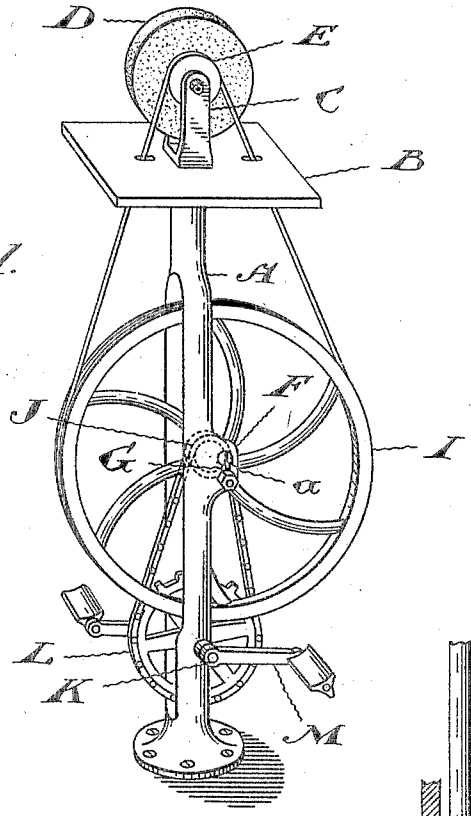
No. 802,371. PATENTED OCT. 24, 1905.

W. & G. P. CONNOR.

GRINDING APPARATUS.

APPLICATION FILED MAY 16, 1904.

Fig. 1.



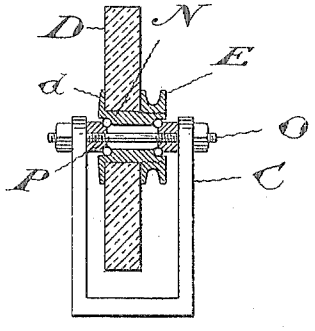


Fig. 2.

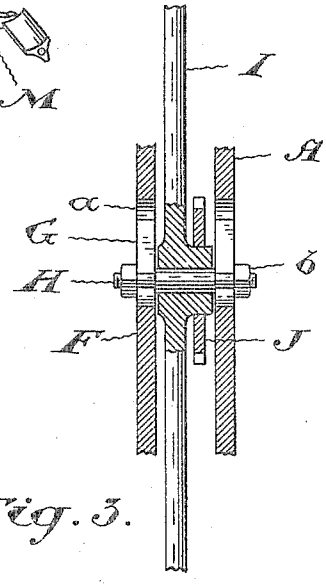


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

WALTER CONNOR AND GEORGE P. CONNOR, OF EXETER, CANADA.

GRINDING APPARATUS.

No. 802,371. Specification of Letters Patent. Patented Oct. 24, 1905.

Application filed May 16, 1904. Serial No. 208,193.

To all whom it may concern:

Be it known that we, WALTER CONNOR and GEORGE P. CONNOR, of Exeter, in the county of Huron, Province of Ontario, Canada, have invented certain new and useful Improvements in Grinding Apparatus, of which the following is a specification.

The object of our invention is to devise a simply-constructed light-running emery-grinder; and it consists, essentially, of the details of construction hereinafter specifically described and then definitely claimed.

Figure 1 is a perspective view of our improved apparatus. Fig. 2 is a sectional elevation showing the bearings of the emery-wheel. Fig. 3 is a similar view showing the bearings of the fly-wheel.

In the drawings like letters of reference indicate corresponding parts in the different figures.

The frame of the apparatus comprises a standard A, slotted or divided, as shown. The standard carries a table B on its upper end. The table may also be secured to a wall, if desired. The lower end of the standard is flanged or provided with a suitable base which may be secured to the floor in any desired manner. The table carries the bracket C, in which is journaled the emery-wheel D in the manner hereinafter described. A buffing-wheel might also be journaled on the bracket at one side of the emery-wheel, as is often done in ordinary grinders. Revolving with the emery-wheel is a grooved pulley E. The halves of the standard, where the latter is slotted, have lugs F formed integrally therewith, and these lugs are provided with the vertical slots G. At one part of each slot is an enlargement *a*.

H is an axle with reduced ends, the axle being of the same diameter as the enlargement *a* and its ends the same diameter as the width of the slots G. The axle may thus be placed in position by inserting it through the enlargement *a*, with its ends subsequently dropped into the slots G, where it may be clamped by means of the nuts *b* on its ends. (See Fig. 3.) A vertical adjustment for the axle is thus provided. On the axle is journaled the grooved pulley and fly-wheel I, also carrying on its hub the sprocket-wheel J.

In the standard below the fly-wheel is journaled a spindle K, and on the spindle within the slot in the standard is secured the sprocket-wheel L. This sprocket-wheel is connected with the sprocket-wheel J by the chain *c*.

On the ends of the spindle K are fastened the pedal-cranks M, of any suitable construction.

The vertical adjustment of the fly-wheel I is important, as the sprocket-wheel must run with the chain reasonably tight, and chains are apt to vary in length, though composed of the same number of links.

The pulley E is driven from the pulley I by a round leather belt, which of course is easily shortened or lengthened to give the desired tension. This belt passes through suitable apertures in the table.

The emery-wheel D is carried on a metal hub N, provided with a flange *d* at one side. The other end of the hub is screw-threaded, and on this end is screwed the grooved pulley E. Thus the emery-wheel is securely held in position.

The axle O passes through the hub and has screwed thereon the cones P, the hub being suitably cupped to provide with the cones the races for two sets of balls.

The cones fit between the brackets C and the axle, and the cones are securely held in position by means of the nuts *e*, the brackets C having sufficient spring to allow the parts to be clamped tightly together.

From the above description it will be seen that we have devised a very light and easily running grinding apparatus, which is very compact and neat in construction. The fly-wheel being set off the center allows the operator to sit at the near side of the machine without finding the fly-wheel inconveniently in his way. The adjustability of the device permits of it being set to run as perfectly as a bicycle.

What we claim as our invention is—

1. In grinding apparatus the combination of a slotted standard; a pedal-crank shaft journaled therein; a sprocket-wheel on said shaft within the slot; a main pulley journaled on the standard within the slot, its bearings being made vertically adjustable; a sprocket-wheel secured to the pulley; a chain connecting the two sprocket-wheels; a journaled abrasive wheel supported at the top of the standard; a pulley secured thereto; and a belt connecting the two pulleys, substantially as described.

2. In grinding apparatus the combination of a slotted standard; a pedal-crank shaft journaled therein; a sprocket-wheel on said shaft within the slot; a main pulley journaled on the standard within the slot, its bearings

being made vertically adjustable; a sprocket-wheel secured to the pulley; a chain connecting the two sprocket-wheels; a journaled abrasive wheel supported at the top of the standard; a pulley secured thereto; and a belt connecting the two pulleys, the main pulley being journaled in front of the line of the crank-shaft and emery-wheel, substantially as described.

3. In grinding apparatus the combination of a slotted standard; a pedal-crank shaft journaled therein; a sprocket-wheel on said shaft within the slot; a main pulley journaled on the standard within the slot, its bearings being made vertically adjustable; a sprocket-wheel secured to the pulley; a chain connecting the two sprocket-wheels; a hub flanged at one end; an abrasive wheel sleeved on said hub; a pulley screwed on the free end of the hub and adapted to clamp the wheel against the flange; an axle on which the hub has its bearings; brackets connected with the standard and through which the axle passes, and nuts on the ends of the axle.

Exeter, May 3, 1904.

WALTER CONNOR.
GEORGE P. CONNOR.

In presence of—
F. W. GLADMAN,
W. H. GREGORY.