

(No Model.)

2 Sheets—Sheet 1.

T. F. HORN.

MACHINE FOR REMOVING BARK FROM TREE SECTIONS.

No. 416,784.

Patented Dec. 10, 1889.

Fig. 1.

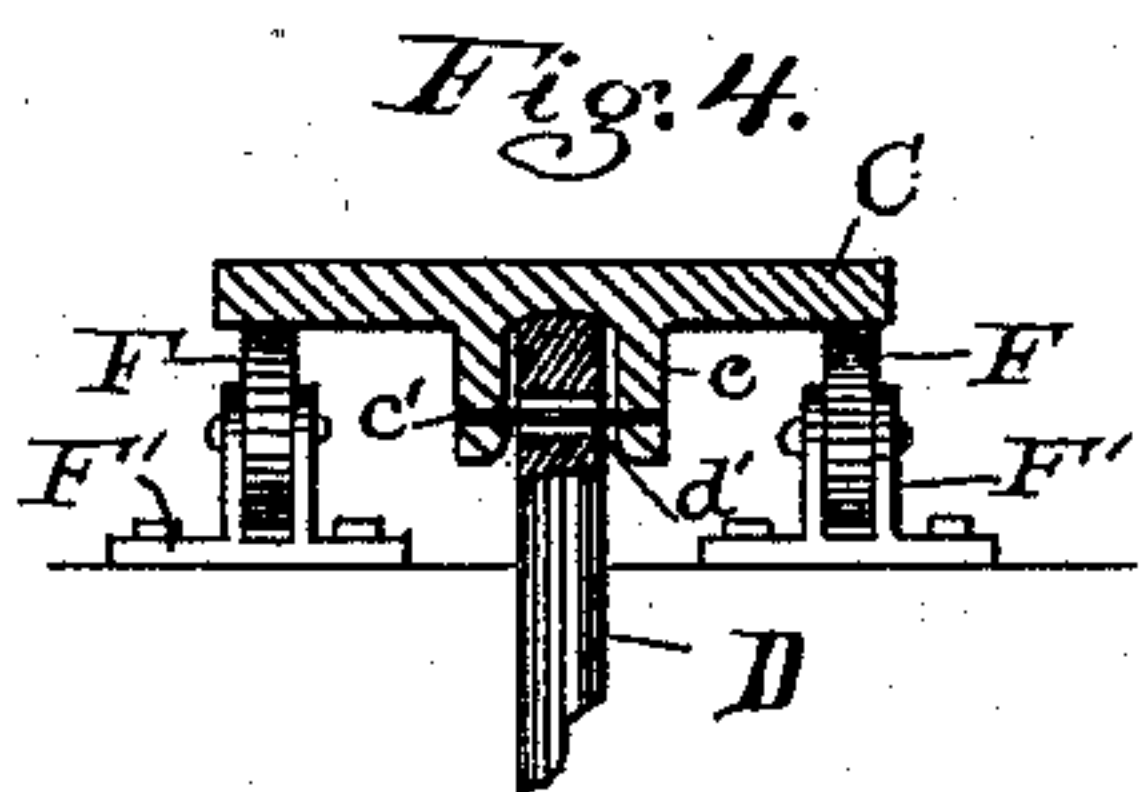
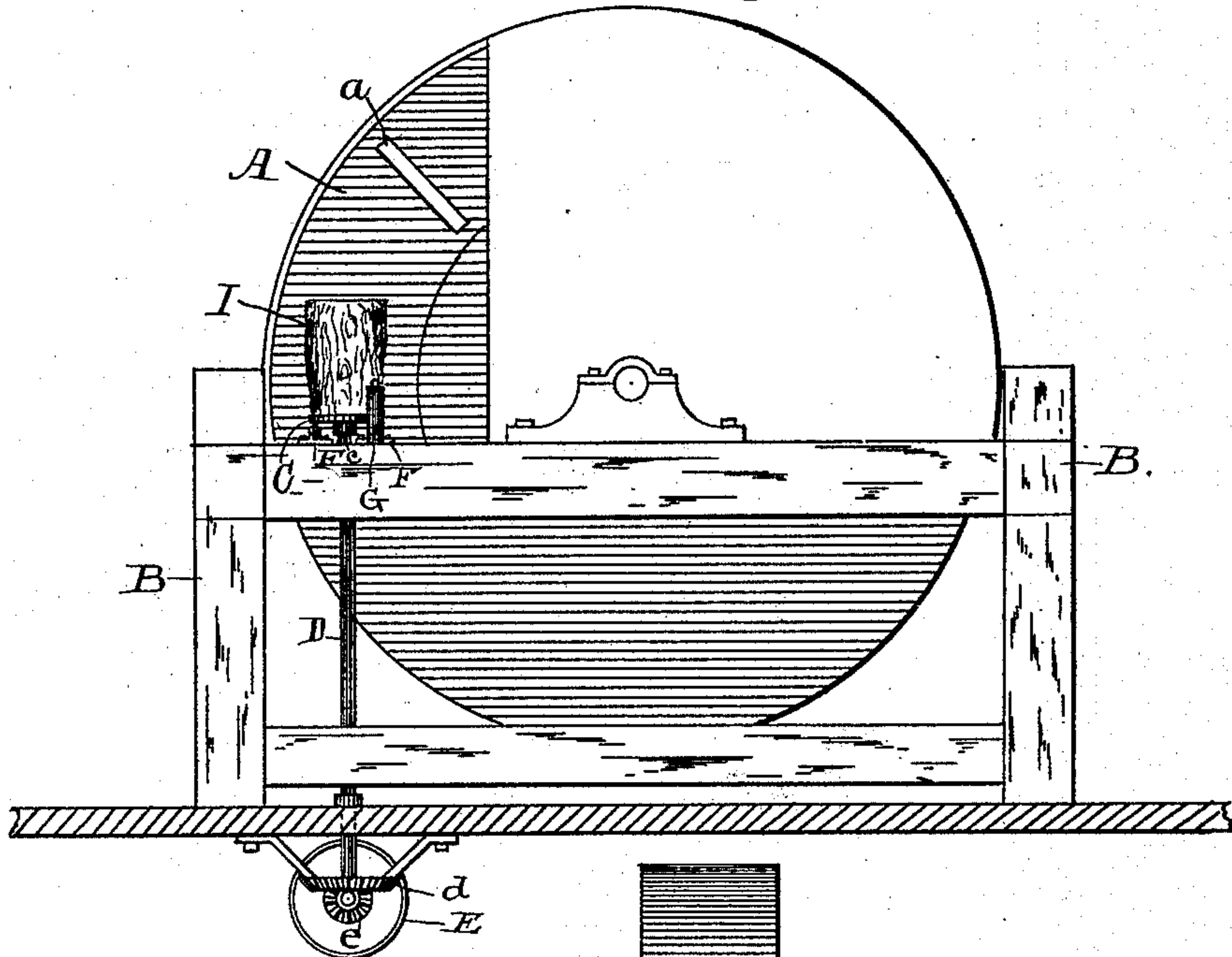


Fig. 2.

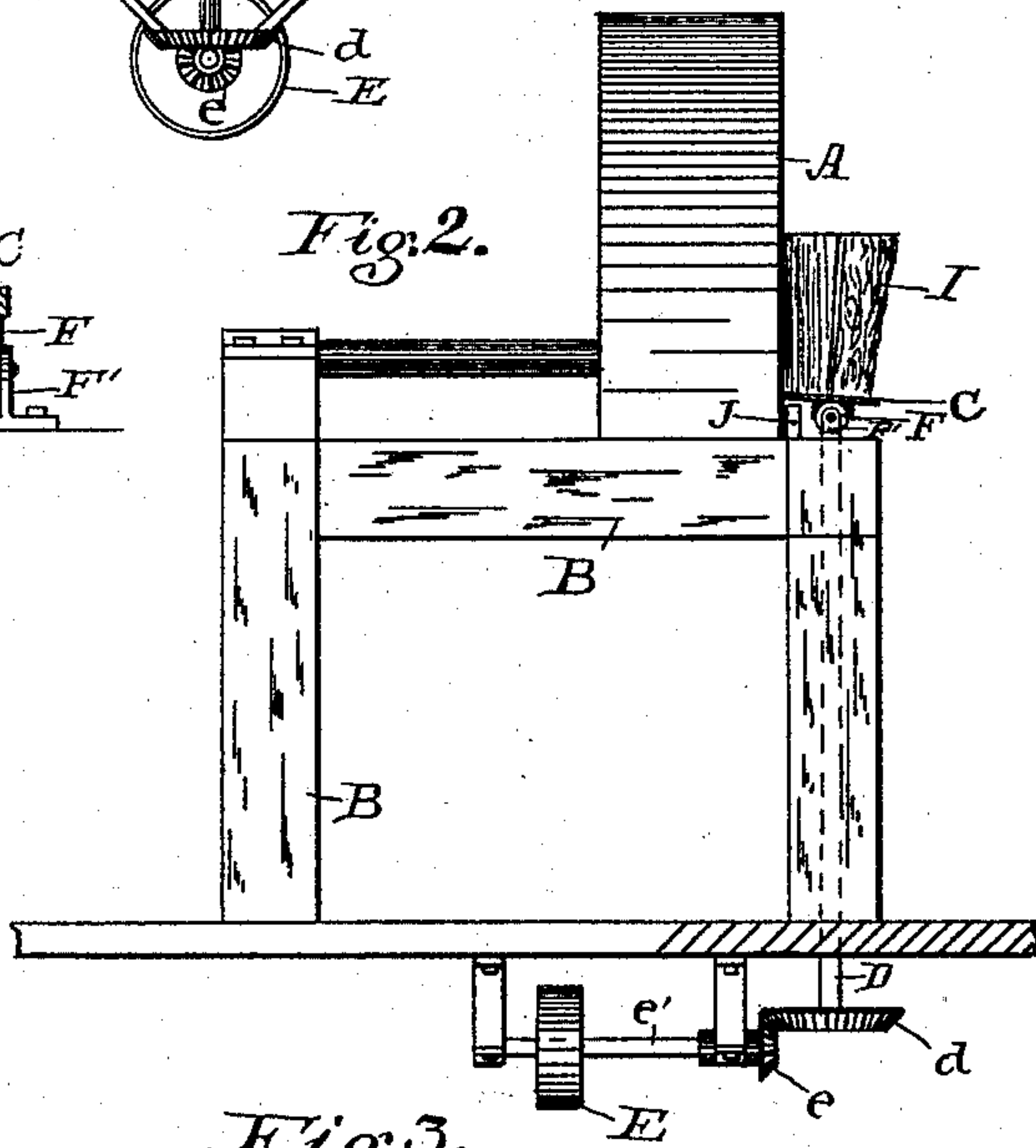
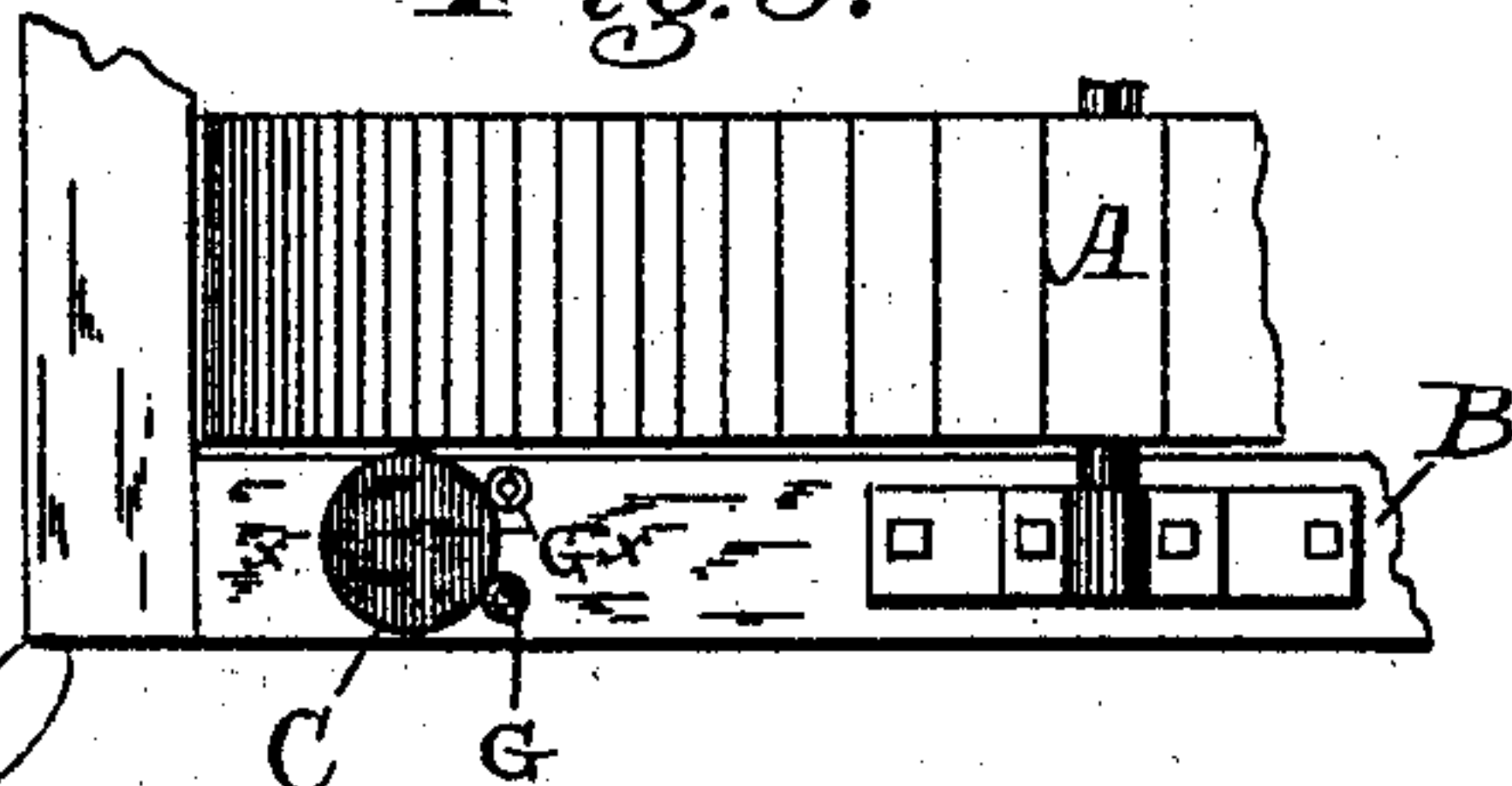


Fig. 3.



Witnesses:

Lee D. Sheffield  
Charles Stansfield

Inventor:

Thomas F. Horn  
by S. M. Bates  
his atty.

(No Model.)

2 Sheets—Sheet 2.

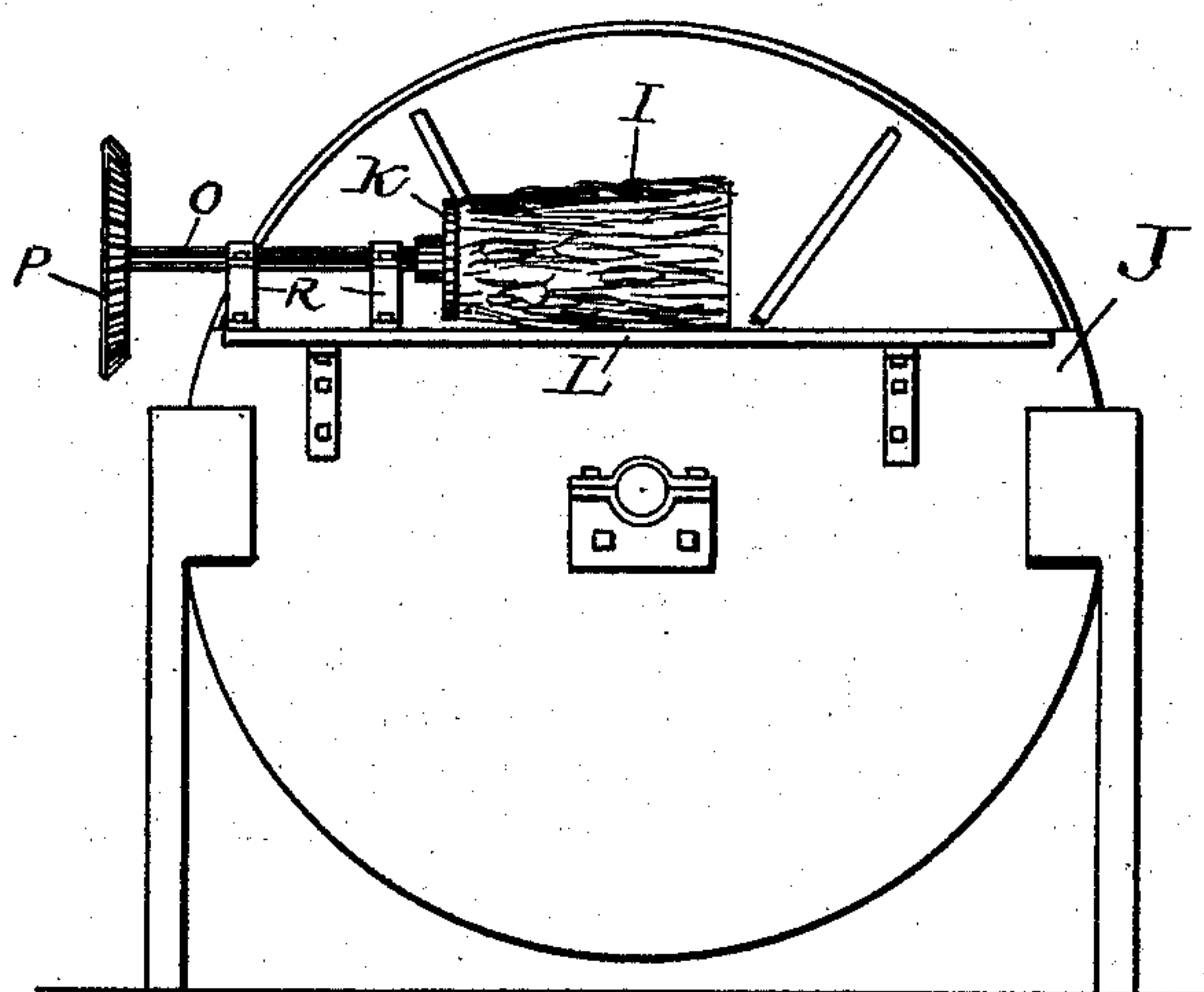
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Fig. 5.



Witnesses:  
Charles Stansfield

Inventor  
Thomas F. Horn  
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# UNITED STATES PATENT OFFICE.

THOMAS F. HORN, OF LIVERMORE FALLS, ASSIGNOR TO THE OTIS FALLS  
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## MACHINE FOR REMOVING BARK FROM TREE-SECTIONS.

SPECIFICATION forming part of Letters Patent No. 416,784, dated December 10, 1889.

Application filed May 20, 1889. Serial No. 311,369. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. HORN, a citizen of the United States, residing at Livermore Falls, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Machines for Removing Bark from Tree-Sections; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for removing bark from sections of trees or logs, such as are used in the manufacture of wood pulp. These machines as they have commonly been constructed for use in manufacturing wood pulp have consisted of a revolving cutter with knives fixed in its face and having in front of this face a fixed table. The bolt or section was placed on this table and turned by hand, at the same time being pressed against the face of the cutter, by which the bark was removed. These bolts were usually of considerable size and weight, and, as they rested in an upright position on the table, being turned as the cutters removed the bark, the cutters acted on the outer surface, removing the bark at right angles to the base. Thus when the bolts happened to have one end larger than the other or to be "churn-butted," so called, it became necessary to cut down the larger end to the size of the smaller end before the bark could be entirely removed. In this manner much material and labor were wasted. Waste also occurred when the bolt was rotated by hand by reason of the irregularity of the motion. When so turned by hand, the cutter would remove the outer surface by a series of straight cuts, leaving the bolt when finished polygonal in section instead of cylindrical.

The object of my invention is to avoid this loss of labor and material and to construct the machine so that the knives will cut parallel with the surface of the bolt and not

parallel with its center. I accomplish this end by providing a tilting table or rest in front of the knives on which the bolt rests and by means of which it can be canted to conform to the surface of the wood. A further improvement in the machine is effected by making this table or rest rotatable, whereby the turning of the bolt is facilitated.

My invention consists of the various features pointed out in the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a barking-machine fitted with my improvement. Fig. 2 is an end view of the same. Fig. 3 is a part plan of the same; and Fig. 4 is an enlarged vertical section through  $x x$  of Fig. 3, showing the table or rest. Fig. 5 shows my invention applied to a machine wherein the bolt is laid horizontally.

A is the cutter, and B the frame, of any form of barking-machine wherein the bolt is worked in an upright position,  $a$  being one of the knives.

C is a table or rest suitable in size to support the bolts and so hung or supported as to tilt or incline out of a horizontal position, and particularly in a direction at right angles to the face of the cutter. Here I arrange for this tilting motion by resting the table C on the top of a vertical shaft D, the shaft entering loosely an opening in the hub  $c$ , which is formed on the under side of the table C. The fit is sufficiently loose to secure a considerable rocking motion, and the end of the shaft and the surface of the recess in the table are curved to conform to each other. The two parts are loosely secured together by means of a pin  $c'$ , which passes through the hub and through a slot or large opening  $d'$  in the end of the shaft. This connection forms a "universal joint" and enables the table C to rock or tilt to a limited extent in any direction. The shaft is provided with means of being rotated, (here shown as a pair of bevel-gears  $d$  and  $e$ , driven by a pulley E, fixed to a counter-shaft  $e'$ .)

The table C, as here shown, is supported and prevented from rocking laterally or in a direction parallel with the face of the cutter



by means of two trucks or rolls F, pivoted in chairs F', and it is prevented from tilting toward the cutter by a block or standard J, placed next to the face of the cutter. As  
5 thus supported, the table is only allowed to tilt in one direction—namely, away from the cutters.

Rolls or stops G G are pivoted in a vertical position at one side of the table to prevent the bolt from sliding from the table as it rotates. They are here shown as two in number, so disposed as to retain the bolt; but any convenient number may be used.

It is obvious that the bearing J may be re-  
15 placed by an anti-friction roll.

In using my improved machine the bolt is placed on end on the table. As it is then pushed by hand against the face of the cutter, it is rotated automatically and quickly  
20 and the bark is evenly removed from the surface, leaving the bolt cylindrical in form.

When a churn-butted bolt is to be treated, it is placed on the table with the small end down. As the bolt is pushed evenly against  
25 the face of the cutter, the table rocks outward or away from the cutter, and so remains while the bolt is turning, so that the cutter acts always parallel with the inclined surface, leaving the bolt conical in shape.

By the use of my improvement the efficiency of the machine is greatly increased and the material which was formerly wasted is now saved.

By dispensing with or decreasing the height  
35 of the bearing J the table can be tilted toward the cutter, in which case the bolt could be placed with the large end down. I prefer to work it, as described, with the small end down, as there is then no tendency of  
40 the knives to draw the bolt toward the cutter and so remove more than necessary.

Although my invention is designed more particularly to be used on machines which operate on a bolt held vertically, it can be ap-  
45 plied with good results to machines wherein the bolt is placed on its side. In Fig. 5 I illustrate such a machine and show the application of my device to it.

J is the machine, and L is the table on  
50 which the bolt rests on its side.

K is my rotating table with its shaft O and gear P for rotating it, these parts being constructed in the same manner already described, except that the shaft is held in a

horizontal position by the bearings R. The  
55 table is connected with the shaft by a universal joint, and as the cutter acts on the bolt it forces its base against the rotating rest, which causes it to turn and at the same time take a position which allows the inclined  
60 surface to be acted on by the cutter. It will be observed that the cutter acts on the bolt longitudinally and tends to press it against the rotating table or rest, so that sufficient friction is created to cause it to rotate with  
65 said table while being completely under the control of the operator.

I claim—

1. In a machine for removing bark from tree sections or bolts, a rotating table or rest  
70 for said bolts, in combination with a cutter co-operating therewith and acting longitudinally on the surface of said bolt to press it against said table or rest, substantially as shown.

2. In a machine for removing bark, the combination of a cutter and a rotatable table or rest for rotating the bolt on its axis in front of said cutter, and guides at the side of said table or rest for retaining said bolt thereon,  
80 substantially as described.

3. In a machine for removing bark, the combination of a cutter, a rotatable table or rest in front of said cutter for rotating the bolt on its own axis, said table or rest being  
85 capable of tilting in a plane at right angles to the face of said cutter, substantially as described.

4. In a machine for removing bark from tree-sections, a rotatable table or rest for receiving the bolt, said table being capable of tilting in a plane at right angles to the face of the cutter, and anti-friction bearings for preventing the lateral tilting of said table,  
90 substantially as described.

5. The table or rest having a recess on its under side, a rotatable shaft fitting said recess and connected with said table by a joint or connection which allows the parts to turn at an angle with each other, substantially as  
100 described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. HORN.

Witnesses:

E. L. STANWOOD, Jr.,  
S. W. BATES.