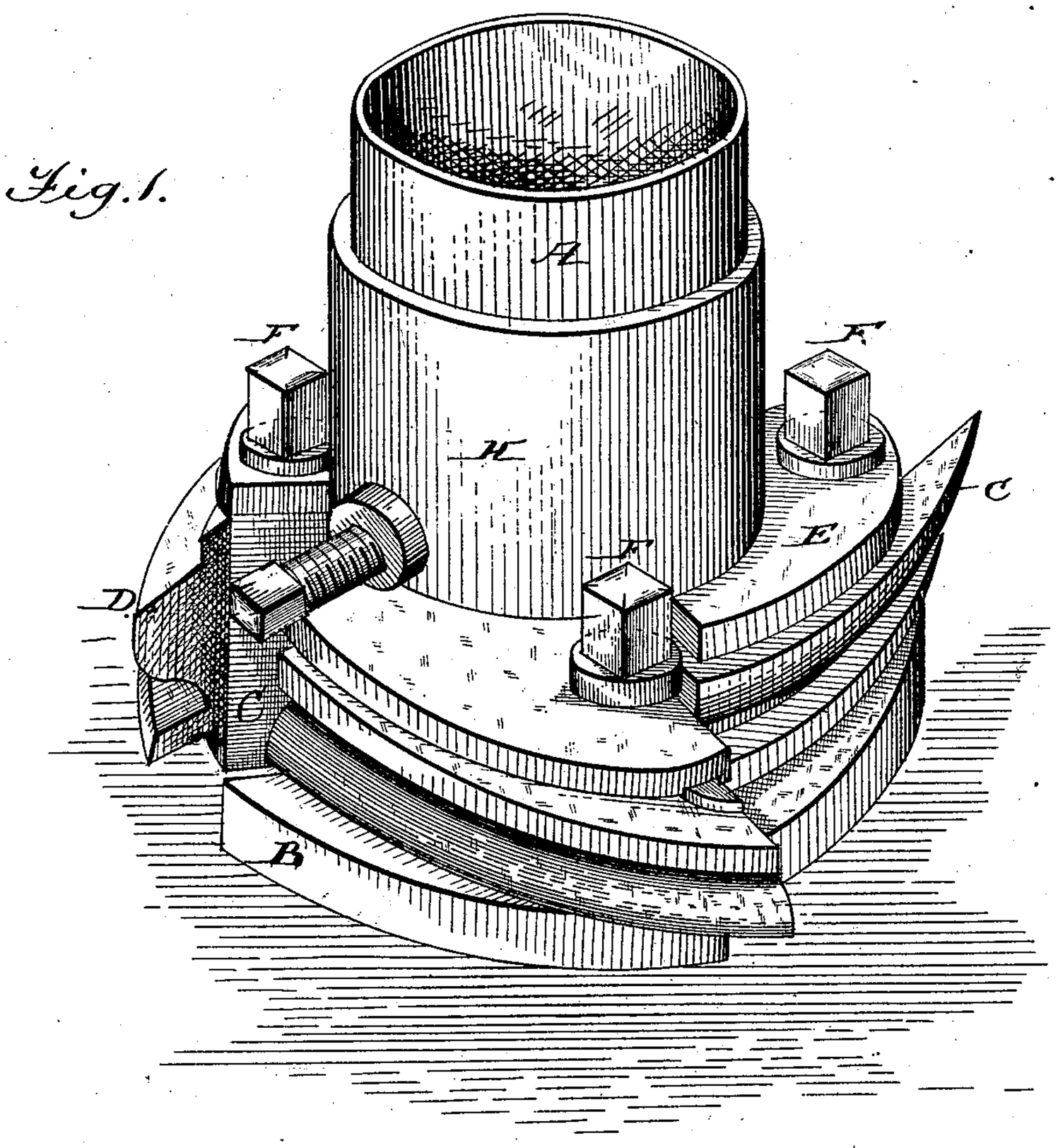
4 Sheets—Sheet 1.

G. W. AMESBURY.

Cutter-Head.

No. 226,381. Patented April 13, 1880.

Fig. 1.



Attest;
T. Walter Fowler,
Wm. H. Morsell

Inventor;
Geo. W. Amesbury
per attys.
A. H. Evans & Co

4 Sheets—Sheet 2.

G. W. AMESBURY.

Cutter-Head.

No. 226,381. Patented April 13, 1880.

Fig. 3.

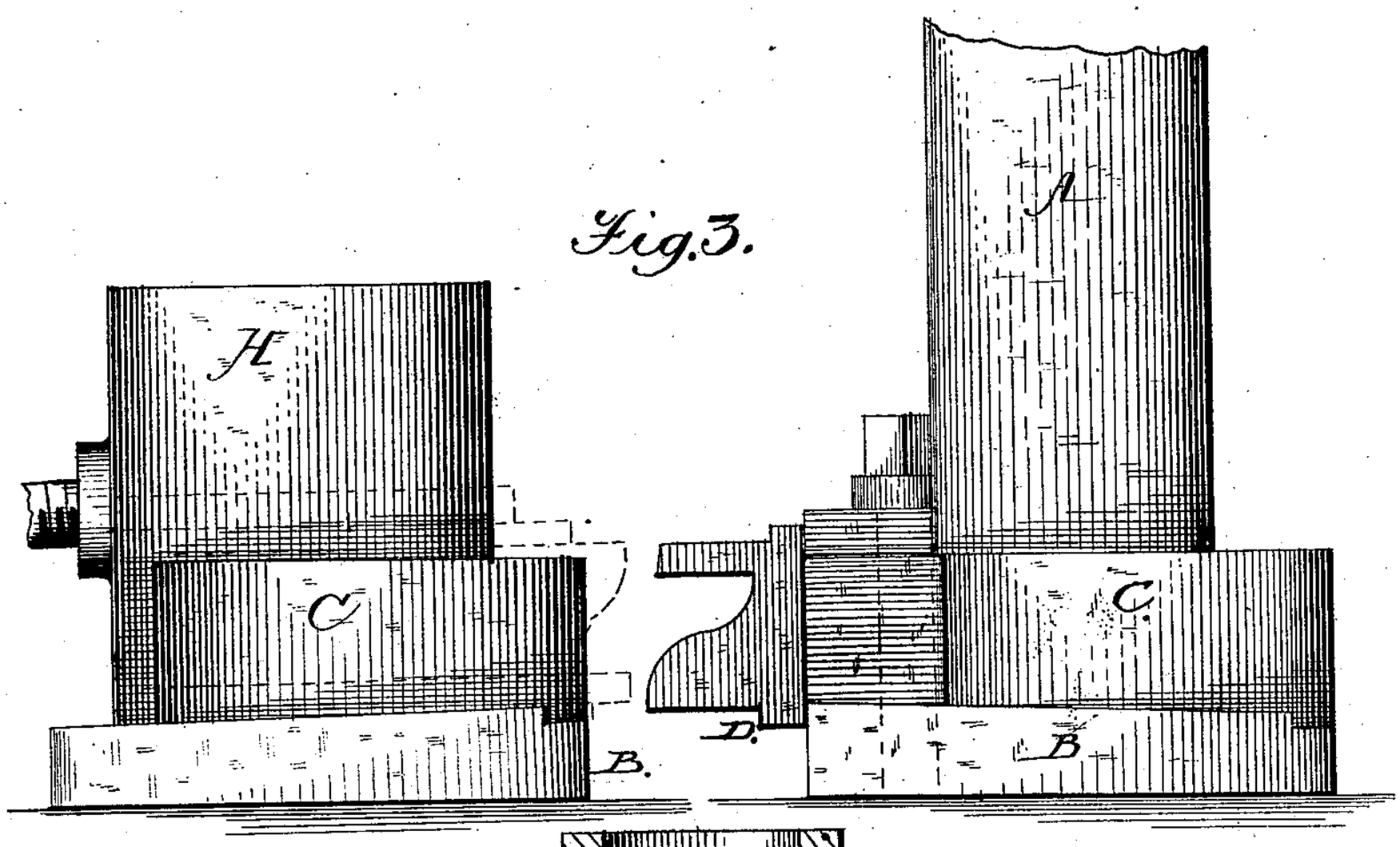
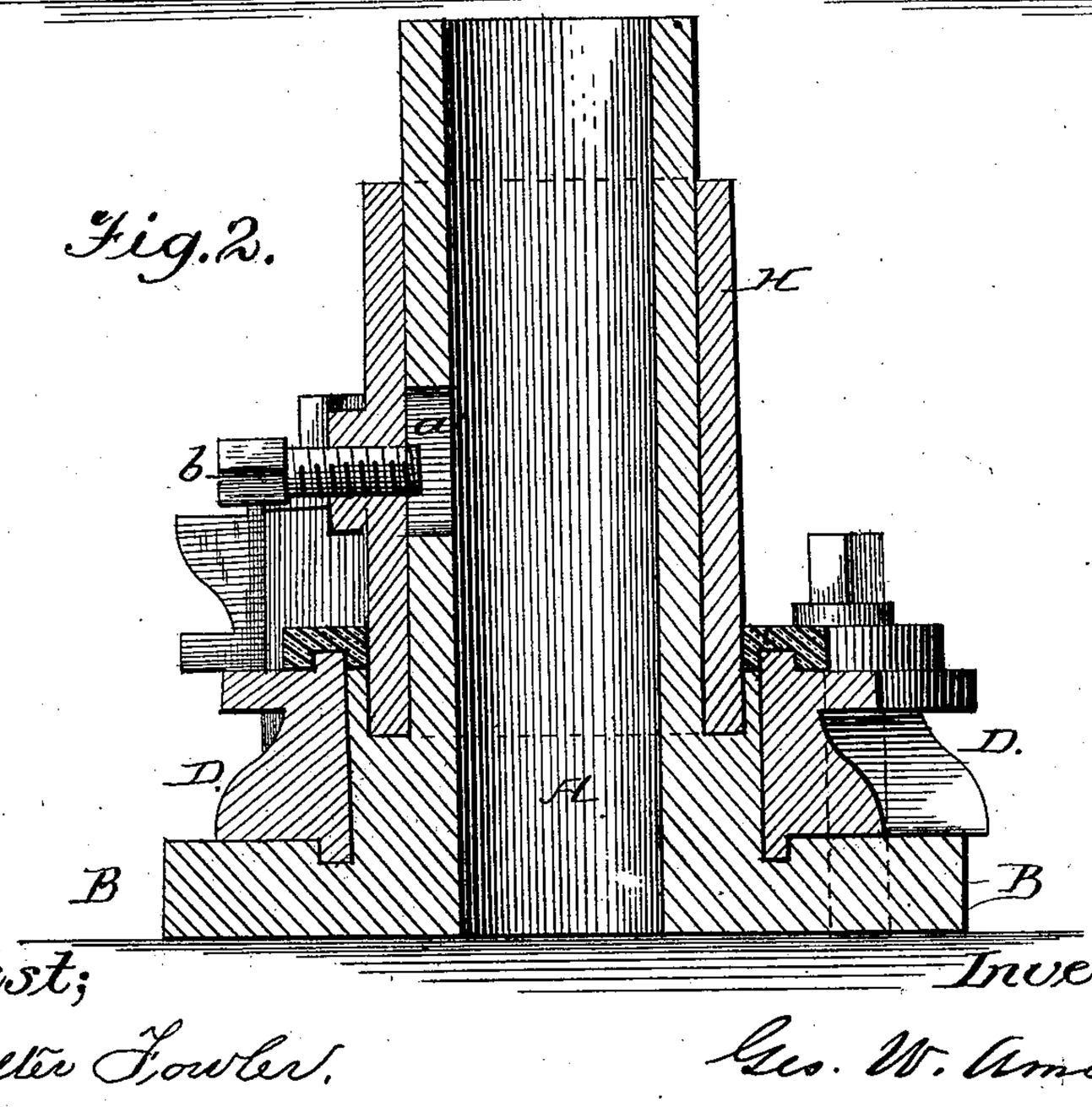


Fig. 2.



Attest;

J. Walter Fowler.

Wm. H. Morsell

Inventor;

Geo. W. Amesbury

per attys

A. H. Evans & Co

4 Sheets—Sheet 3.

G. W. AMESBURY.

Cutter-Head.

No. 226,381. Patented April 13, 1880.

Fig. 4.

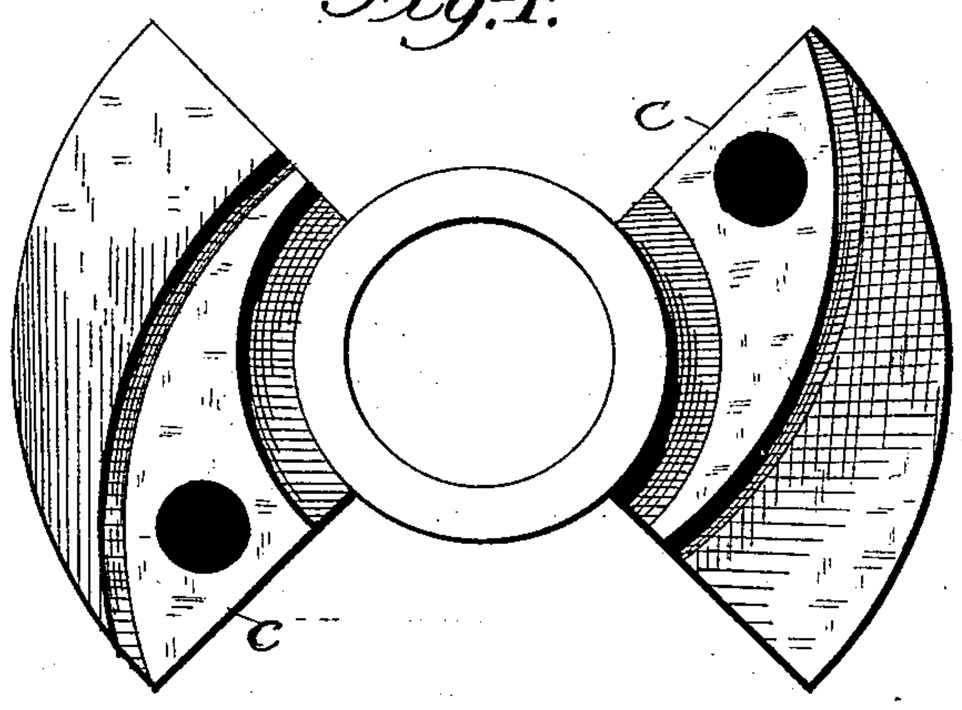
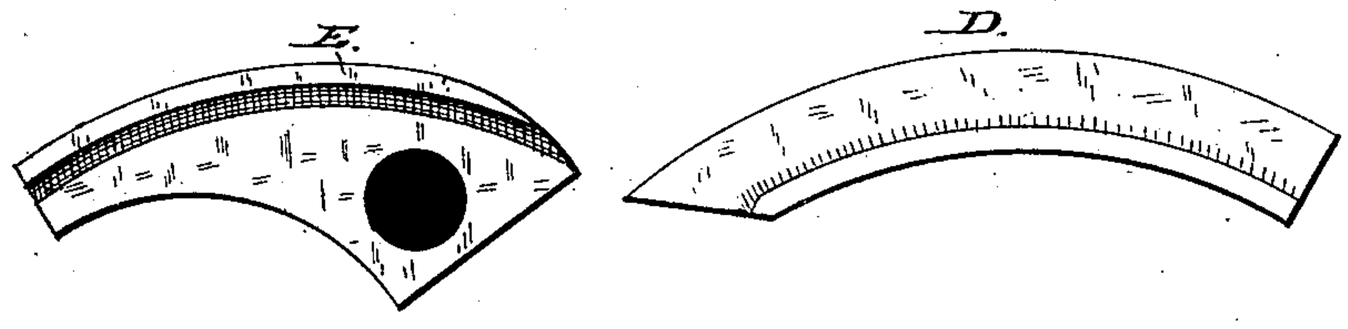


Fig. 5.



Attest:
J. Hall Fowler,
Wm H. Morsell.

Inventor.
Geo. W. Amesbury
per Attys
A. N. Evans & Co.

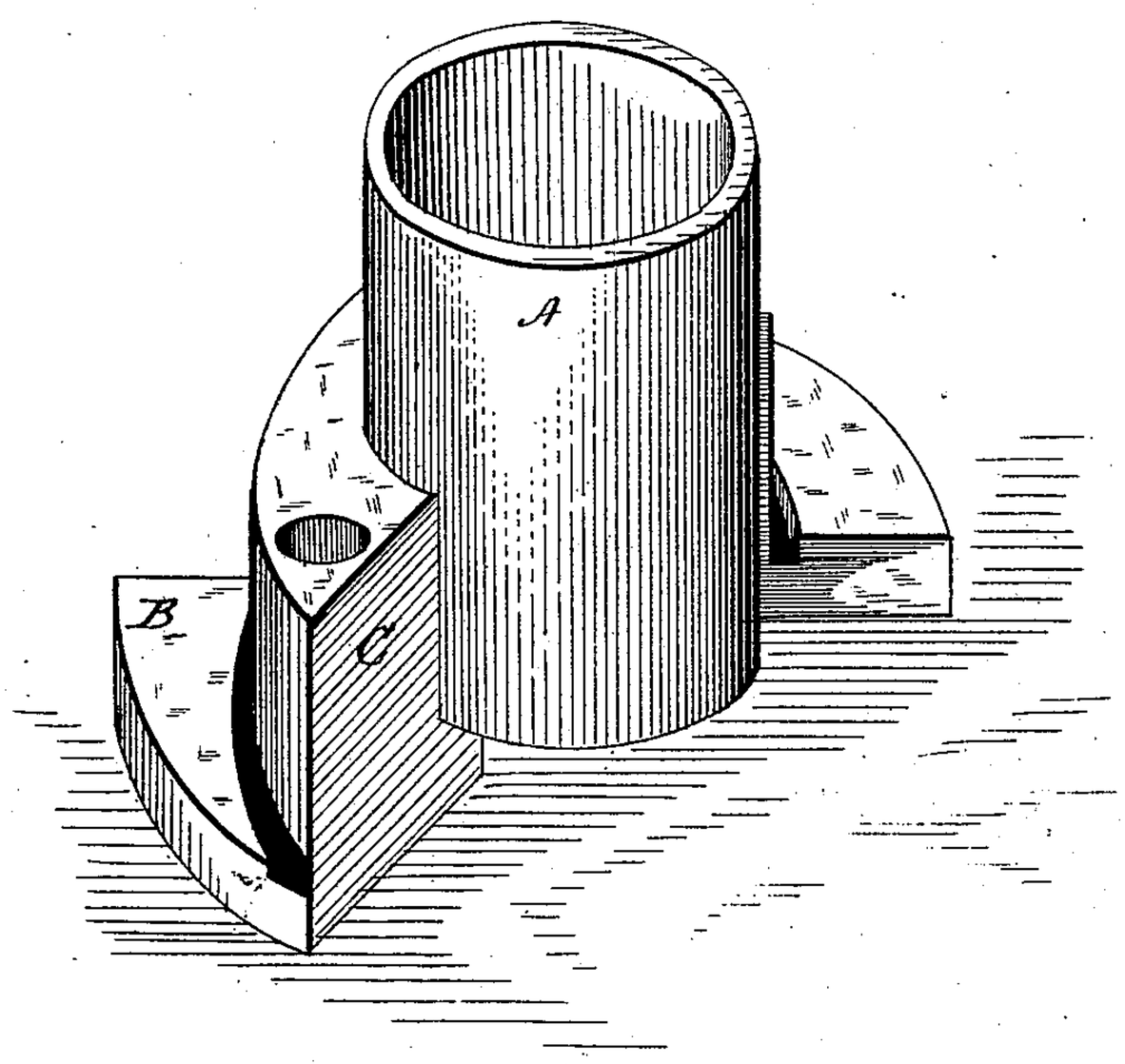
4 Sheets—Sheet 4.

G. W. AMESBURY.

Cutter-Head.

No. 226,381. **Patented April 13, 1880.**

Fig 6



Attest:
J. Waller Fowler.
W. A. Morsell

Inventor;
Geo. W. Amesbury
per attys
A. St. Evans & Co.

UNITED STATES PATENT OFFICE.

GEORGE W. AMESBURY, OF NEW YORK, N. Y.

CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 226,381, dated April 13, 1880.

Application filed February 25, 1880.

To all whom it may concern:

Be it known that I, GEORGE W. AMESBURY, of the city and State of New York, have invented certain new and useful Improvements in Cutter-Heads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of the specification, in which—

Figure 1 is a perspective view of a cutter-head with my improvement attached. Fig. 2 is a vertical section. Fig. 3 shows the two parts of the cutter-head detached. Fig. 4 is a plan view of the sections with cutters and caps removed; Fig. 5, details showing cap-cutter. Fig. 6 is a perspective with cutters removed.

The object of my invention is to form a cutter-head having cutters, the outside shape of which is first turned in the outside of a continuous ring and then cut into as many segments as may be necessary to complete the cutters for one head, thus insuring perfect exactness of shape while all are cutting equal and alike.

My invention further consists in having a divided cut, so that the cutters alternate in their action, and resting on beveled flanges, whereby the cutters are inclined upward or downward, as desired, and thus give clearance to the flat sides of the leading-points.

My invention consists in the combination of the several devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A is a hub, bored of suitable size, with flanges or faces B, provided with the lugs C, of a shape to correspond in size, shape, and location with the segments D of the ring to be used as cutters.

The lugs C are formed to correspond with the inside of the segments or cutters D, which are held in position by the caps E fitted to the top of the lugs and cutters, and secured in position by the bolts F running through the caps and lugs. The faces of these lugs are formed radial to the center of the hub, so that those on the hub form a guide for those on the sleeve-section, as will be hereinafter explained.

In order to give my cutters the necessary incline and secure proper clearance to the leading-points, I bevel the upper surface of the flanges B, as shown in Fig. 3, and to these my cutters D are secured, as hereinbefore described.

It is evident that the cutters attached to the hub A will cut in a line, the one following the other and doing one side of the work, the cutters being of the proper shape to perform the work desired.

The sleeve H, which fits snugly on the hub A, is provided with flanges, lugs, cutters, caps, and bolts similar in all respects to those on the hub A, with the exception that the cutters may be reversed in shape and incline, whereby they are adapted to do the other side of the work, as will be evident to workmen skilled in the use of this cutter.

The hub A is slotted at *a* to receive the set-screw *b*, which passes through the sleeve H and abuts against the shaft, whereby the sleeve is secured at any desirable position on the hub and both secured on the shaft, and the two sets of cutters are adjusted to their work.

By thus sliding and setting the sleeve H on the hub A it is evident that the two sets of cutters may be adjusted so as to increase or decrease the scope of their action and adapt them to the different thickness of material to be worked, thus doing with one head or one set of heads the work that by other methods requires a separate head or separate sets of heads for each and every thickness of material.

In adjusting the sleeve H with its flanges, cutters, lugs, and caps, the lugs on the hub are of sufficient height to serve as guides for the flanges and cutters on the sleeve H as they move up and down. These lugs are made to correspond exactly with the height of the cutters to be used, and so formed on the outside as to fit the curve of the segmental cutter. They also serve as a seat or rest for the caps E.

I am aware that cutters of different shapes and designs have been used to produce a divided cut; and I am also aware that cutters attached to a sleeve sliding on a fixed section have been used; also, that heads provided with hub-seats having oblique faces are not new, nor do I claim such as my invention, the same being shown in patent to G. I. Shimer, No. 159,226, and the patent to I. H. and H. F. Gurley, No. 210,522.

Having thus described my invention, what I

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

1. The hub A, provided with the beveled sectional flanges B at right angles to the axis of the hub, for the attachment of the cutters, substantially as described.

2. The hub A, having the beveled sectional flanges B at right angles to the axis of the hub, and the lugs C situated on the flanges next the hub, for steadying the cutters and holding the caps, substantially as herein described.

3. The hub A, having the beveled sectional flanges B and lugs C, in combination with the segmental cutters D and caps E, all constructed and arranged to operate substantially as and for the purpose set forth.

4. The segmental cutters D, resting on the beveled flanges B, whereby is secured a clearance to the flat faces of the leading-points, in combination with the beveled sectional flanges B, lugs C, caps E, and the adjustable sleeve H, provided with similar flanges, cutters, lugs, and caps, as herein described.

GEORGE W. AMESBURY.

Witnesses:
JNO. L. CONDRON,
W. H. MORSELL.