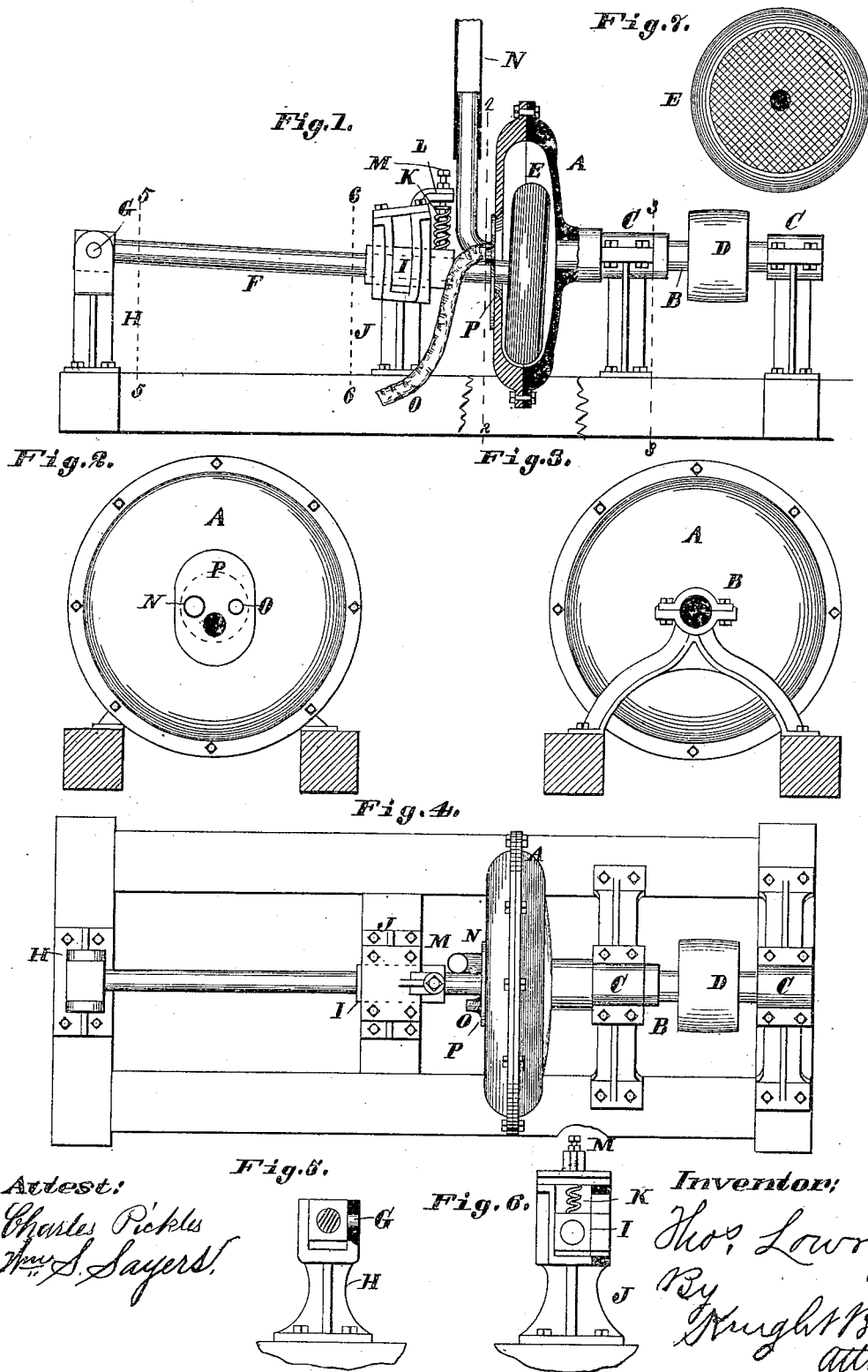


(No Model.)

T. LOWRY.  
GRINDING APPARATUS.

No. 263,548.

Patented Aug. 29, 1882.



# UNITED STATES PATENT OFFICE.

THOMAS LOWRY, OF ST. LOUIS, MISSOURI.

## GRINDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 263,548, dated August 29, 1882.

Application filed June 28, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS LOWRY, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Grinding Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation, part in section, of my improved grinding apparatus. Fig. 2 is a vertical section on line 2 2, Fig. 1. Fig. 3 is a vertical section on line 3 3, Fig. 1. Fig. 4 is a top view. Fig. 5 is a vertical section on line 5 5, Fig. 1. Fig. 6 is a vertical section on line 6 6, Fig. 1; and Fig. 7 is a front elevation of the grinding-disk removed from its shell or casing.

The object of my invention is to provide an apparatus for grinding to powder hard substances—as marble, for instance—and for grinding wheat, drugs, &c.

In order that the exact nature of my invention may be understood, I will proceed to describe it, referring by letters to the accompanying drawings.

A represents a suitable shell or cylinder of any desired size and construction. It is supported and driven by a shaft, B, working in boxes C, which are supported on a suitable frame, and having a suitable driving-pulley, D. Within this casing or shell is a circular disk or wheel, E, on one end of a shaft, F, whose other end is connected by a suitable journal pivot-joint, G, to a standard, H. Thus the disk can rise and fall slightly within its casing. The forward end of the shaft F has a journal-bearing in a box, I, which has vertical movement in a suitable frame on the upper end of a suitable standard, J.

K is a spiral spring interposed between the box I and a lug, L, projecting from the top of the standard J. The tendency of the spring is to hold the shaft down, and its tension may be regulated by a suitable set-screw, M, working in the lug L. Thus as the material is fed to the cylinder, which is turned rapidly, it is ground to powder between the periphery of the disk and the cylinder. As the disk is allowed to rise and fall it will accommodate itself to the amount of material in the cylinder. The disk is allowed to turn with its shell, as

its shaft is supported in journal-boxes, as stated, and it may be driven, if desired, by a belt and pulley. The material is fed to the cylinder through a suitable pipe, N, connecting with a hopper of common construction, and the powder or dust is taken from the cylinder through a suitable pipe or tube, O, which connects with a common suction-fan. I prefer to corrugate the face of the grinding-disk, (see Fig. 7,) so that it will take hold of the material as it leaves the feed-pipe, and carry it into the cylinder. There is necessarily a rather long opening in the face of the cylinder to allow the shaft of the grinder to rise and fall. This opening is closed by a plate, P, on the shaft of the disk just outside and close to the cylinder. I have shown the feed and suction pipes connected to this plate, and to allow them to give freely with the plate I have shown the suction-pipe formed of flexible material and the feed-pipe made in two parts, one of which telescopes the other. These forms of construction, however, may be varied. As a modification of the suction-pipe, the shaft B may be made hollow and air blown through it by means of a suitable fan. The exit for the dust could then be at any suitable point in the cylinder.

I claim as my invention—

1. The combination of cylinder A, shaft B, driving-pulley D, and suction and feed pipes O N, with disk E and vertically-adjustable shaft F, substantially as shown and described, for the purpose set forth.

2. The combination of cylinder A, shaft B, pulley D, and supply and suction pipes N O, with disk E, pivoted shaft F, standard H, journal-box I, a suitable frame therefor, standard J, lug L, set-screw M, and spring K, all substantially as and for the purpose set forth.

3. The combination of cylinder A with shaft B, pulley D, supply and suction pipes N O, plate P, disk E, having a corrugated face, shaft F, standard H, box I, standard J, lug L, spring K, and set-screw M, all made substantially as shown and described, for the purpose set forth.

THOMAS LOWRY.

Witnesses:

SAML. KNIGHT,  
GEO. H. KNIGHT.