

No. 666,211.

Patented Jan. 15, 1901.

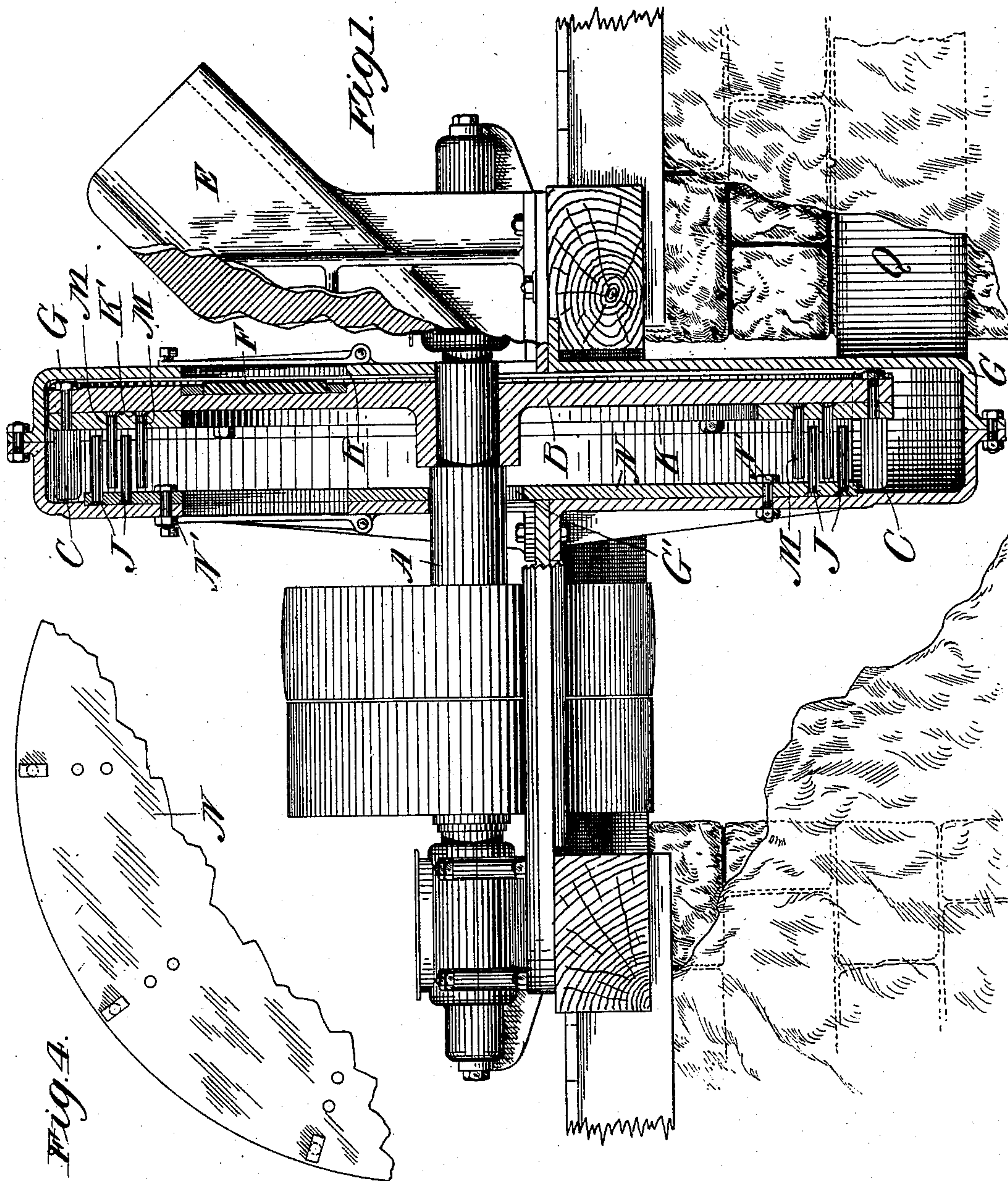
H. G. SHORTT.

COMBINED WOOD CHIPPER AND CRUSHER.

(Application filed Nov. 16, 1900.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES  
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J. M. Puffer

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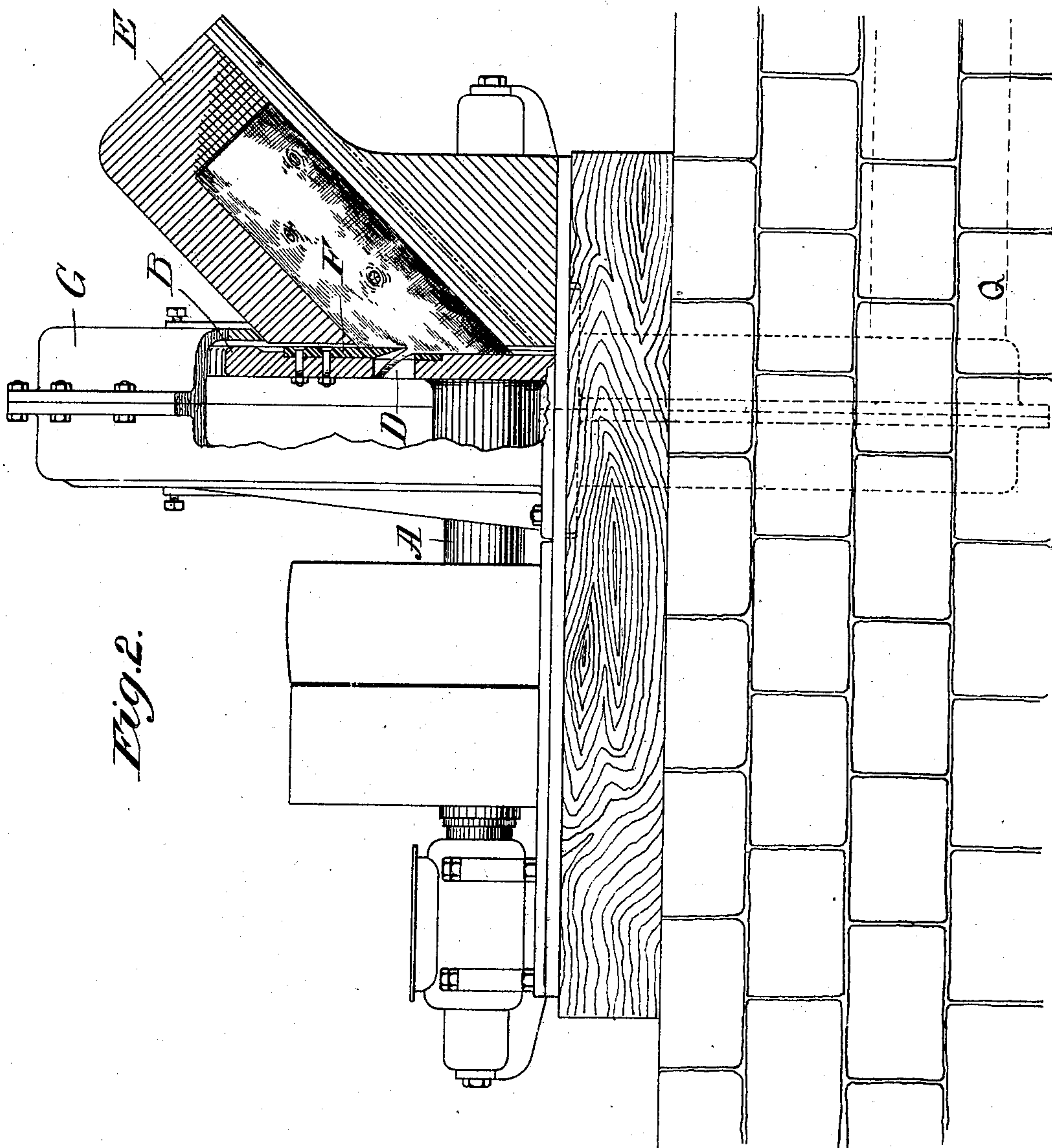
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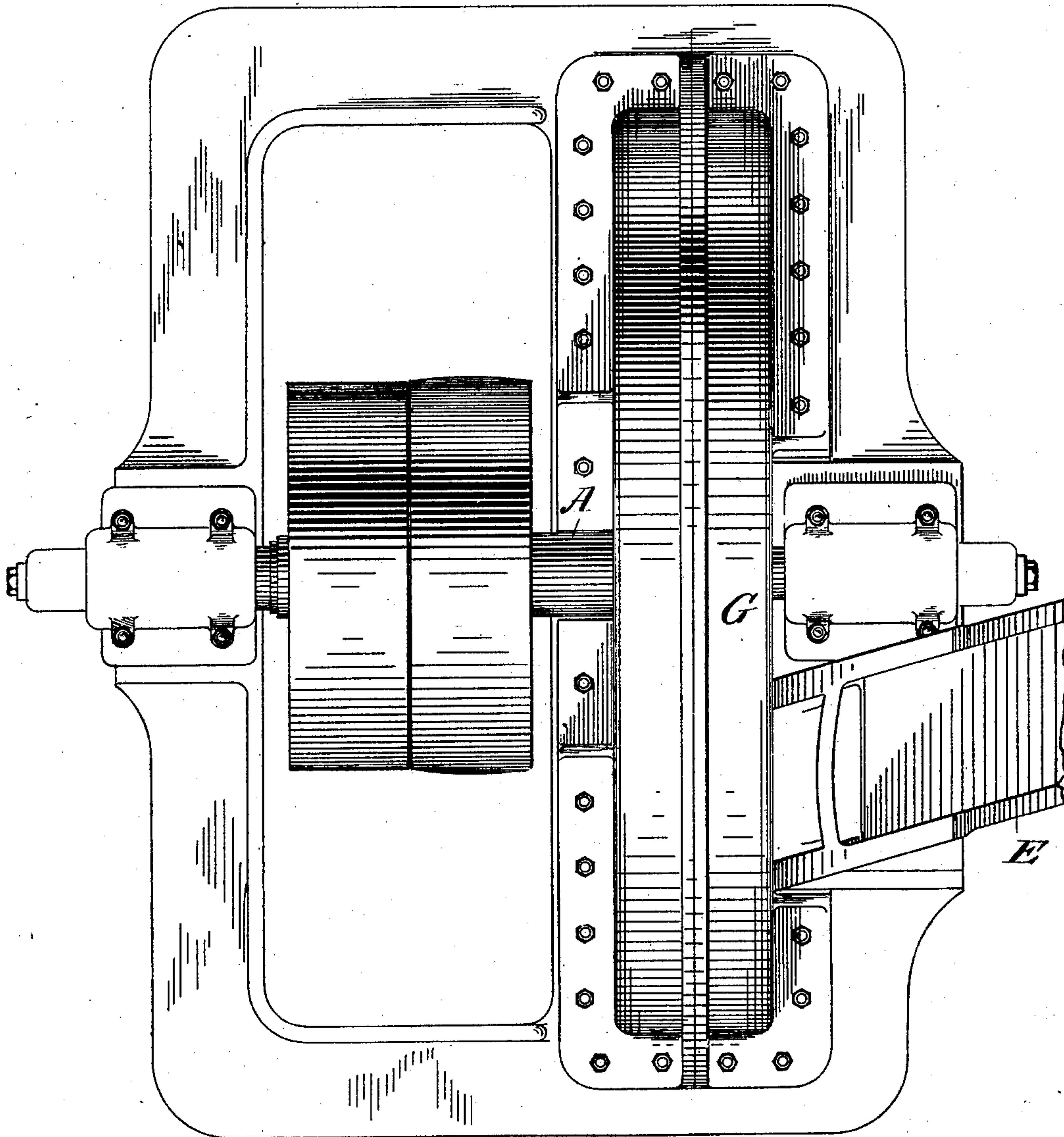


Fig. 3.

WITNESSES.

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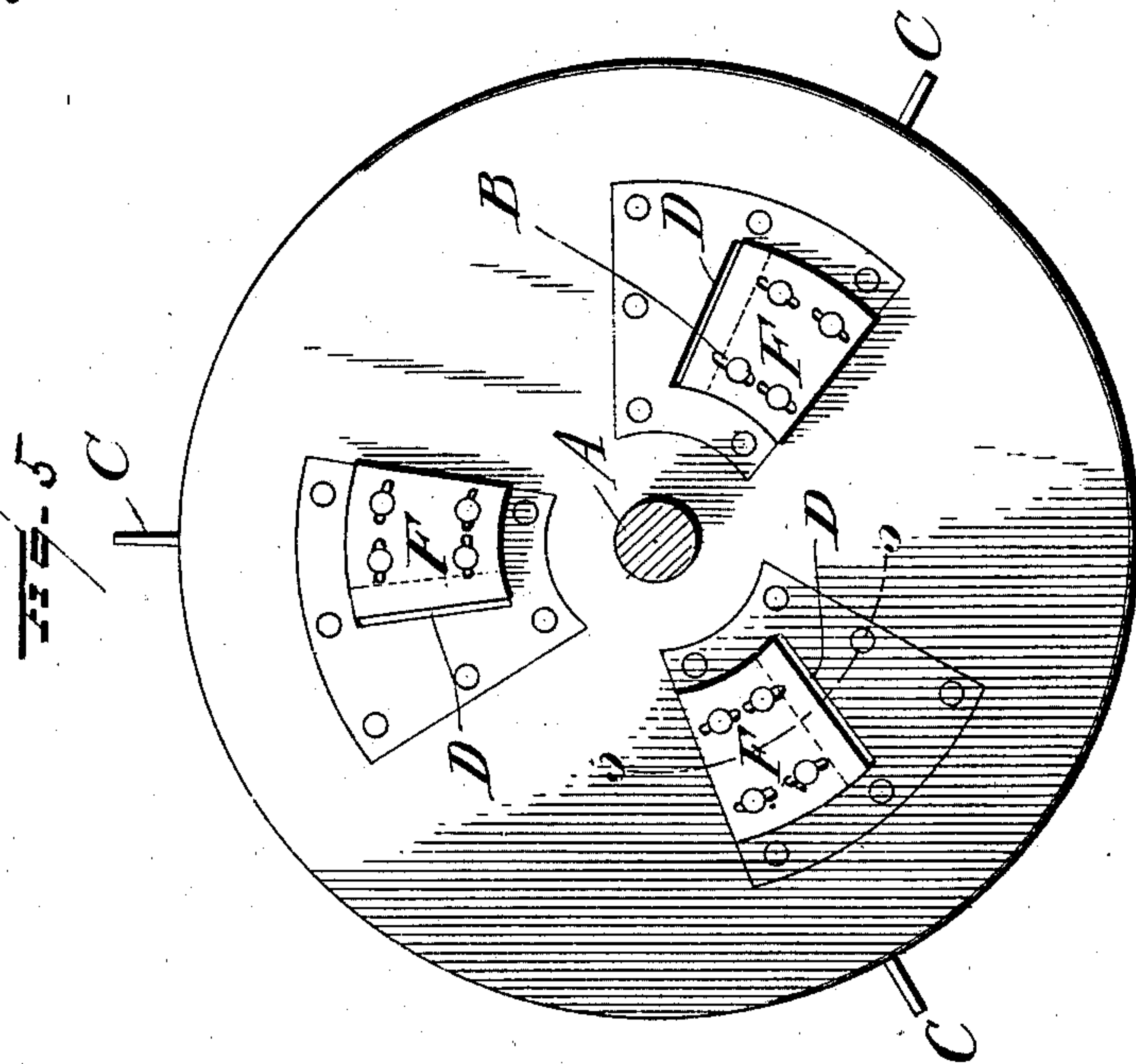
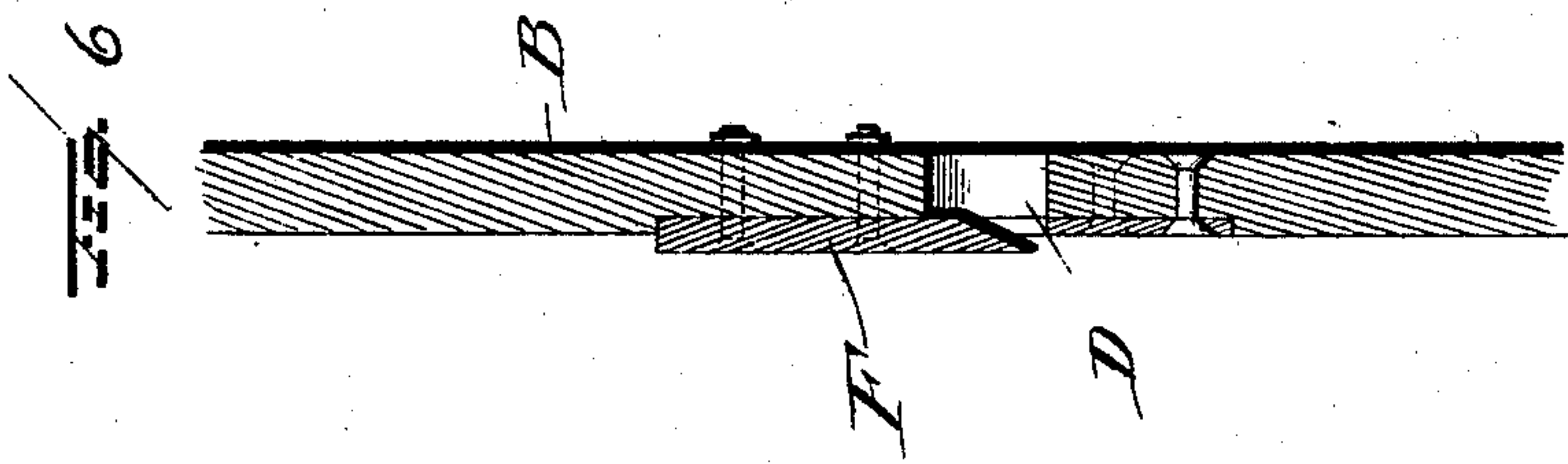
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4 Sheets—Sheet 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HOWARD G. SHORTT, OF CARTHAGE, NEW YORK, ASSIGNOR OF ONE-HALF  
TO JOHN G. JONES, OF SAME PLACE.

## COMBINED WOOD CHIPPER AND CRUSHER.

SPECIFICATION forming part of Letters Patent No. 666,211, dated January 15, 1901.

Application filed November 16, 1900. Serial No. 36,736. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD G. SHORTT, a citizen of the United States, residing at Carthage, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in a Combined Wood Chipper and Crusher; 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.

This invention relates to new and useful improvements in apparatus for chipping wood and reducing the chips to a uniform size, a process which has heretofore required a plurality of machines, but which by this invention is accomplished by combining a wood chipper and crusher in a single machine.

In my improvement I embody within a steel or iron casing a wood-chipper of suitable design, disks carrying disintegrating-pins, and wings for causing the uniformly-divided chips of wood to be pneumatically carried to a conveyor or other mechanism for carrying chips to any desired place.

My invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which—

Figure 1 is a central vertical section through my improved apparatus. Fig. 2 is a rear view in side elevation, parts being shown in section. Fig. 3 is a top plan view of the machine. Fig. 4 is a detail view of a portion of one of the plates carrying disintegrating-pins. Fig. 5 is a plan view of a disk, showing the adjustable chipping-knives secured thereto; and Fig. 6 is a vertical section through a chipping-knife and disk.

Reference now being had to the details of the drawings by letter, A designates the main operating-shaft, having a driving-pulley mounted thereon and journaled in suitable bearings. Mounted on and adapted to rotate with said shaft is a disk B, having a series of laterally-projecting wings C about its circumference. Said disk has a plurality of apertures D, through which the chips of wood are

designed to pass after being severed from the log, which is held adjacent to the outer face of said disk, preferably at an angle of forty-five degrees, said log being fed to the cutting-disk in the trough E. On the outer face of said disk are bolted the cutting-knives F, the inner faces of which are preferably slightly countersunk in the outer face of the disk, and the cutting edges of said knives project slightly over the apertures D, through which the chips pass. Surrounding said disk is a suitable casing G, made up of two complementary parts, which are held together by bolts passing through flanges on said parts. Said casing is centrally apertured to allow the shaft to rotate therein, and a space G' is left adjacent to the shaft in one of the plates of the casing, through which the air is drawn.

To the inner face of the disk B is bolted or otherwise secured a disk K, which has a series of apertures K' therein which are rimmed out to receive the heads of the disintegrating-pins M, the outer ends of the heads of which pins when adjusted in place being flush with the inner face of the said disk K and held in place by the inner face of the disk B, thus dispensing with threaded connections in the apertures holding said pins.

A third disk N is fastened, by means of bolts N', to the inner face of the casing on the opposite side from that through which the blocks of wood are fed and is stationary and provided with a series of round, square, or octagonal pins J, which are countersunk in the disk and held in place by the shell or casing. Said pins mounted on the disks K and N are so arranged as to intermesh with one another as the disks B and K rotate together within the casing. The laterally-projecting wings C about the circumference of the disk B, before referred to, project over the space intervening between the disks and are provided for the purpose of drawing in a current of air as the disk B rotates with the shaft on which the same is mounted.

Leading away from any desired portion of the casing is a pneumatic passage-way Q, through which the particles of wood, which have first been chipped from the log and uniformly divided by being passed through the disintegrating-pins, are blown by the current



generated by the rapid rotation of the wings C to a conveyer to be carried wherever desired.

From the foregoing it will be observed that  
5 by arranging the various parts as shown and described I embody in a single machine the chip-cutting mechanism, the disintegrating-disk, and means for pneumatically conveying the uniformly-divided chips of wood with-  
10 out the necessity of providing a separate machine for cutting the chips, crushing the same, and the use of a fan for conveying the material to the conveyer or other mechanism to be carried to any desired place.

15 Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. A combined wood chipper and crusher, comprising a disk carrying knives, against  
20 which the log of wood is to be fed, a casing surrounding said disk, mechanism actuated by said disk for crushing and reducing the chips of wood to a uniform size after they are cut, and pneumatic means for conveying the  
25 uniformly-reduced chips of wood to a conveyer or other mechanism, as set forth.

2. A combined wood chipper and crusher, comprising a disk mounted on a suitable shaft, a casing surrounding said disk, knives carried by the disk, against which the log of  
30 wood is fed, a rotary and a stationary disk each carrying disintegrating-pins mounted within said casing, and means for pneumatically conveying the uniformly-reduced chips  
35 of wood from the casing, as set forth.

3. A combined wood chipper and crusher, comprising a rotary disk and shaft carrying the same, a casing surrounding said disk, an aperture in said casing, knives carried by the  
40 disk, against which a log of wood is fed, through said aperture in the casing, a rotary and a stationary disk carrying disintegrating-pins, which intermesh with one another, and

means within the casing for creating a pneu-  
matic current for conveying the uniformly-  
reduced chips of wood therefrom, as set forth. 45

4. An apparatus for chipping wood and crushing the same, the combination with the casing, an aperture therein, a rotary shaft  
50 mounted in said casing, a disk having apertures and carrying a series of cutting-knives mounted over apertures therein, and against which logs of wood are fed, and a series of wings about the circumference of said disk, for creating a pneumatic current, whereby,  
55 the chips of wood are blown from the casing, as set forth.

5. A combined wood chipper and crusher, comprising a casing, a shaft rotating therein, an aperture in said casing, a flanged disk hav-  
60 ing apertures and rotating with said shaft and having a series of laterally-projected wings about its circumference, and cutting-knives mounted over the apertures in the face of said disk, against which a log of wood  
65 is fed at an angle, a trough through which the log of wood is fed, a disk K fastened to the winged disk, disintegrating-pins carried by said disk K and a stationary disk secured to the casing, disintegrating-pins carried by said  
70 stationary disk, which pins intermesh with the pins on the disk K, as set forth.

6. In combination with the winged disk, a disk K secured thereto, pins having flanged  
75 heads which are countersunk in said disk K, having their heads flush with the outer face of said pin-carrying disk K, and held in place by the inner face of the winged disk, as shown and described.

In testimony whereof I affix my signature 80  
in presence of two witnesses.

HOWARD G. SHORTT.

Witnesses:

MARK S. WILDER,  
FREDK. HALL.