

(No Model.)

F. W. FULLER.

MACHINE FOR GRINDING AND POLISHING SPHERICAL BODIES.

No. 537,971.

Patented Apr. 23, 1895.

FIG. 1.

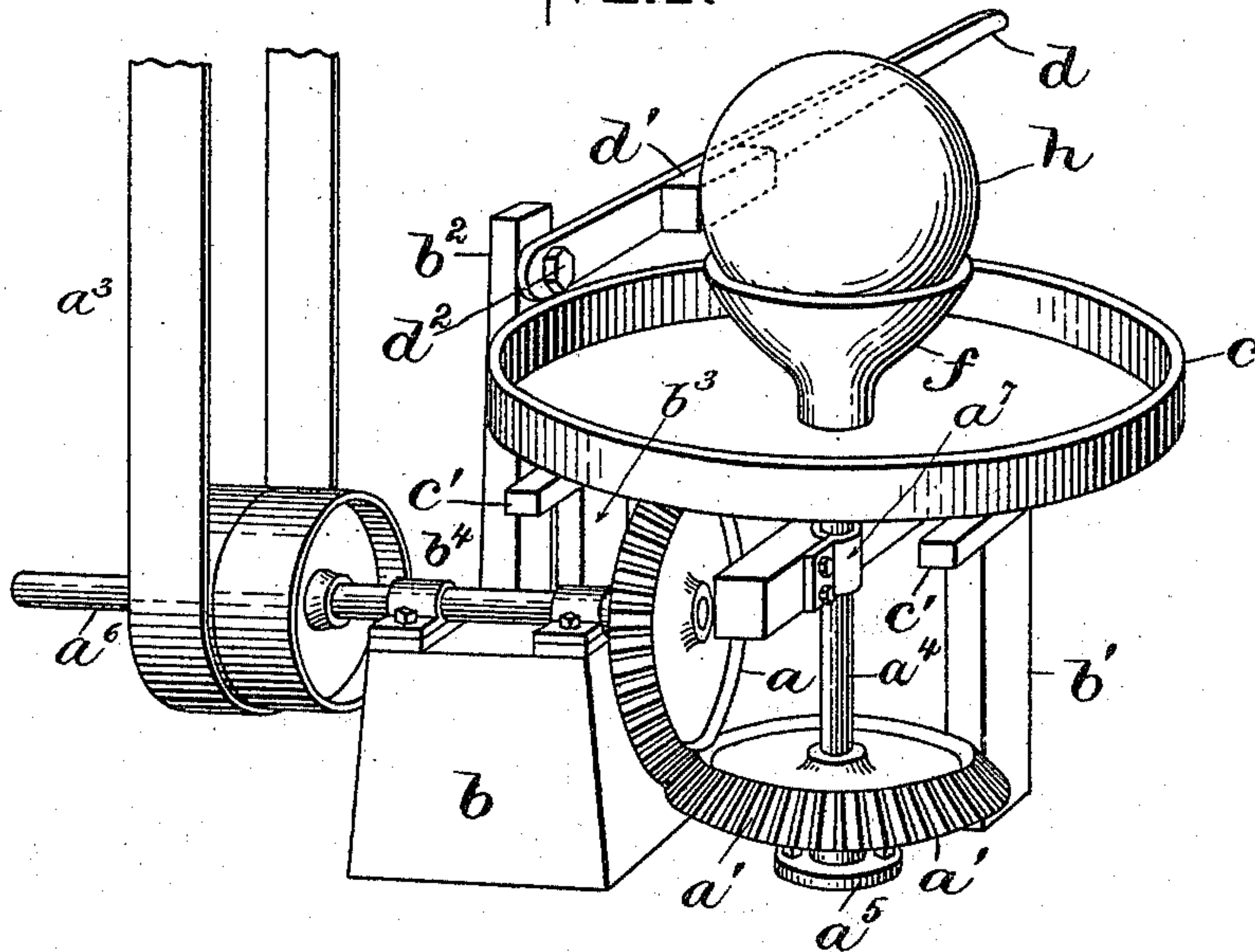
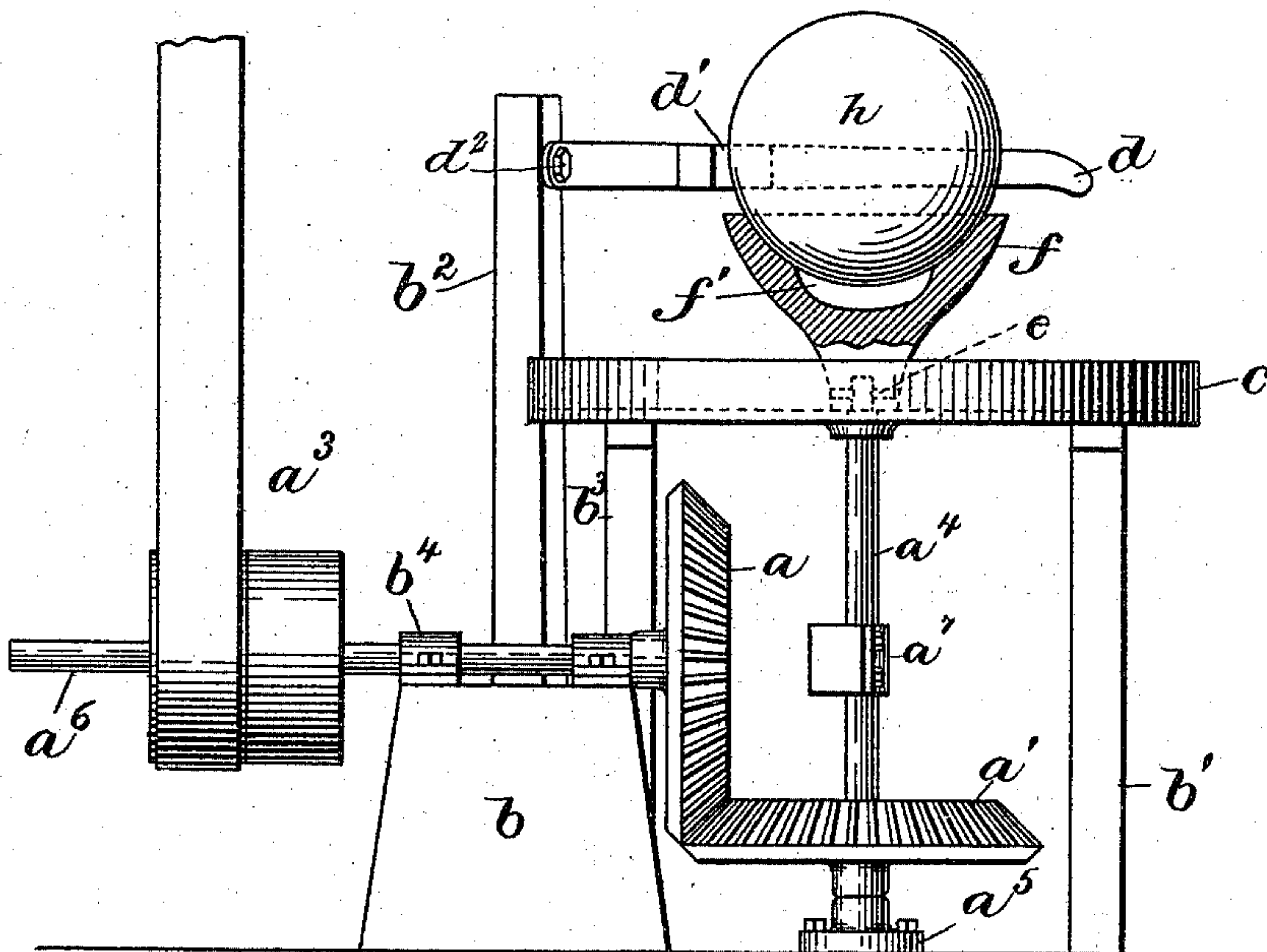


FIG. 2.



WITNESSES:

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FREDERICK W. FULLER, OF QUINCY, MASSACHUSETTS.

MACHINE FOR GRINDING AND POLISHING SPHERICAL BODIES.

SPECIFICATION forming part of Letters Patent No. 537,971, dated April 23, 1895.

Application filed June 29, 1894. Serial No. 516,045. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. FULLER, of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Grinding and Polishing Spherical Bodies, of which the following is a specification.

My invention relates to an improvement in machines for polishing spherical bodies for monumental architecture or other purposes, and has for its object, first, to provide a suitable rotary holder or cup for the body to be operated upon; and, second, to provide means whereby the speed of such object may be varied relative to that of the cup.

My invention consists in certain novel features of construction and arrangement of parts, which will be fully hereinafter described and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings and the characters marked thereon, which form a part of this specification, like characters designating like parts or features, as the case may be, wherever they occur.

In the drawings—Figure 1 is a perspective view of my complete machine. Fig. 2 is a front view thereof, the holder or cup being shown in section.

aa' are two beveled pinions suitably mounted for the transmission of motion from one to the other. The pinion, a , is secured to the end of a shaft, a^6 , held upon a support, b , by bearings b^4 . The shaft, a^6 , and pinion, a , receive their motion through an ordinary belt connection, a^3 . The pinion, a' , is secured to a vertical shaft, a^4 , mounted in bearings, a^5 and a^7 . A holder or cup, f , or iron of soft metal is rigidly secured to the upper end of the shaft by any suitable means, as for instance, by a socket in the end of the cup arranged to fit on a reduced part of the shaft, a^4 , and held together by a pin, e .

c is a stationary tray secured upon horizontal pieces, $c' c'$, resting upon uprights, $b' b^3$. The shaft, a^4 , passes through the tray.

d is a lever secured to an upright, b^2 , by means of a bolt, d^2 . A friction-block, d' , is secured upon the lever at a suitable distance from the pivot point to engage the ball, h , which rests in the cup, f .

The parts being constructed and arranged as shown and described, and the speed regulated

to suit the size of the ball to be ground or polished, the machine is started, the cup, f , revolves and with it the ball, h . Now, by pressing the block, d' , against the ball, h , the speed of the latter in relation to the cup will be retarded, causing the inside surface of the cup to pass about that portion of the surface of the ball that rests in the cup. By supplying any suitable abrasive material at this point the ball will be ground or polished as desired.

The particular parts of the surface of the ball to be presented to the action of the abrading material at the inside surface of the cup may be regulated at will by means of the block, d' , which when applied to the ball and pressed either up or down will cause the ball to take a twisting motion in the cup, owing to the resultant of the two forces, to-wit:—one tending to retard the speed of the ball in the cup, and the downward or upward pressure of the block tending to turn the ball in the cup. It will thus be seen that by pressing the block against the ball the surface of the ball in contact with the cup will be polished or ground, and when it is desired to present a new surface to the action of the abrading material this can be readily done by releasing or increasing the pressure of the block upon the ball.

The depression, f' , in the cup serves as a receptacle for the abrading material. It is necessary to use abrasive material of some sort since metal of itself will not cut stone, but merely chip or break it. The part, c , serves to catch the grindings that fall from the ball, h .

Any desired form of motive power may be used, the essential thing being the arrangement of the rotary cup, the ball and the friction block, so that the speed of the ball may be varied in relation to the speed of the cup, and also given a twisting motion in the cup, either for the purpose of polishing or of changing the position of the ball in the cup.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. In a stone polishing machine, in combination, a rotary cup for carrying a ball, and

means for retarding the speed of the ball in relation to the speed of the cup, substantially as and for the purpose described.

2. In a stone polishing machine, in combination, a rotary cup for carrying a ball, a lever provided with a friction block arranged to engage the ball carried by said cup, substantially as and for the purpose described.

3. In a stone polishing machine in combination, a rotary cup for carrying a ball a depression f' in the bottom of said cup to receive and hold abrasive material, a lever pro-

vided with a friction block arranged to engage the ball carried by said cup, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of June, A. D. 1894.

FREDERICK W. FULLER.

Witnesses:

WILLIAM QUINBY,
C. F. BROWN.