

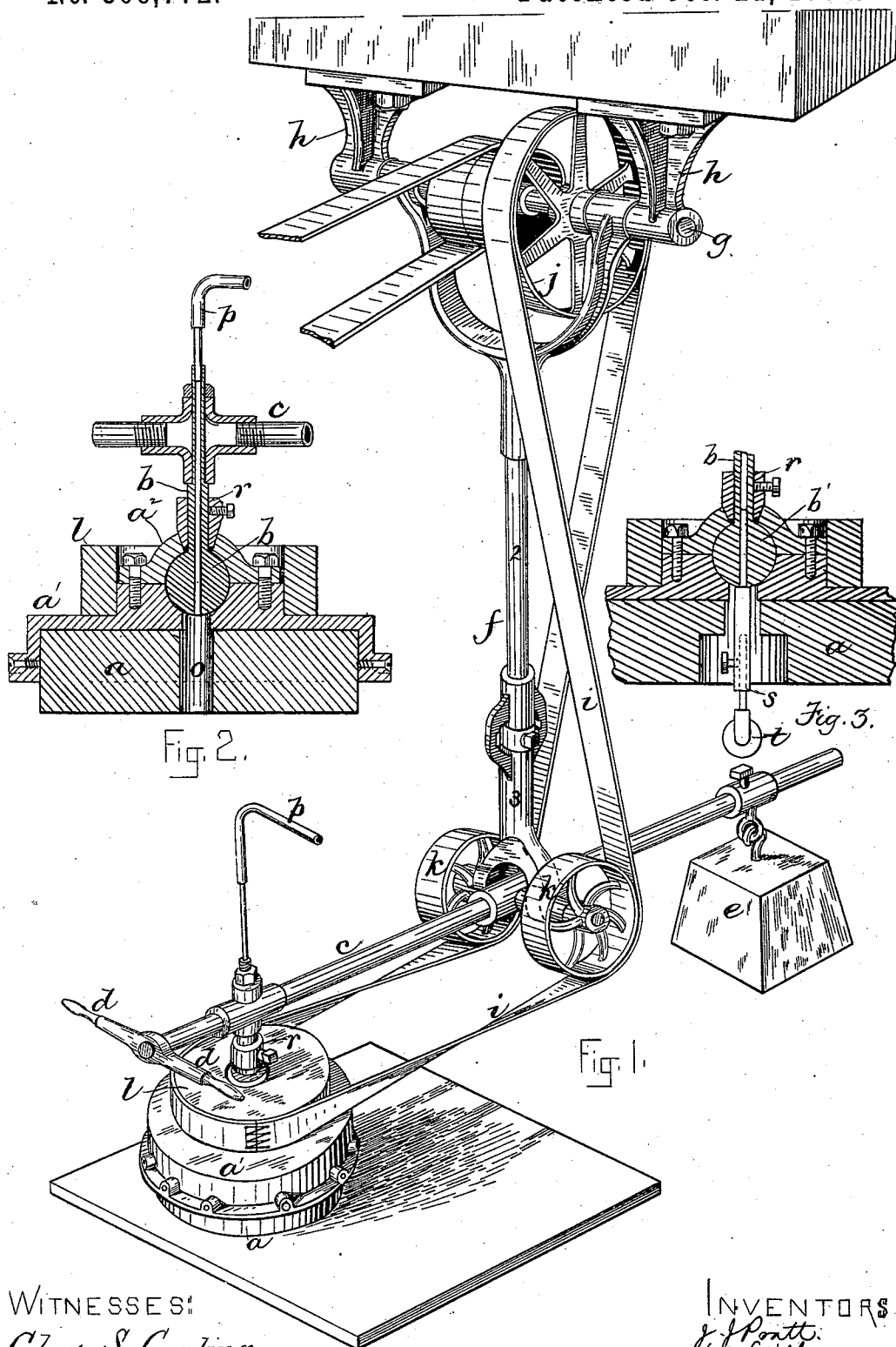
(No Model.)

J. J. PRATT & H. B. STILLMAN.

STONE DRESSING MACHINE.

No. 306,772.

Patented Oct. 21, 1884.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN J. PRATT, OF WAKEFIELD, AND HENRY B. STILLMAN, OF BOSTON,
MASSACHUSETTS.

STONE-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,772, dated October 21, 1884.

Application filed March 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, JOHN J. PRATT, of Wakefield, county of Middlesex, and HENRY B. STILLMAN, of Boston, in the county of Suffolk, both in the State of Massachusetts, have invented certain Improvements in Stone-Dressing Machines, of which the following is a specification.

This invention relates to that class of stone-dressing machines in which a rotary grinding or rubbing wheel is employed, which is capable of being moved about by the operator over the surface to be dressed, the lower side of the wheel constituting its acting surface.

The invention has for its object to provide certain improvements in the means employed for supporting and for rotating the wheel, as we will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of an organized machine embodying our improvements. Fig. 2 represents a vertical central section through the wheel and its attachments. Fig. 3 represents a similar section showing the wheel supported so that its periphery can act instead of its under side.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the grinding or rubbing wheel, which will usually be made of sandstone or emery, and is secured by set-screws to a metal cap, *a'*. The upper portion of said cap has a plate, *a²*, bolted to it, and between the cap and the plate *a²* is formed a spherical cavity or socket.

b represents a vertical stud, having at its lower end a spherical enlargement or ball, *b'*, fitted in the above-mentioned socket. The wheel and its cap are adapted to be tilted or inclined in any direction on the ball *b'*, the orifice in the plate *a*, through which the stud *b* passes, being considerably larger than said stud, so as to allow the wheel to be inclined as may be desired, and thus adapt its acting surface to the inclination, if any, of the surface on which it acts. The stud *b* is affixed to an arm, *c*, having at its outer end suitable handles, *d d*, adapted to be grasped by the operator, and at its rear end a counterbalancing-weight, *e'*, which is adjustable on the arm *c*,

and thus enables the pressure of the wheel against the surface on which it acts to be adjusted. The arm is pivoted to the lower end of a pendulous arm, *f*, which is hung so as to oscillate upon a driving-shaft, *g*, supported in fixed hangers *h h*. The arm *f* is made in sections 2 3, the lower section, 3, to which the arm *c* is pivoted, being swiveled to the main section. The wheel *a* is thus adapted to be moved in any direction by the operator. The wheel is rotated by means of a belt, *i*, running from a pulley, *j*, on the driving-shaft *g* under idle-pulleys *k k* on the trunnions, which connect the arm *f* with the arm *c*, and around a pulley, *l*, secured to the holder *a'*. The pulley *l* surrounds the ball-and-socket joint, above described, so that the center of the width of the belt on said pulley will always coincide with a plane intersecting the center of said joint at right angles with the axial line of the wheel. This arrangement of the pulley enables the wheel to be inclined in any direction without varying the tension of the belt to any material extent, the operative relation of the belt to the pulley being unchanged by any inclination that the wheel and pulley are capable of assuming. The arrangement of the belt-supporting pulleys enables a single belt to communicate motion from the driving-shaft mounted in fixed bearings to the universally-movable wheel.

It being desirable to introduce water between the acting surface of the wheel and the surface on which it acts, we provide the stud *b* with a longitudinal passage extending through the ball *b'*, the stone *a* and its holder being provided with coinciding apertures *o*, as shown in Fig. 2. A flexible water-pipe, *p*, is connected with the upper end of the stud *b* by a metal terminal secured to said flexible pipe and inserted in the stud *b*.

In case it is desirable to prevent the wheel and its holder from tipping on the ball *b'*, a collar, *r*, on the stud *b* may be slipped downwardly into the orifice in the socket-plate *a²*, as shown in Fig. 2, said collar nearly filling the orifice, and thus preventing such lateral movement.

Fig. 3 shows the wheel raised and supported by a standard, *s*, having an anti-friction roller or caster, *t*, at its lower end, adapted to

move about on a supporting surface, the upper end of said standard being inserted in the passage in the ball *b'*. When the wheel is thus supported, its periphery may be caused to act on the edges of articles of stone to be formed or dressed. The periphery of the wheel may be molded to impart a correspondingly-molded form to the article on which the wheel acts.

The standard *s* may be of telescopic construction, so that it can be adjusted as to length, and thus support the wheel at any desired height. When the standard is used, the collar *r* should be adjusted to prevent the wheel from oscillating on the ball *b'*.

It is obvious that the wheel may be of suitable construction to polish stone or other surfaces, instead of abrading them, and to this end may be made of wood covered with a suitable fabric or leather to hold a polishing-powder.

The machine may, if desired, be provided with interchangeable grinding and polishing wheels.

We claim—

1. In a stone-dressing machine, the holder connected to a supporting-arm by a ball-and-socket joint and provided with a pulley surrounding said joint and with a wheel, *a*, as set forth.
2. The combination of the socketed holder having the wheel *a*, and the stud *b*, having the

ball *b'*, and a water-passage passing through said stud and ball and coinciding with an orifice in the wheel, as set forth.

3. The combination, with the socketed holder having the stone-dressing wheel, of the stud having the ball fitting the socket of the holder and a collar adapted to prevent the holder and its wheel from oscillating on the stud, as set forth.

4. The combination of the holder and its wheel, the jointed supporting-arms *c f*, the former being connected to the holder by a ball-and-socket joint, the driving-pulley *j*, and idle-pulleys *k k*, and the single belt arranged to communicate motion from the driving-pulley to the wheel *a*, as set forth.

5. The combination of the wheel, the socketed holder, the stud *b*, having a longitudinal passage, and the standard *s*, adapted to be inserted in said passage and to support the wheel, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 4th day of March, 1884.

JOHN J. PRATT.
HENRY B. STILLMAN.

Witnesses:

C. F. BROWN,
A. L. WHITE.