

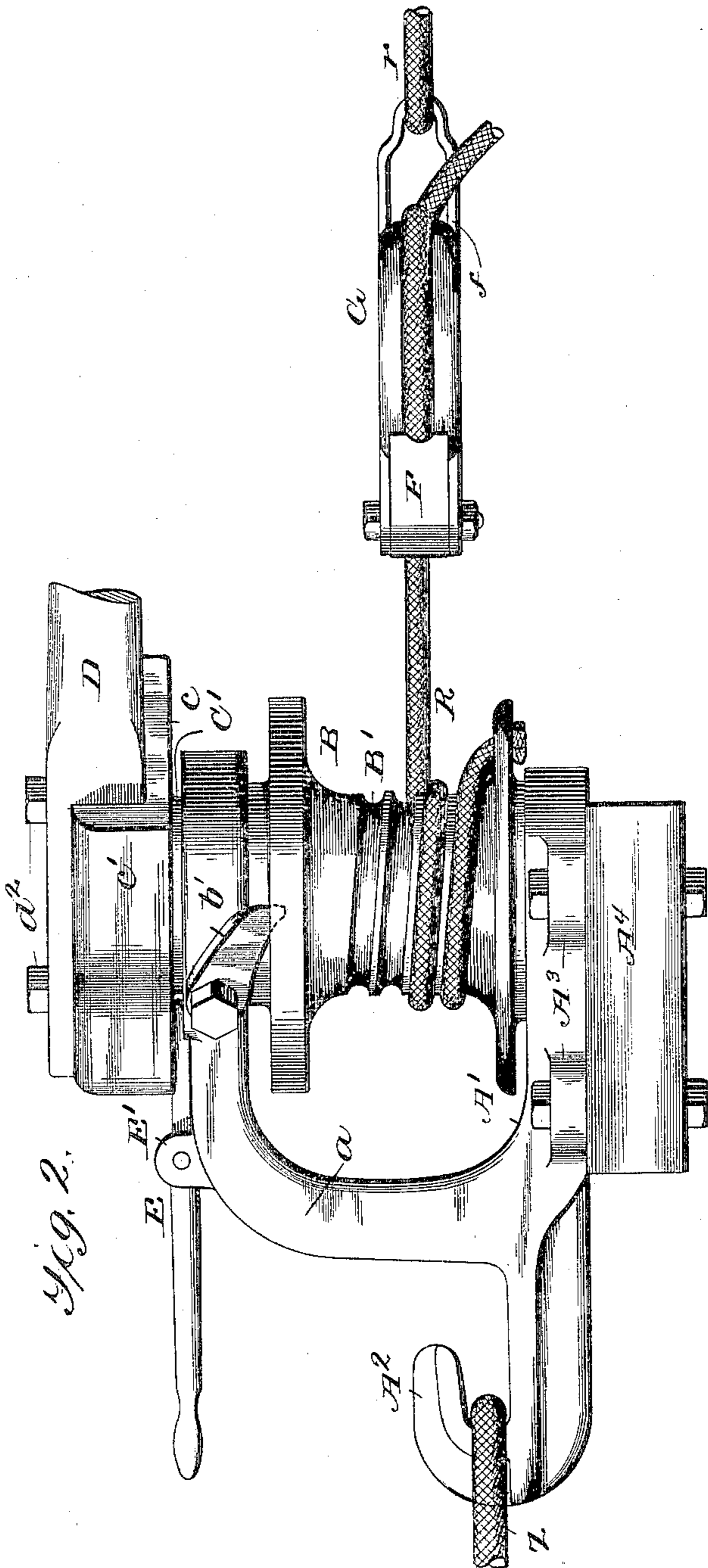
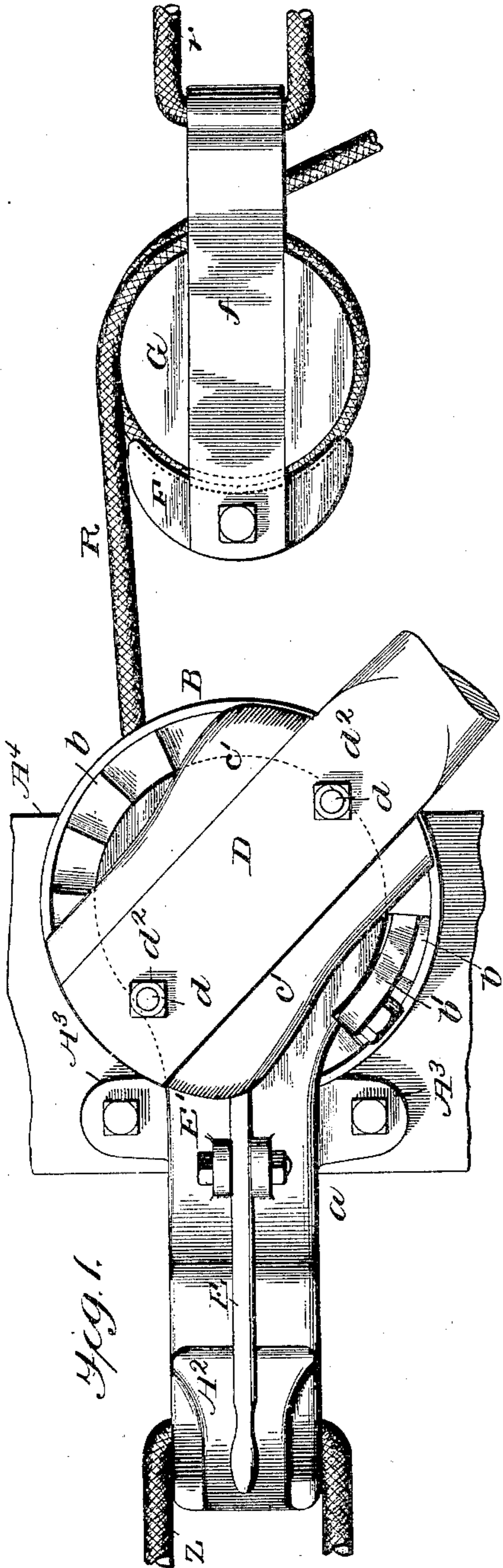
(No Model.)

2 Sheets—Sheet 1.

M. BATEMAN & W. C. F. ZIMMERMAN.  
STUMP PULLER AND GRUBBING MACHINE.

No. 599,214.

Patented Feb. 15, 1898.



WITNESSES

Jos. C. Stack.

James R. Mansfield.

INVENTORS

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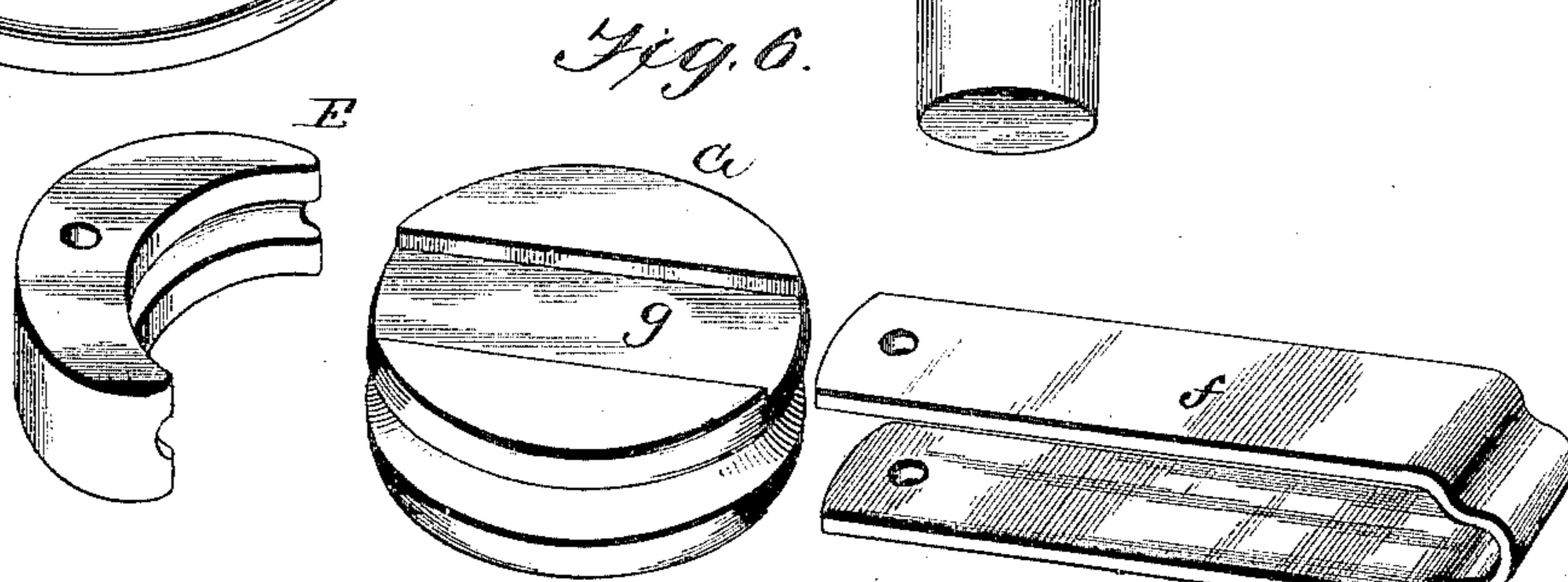
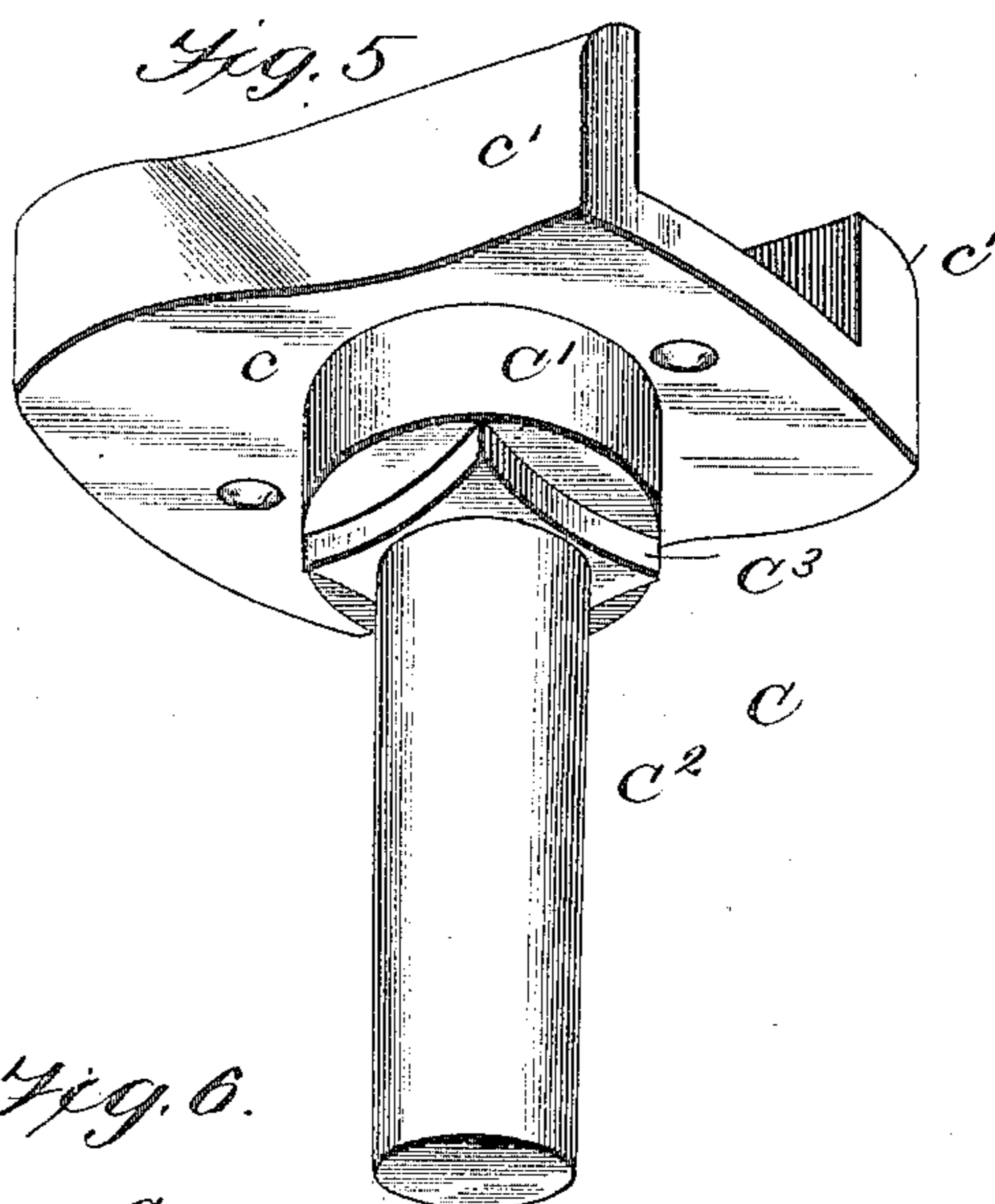
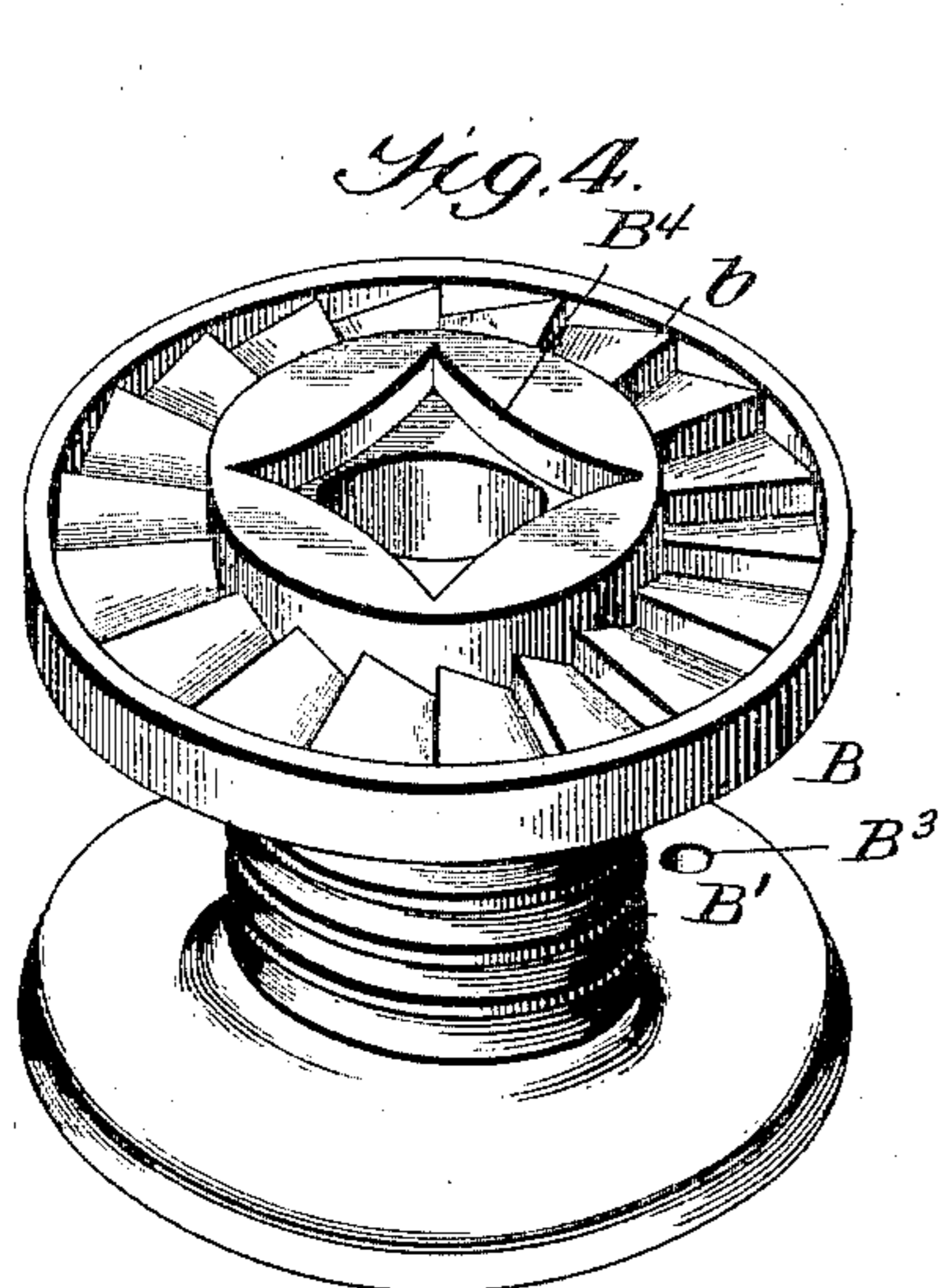
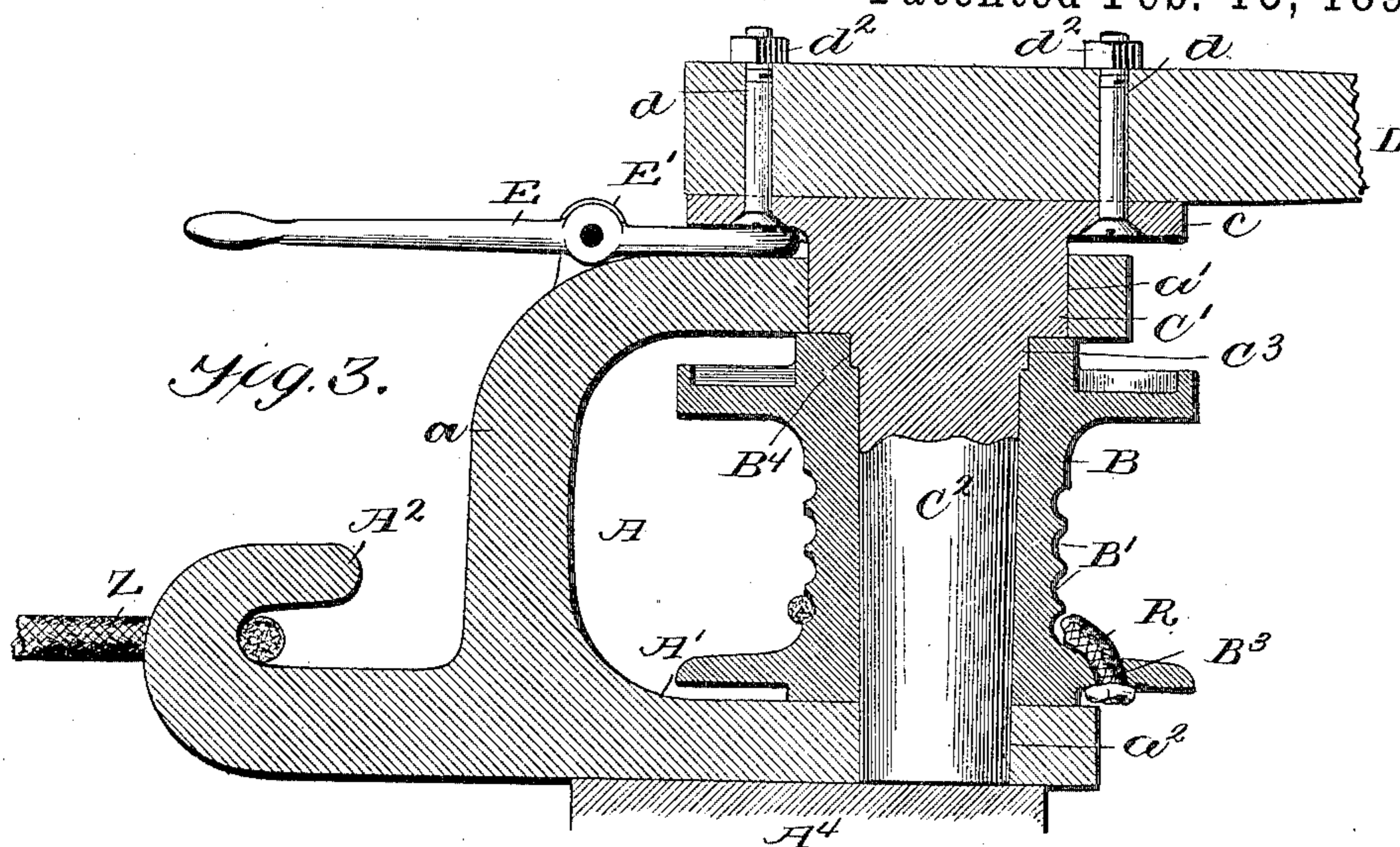
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Joseph L. Stack.  
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INVENTORS

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# UNITED STATES PATENT OFFICE.

MILES BATEMAN AND WILLIAM C. F. ZIMMERMAN, OF LONE TREE, IOWA.

## STUMP-PULLER AND GRUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 599,214, dated February 15, 1898.

Application filed February 17, 1896. Serial No. 579,571. (No model.)

*To all whom it may concern:*

Be it known that we, MILES BATEMAN and WILLIAM C. F. ZIMMERMAN, of Lone Tree, in the county of Johnson and State of Iowa, have  
5 invented certain new and useful Improvements in Stump-Pullers and Grubbing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference  
10 marked thereon, which form part of this specification.

This invention is an improvement in machinery for pulling stumps, grubbing, &c., by horse or manual power; and its object is to  
15 provide an improved power-machine or windlass and novel slack take-up whereby the operation of the power-machine is facilitated.

The novel features of the power-machine  
20 are its simplicity of construction and its capability of being taken apart or assembled at will without manipulation of screws or bolts, thereby facilitating the work of erecting it and of removing it from place to place, as re-  
25 quired, in using it. The slack take-up is very simple, and the entire apparatus will be clearly understood from the following description and the drawings accompanying it and made part thereof by letters of reference  
30 marked thereon.

In the drawings, Figure 1 is a top plan view of the complete apparatus in working position. Fig. 2 is a side view thereof. Fig. 3 is a vertical section through the power-machine  
35 or windlass. Fig. 4 is a detail perspective view of the drum. Fig. 5 is a detail perspective view of the stub-shaft. Fig. 6 is a detail perspective view of the parts of the take-up.

The frame A of the windlass is one casting  
40 having a base portion A', provided with a hook A<sup>2</sup> at one end for the attachment of the anchoring chain or rope Z, and it also has lateral perforated lugs A<sup>3</sup> for the passage of bolts to retain it on a bar or support A<sup>4</sup>, which  
45 prevents the windlass tilting or toppling over. In front of hook A<sup>2</sup> an arm a rises from the base A' and extends upward as high as the windlass-drum B and then bends forward parallel with the base and has a large jour-  
50 nal-opening a' in its front end directly over

a smaller opening a<sup>2</sup> in the front end of the base portion.

The drum B is of ordinary spool shape, but has a spiral groove B' in its hub for the accommodation of the rope. Said groove not  
55 only prevents the rope binding upon itself, but also keeps it from flattening out and equalizes strain thereon, thus prolonging the usefulness of the wire rope.

The end of the rope R is secured in an opening B<sup>3</sup> in the lower flange of the drum, as shown. The upper flange of the drum has an annular ratchet b in its upper surface, which is engaged by a dog b', pivoted to the arm a above the drum.  
60  
65

C designates a stub-shaft upon which the drum is journaled and by which it is retained in position in the frame A. This shaft has an enlarged upper end C' of a diameter to fit neatly in the opening a', while the lower portion C<sup>2</sup> of the shaft is of less diameter, so as  
70 to fit easily in the bore of the drum and in the opening a<sup>2</sup>, as indicated in Fig. 3.

On the upper end of shaft C is a transverse T-head c, having upstanding flanges c' on its sides, between which the sweep D is secured  
75 by means of bolts d and nuts d<sup>2</sup>, as shown. At the junction of parts C' C<sup>2</sup> of the stub-shaft is a substantially squared portion C<sup>3</sup>, which is adapted to engage a corresponding  
80 recess B<sup>4</sup> in the upper end of the drum B and thus lock the drum and shaft together.

A lever E is pivoted in a bifurcated lug E' on top of arm a, and one end thereof underlies the T-head c, and by depressing the outer  
85 end of said lever the stub-shaft is raised so that part C<sup>3</sup> is disengaged from recess B<sup>4</sup>, and thus the draft strain on sweep D can be relaxed while the drum is locked by dog b', or the dog can be disengaged from the ratchet  
90 and the drum revolved on the stub-shaft to unwind the rope.

It will be particularly observed that the drum has no bearing in the frame, but only on or through shaft C. Consequently frame  
95 A can be made in one piece and thus last indefinitely, whereas if it were made in two parts, as it would have to be if the drum had bearings therein, the bolts which united the parts of the frame would be eventually sheared off  
100

by the immense strains to which they would be subjected or bent and loosened; so as to impair the usefulness of the machine; but the principal advantage of this construction is that when it is desired to remove the machine the sweep and stub-shaft can be lifted off the frame, then the drum slipped out, and thus the whole thing dismantled without unfastening any bolts or small pieces, and when the machine is to be set up after the frame is in place the drum is stood up in position and then the stub-shaft dropped in place, and the windlass is ready for operation.

The slack take-up consists of a U-shaped strap or rod *f*, between the ends of which is pivotally secured a crescent-shaped clamp *F*, whose inner edge is concaved to fit against the edge of a circular disk *G*, which is mounted between the sides of the strap and can slide toward or from the clamp, but is grooved on its sides, as at *g*, to accommodate the sides of the rod and be thereby kept from rotating.

The outer edge of the disk *G* and the inner edge of clamp *F* are grooved to accommodate the rope *R*.

In using this apparatus the eye of the strap *f* is made fast to the stump or tree to be pulled by a rope *r*. Then the main rope *R* from the drum *B* is turned around the disk *G* and between it and the clamp and drawn taut by hand, taking up all the slack between the drum and slack take-up, and as soon as power is applied to the windlass the rope *R* pulls the disk *G* against clamp *F*, binding the rope *R* between the disk and clamp the more firmly as the strain on the rope *R* increases.

The manner of using the slack take-up will be apparent from the drawings, and the advantages of it in saving time will be readily understood by operators of this class of machinery. Of course, if desired, the usual power-pulleys can be interposed between the drum and slack take-up.

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

1. The combination with the frame having a base *A'*, arm *a*, and hook *A*<sup>2</sup>, formed in one piece, and the grooved drum *B*, supported on the base but not journaled therein, having a ratchet in its upper flange and a square socket *B*<sup>4</sup>; a dog pivoted on the arm and engaging said ratchet; and the removable stub-shaft *C*, securing the drum to the frame, and having a T-head on its upper end, an enlargement *C*<sup>3</sup> journaled in the arm, and a squared enlargement *C*<sup>3</sup> engaging socket *B*<sup>4</sup>, and the sweep attached to the T-head; with the lever *E* pivoted on the arm and underlying the T-head, whereby the stub-shaft can be raised so as to free it from the drum, substantially as and for the purpose described.

2. The combination of the frame *A* having base *A'*, hook *A*<sup>2</sup>, and arm *a*, all formed in one piece, and constructed substantially as described, and the drum *B* fitted loosely between the base and arm having spiral groove *B'*, annular ratchet *b* and socket *B*<sup>4</sup>, substantially as described; with the stub-shaft *C* having enlarged portion *C'*, square portion *C*<sup>3</sup> and T-head *c* having flanges *c'*, the sweep-securing bolts *d*, and the dog *b'* pivoted to arm *a*; with the lever *E* pivoted on arm *a*, having one end underlying T-head *c*, whereby the stub-shaft may be disengaged from the drum, all substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have affixed our signatures in presence of two witnesses.

MILES BATEMAN.

WILLIAM C. F. ZIMMERMAN.

Witnesses:

T. R. FITZGERALD,  
I. A. KERR.