

No. 662,749.

Patented Nov. 27, 1900.

J. F. ARTHUR.  
ROTARY CUTTER CLEANER.

(Application filed Aug. 21, 1900.)

(No Model.)

Fig. 1,

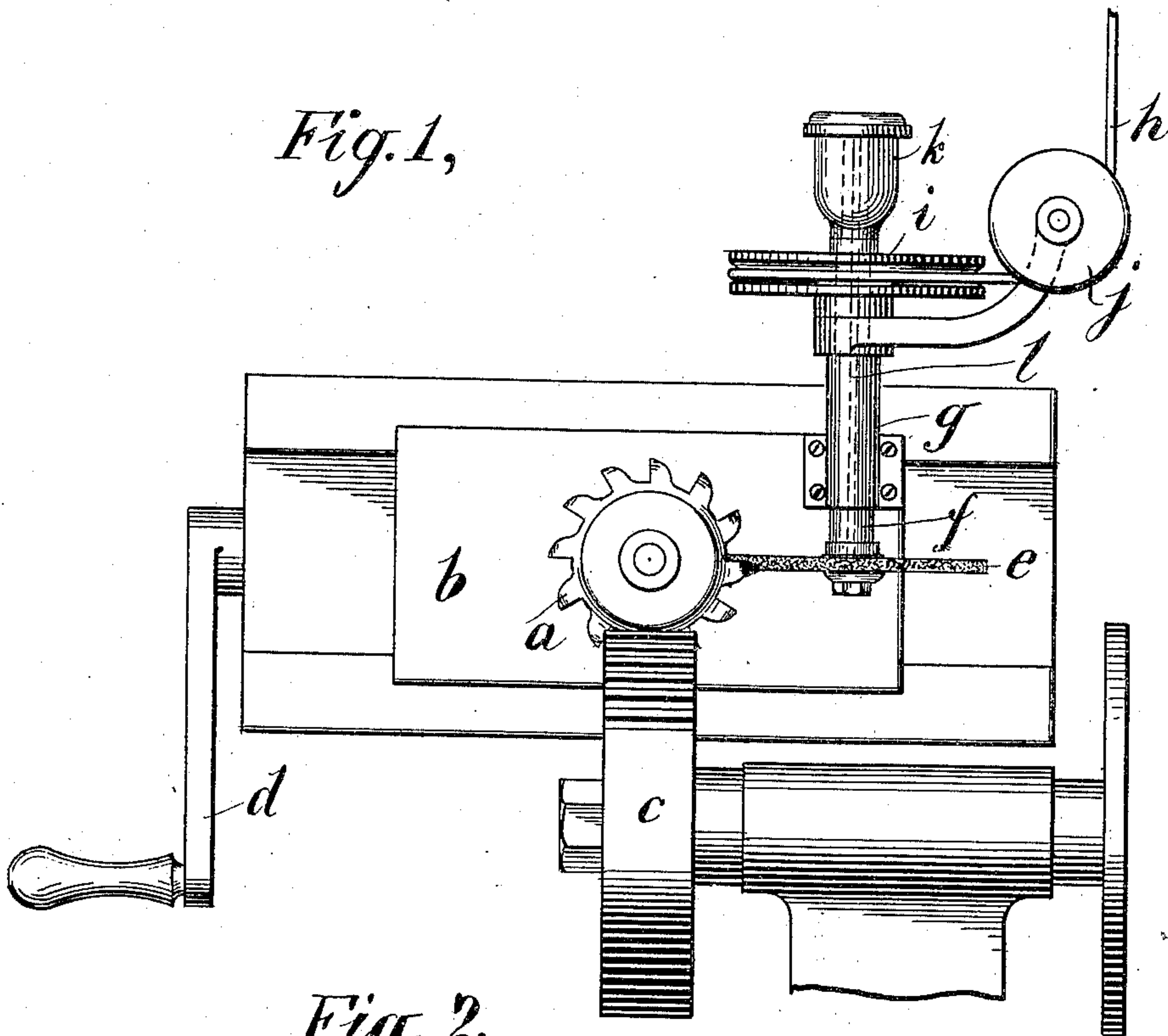
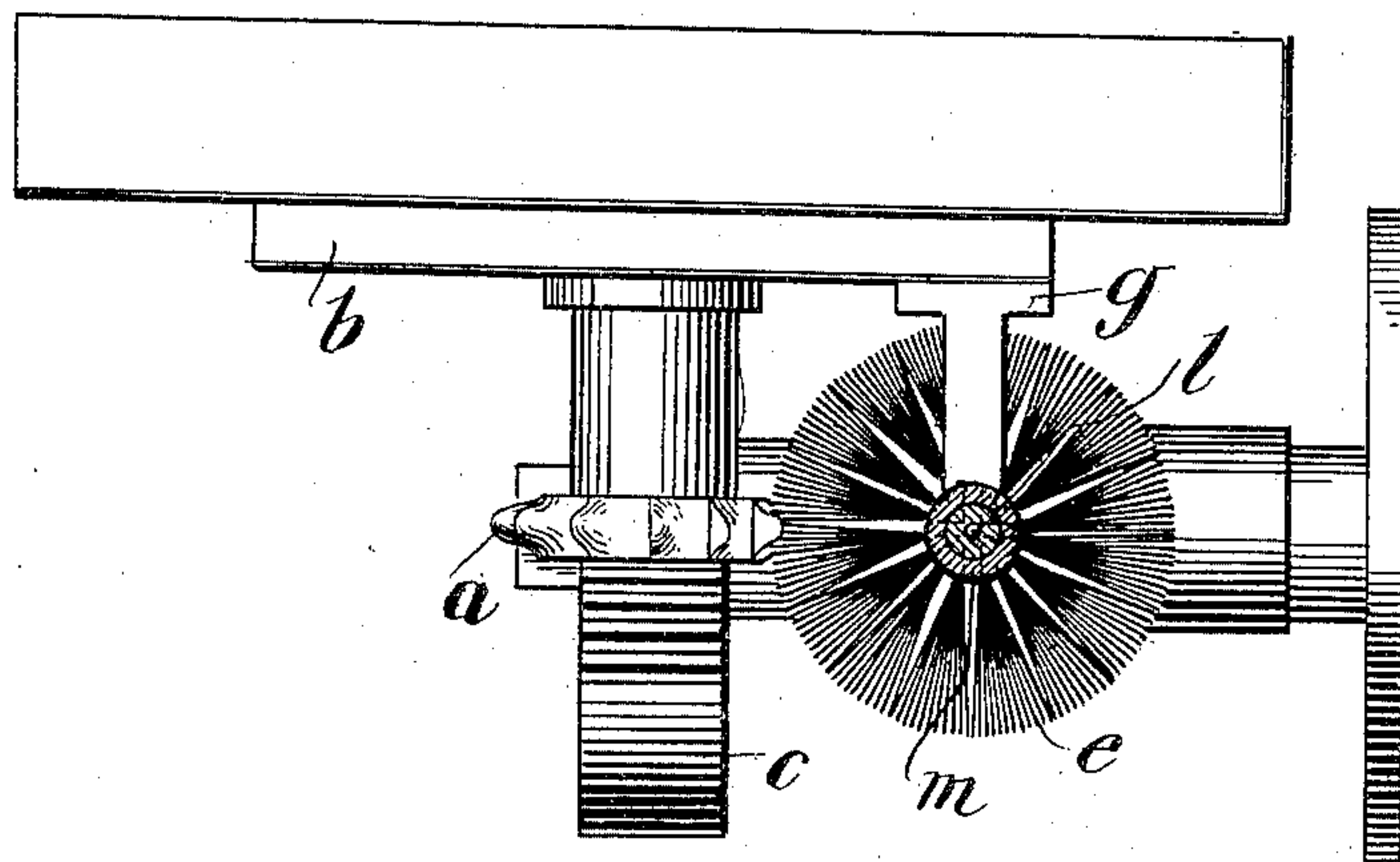


Fig. 2,



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# UNITED STATES PATENT OFFICE.

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## ROTARY-CUTTER CLEANER.

SPECIFICATION forming part of Letters Patent No. 662,749, dated November 27, 1900.

Application filed August 21, 1900. Serial No. 27,595. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. ARTHUR, a citizen of the United States, and a resident of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Rotary-Cutter Cleaners, of which the following is a specification.

In the working of metals by means of rotary milling tools or cutters it is advantageous and in many cases necessary, to produce clean-cut work, to remove the chips from the teeth of the rotary cutter and to apply a proper lubricant thereto. This is now generally done by the use of a hand-brush to remove the chips and by the occasional application of oil to the cutters or by washing the cutters by means of a continual flow of oil thereto. I have devised a simple and efficient cleaning device by means of which the teeth of rotary cutters and analogous tools may be economically kept clean and free from chips and, when desired, suitably lubricated, thus insuring the performance, by the use of such tools, of continuous, perfect, and clean-cut work, the same consisting of a brush, preferably circular in form, arranged in such relation to the rotary cutter to be cleaned and mounted on a suitable axle or shaft that its plane of movement will be transverse to the plane of rotation of the cutter and at or near a right angle thereto, with the axis of the cutter in the plane of movement of the brush or approximating such relation thereto, the arrangement being such that the ends of the bristles (which word "bristle" is intended to cover all material employed in the active part of the brush) will move laterally through the path of rotation of the cutter sidewise through the spaces between the cutter-teeth and by means of a direct sweeping action brush the cutting edges and faces of the teeth and so remove all chips and dirt therefrom. When a lubricant is to be used, it may be occasionally applied to the rotating brush, the bristles of which will hold it in considerable quantity and transfer it without waste to the cutting edges of the rotary cutter as they sweep transversely across the cutting-faces. My invention, however, further contemplates automatically supplying oil or other lubricant to the rotating brush in such quantity as to insure the requisite and proper lubrication of the cutter. To this

end the shaft of the brush is made hollow, provided with a suitable oil-cup, and having lateral holes extending from the central cavity to openings formed through the hub of the brush to the roots of the bristles thereof, the brush thus being kept moistened or supplied with the lubricant.

To illustrate my invention, an application of my cleaning device to a machine in which rotary cutters are used is shown in the accompanying drawings, in which—

Figure 1 shows in front elevation so much of a milling-machine with a rotary cutter acting on a gear-wheel blank as is necessary for a correct understanding of the use and application of my improved cutter-cleaning device. Fig. 2 is a plan view of the same, partly in section.

The rotary cutter *a*, shown as a gear-cutter, is for illustrative purposes carried on a mandrel having its bearing in the traversing head *b*, and the wheel-blank *c* is suitably supported for the cutter *a* to act thereon as it is caused to travel over the blank, the handle *d* being shown as the means by which the traversing head is moved.

The circular brush *e* is, as before stated, arranged to maintain a given position relative to the cutter. In this case it is shown as carried on the end of the vertical shaft *f*, fitted to rotate in bearings on the bracket *g*, secured to the traversing head *b*, which carries the cutter *a*. Rotary motion may be applied to the shaft *f* and brush *e* by any suitable means—as, for instance, the traveling belt *h*, passing around the grooved pulley *i*, secured to the upper end of the shaft *f* and guided thereto by the guide-pulleys *j*. In carrying out the principle of my invention it is not necessary that the plane of rotation of the brush *e* be at right angles to the plane of motion of the cutter *a* for the proper action of the brush on the teeth of the cutter, for the ends of the bristles of the brush will effectually sweep laterally across the cutting-faces of the teeth of the cutters if the axis of the brush be set at an angle to the vertical when the axis of the cutter is horizontal, as shown. The brush need not rotate continually in one direction. It will, if given a reciprocating motion, practically perform the functions of the invention as long as it moves



in a path transversely to the plane of rotation of the cutter, which path may be more or less at an angle to the cutting-faces of the teeth, and still the brush will sweep over the cutting-faces and remove the chips therefrom.

For a continuous supply of lubricant to the brush *e* an oil-cup *k* is applied to the upper end of the shaft *f* and from which the lubricant is fed at any desired amount down the bore *l* of the shaft through lateral holes therein and holes *m*, formed in the hub of the brush *e*, and so passes to the sweeping portion of the brush and from such portion is applied to the cutting edges of the cutter-teeth.

Such modifications as are necessary to the adaptation of this invention to other forms of cutters and their arrangements relatively to the work or material operated on other than shown in the drawings will be readily suggested to those skilled in the art of metal working, and what is here shown is considered sufficient to fully define the nature and application of the invention.

I claim as my invention—

1. A rotary-cutter cleaner, consisting of a brush held and arranged to move in a plane transverse to the plane of rotation of the cutter, and sidewise through the spaces between the cutter-teeth, and means for imparting motion to the brush to cause it to sweep over

the edges and the cutting-faces of the teeth of the rotary cutter.

2. A rotary-cutter cleaner consisting of a circular brush, a shaft upon which the brush is mounted, a bracket or other holder for the shaft adapted to hold the brush relatively to the rotary cutter to be cleaned so that its plane of rotation will be transverse to the plane of rotation of the cutter with the edge of the brush moving sidewise through the spaces between the cutter-teeth, and means for rotating the brush.

3. A rotary-cutter cleaner and lubricator, consisting of a circular brush, the hub of which is perforated from the central opening to the roots of the bristles, a bored shaft upon which the brush is mounted having lateral holes opening into the perforations of the hub of the brush, an oil-cup attached to the open end of the shaft, means for rotating the brush-shaft, and a support for said shaft adapted to hold the brush so that its path of rotation will be transverse to and enter the path of the cutting-teeth of the rotary cutter.

Signed at New York, in the county of New York and State of New York, this 17th day of August, A. D. 1900.

JOHN F. ARTHUR.

Witnesses:

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ALFRED SHEDLOCK.