

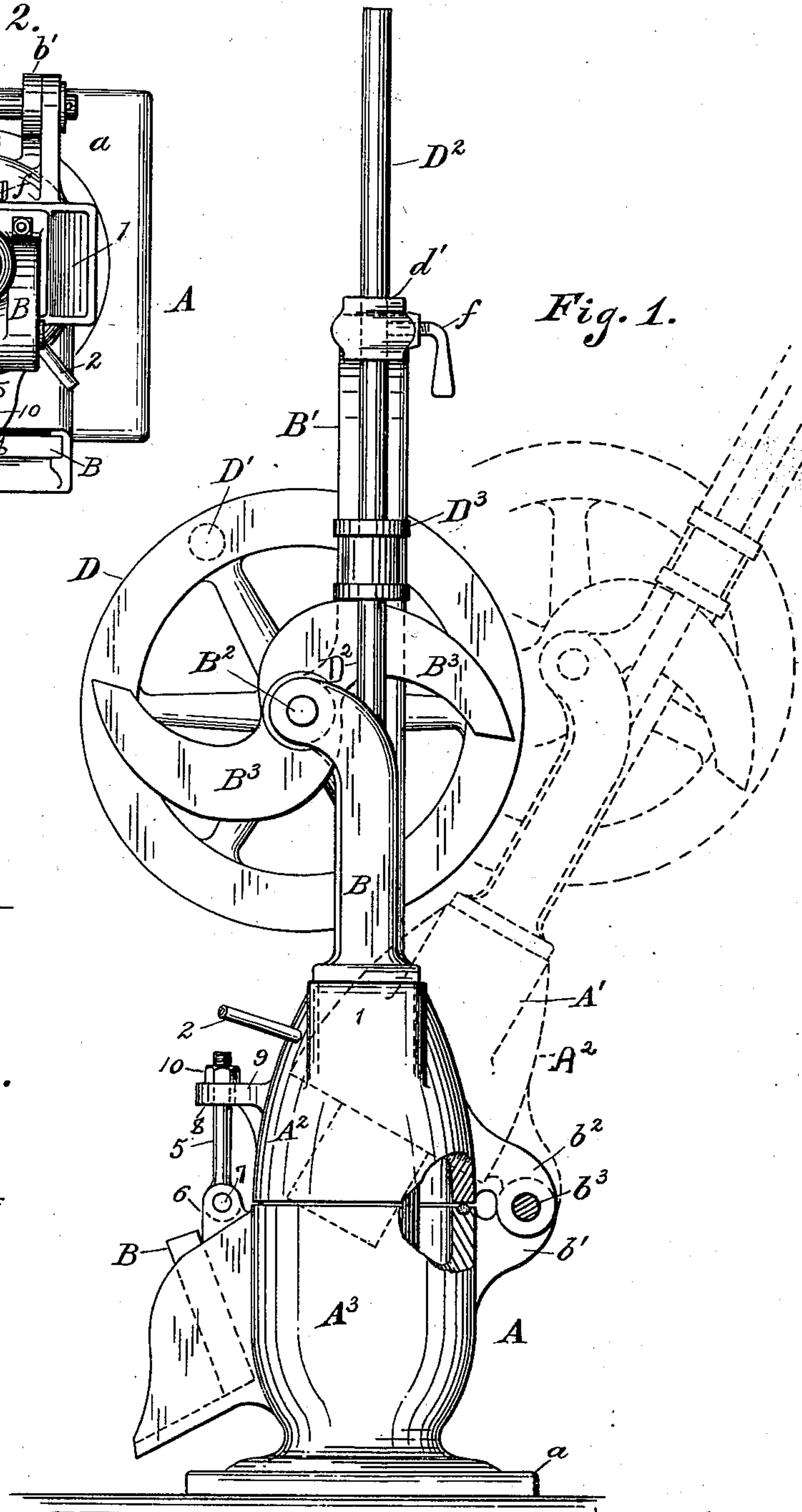
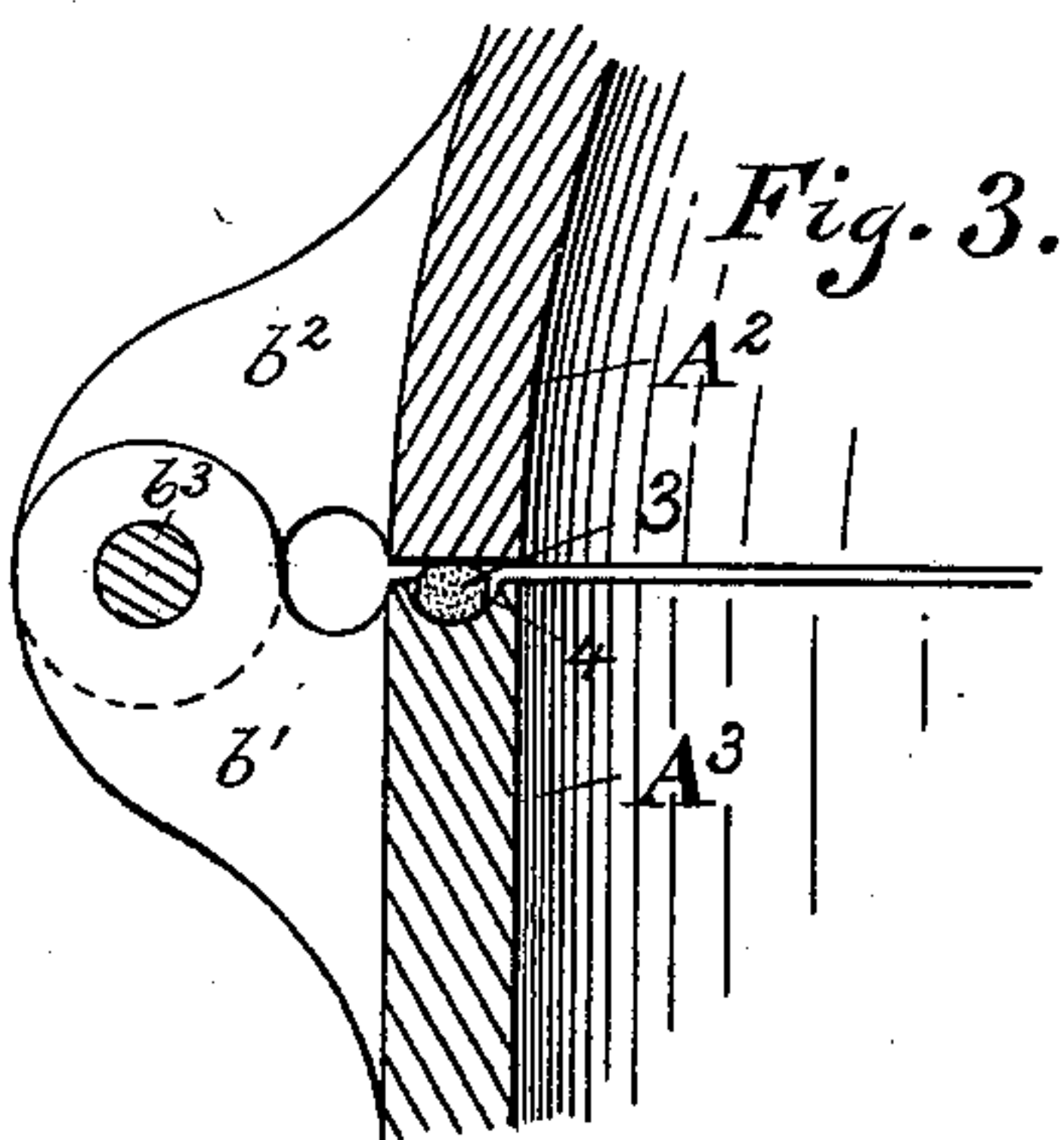
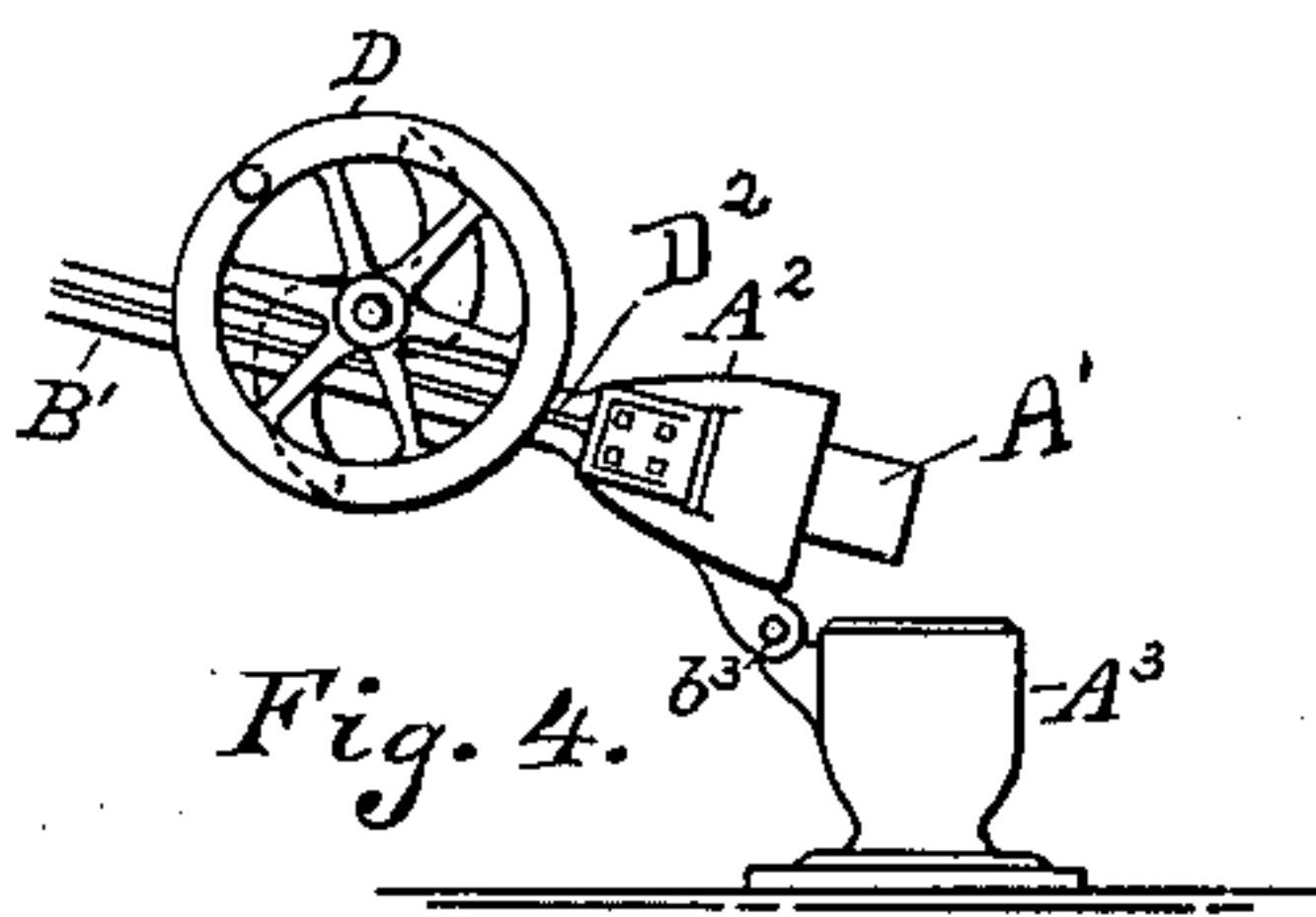
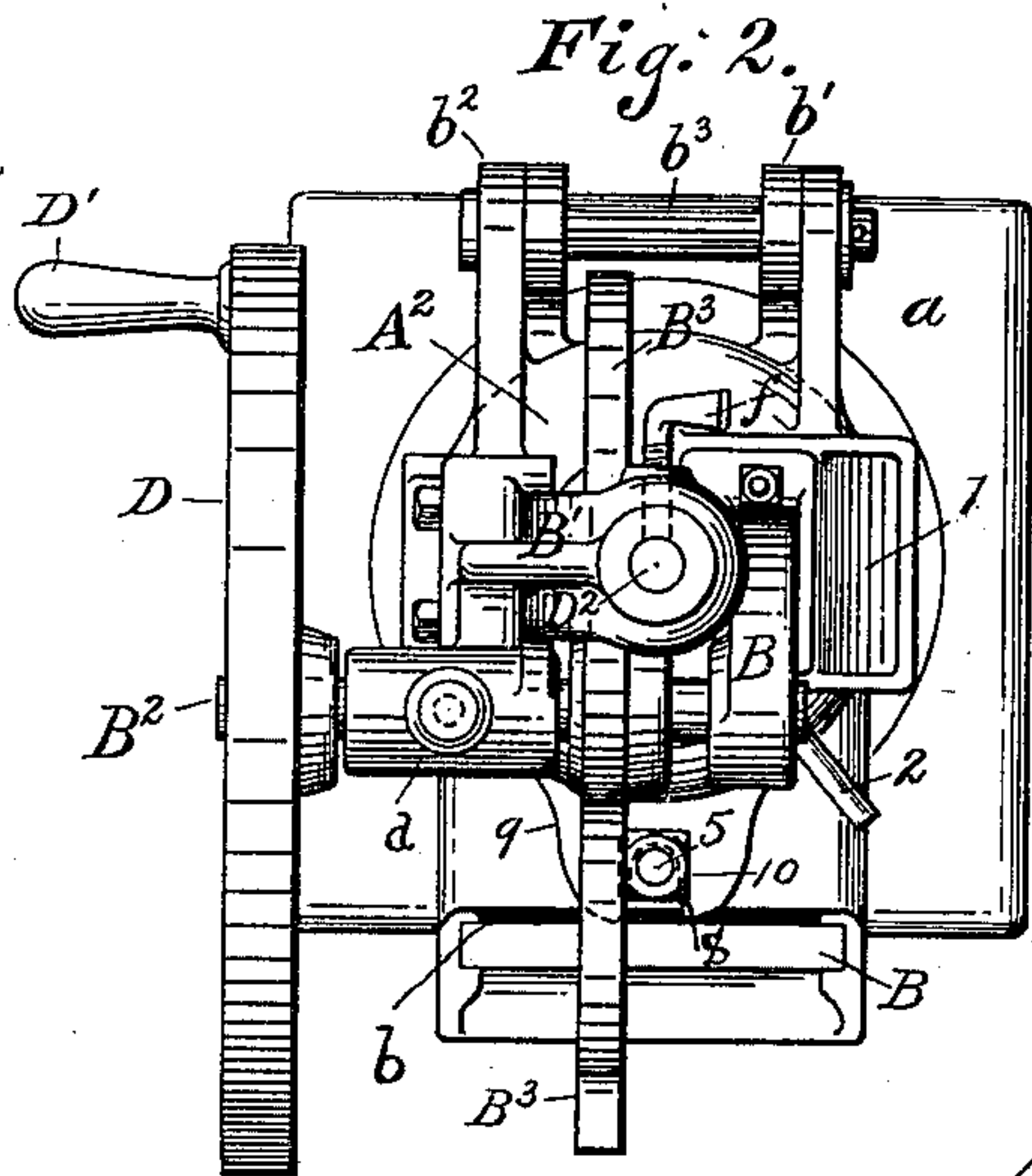
No. 661,144.

Patented Nov. 6, 1900.

M. H. HAMM & H. R. TAYLOR.
ORE STAMP MILL.

(Application filed Dec. 13, 1899.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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ORE STAMP-MILL.

SPECIFICATION forming part of Letters Patent No. 661,144, dated November 6, 1900.

Application filed December 13, 1899. Serial No. 740,195. (No model.)

To all whom it may concern:

Be it known that we, MARK H. HAMM, residing at Petaluma, county of Sonoma, and HENRY R. TAYLOR, residing at Oakland, county of Alameda, State of California, citizens of the United States, have invented certain new and useful Improvements in Ore Stamp-Mills; and we do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to a certain new and useful ore stamp-mill designed to take the place of the hand-mortar commonly used by miners or prospectors, the same consisting in the arrangement of parts and details of construction, as will be hereinafter fully set forth in the drawings and described and pointed out in the specification.

Our invention is mainly designed for the use of prospectors in reducing or crushing mineral-bearing quartz or ores, with the view of ascertaining the probable value of the ground being worked.

The objects of the invention are to provide an ore stamp-mill which may be readily dismantled for the purpose of transportation from place to place and quickly placed together when required for operation, to construct a mill which shall be simple of construction and simple in its operation and which may be placed upon the market at a nominal cost in comparison with mills designed to crush ores, to produce a mill which may be operated with slight power, and to arrange a mill wherein the mortar may be quickly opened in order to enable a "clean-up" to be made after the pulverization of the ore and easily restored or closed after a clean-up.

In order to comprehend the invention, reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a side view in elevation of the entire mill, said view also indicating in dotted lines the position that the upper part of the mill assumes as tilted or swung over. Fig. 2 is a top plan view of the mill. Fig. 3 is an enlarged broken detail sectional view of the mortar, and Fig. 4 is a broken detail view

showing the mill in its tilted position or the upper portion thrown over to open the mortar to enable a clean-up to be made.

In the drawings the letter A is used to indicate the mortar, within which works the stamp A'. This mortar consists of an upper section A² and a lower section A³, the former being hinged to the latter. The lower section A³ is preferably cast in one piece with its broad base *a*, and the same is provided on its inside with a seat or recess to receive a shoe, which shoe can be removed when worn out by the action of the stamp A'. In the front wall of the lower section there is an outlet-opening, which is maintained closed by the screen B, removably fitted within guide-ways.

Any suitable style of hinge may be employed to unite the upper section A² to lower section A³ of the mortar; but preferably we prefer to cast the lower section near its upper edge with two rearwardly-projecting arms *b'*, which fit between two arms *b*², rearwardly projecting from the lower rear edge of the upper section, said arms being united by the bolt or pin *b*³ passing therethrough and upon which the arms *b*² turn as the upper section is swung over.

The mortar may be made in any suitable shape or form, although, as we have only shown one stamp, we prefer to make it cylindrical in shape.

To the upper section A² of the mortar are bolted the upwardly-extending supports or uprights B B', the former being somewhat shorter than the latter and its upper end being slightly curved and serving as a pillow-block or bearing for the outer end of the cam-shaft B², the opposite end of which shaft extends through a curved shoulder *d*, projecting from standard, upright, or support B' and in line with upper end of the support or upright B, Fig. 2 of the drawings. Upon the shaft B² is keyed or otherwise secured the tappet-cam B³, which works between the standards, uprights, or supports B B'. To the projecting end of the cam-shaft B² is secured the drive-wheel D, which is driven by handle D', se-

cured thereto. If desired, the cam-shaft may be driven by means of a power-belt (not shown) working over drive-wheel D.

Through an opening in the top of mortar-section A² passes the stem D² of the stamp A', which stem extends upward through the guide-opening d', formed through the upper curved end of standard, support, or upright B'. The upper end of said standard, upright, or support is slightly curved, so as to place the guide-opening d' in line with the guide-opening in the top of the section A², which guide-openings serve as an upper and lower bearing for the stem D² of the stamp A. The stamp is raised by the action of the tappet-cam during the rotation of the cam-shaft against the tappet D³, secured to the stem D², as is usual in ore stamp-mills.

The ore to be crushed enters the mortar through an ore-feed 1 in the top of section A², while the water enters through the pipe 2, leading from a suitable source of supply, which enters the mortar through said section A². In order to obtain a tight joint between sections A² and A³, a gasket 3 is interposed therebetween, said gasket fitting within the annular groove or seat 4, cut or formed in the upper edge of lower section A³.

The mortar-sections are held locked or united during the work of the mill by means of the eye or lock bolt 5. This bolt at its lower end is secured between the shoulders of a shelf 6, projecting from the front of the lower section, by means of the pin 7. The upper end of lock-bolt 5 fits within a recess or socket 8 in the shelf 9, projecting from section A², and the parts or sections A² and A³ are drawn together by screwing down the nut 10 of eye or bolt lock 5, which nut bears down upon shelf 9.

It will be observed that the longer support, standard, or upright serves a double purpose, to wit: first, a bearing for one end of the cam-shaft, and, second, a bearing or guide of the stem of the stamp.

Through the upper end of the support, standard, or upright B' extends screw-bolt f, which bolt when screwed inward engages the stem of the stamp and holds the same against movement. When it is desired to make a clean-up, the stem of the stamp is raised or lifted its full stroke and the screw-bolt f turned so as to frictionally engage the same and hold it in such elevated position. The nut 10 of eyebolt 5 is then screwed up or loosened and eyebolt 5 thrown downward, so as to unlock the sections of the mortar. When thus released it is only required that slight pressure be brought to bear against the standards or uprights in order to swing the upper section of the mortar upon its hinge, so as to place the parts into the position illustrated by Fig. 4 and by dotted lines in Fig. 1 of the drawings. When thus thrown or tilted over ready access may be had to the interior of

mortar-section A³ in order to make a clean-up. After a clean-up the parts are restored to their normal position by raising the tilted parts into a vertical position, Fig. 1 of the drawings, and securing the mortar-sections together by placing the eyebolt into engagement with the upper section of the mortar and locking the parts by screwing down the nut 10. When these parts have been united, the stem of the stamp is released by unscrewing the screw-bolt f.

The above-described ore stamp-mill may be readily detached for shipment or transportation by simply disconnecting the mortar-sections, which places the mill in two parts. The stem may then be withdrawn and, if desired, the cam-shaft and its drive mechanism detached.

Having thus described the invention, what we claim as new, and desire to be protected by Letters Patent, is—

1. In an ore stamp-mill, the combination with the mortar comprising an upper and lower section, a hinged connection therebetween, of a stamp working within the mortar, the standards or uprights secured to and projecting from the upper section of the mortar, the stamp-stem extending through an opening in the upper section of the mortar, a tappet-cam secured to a cam-shaft working in bearings of the uprights or standards, device for frictionally locking the stamp-stem, and of a water and an ore feed opening formed in the upper section of the mortar.

2. In a stamp-mill, the combination with the mortar consisting of an upper and lower section connected by a hinged joint, the uprights or standards secured to and projecting from the upper section of the mortar, the stamp-stem working through said section of the mortar and through bearings of one of the uprights or standards, operating mechanism for the stamp, and of a device for engaging with the stamp-stem to hold the same in a raised position.

3. In a stamp-mill, the combination with a mortar comprising a lower section, and an upper section hinged to said lower section, a stamp working within the mortar and having a stem guided in bearings carried by the upper mortar-section, means mounted on the upper mortar-section for operating said stamp, and a locking device adapted to engage said stem for holding the stamp, substantially as described.

4. In an ore stamp-mill, the combination with a mortar comprising an upper and a lower section, a hinged connection therebetween, of a stamp working within the mortar, standards secured to and projecting from the upper mortar-section, a stamp-stem, extending through an opening in the upper mortar-section, a shaft mounted in bearings on said standards, means operated by the shaft for reciprocating said stamp and a device for lock-

ing the stamp in raised position, said mortar being provided with an ore-feed, substantially as described.

5 In an ore stamp-mill, the combination of a mortar comprising a lower section, and an upper section hinged thereto, a stamp within the mortar, a stem projecting therefrom through an opening in the upper mortar-section, standards secured to and projecting from
10 said upper mortar-section, a bearing on one of said standards for said stamp-stem, a rotary shaft journaled in bearings on said standards, operating devices between said shaft

and stem for reciprocating the latter, and a locking device for holding said stamp in raised position, substantially as described. 15

In witness whereof we have hereunto set our hands.

MARK H. HAMM.

HENRY R. TAYLOR.

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H. SCHUMAN.

Witnesses to the signature of H. R. Taylor:

J. N. TURNER,

J. S. WARDELL.