

(No Model.)

G. ADAMS.

REVOLVING MOLD FOR CASTING TUBES.

No. 348,709.

Patented Sept. 7, 1886.

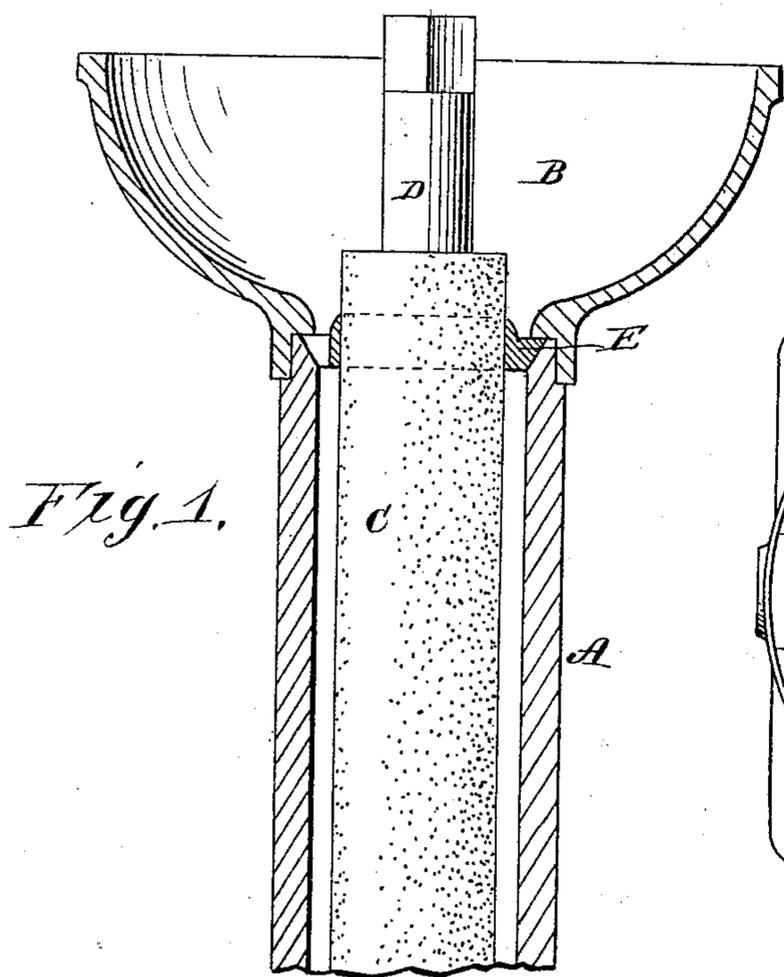


Fig. 1.

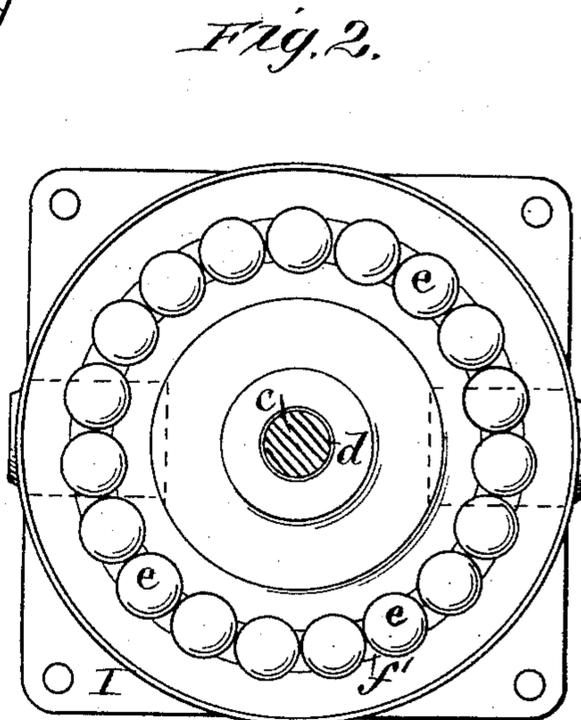


Fig. 2.

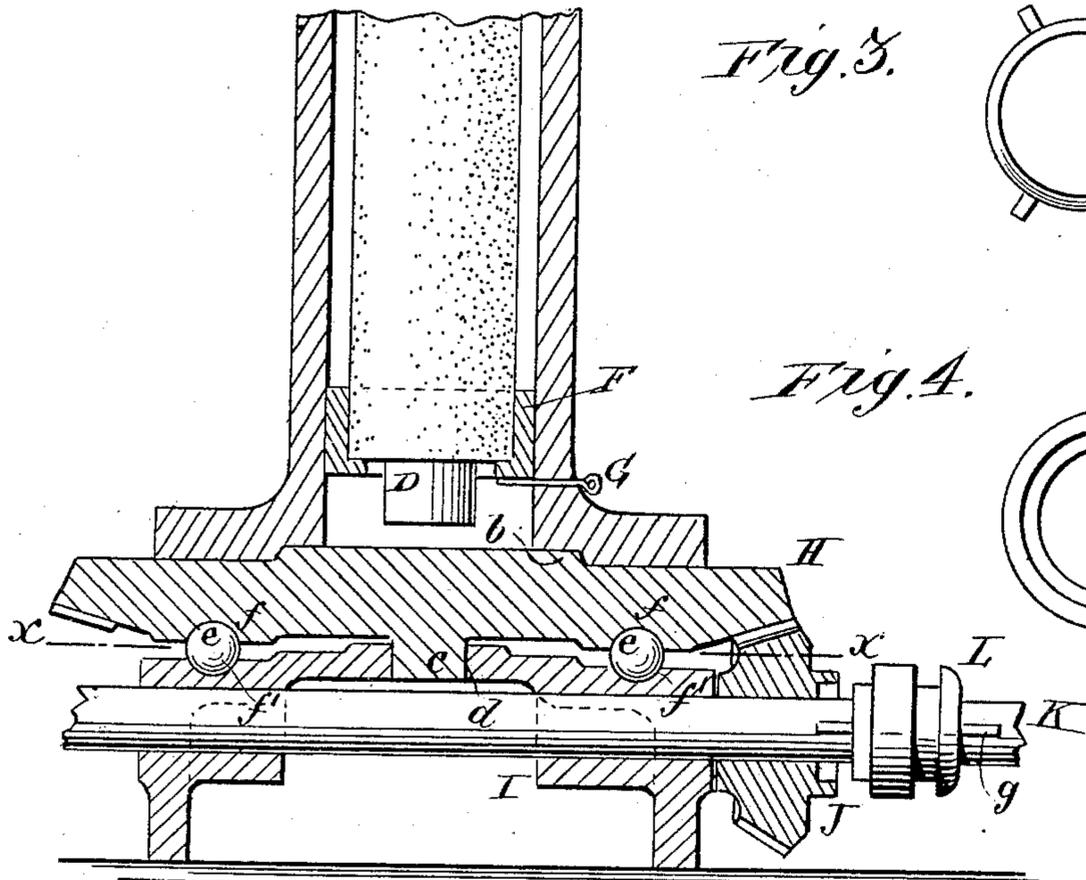


Fig. 3.

Fig. 4.

WITNESSES:

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REVOLVING MOLD FOR CASTING TUBES.

SPECIFICATION forming part of Letters Patent No. 348,709, dated September 7, 1886.

Application filed June 30, 1886. Serial No. 206,704. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ADAMS, of Waterbury, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Revolving Molds for Casting Seamless Copper Tubing, of which the following is a full, clear, and exact description.

This invention consists in a revolving mold of novel construction for casting seamless copper or other tubes, substantially as hereinafter described, whereby increased convenience is afforded for rotating the mold to insure a uniformly-solid construction of the casting circumferentially throughout its length.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a broken vertical section of a revolving mold embodying my invention with the core of the mold in place; Fig. 2, a plan view of the base portion of the frame or stand of the mold, as indicated by the line *xx* in Fig. 1. Fig. 3 is a plan view of the top core-bit; and Fig. 4, a plan view of the bottom core-bit.

A indicates the mold proper, fitted on its top with a bowl, B, into which the molten metal is run, as both mold and bowl, together with the core C, rotate in unison to make a solid casting. D is the core-barrel; E the top core-bit, and F the bottom core-bit. G is a pin for holding up the core-bit. Said mold with its contained core rests upon a horizontal bevel-wheel, H, the bottom of the mold being suitably centered and retained in place thereon in a detachable manner to permit of its being tilted or thrown over when extracting the casting from it prior to drawing the casting by the usual or any suitable means to the required thickness of the tube. Thus the mold is represented as provided with a circular recess in its base, within which a correspondingly-shaped and central projection, *b*, upon the back of the gear H fits. This wheel or gear H, which is rotated to revolve the mold, as required, is centered by an axial stud, *c*, on its face, fitted to turn freely within an aperture, *d*, in a base or stand, I, forming a sleeve-bearing; but said stud is relieved from all downward friction or pressure due to the weight of the mold and its contained core and

casting by supporting the whole upon a circular row or series of anti-friction rollers or balls, *e*, outside of or encircling the stud *c* at a distance from its center and fitted to freely travel within annular grooves or tracks *f f'* in the face of the gear and top of the base I. This mode of centering and carrying the mold provides for its firm upright support and easy run or travel about a fixed center, and enables the mold to be rotated with comparatively little power. The mold is rotated by means of a bevel driving wheel or pinion, J, arranged to engage with the bevel-wheel H and fitted loosely upon a horizontal driving-shaft, K, said pinion being made to turn with said shaft when an engaging sliding clutch, L, fitting a spline, *g*, on the shaft is slid forward for the purpose. When it is necessary to stop the rotation of the mold without arresting the motion of the driving-shaft K, the clutch L is slid back out of engagement with the pinion J. This engagement and disengagement of the pinion J with the driving-shaft K provides for the same shaft being utilized to rotate a series of molds independently of or collectively with each other.

Instead of the stud *c* being upon the under side of the gear H, and the aperture or sleeve bearing *d* in the base I, they may be reversed—that is, the stud *c* may be upon the base and the aperture or sleeve bearing *d* be in the gear H, which would be the equivalent of the construction shown.

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

1. In a revolving mold for casting seamless tubes of copper, &c., the combination, with the mold A, of the rotating horizontal wheel H, centering and carrying said mold and provided with a lower center stud, *c*, the base or stand I, having a sleeve-bearing, *d*, for said stud, and the circular series of balls or rollers *e*, interposed between said wheel H and stand I, and fitted to freely run within tracks therein, substantially as specified.

2. The combination of the detachable upright mold A and its bowl B, the horizontal mold centering and carrying gear H, provided with a center stud, *c*, and grooved circular track *f* on its under side or face, the base or stand I, having a central aperture or sleeve

bearing, d , for the stud and a grooved circular track, f' , in its upper face, the circular series of balls or rollers e , the driving-shaft K, and the driving wheel or pinion J, fitted to
5 engage and disengage with said shaft, essentially as shown and described, and for the purposes herein set forth.

3. In a revolving mold for casting tubes, the combination, with a stand having a central aperture and an annular groove, of a gear fitted
10 upon one side for carrying a mold and having

upon its opposite side a central stud fitting the aperture of the stand and an annular groove coincident with the groove in the stand, and a series of balls adapted to the
15 grooves in the stand and gear, substantially as shown and described.

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Witnesses:

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