

(No Model.)

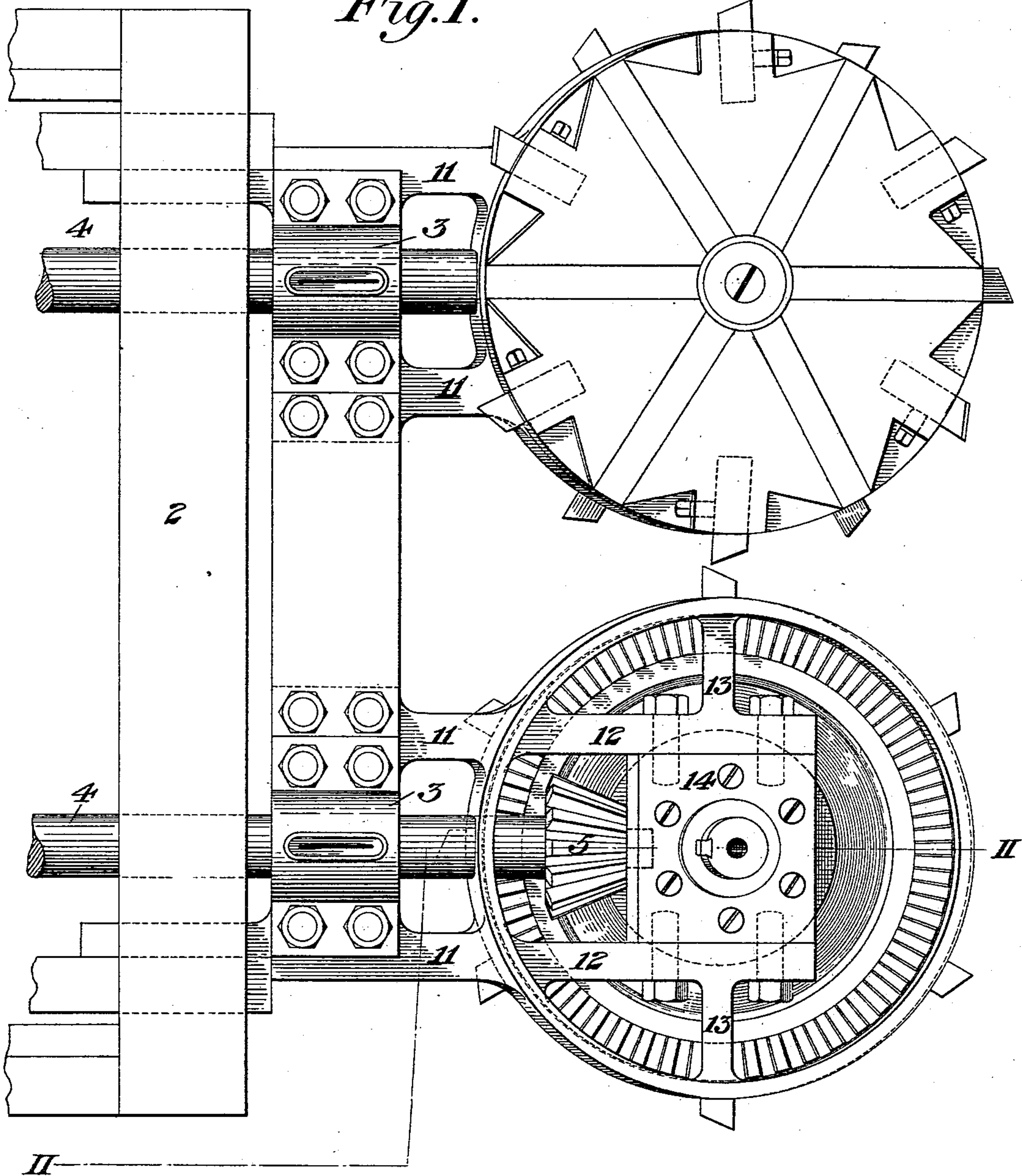
2 Sheets—Sheet 1.

C. E. WOLFENDALE & G. W. FRITZ.
MINING MACHINE.

No. 557,745.

Patented Apr. 7, 1896.

Fig. 1.



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

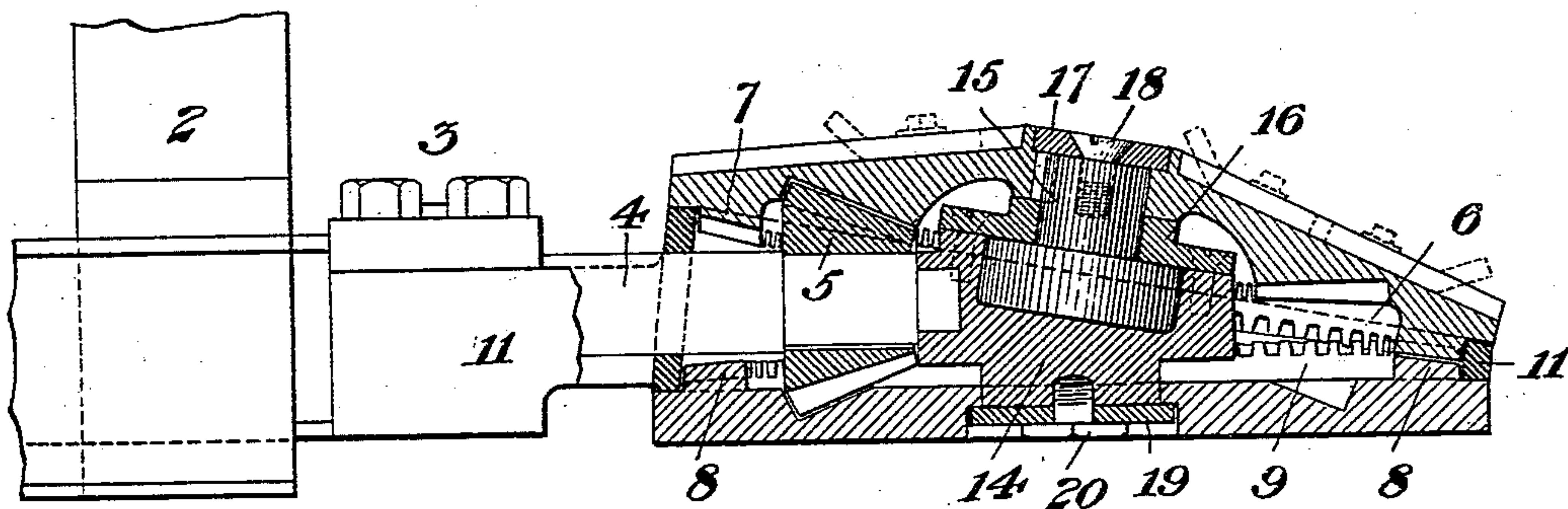
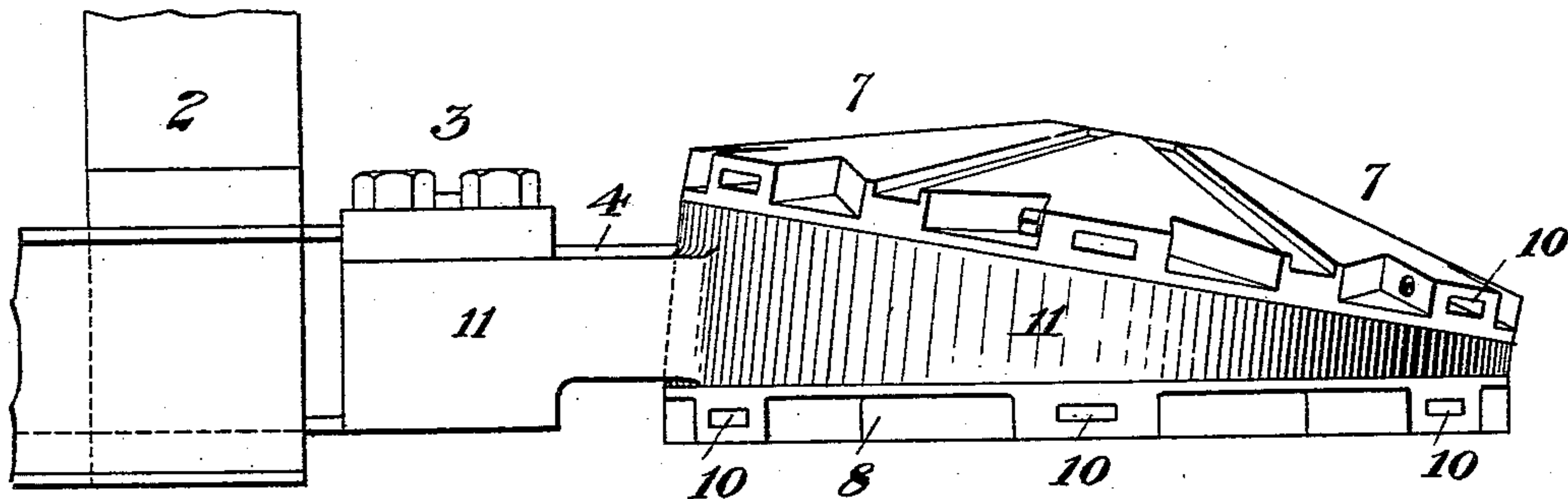


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES E. WOLFENDALE, OF ALLEGHENY, AND GEORGE W. FRITZ, OF
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MINING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 557,745, dated April 7, 1896.

Application filed July 15, 1895. Serial No. 555,942. (No model.)

To all whom it may concern:

Be it known that we, CHARLES E. WOLFENDALE, of Allegheny, and GEORGE W. FRITZ, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Mining-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of the cutters, showing our improvement, one of the upper cutters being removed. Fig. 2 is a vertical sectional view on the line II II of Fig. 1. Fig. 3 is a side elevation of the same.

Like symbols of reference indicate like parts wherever they occur.

Our invention relates to an improvement in the Fritz and Boland mining-machine described in Letters Patent No. 536,912; and it consists in an attachment the purpose of which is to support the cutters and to prevent dirt from clogging in the machine and also to afford a more perfect bearing to the cutting-disks.

We will now describe our invention, so that others skilled in the art may manufacture and use the same.

In the drawings, 2 represents the framework of the mining-machine, 3 the journals of the cutter-driving shafts, and 4 the shafts. On the end of the shafts 4 are keyed the beveled pinions 5, which mesh with the gear-teeth 6 of the upper cutting-disk 7. On the upper or inner face of the lower cutting-disk 8 are gear-teeth 9, which also mesh with the gear-teeth 6, the upper cutting-disk 7 being inclined to the lower cutting-disk. Extending from the disks 7 and 8 are the cutting-teeth 10.

Bolted to the frame of the machine is a guard 11, which, extending from the frame, surrounds the space between the two disks 7 and 8, so as to prevent any dirt or foreign substance from entering between the two disks. Extending from the inner circumference of the guard-piece 11 is the frame or bracket 12, which is provided with bracing-arms 13, extending to the inner circumference of the guard-piece. Bolted to the bracket 12 is the socket 14, having in its upper face an

annular recess for the reception of the pivotal or journal bearing-pin 15 of the upper disk 7, which pin is enlarged at its bottom to prevent its jumping and is held in place by the cap washer 17 and screw-bolt 18. The lower disk 8 is secured to the guard-piece 14 by means of the washer 19 and screw-bolt 20.

It will be noticed that the guard-piece 14 at its base or bearing for the disk 8 is made as large as possible to afford a firmer support to the cutting-disk and to prevent heating.

In the use of our improved cutter when power is applied to the shafts 4 the pinion 5 meshing with the gear-teeth in the upper disk 7 causes the same to revolve, which in turn imparts motion to the lower cutting-disk 8 through the gear-teeth 9. Owing to the increase in the size of the journal-pin 15 and the larger bearing of the lower cutting-disk on the socket-piece 14, there is much steadier action of the cutting-disk than has heretofore been possible, which steadiness is also increased by the bracket-piece 12. At the same time the guard-piece 11 excludes all dirt and foreign substance, which without the guard-piece would soon fill the space between the top and lower disks, so as to prevent the movement of the same.

The advantages of our improvement will be apparent to those skilled in the art.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a mining-machine the combination of two cutting-disks a driving-shaft meshing with one of said disks, a socket-piece as 14 provided with an enlarged cavity on its upper surface, said upper cutting-disk being provided with a journal-pin having an enlarged head fitting in said cavity and means for securing the journal-pin in its socket; substantially as described.

2. In a mining-machine the combination with a driving-shaft, and upper and lower disks and bracket as 12, a socket-piece supported by the bracket on one side of which the end of the driving-shaft has a bearing, said socket-piece having an enlarged cavity a journal-pin secured to the upper disk and

having an enlarged head fitting in said cavity and a cap 16 for holding said enlarged portion in the cavity; substantially as described.

3. In a mining-machine the combination
5 with a driving-shaft, and upper and lower disks, a bracket 12, a socket-piece supported by the bracket on one side of which the end of the driving-shaft has a bearing, said socket-piece having an enlarged cavity, a journal-
10 pin secured to the upper disk and having an enlarged head fitting in said cavity and a cap 16 for holding said enlarged portion, the

washer 17 and screw-bolt 18 for securing said journal-pin to the upper cutter and the washer 19 and screw-bolt 20 for securing the lower 15 cutter to the socket-piece; substantially as described.

In testimony whereof we have hereunto set our hands.

CHARLES E. WOLFENDALE.
GEORGE W. FRITZ.

Witnesses:

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