

(No Model.)

2 Sheets—Sheet 1.

M. A. BARBER.

DEVICE FOR TRUING GRINDSTONES.

No. 304,774.

Patented Sept. 9, 1884.

Fig. 1.

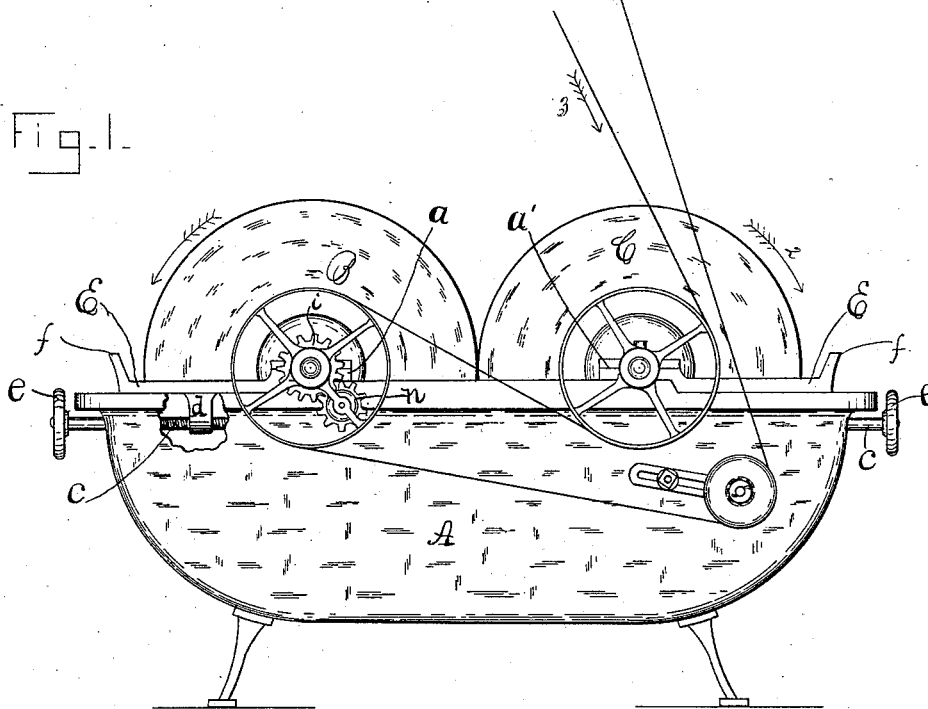
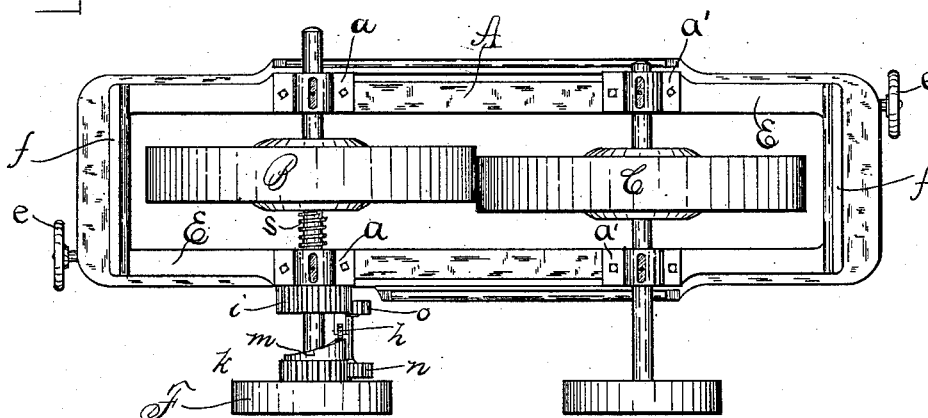


Fig. 2.



WITNESSES.

Frank H. Allen

Carl Warner

INVENTOR.

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(No Model.)

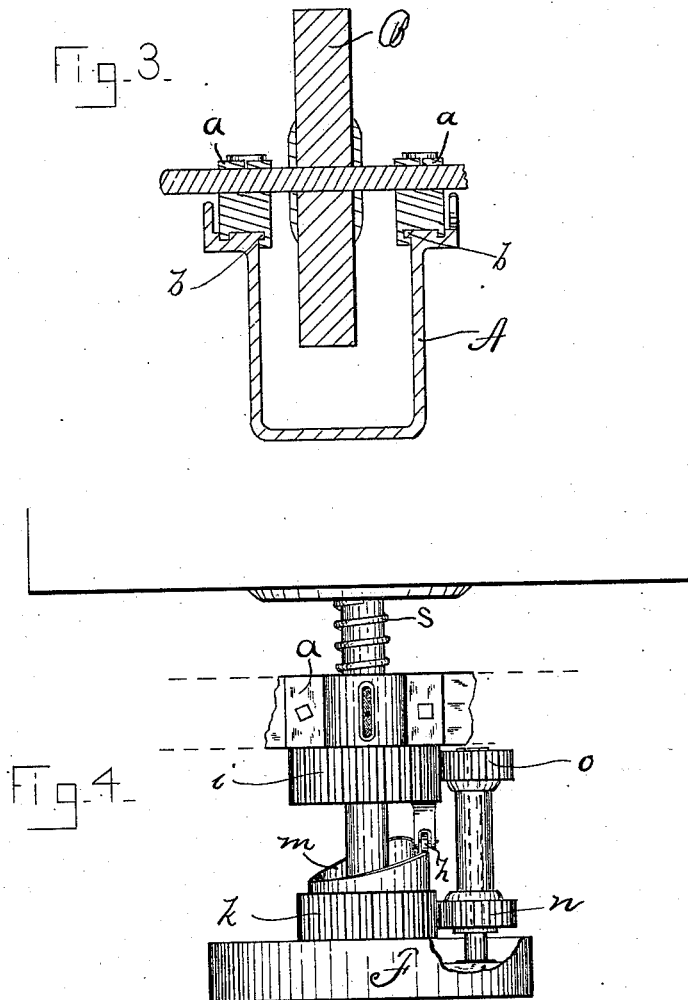
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Earl Warner

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UNITED STATES PATENT OFFICE

MICHAEL A. BARBER, OF NORWICH, CONNECTICUT.

DEVICE FOR TRUING GRINDSTONES.

SPECIFICATION forming part of Letters Patent No. 304,774, dated September 9, 1884.

Application filed April 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL A. BARBER, of the city of Norwich, county of New London, and State of Connecticut, have invented a certain new and useful Improvement in Devices for Truing Grindstones, which improvement is fully set forth and described in the following specification, reference being had to the accompanying drawings.

My invention relates to a new and novel method of hanging and running a pair of grindstones, my immediate object being to cause said stones to automatically level the outer surface or periphery of each other and to keep said surfaces always smooth and ready for use. Owing to the fact that all grindstones have spots harder or softer than the main body of the stone, they soon lose their original circular form, the hard spots protruding and becoming so prominent that it becomes necessary to turn off the periphery of the stone with tools specially prepared for the purpose. To keep a stone in condition to use, this "turning-off" operation must be frequently resorted to. It is my purpose in this present invention, as before stated, to furnish means for automatically truing up such stones. This I accomplish by so hanging two stones that their peripheries come in direct contact with each other as they revolve, one of said stones being so hung that it has no lateral or sidewise movement, the other stone being arranged to rotate at a slightly slower or faster rate of speed, and also by means of peculiar mechanism, as hereinafter described, to traverse laterally back and forth across the face of its mate, to bring the peripheries of both to a parallel with the driving-arbors and at right angles with the sides of said stones. If one of the pair of stones were not arranged to traverse laterally, the hard spots in one stone would soon cut or turn grooves in the other, and the objects sought after would not be attained.

In the accompanying drawings, Figure 1 is a side elevation of my device, a portion of the supporting frame or trough being cut away to show more clearly my method of adjusting horizontally the bearings which support the stones, so that as said stones become worn and reduced in diameter their peripheries may again be brought in contact with each other.

Fig. 2 is a top or plan view of the same. Fig. 3 is a vertical transverse section taken through the center of one of the stones, showing a convenient and inexpensive method of locking the adjustable bearings to the bed or trough. Fig. 4 is a view, somewhat enlarged, of the gears, cam, spring, &c., employed to produce the traversing movement of stone B.

A represents a frame or trough as commonly constructed, having longitudinally-adjustable bearings *a a'*, in which are hung the arbors which support the grindstones B C. By a system of belting substantially as shown in Fig. 1 the stones are rotated in opposite directions, as indicated by the arrows 1 2.

The carriages which form the lower half of the arbor-bearings are so shaped that they lock under a projecting rim or flange, *b*, on the bed A, (see Fig. 3,) and are preferably connected by a cast-metal frame, E, which passes around the stone, reaching from the bearing on one side to its mate on the opposite side. By thus making the two bearings of each stone of practically one piece of metal I am able to adjust the arbor-bearings with a single screw, *c*, at each end of the machine, said screw passing through the bed A and engaging a threaded lug, *d*, on frame E. Said adjusting-screw *c* has a convenient form of hand-wheel *e* on its outer end, and as said wheel is rotated the bearings *a a'* travel inward or outward, as desired, a fine adjustment of the stones and bearings being thus obtained. The flange *f* provides a convenient tool-rest, and also serves to throw the waste water back again into the trough A.

To produce the desired traversing movement of stone B, I have provided the system of gears, &c., shown in Figs. 2 and 4. *i* is a gear fixed rigidly to the bearing *a* and having secured to its outer side a bracket, in which is pivoted a friction roll or pulley, *h*. Near pulley F, and fitting loosely on the arbor which carries F and B, is a gear, *k*, having formed on its inner side a cam, *m*, which engages friction-roll *h*, above referred to. Gears *n o* travel together and rotate on a stud fastened rigidly to one of the spokes of pulley F. The gears *n, o*, and *i* may, if desired, be of the same size and number of teeth; but the loose gear *k*, which carries cam *m*, should have one or two teeth more or less

than gear *i*. Gears *n* and *o* must be of the same size and number of teeth. As pulley *F* revolves, it carries with it *n* and *o*, the fixed gear *i* causing them to rotate slowly, and they in turn causing loose pulley *k* and cam *m* to rotate. Now, it will be evident that if gears *i* and *k* were of the same size and number of teeth, gear *k* would remain in a given position; but as it has one or two teeth less than gear *i*, it is caused to rotate very slowly, and as its cam engages roll *h* the arbor and stone are moved laterally until the outer point of the cam is reached, when the spring *s* draws or forces the stone and arbor back again. This sidewise movement is repeated at regular intervals, causing the stone *B* to traverse very slowly back and forth across the face of stone *C*, reducing the high spots on both stones and keeping them perfectly round.

I am aware that a pair of grindstones with their peripheries in contact (but revolving continually in the same plane) have been used heretofore, and I do not therefore broadly claim such an arrangement of stones.

What I do claim as new, and wish to secure by Letters Patent, is—

1. In combination with a single supporting frame or trough, a pair of grindstones revolving in bearings which are longitudinally adjustable on said frame, one of said stones be-

ing arranged to traverse laterally back and forth across the face of its mate for the purpose of leveling the peripheries of said stones, substantially as hereinbefore described.

2. In combination with a suitable supporting-frame, a pair of grindstones hung in bearings longitudinally adjustable on said frame, said bearings being formed with a downward projection or lug which hooks under flange *b* of the supporting-frame, the fixed gear *i*, and friction-roll *h*, the gears *o* *n* rotating on a stud secured to a spoke of pulley *F*, the loose gear *k*, cam *m*, and the retractor-spring *s*, said parts being so arranged and connected that a continuous lateral traversing movement is imparted to stone *B*, substantially as and for the purpose specified.

3. In combination with a suitable supporting-frame and a duplex system of grindstones wherein one stone is arranged to travel laterally and continuously back and forth across the face of its mate, the bearings *a* *a*, having a cast-metal frame, *E*, extending from one bearing around the stone to the opposite bearing, and having means for longitudinal adjustment on frame *A*, as and for the purpose specified.

MICHAEL A. BARBER.

Witnesses:

FRANK H. ALLEN,
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