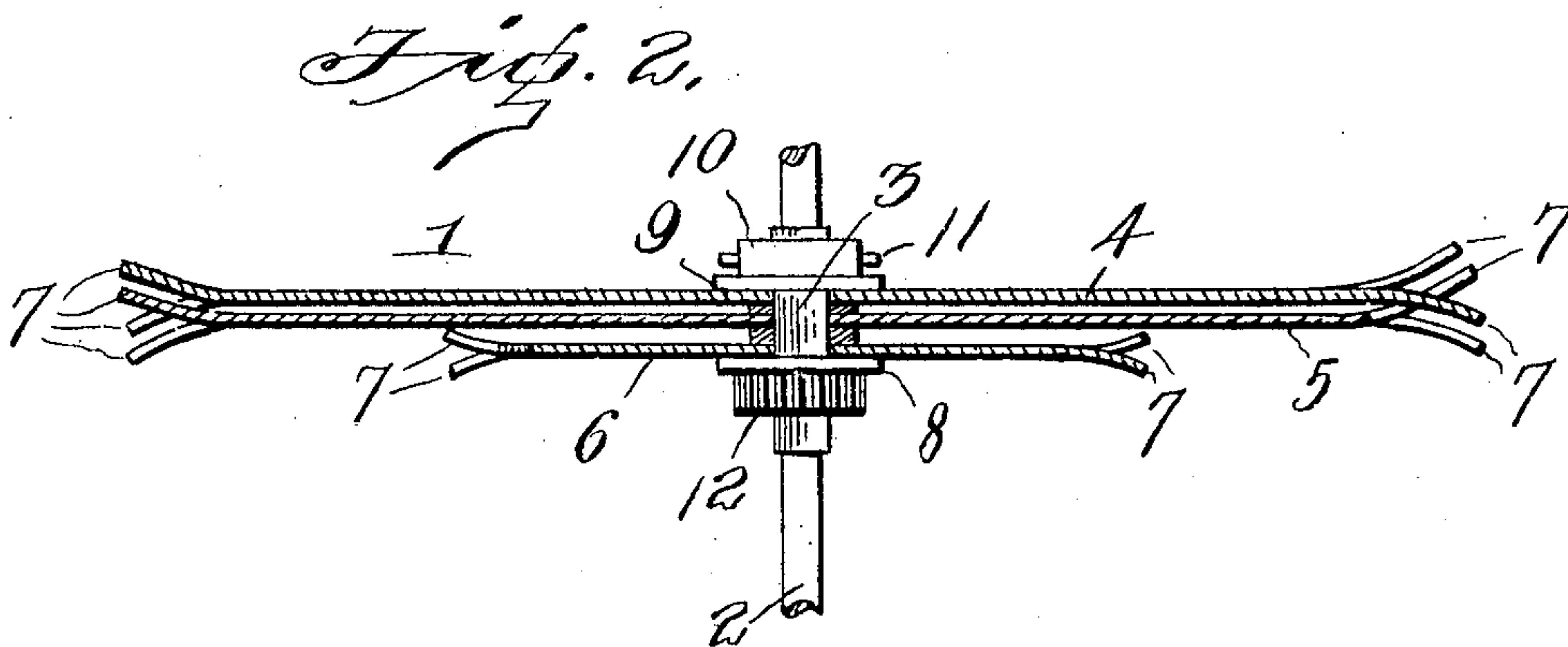
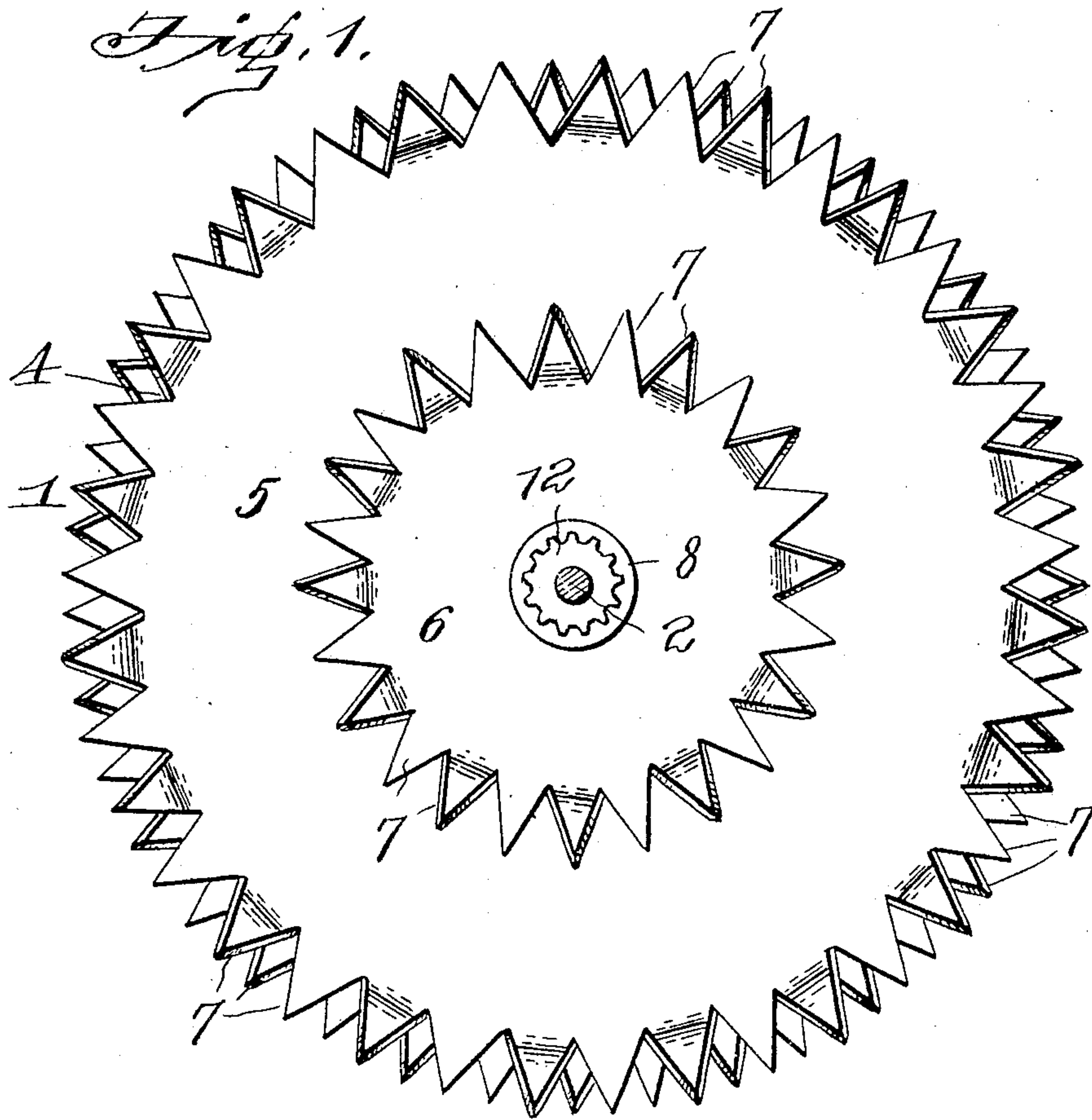


No. 805,685.

PATENTED NOV. 28, 1905.

J. SWANSON.
MINING MACHINE.
APPLICATION FILED APR. 3, 1906.



Witnesses
Jas. A. Koehl
C. H. Griesbauer.

Inventor
John Swanson.
by *A. B. Wilson*
Attorney

UNITED STATES PATENT OFFICE.

JOHN SWANSON, OF MYSTIC, IOWA.

MINING-MACHINE.

No. 805,685.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed April 3, 1905. Serial No. 253,659.

To all whom it may concern:

Be it known that I, JOHN SWANSON, a citizen of the United States, residing at Mystic, in the county of Appanoose and State of Iowa, have invented certain new and useful Improvements in Mining-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in reamers or cutters for coal-mining machines; and it consists in certain novel features of construction, combination, and arrangement of parts herein shown and described.

The object of the invention is to provide a simple and efficient device of this character which is especially designed for use in long-wall work for undermining a portion of the wall or bank sufficient to cause it to drop of its own weight.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a bottom plan view of my improved reamer or cutter, and Fig. 2 is a vertical sectional view of the same.

Referring to the drawings by numeral, 1 denotes my improved reamer or cutter, which is adapted to be mounted in a horizontal position upon the machine and to be rotated by the usual or any preferred driving mechanism. The reamer or cutter comprises a shaft 2, formed with a rectangular or polygonal shaped upper portion 3, upon which are secured three cutter-disks 4, 5, and 6. The two upper cutter-disks are large and of the same diameter, and the lower disk 6 is of less diameter, being substantially one-half the size of the upper disks. The peripheries of these disks 4, 5, and 6 are notched to form teeth 7, the adjacent ones of which are bent in the opposite directions. The teeth of one of the large upper disks are disposed between those of the other, as clearly shown in Fig. 1. It will be understood that one or more of either the large or the small cutter-disks may be provided, according to the thickness of the cut or kerf made by the device. These disks are retained upon the shaft between washers 8 and 9 by a nut 10, which may be retained upon the polygonal-shaped portion 3 of the shaft by a pin or key 11. Upon the shaft 2, beneath the lower washer 8, is a gear

or pinion 12, by means of which the shaft may be rotated; but it will be understood that any other form of driving device may be substituted.

The construction, use, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. The cutter is especially designed for long-wall work, and two or more large disks are employed in order to take sufficient material out from under the bank or bed of coal, so that the undercut portion will drop of its own weight. One or more of the small cutter-disks are provided for the purpose of widening the cut at the breast of the vein of coal and taking off the "dutchman" or angle there, which if not taken off would prevent the coal from becoming detached after the cut has been made.

While I have shown and described the preferred embodiment of my invention, I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the character described, having a pair of superposed cutting-disks having toothed peripheries, the teeth of each of said disks being bent alternately in opposite directions and the teeth of one disk being opposite the spaces between those of the other, the alternate teeth of the respective disks being parallel.

2. A device of the character described, having a pair of superposed cutting-disks having toothed peripheries, the teeth of each of said disks being bent alternately in opposite directions and the teeth of one disk being opposite the spaces between those of the other, the alternate teeth of the respective disks being parallel, and a small cutting-disk disposed beneath the lowermost of the first-mentioned disks and having a toothed periphery.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN SWANSON.

Witnesses:

CHAS. QUIST,
JOHN QUIST.