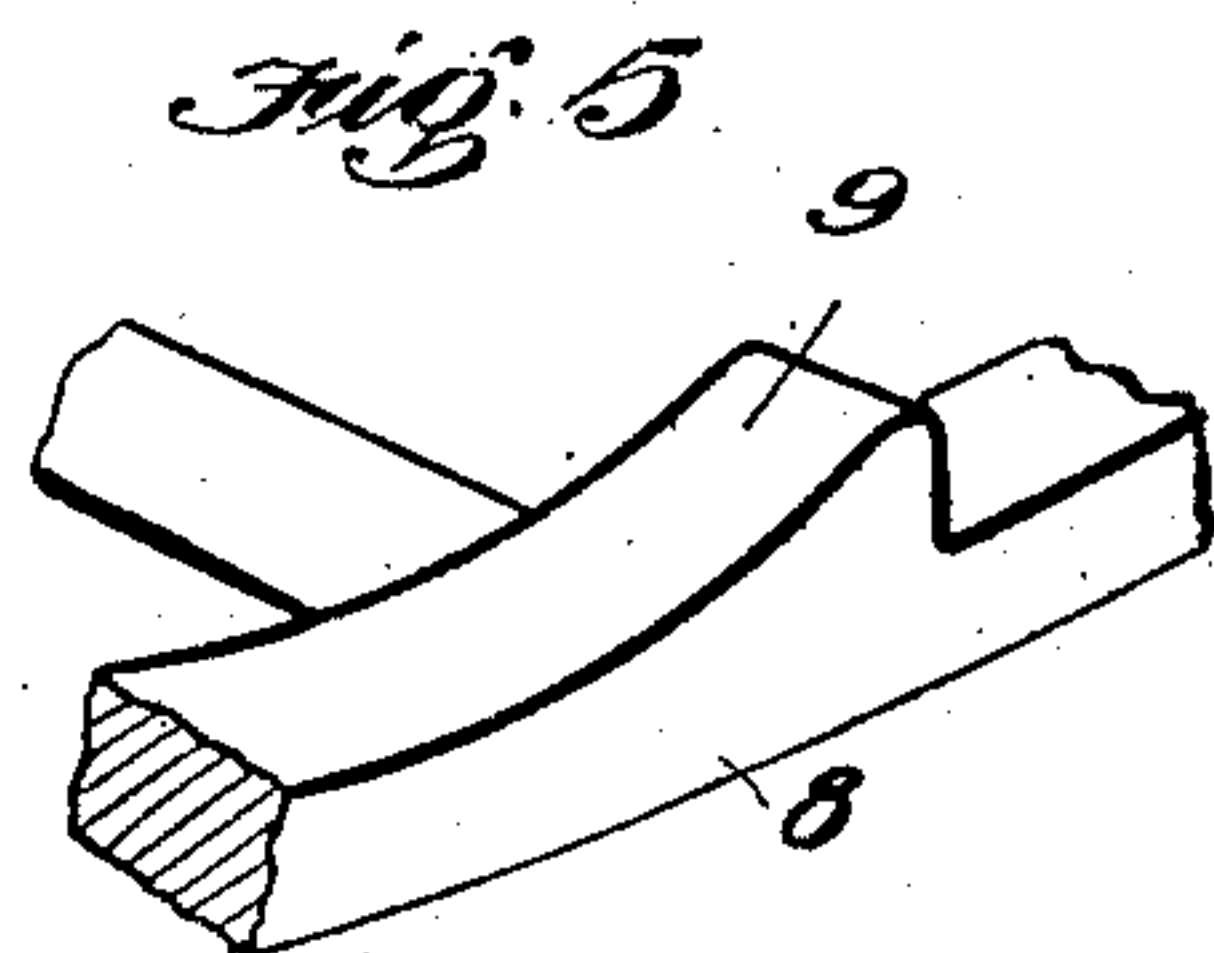
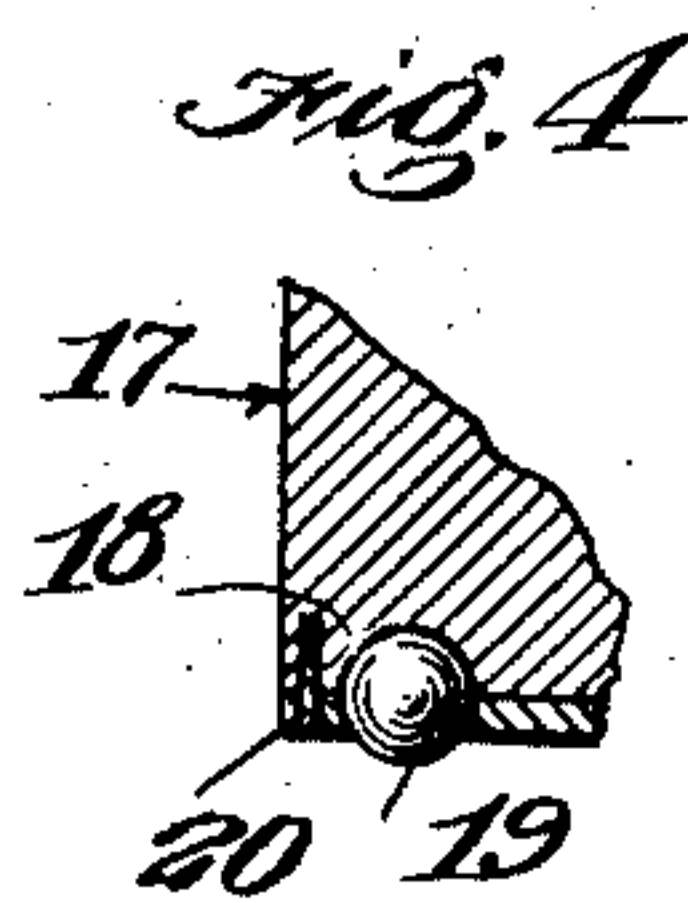
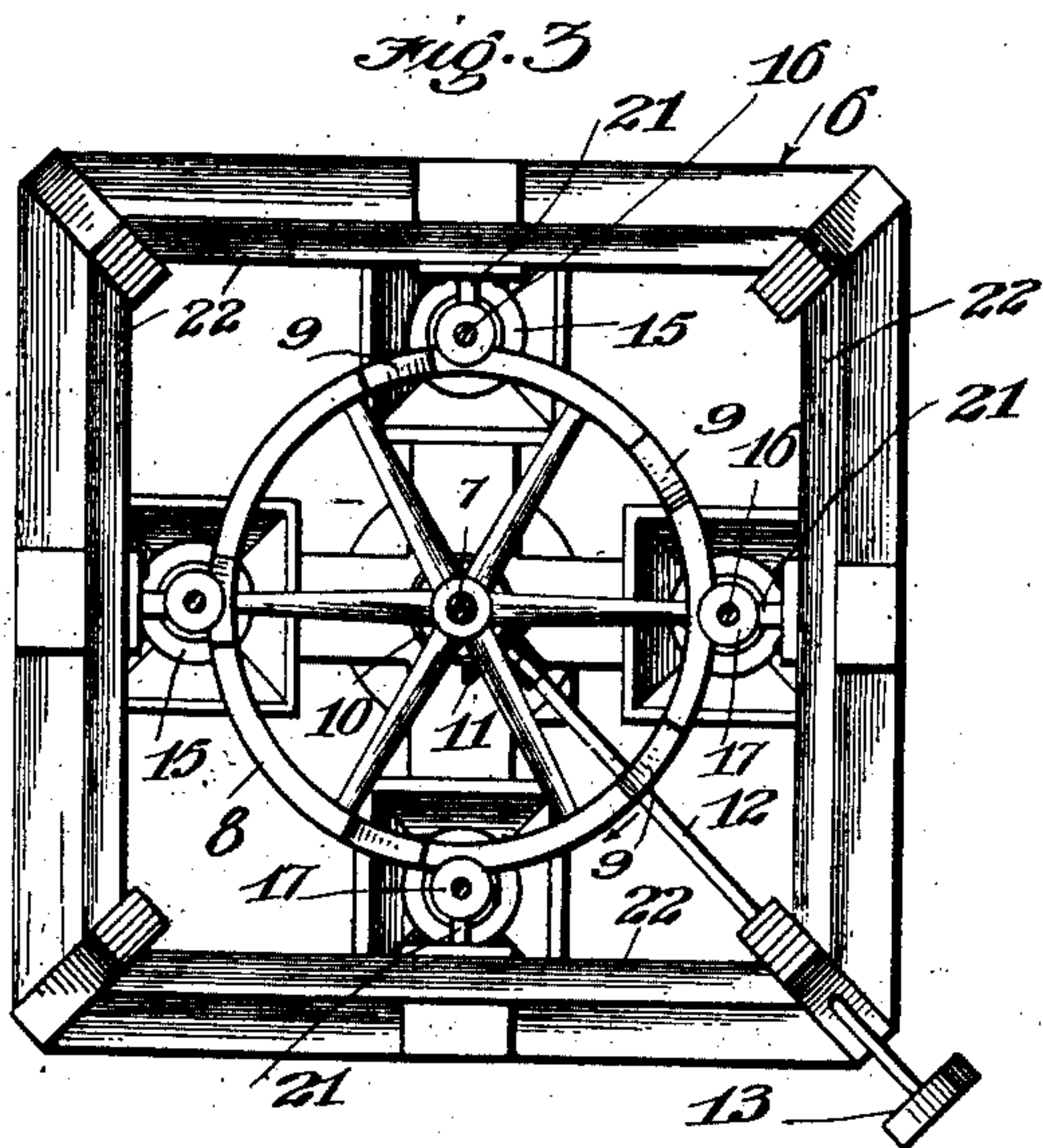
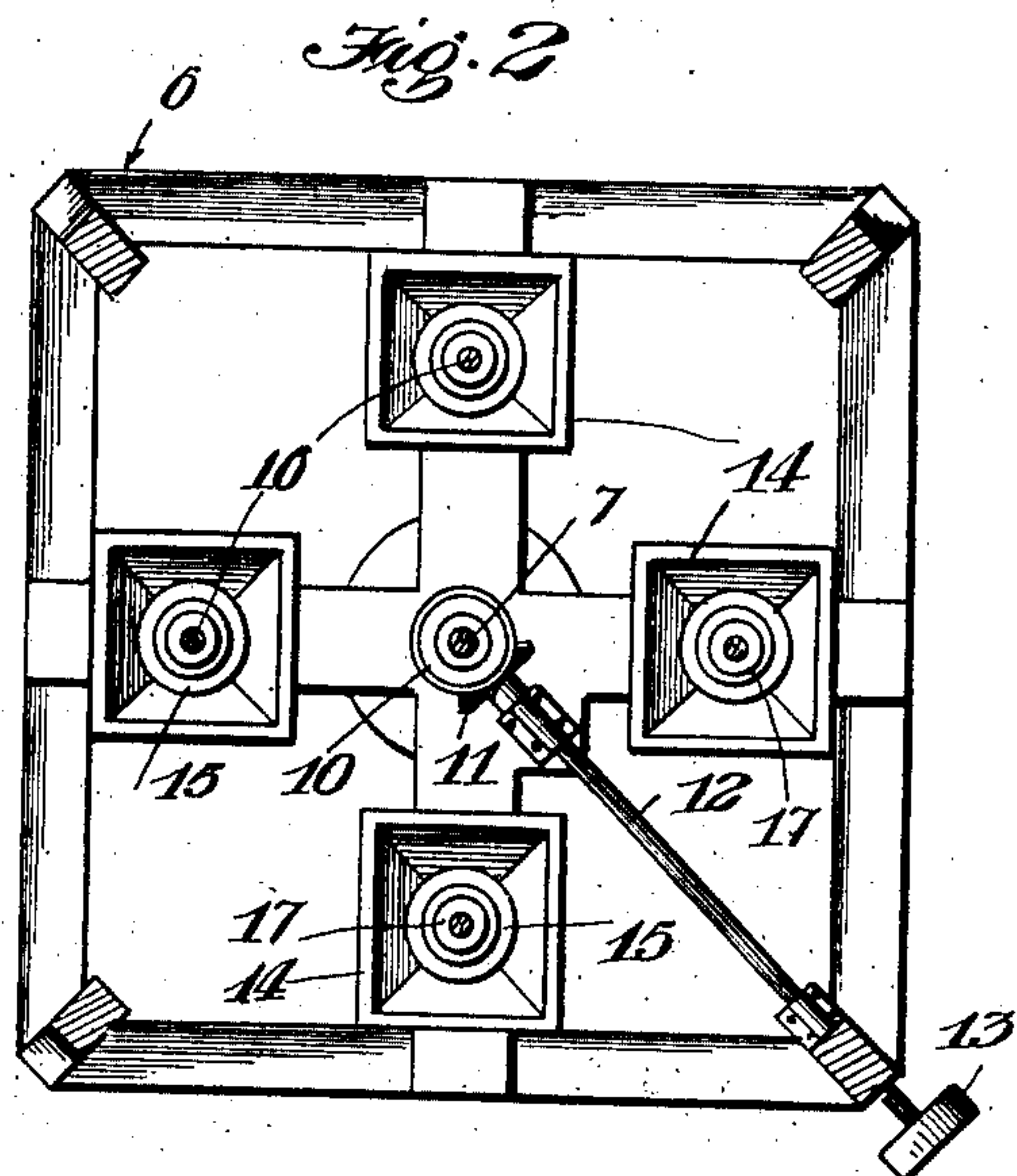
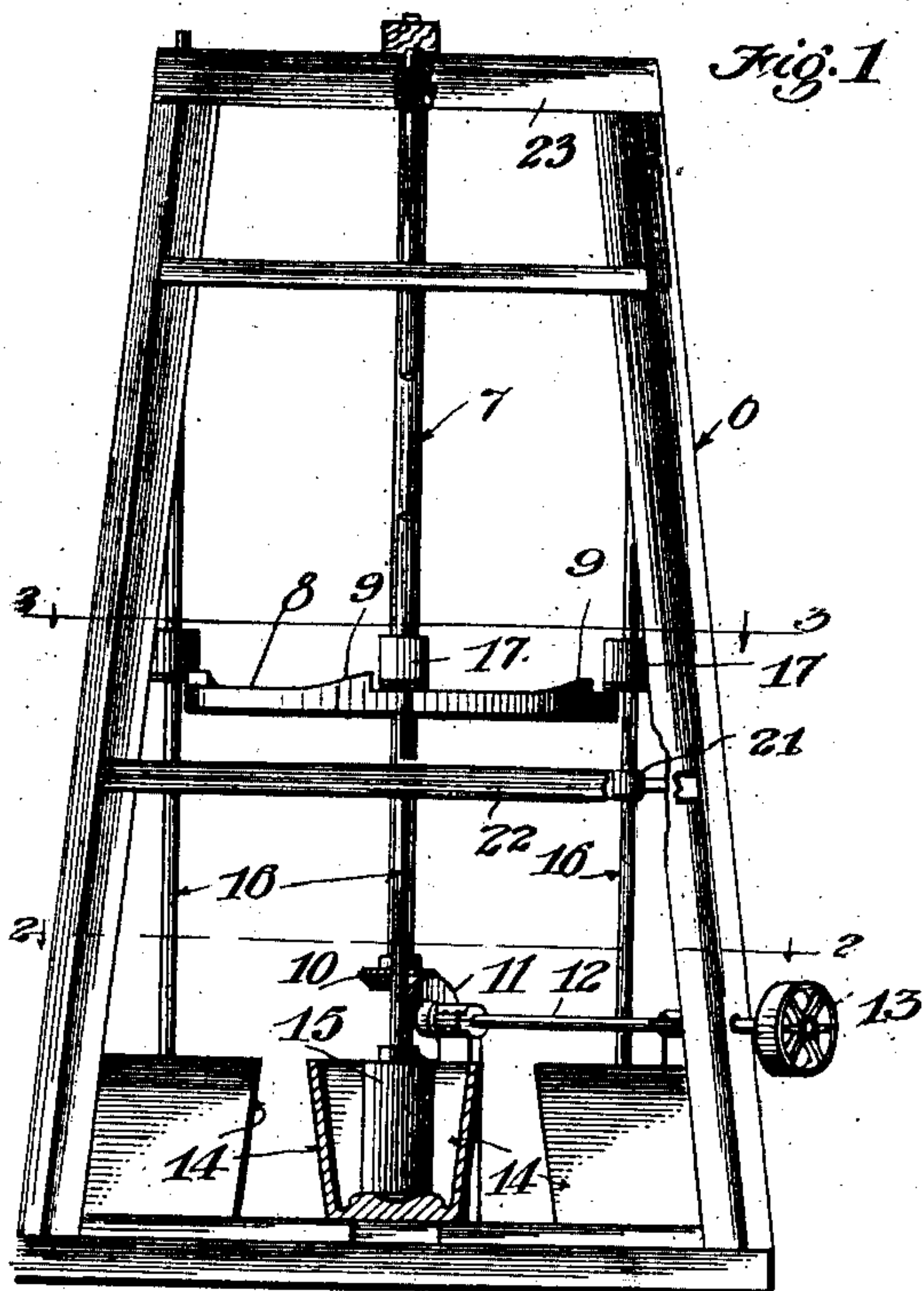


No. 826,726.

PATENTED JULY 24, 1906.

J. & C. A. HUNT.
STAMP MILL.

APPLICATION FILED OCT. 20, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN HUNT AND CHARLES A. HUNT, OF LOS ANGELES, CALIFORNIA.

STAMP-MILL.

No. 826,726.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed October 20, 1904. Serial No. 229,328.

To all whom it may concern:

Be it known that we, JOHN HUNT and CHARLES A. HUNT, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Stamp-Mills, of which the following is a specification.

Our invention relates to stamp-mills in which a plurality of stamps are operated by a single driving-shaft; and the objects thereof are to provide a stamp-mill of compact form in which stamps are operated with small expenditure of power. We accomplish these objects by the stamp-mill described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, with the front of one of the mortar-boxes removed. Figs. 2 and 3 are sections taken on the lines 2 2 and 3 3 of Fig. 1 looking in the direction of the arrows. Figs. 4 and 5 are details of construction of the ball-race of tappet and the stamp lifter or cam.

In the drawings, 6 is the frame, in which is mounted the vertical cam-wheel-operating shaft 7, upon which is mounted cam-wheel 8, having a plurality of wedge-shaped cams 9 secured to its upper surface. Bevel gear-wheel 10 is also secured upon this shaft and meshes with bevel-gear 11, which last gear-wheel is secured upon shaft 12, to the outer end of which is secured pulley 13, to which power is applied when it is desired to operate the cam-wheel.

In the bottom of the frame are mounted a plurality of mortars 14 of usual construction. Stamps 15, having stems 16, are provided for crushing the ore in these mortars. Upon these stamp-stems are tappets 17, in the bottom of which and near the outer edge thereof is provided a groove 18, which forms the top of a ball-race, in which are carried balls 19. These balls are secured to the tappet by a plate 20, having holes therein, through which the balls project, as shown in Fig. 4. The tappets on these stems project over the edge on the cam-wheel and are adapted to be engaged by the cams thereon and lifted thereby to secure the necessary drop of the stamp required for crushing the ore. In the drawings we have shown our mill as provided with four mortars and four stamps, as we consider that a very convenient number; but

more or less mortars and stamps may be used, as desired. Where four stamps are used, we prefer to have our cam-wheel provided with five cams equally spaced apart, so that upon the revolution of the cam-wheel only the full lift of one stamp and the partial lift of another stamp will be obtained at any one time, as by this arrangement this number of stamps can be more successfully and economically operated than in any other arrangement that we know of. Intermediate the tappet and the stamp the stems are guided by guides 21, which are secured to cross-timbers 22, and the upper end of the stamp-stems are guided by passing through the top timbers 23 of the frame.

In the operation of our mill power is applied to drive the cam-wheel in the direction indicated by the arrow in Fig. 3, thereby bringing the low end of the wedge-shaped cam under the tappet and gradually lifting the same until the tappet drops off the cam, when the stamp falls upon the ore in the mortar. The ball-bearing in the bottom of the tappet reduces the friction between the cams and tappet, so that less power is required to raise the stamps than if the ball-bearing was not provided. The rotary movement of the cam produces a rotary movement of the stamp, so that the face of the stamp and the die in the mortar wear evenly.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a stamp-mill a horizontally-revoluble cam-wheel; wedge-shaped cams upon the upper surface thereof; a vertically-movable stamp having stems projecting upwardly therefrom and passing in close proximity to the periphery of the cam-wheel; tappets rigidly secured to said stems above said cam-wheel and adapted to be engaged and lifted and revolved and dropped by the cams on the cam-wheel, said tappets having a ball-race in the bottom of each; and balls in said ball-race.

2. In a stamp-mill a frame; a plurality of mortars having the centers thereof arranged in a circle secured in the bottom thereof; a vertically-movable stamp for each of said mortars; vertically-projecting stems for said stamps; guides for said stems, said guides being secured to said frame; tappets having

ball-races in the bottom thereof rigidly secured to said stems; a horizontally-revoluble cam-wheel having the outer perimeter in close proximity to said stems; wedge-shaped
5 cams upon the upper surface of said cam-wheel adapted to engage the tappets on the stamp-stems and thereby lift revolve and drop the same; means to operate said cam-wheel.

In witness that we claim the foregoing we do have hereunto subscribed our names this 13th day of October, 1904.

JOHN HUNT.
CHARLES A. HUNT.

Witnesses:

G. E. HARPHAM,
MYRTLE JONES.