side bars 3. The molding-wheel is moved longitudinally of the flask 9 in either direction by means of screw-shafts 25, journaled in uprights 1 and 2 and screwing into nuts 26 upon hanger 20, there being ordinary reversing-gear 27 at one end of the shafts, by which to cause the shafts to revolve in either direction. The amount of compression exerted by wheel 14 is controlled by means of coiled springs 28 bearing upon the boxing of journals of shaft 16 and controlled in its compression by bolts 29, the heads of which are secured in the hangers and passing through the springs are provided with nuts 30, which bear upon the lower ends of the spring.

In order to provide against the possibility of wheel 14 refusing to revolve in the event of contacting with an undue amount of sand while traveling longitudinally of the flask, we provide a gear 31, which is secured to the driving-shaft, which meshes with a rack-bar 32, secured rigidly as regards longitudinal movement, and is allowed a vertical movement to compensate for the adjustment of the compression of wheel 14. This yielding motion is provided for by means of springs 33, upon which the ends of the rack-bar rest, the ends of the rack-bar being guided verti-

cally by bolts 34, which screw into the ends of the rack-bar and pass through the angled irons 35, secured to uprights 1.

- In the art to which our invention belongs it is necessary that the sand forming the mold shall be compacted within the flask with a uniform density. As heretofore stated, we employ supplemental side bars 10, the office of which is to receive the sand supplemental to that within the mold to compensate for compression to the required density. We have found, however, that in actual practice it is necessary to strike from the body of sand thus confined an amount of sand equal to the projecting contour of the molding-wheel to prevent undue strain upon the mechanism and compression of the sand. We therefore employ a scraper 36, which runs upon the side boards in advance of the wheel. This scraper strikes off any extra amount of sand within the side bars and levels off the sand to the desired amount for compression, and to compensate for the contour of the peripheral mold we employ supplemental scrapers 37 of a contour like to that of the mold, thereby insuring an equal compression of sand within the mold. Scraper 36 is urged forward by means of arms 38, secured at one end to the hangers, the opposite ends being secured to the scraper adjustably by means of bolts 39, passing through orifices in the walls of the scraper and into elongated openings 40 in arms 38, whereby by tightening nuts 41 the adjustment is effected.
- In operation the flask is placed upon table 8. Side boards 10 are placed thereon and secured. Sand is now thrown into the flask and fills the side boards, the molding-wheel being upon track 13. Screw-rods 25 are now revolved to advance the molding-wheel, the scraper moving in advance to strike off any extra amount of sand and the supplemental scrapers striking off a quantity of sand coin-

cident with the contour of the mold upon the periphery of the wheel, and the longitudinal travel of the wheel forms the mold, the wheel being traveled upon the tracks at the opposite end of the platform, when the flask is removed, the wheel returned to its starting-point, and the operation repeated.

What we claim is—

1. In means for forming molds, tracks, depending hangers, boxes having a vertical movement in the hangers, a shaft journaled in the boxes a molding-wheel secured upon the shaft, springs for normally projecting the boxes downwardly, and means for moving the hangers and the elements carried thereby.

2. In means for forming molds, a vertically-movable molding-wheel and means for adjusting the vertical movement thereof, means for moving the molding-wheel, a gear-wheel carried by the molding-wheel, a rack-bar in mesh with the gear-wheel, and springs for normally projecting the rack-bar to mesh with the gear-wheel irrespective of the vertical adjustment of the gear-wheel.

3. In means for forming molds, a framework, a molding-wheel movably suspended therein, means for moving the wheel, and platforms to receive the wheel at each end of the frame.

4. In means for forming molds, tracks, hangers carried thereby and suspended therefrom, a molding-wheel carried by the hangers, arms carried by the hangers and projecting downwardly to a point forward of the molding-wheel, and a scraper adjustably secured to the lower end of the arms.

In testimony whereof we affix our signatures in presence of two witnesses.

JACOB B. RUFE.
PHILIP J. TRÜB.

Witnesses:

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