No. 810,591. PATENTED JAN. 23, 1906.

F. WICKS.

APPARATUS FOR CASTING PROJECTILES FOR SMALL ARMS.

APPLICATION FILED OCT. 22, 1902.

2 SHEETS—SHEET 1.

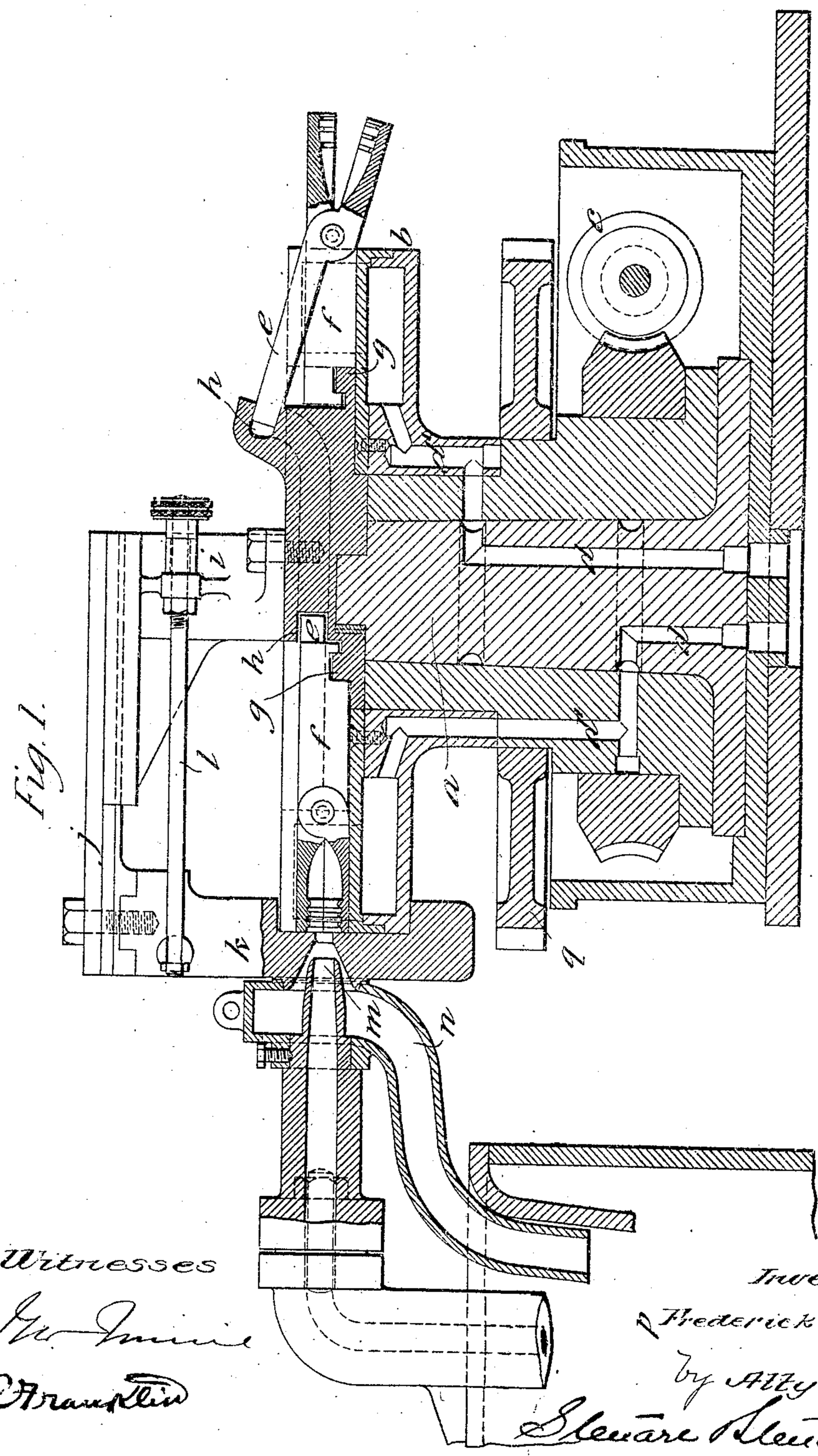

Fig. 1.

Witnesses

[illegible]

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by Attys

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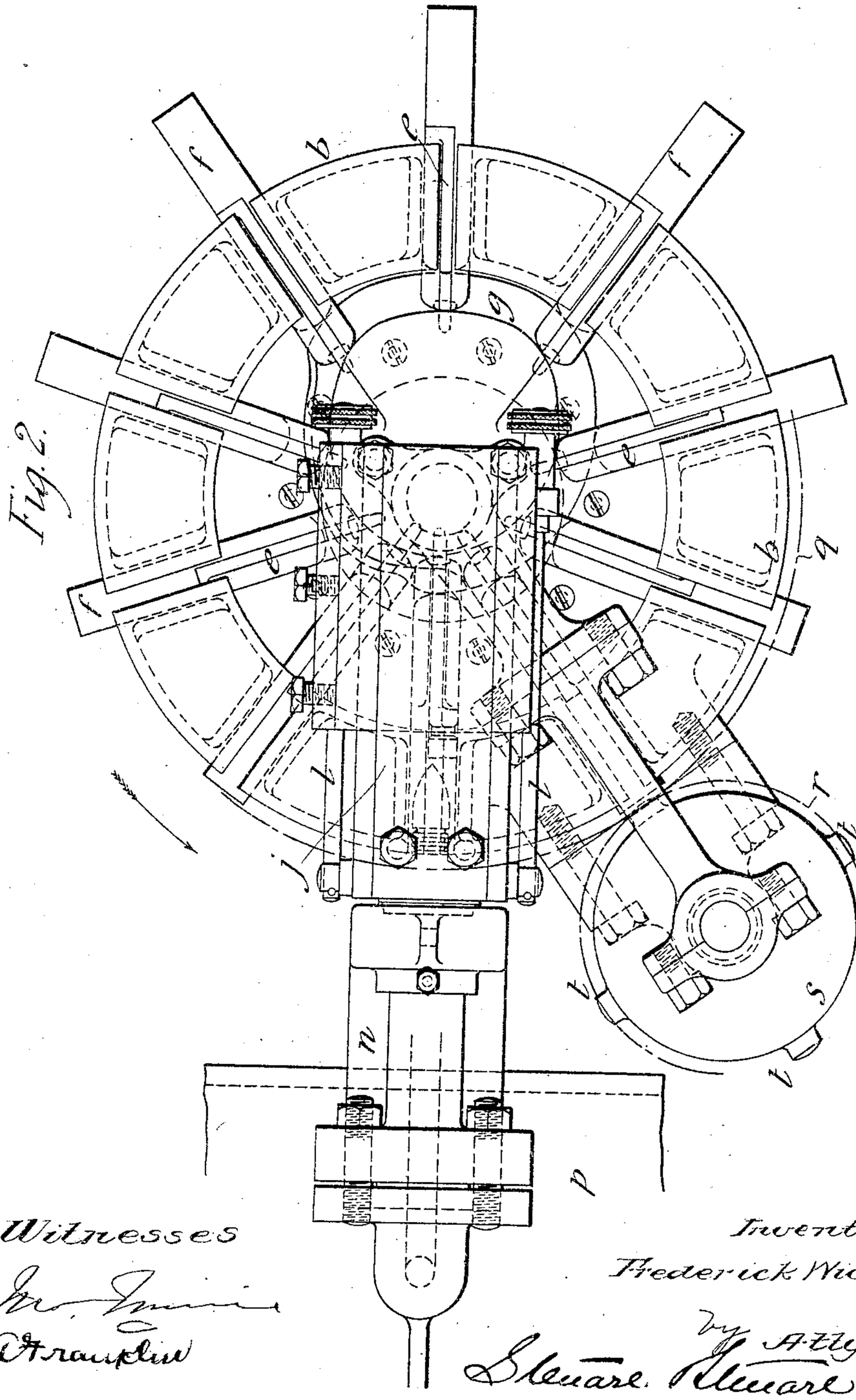

Witnesses

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FREDERICK WICKS, OF ESHER, ENGLAND.

APPARATUS FOR CASTING PROJECTILES FOR SMALL-ARMS.

No. 810,591. Specification of Letters Patent. Patented Jan. 23, 1906.

Application filed October 22, 1902. Serial No. 128,294

To all whom it may concern:

Be it known that I, FREDERICK WICKS, newspaper proprietor, a citizen of England, residing at Halfway Lodge, Esher, in the county of Surrey, England, have invented a certain new and useful Apparatus for Casting Projectiles for Small-Arms, of which the following is a specification.

This invention relates to an apparatus for casting projectiles for small-arms in molds carried by a mold-wheel, the mold-wheel carrying the molds past a nozzle where a jet of molten metal is injected into the molds and then around to a position where the molds are pushed out for the purpose of delivering the cast projectile therefrom.

Referring to the drawings, wherein I show a specific embodiment of my invention, and wherein like reference-numerals are used to designate the same parts wherever they occur, Figure 1 is a vertical sectional view, partly in elevation, of one form of my apparatus; and Fig. 2 is a plan view thereof.

a is a vertical shaft on which the mold-wheel *b* revolves. The mold-wheel is provided with a suitable gear, which meshes with a worm *c*, driven from any suitable source of power and by which the mold is rotated.

d represents passages bored in the shaft for the circulation of cooling water through passages *d'*, formed in the wheel *b*. The wheel *b* is provided with a plurality of radial openings, in each of which is slidingly mounted a mold, the mold consisting of two parts *e* and *f*, which are hinged together, the mold being formed by the jaws on one side of the pivot and the part at the other side of the pivot being formed into arms by which the jaws are opened and closed in a manner to be hereinafter described. On the upper end of the shaft *a* is mounted a cam, having the cam projection *g*, which engages with a notch cut in the arm *f* of the mold. The cam, which is of the form best shown in Fig. 2, causes the mold as it is carried around by the wheel to move to and fro in the radial openings of the wheel. The cam is also provided with a cam-groove *h*, which engages the free end of the arm of the part *e* of the mold and by the curvature of the cam causes the mold to open and close as the mold is carried around by the mold-wheel.

i is an upright frame also carried by the end of the shaft *a*, and on the top of this upright is fitted a slide *j*, adapted to slide horizontally on the upright *i*, and from the slide the shield *k* projects downwardly in front of the periphery of the mold-wheel.

l represents adjusting-screws, by means of which the shield can be brought to the proper position in relation to the periphery of the mold-wheel. In the center of the shield I provide an orifice, into which projects a nozzle *m*, coming from a pump. Preferably this pump is of the type shown in my Patent No. 669,405, dated March 5, 1901, and *n* is the duct by which the surplus metal delivered by the pump is returned into the melting-pot *p*.

On a boss of the mold-wheel *b* is fitted a gear *q*, which is adapted to mesh with the pinion *r*, having on its shaft a disk *s*, provided with four projections *t*.

The operation of my invention is as follows: When the mold-wheel is driven in the direction of the arrow in Fig. 2 by means of the worm *c*, the molds are successively and gradually brought by the cams *g* and *h* from the protruded and open position shown at the right-hand side of Figs. 1 and 2 to the inward inclosed position shown at the left-hand side of these figures. When the molds are in the latter position, they are opposite the nozzle *n* and receive a jet of molten metal. The molds are then carried on around, and as the metal is hardening the mold passes the disk *s*, and the relative speeds of the disk and mold are so timed that one of the projections *t* will impress each projectile which has been cast with a slight concavity. As the mold continues to revolve it is moved outward and then opened, discharging the projectile at a point immediately opposite that where the projectile is cast.

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

1. In an apparatus for casting projectiles, the combination with a mold-wheel of molds sliding radially therein, means for moving the molds in and out in relation to the mold-wheel, means for forcing a jet of molten metal into the molds when they are in their retracted position, and means for thereafter moving the molds outward to deliver the cast projectile.

2. In an apparatus for casting projectiles, the combination with a mold-wheel of molds sliding radially therein, means for moving the molds in and out in relation to the mold-wheel, means for forcing a jet of molten metal into the molds when they are in their retracted position, means for forming a con-

cavity in the end of the projectile, and means for moving the molds to deliver the cast projectile.

3. In an apparatus for casting projectiles for small-arms, the combination with a mold-wheel, of a series of molds carried by the mold-wheel adapted to move radially of the mold-wheel, each mold being composed of two parts hinged together, means for moving the molds radially of the wheel, and means for opening the molds when they are in their outward position, and closing them as they approach their casting position.

4. In an apparatus for casting projectiles for small-arms, the combination with a mold-wheel, of a plurality of molds mounted radially of the mold-wheel, a cam for moving the molds radially of the mold-wheel, and means for supplying to the molds molten metal under pressure when the molds are in their retracted position.

5. A mold-wheel, a series of scissor-shaped molds mounted in and arranged radially of the mold-wheel and adapted to move radially thereof, with means for moving the molds into the mold-wheel to receive a cast, and outwardly to discharge a bullet, substantially as described.

6. In an apparatus for casting projectiles, the combination with a mold-wheel, of a series of scissor-shaped molds mounted in the wheel, means for moving the molds radially of the wheel and means to cause the molds to open when moved outwardly and to close when moved inwardly.

7. The combination with a mold-wheel, a series of scissor-shaped molds mounted in the wheel means for moving them radially thereof and means for automatically opening and closing the molds.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK WICKS.

Witnesses:
OLIVER IMRAY,
EDWARD GARDNER.