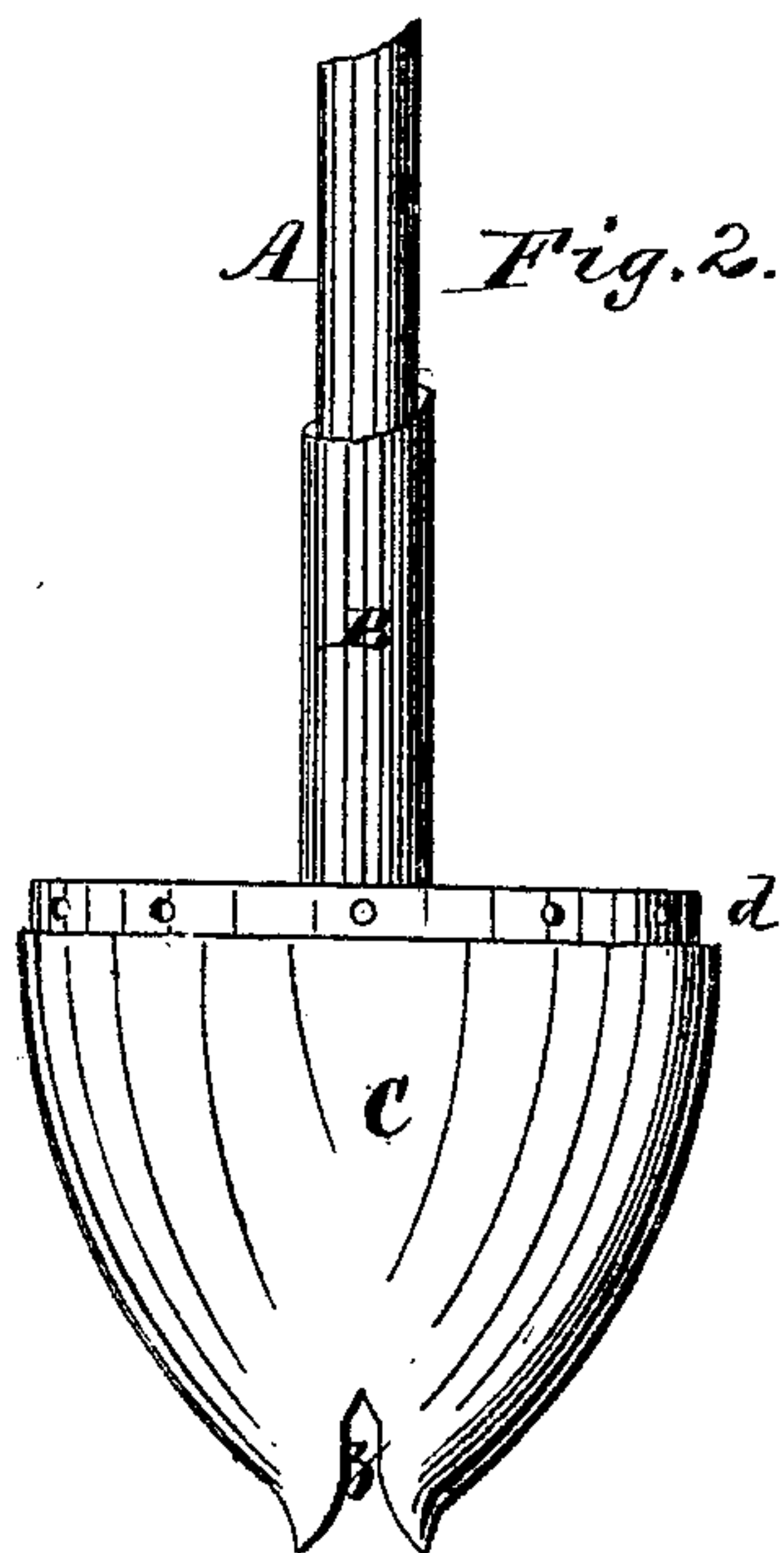
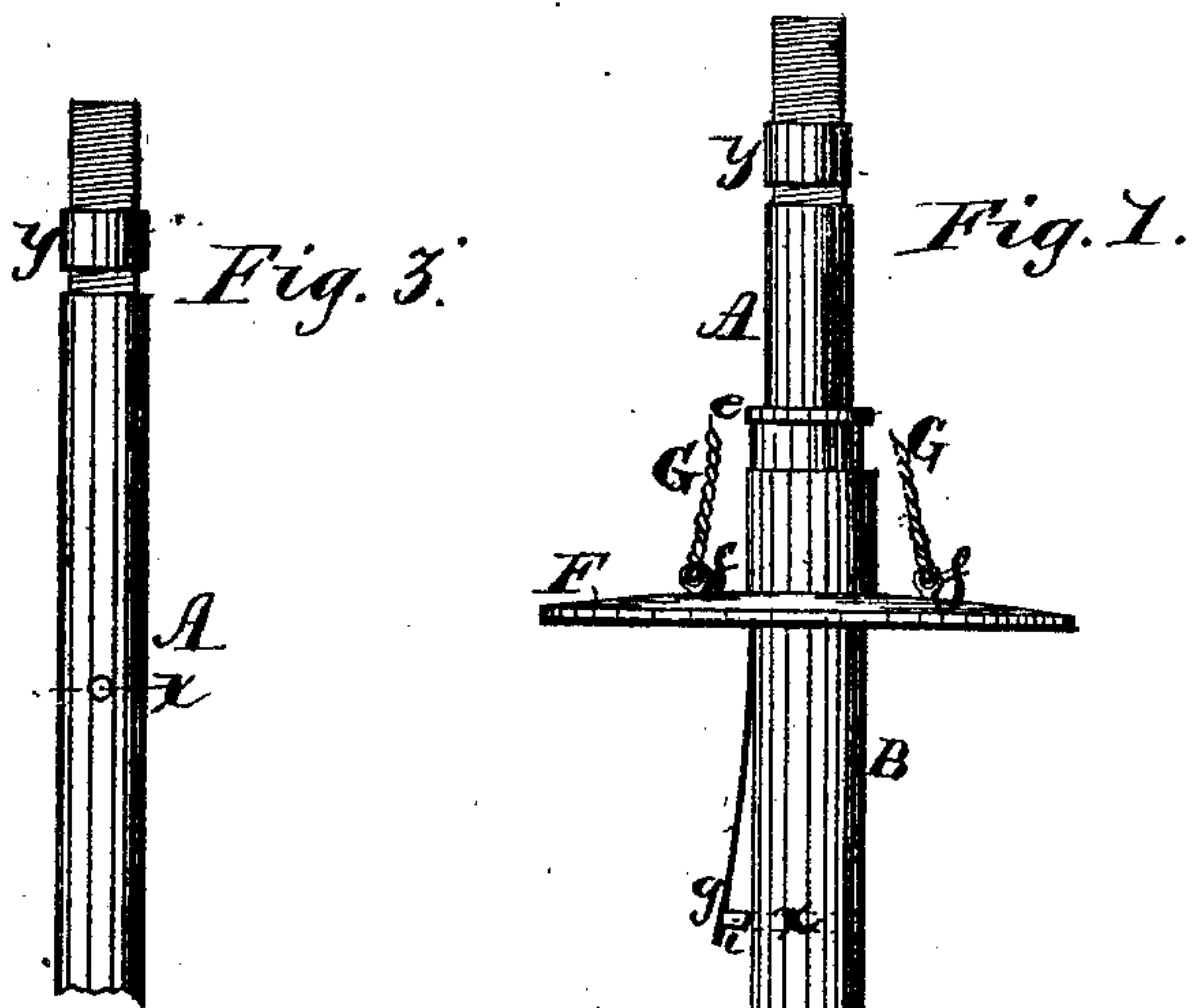


J. HALLIDAY & D. BRADY.

EARTH-AUGER.

No. 183,001.

Patented Oct. 10, 1876.



WITNESSES

Arthur Garbarin
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JOHN HALLIDAY AND DENNIS BRADY, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. 183,001, dated October 10, 1876 ; application filed March 16, 1876.

To all whom it may concern:

Be it known that we, JOHN HALLIDAY and DENNIS BRADY, residents of the city of New Orleans, and State of Louisiana, have invented a certain new and useful Improvement in Earth-Augers; and we do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawing, making a part of this specification.

Our improvement in earth-augers consists of an arrangement, with a suitable shaft, of a conical cutter-head the rear of which is so constructed that it shall answer as a bucket, by means of which the loose earth can be removed as rapidly as it is cut without displacing either the shaft or its point.

In order that our invention may more readily be understood, attention is called to the annexed drawing, whereon—

Figure 1 is an elevation, showing the arrangement by which the cutter-head is secured to the shaft so as to be operated thereby. Fig. 2 is a representation of the lower section of the cutter-head; and Fig. 3, a section of the shaft and its point.

A is a round metallic shaft, provided at its lower extremity with a steel or other suitable point, *b*, the upper portion of which is somewhat larger in diameter than the aforesaid shaft, and is provided on opposite sides with tapering feathers *b'*, the object of which will hereinafter be described. B is a hollow cylindrical stem, the bore of which is sufficiently large to admit of its sliding freely upon the aforesaid shaft A. Its lower end is provided with a conical cutter-head, C, having recesses *a*, in the rear of which are fitted and secured the cutting-knives *c c'*, which can be made adjustable, so as to cut a larger or smaller hole, as may be required. On the flange *d* is riveted or otherwise secured a cylindrical vessel, D, for collecting and removing the loose earth. E is a gate, which may be placed either on the inside or outside of the aforesaid vessel, and through which the loose earth is withdrawn. The upper portion of the stem B is provided with an annular collar, *e*, below which is a loosely-fitting circular plate, F, to which is attached, by means of eyebolts *f f'*, a cord or chain, G, for withdrawing the cutting device

and bucket. Below the collar *e* is pivoted a spring or lever, *g*, the lower end of which is provided with a pin, *i*, for engaging in perforations *x*, that are made in the stem B and shaft A, by which means the two may be securely locked together when the invention is put into operation. It is to provide a means of bringing the perforations of the stem and shaft immediately opposite one another, so that the two may be engaged by the one pin, that we have given the peculiar shape to the upper portion of the feathers *b'* and the mortises *z* of the cutter-head, that are clearly shown on the drawing.

From the above description it will be understood that in operating our invention the shaft is intended to be held in a vertical position, and that the weight of the bucket and cutter-head will be such that its mortises, striking on either side of the feathers, will be by them deflected to the lowest point of the same. The metal ring F is then allowed to slide down upon the top of the bucket D, pressing at the same time the spring or lever Z closely against its stem, and thereby causing the pin *i* to securely lock the device to the main shaft.

To withdraw the working or cutting apparatus, the ring is drawn by its chain up against the collar *e*, which movement withdraws the pin *i* from its perforations, and the aforesaid ring acts as a shield to throw off the water from the bucket as the whole is being withdrawn.

Y is a coupling, through the aid of which any required number of pipes or shafts may be connected with one another.

What we claim as new, and desire to secure by Letters Patent, is—

1. The conical cutter-head C, provided with hollow stem B, and bucket D, in combination with the shaft A, for the purpose set forth.

2. In combination with the hollow stem B, the pin *i*, as described, and for the purpose set forth.

This specification signed this 1st day of March, 1876.

JOHN HALLIDAY.

DENNIS BRADY.

Witnesses:

H. N. JENKINS,
HUGH PIERSON.