(No Model.)

G. ADAMS.

REVOLVING AND TILTING MOLD FOR CASTING TUBES.

No. 368,746. Patented Aug. 23, 1887.

Fig. 1

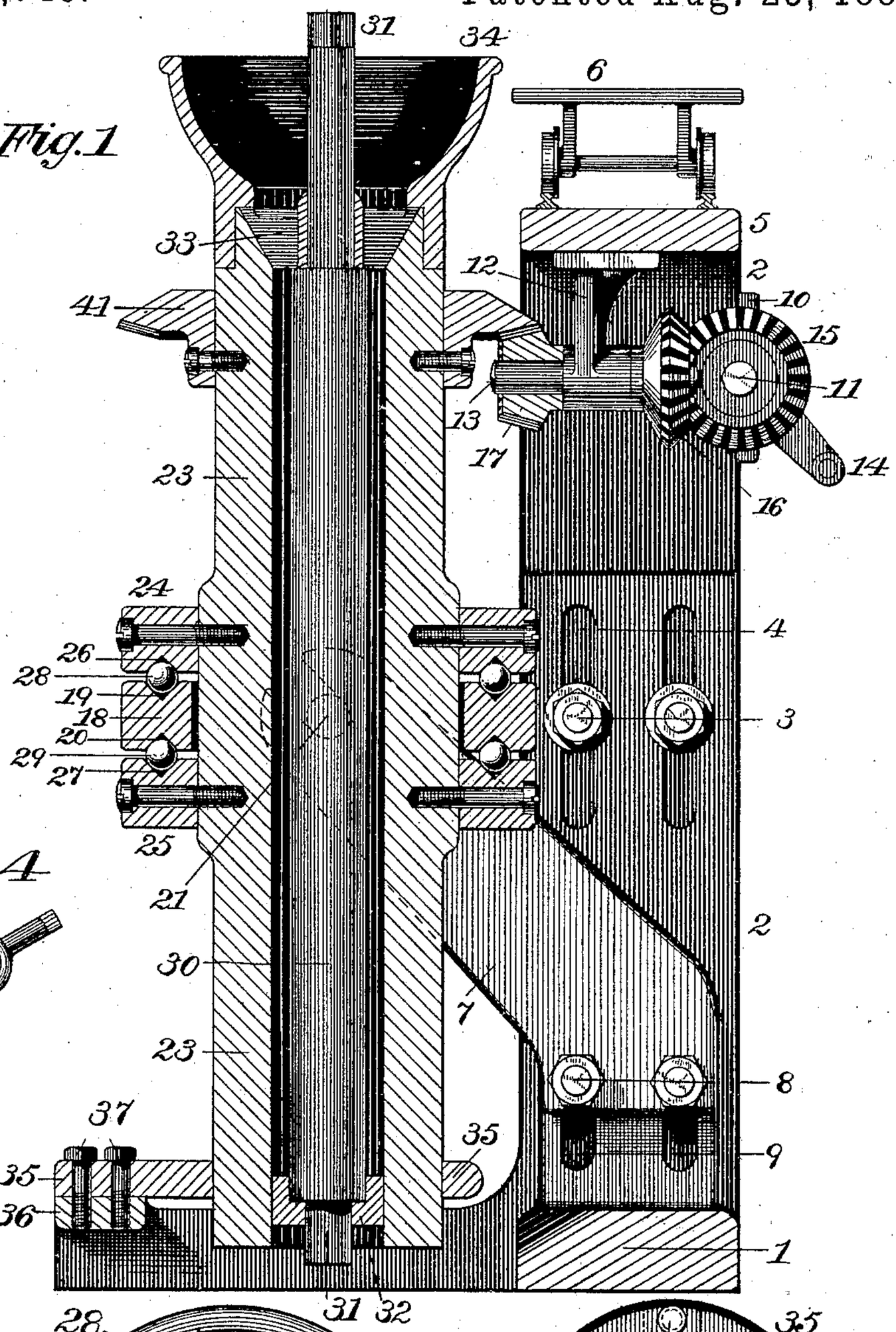
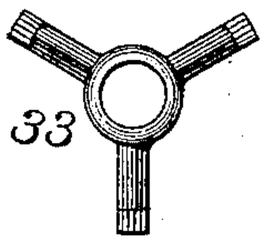


Fig. 4



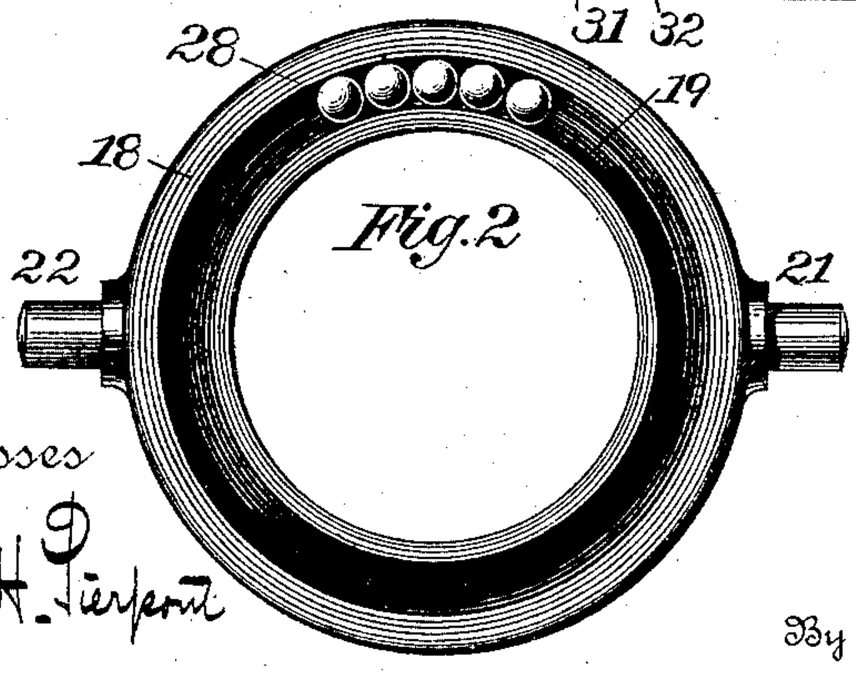


Fig. 2

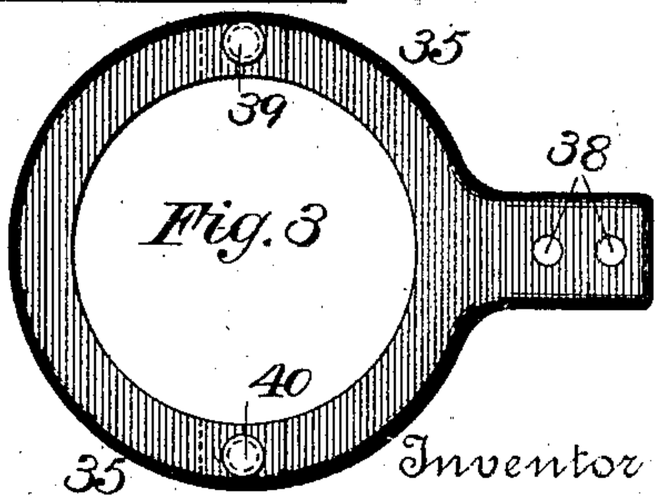


Fig. 3

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE ADAMS, OF ANSONIA, CONNECTICUT.

REVOLVING AND TILTING MOLD FOR CASTING TUBES.

SPECIFICATION forming part of Letters Patent No. 368,746, dated August 23, 1887.

Application filed June 27, 1887. Serial No. 242,576. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ADAMS, of Ansonia, Connecticut, have invented a new and useful Revolving and Tilting Mold for Casting Tubes, of which the following description and claim constitute the specification, and which is illustrated in the accompanying sheet of drawings.

This invention is an upright mold which revolves while receiving melted metal, and afterward tilts to a horizontal position to allow the convenient withdrawal of the cast tube therefrom. The apparatus is particularly applicable to the manufacture of copper and brass tubes, and it can be used in making tubes of other metals.

Figure 1 is a central vertical section of the apparatus on a vertical diametric line of Fig. 2 and on horizontal diametric lines of Figs. 3 and 4. Fig. 2 is a plan view of the grooved ring 18. Fig. 3 is a plan view of the diametrically-divided ring 35. Fig. 4 is a plan view of the core-bit 33.

The numeral 1 indicates the main sill of the frame of the apparatus. The standard 2 is made in two parts, and is adjustable in height by means of the bolts 3 and the slots 4. A corresponding standard on the nearer but removed end of the sill 1 is correspondingly adjustable. These two standards support the plate 5, and that plate has a longitudinal track on its upper side, with a truck, 6, on that track for the transportation of pots containing the melted metal to be used in casting. The diagonal arm 7 is adjustably attached to the standard 2 by means of the bolts 8 and the slots 9, and is provided with a trunnion-bearing in its upper end, and a corresponding arm is correspondingly attached to the other corresponding standard. The standard 2 is provided with a bearing covered with the bearing-cap 10 for the shaft 11, and the plate 5 sustains the hanger 12 and the shaft 13. The shaft 11 is turned by the crank 14 and works the bevel-gears 15, 16, and 17. The ring 18 is provided with the annular groove 19 on its upper side and the corresponding groove, 20, on its under side, and also with the trunnions 21 and 22, and those trunnions rest and turn in the trunnion-bearings in the two diagonal arms.

The mold 23 is supported by the ring 24, aided in some positions by the ring 25, both of which rings are fixed about the middle circumference of the mold. The ring 24 has the annular groove 26 on its under side, and the ring 25 has the corresponding groove 27 on its upper side. A series of anti-friction balls, 28 and 29, rest in the grooves 19 and 27, respectively, under the grooves 26 and 20, respectively. The core 30 is made around the core-barrel 31, in the usual manner, and is supported by the under core-bit, 32, and is held in its proper central position by the upper core-bit, 33. This latter bit is a ring surrounding the core and provided with three thin radial arms, the outer diagonal ends of which rest on the annular diagonal interior surface at the upper end of the mold 23, and the upper edges of which are protected against the action of the melted metal by plumbago or other refractory substance. The bowl 34 is attached to the upper end of the mold 23 in a convenient position to receive melted metal from pots on the truck 6. The divided ring 35 is fixed to the small sill 36 of the frame by means of the bolts 37 and the bolt-holes 38. That half of the ring which is on the left side of the diameter of Fig. 3 is turned in the opposite direction in Fig. 1, and is detachable from the other part of the ring by simply lifting its fixed pins 39 and 40 out of corresponding pin-holes in that other half. The annular bevel-gear 41 surrounds the upper circumference of the mold 23 and meshes with the bevel-gear 17 when the mold is in its upright position.

The mode of operation is as follows: While the melted metal is being poured into the mold the mold is being revolved by the crank 14, and after the mold is filled and the tube cooled the removable half of the ring 35 is lifted away and the mold and its contents are tilted upon the trunnions 21 and 22 to a horizontal position, and the tube is then conveniently removed by pulling it, with the core and upper core-bit, out of the upper end of the mold. The revolution of the mold while the melted metal is being poured into it causes the tube to be built up spirally around the core, and thus produces a freedom from blow-holes and an excellence and uniformity in the casting

which cannot be attained where the mold is stationary, and the metal is therefore first deposited on one side of the core and reaches the other sides by flowage alone, and that revolution also preserves the bowl and the mold from being burned through by the stream of melted metal falling or running constantly on one place in the interior thereof. The tilting of the mold enables the cooled tube to be withdrawn horizontally therefrom, and thus lessens the labor incident to the business.

I claim as my invention—

The combination of the mold 23, and suitable mechanism for revolving the same on its longitudinal axis, with the ring 18, surrounding the middle of the mold and supporting it by an annular or other ledge projecting from the sides of the mold, the ring being supported by the trunnions 21 and 22, turning in proper bearings in suitable standards or arms, substantially as set forth.

GEORGE ADAMS.

Witnesses:
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