

(No Model.)

3 Sheets—Sheet 1.

C. B. JORDAN.  
GOLD SEPARATOR.

No. 245,076.

Patented Aug. 2, 1881.

Fig. 1.

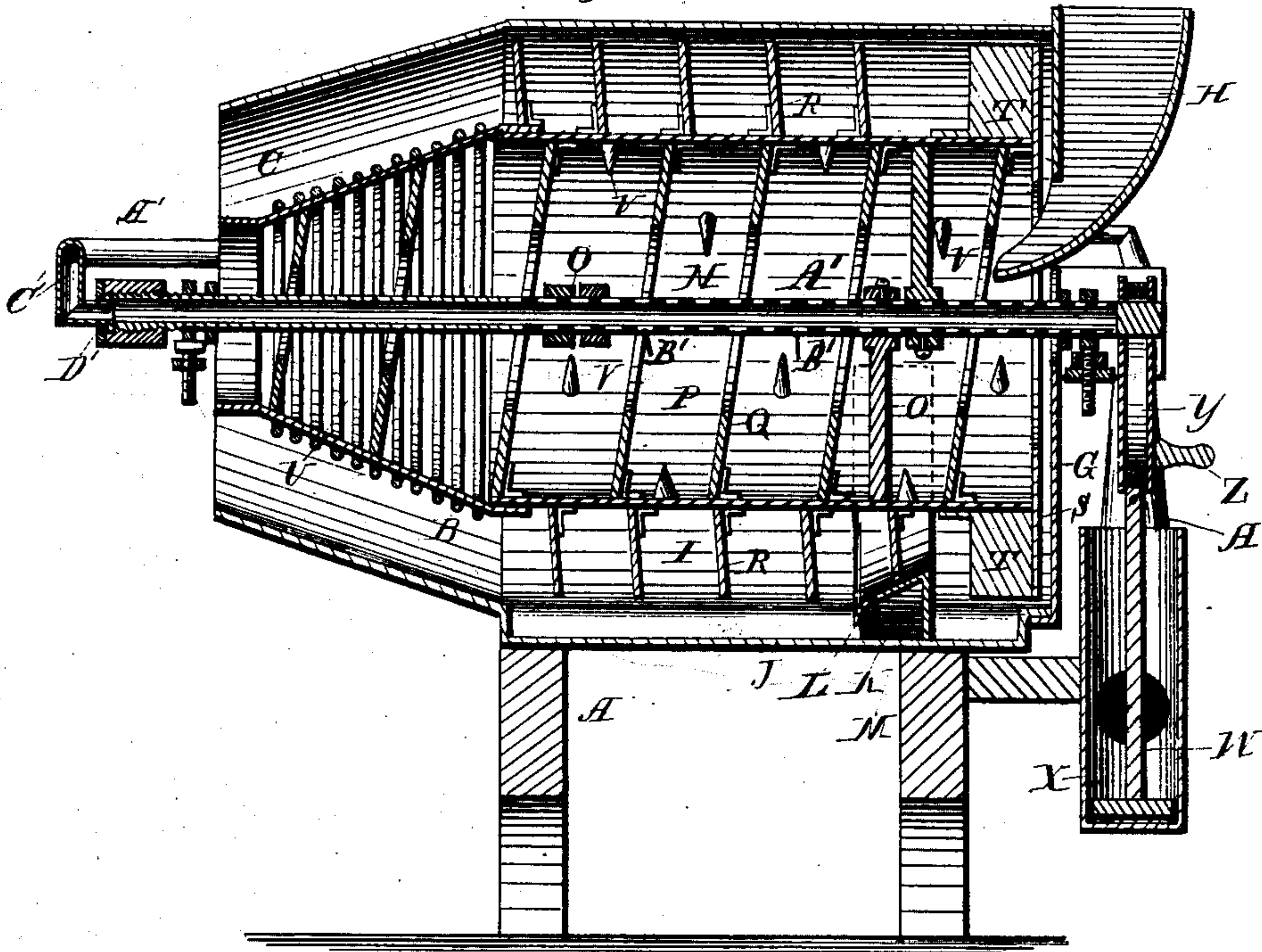
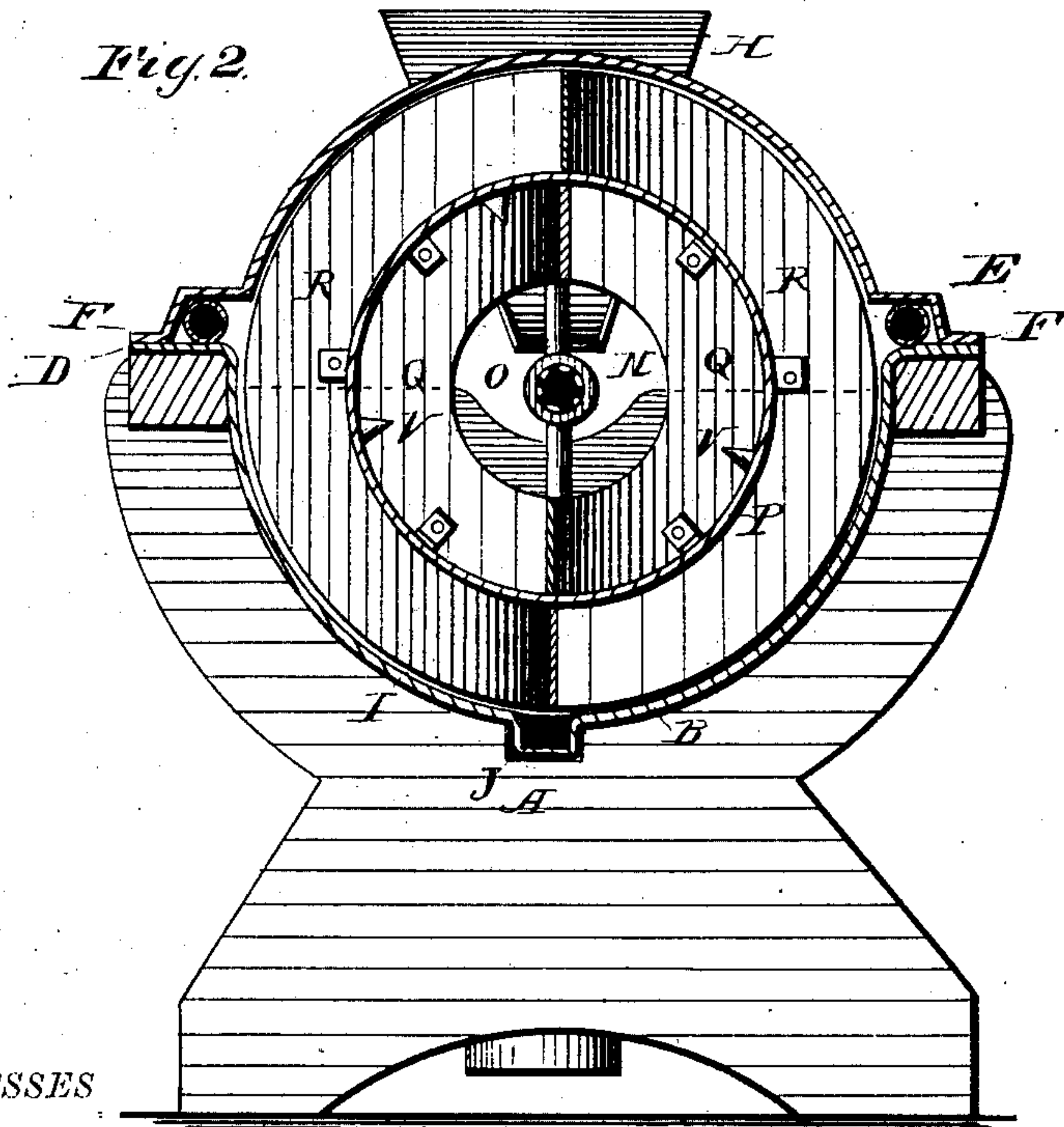


Fig. 2.



WITNESSES

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Fig. 3.

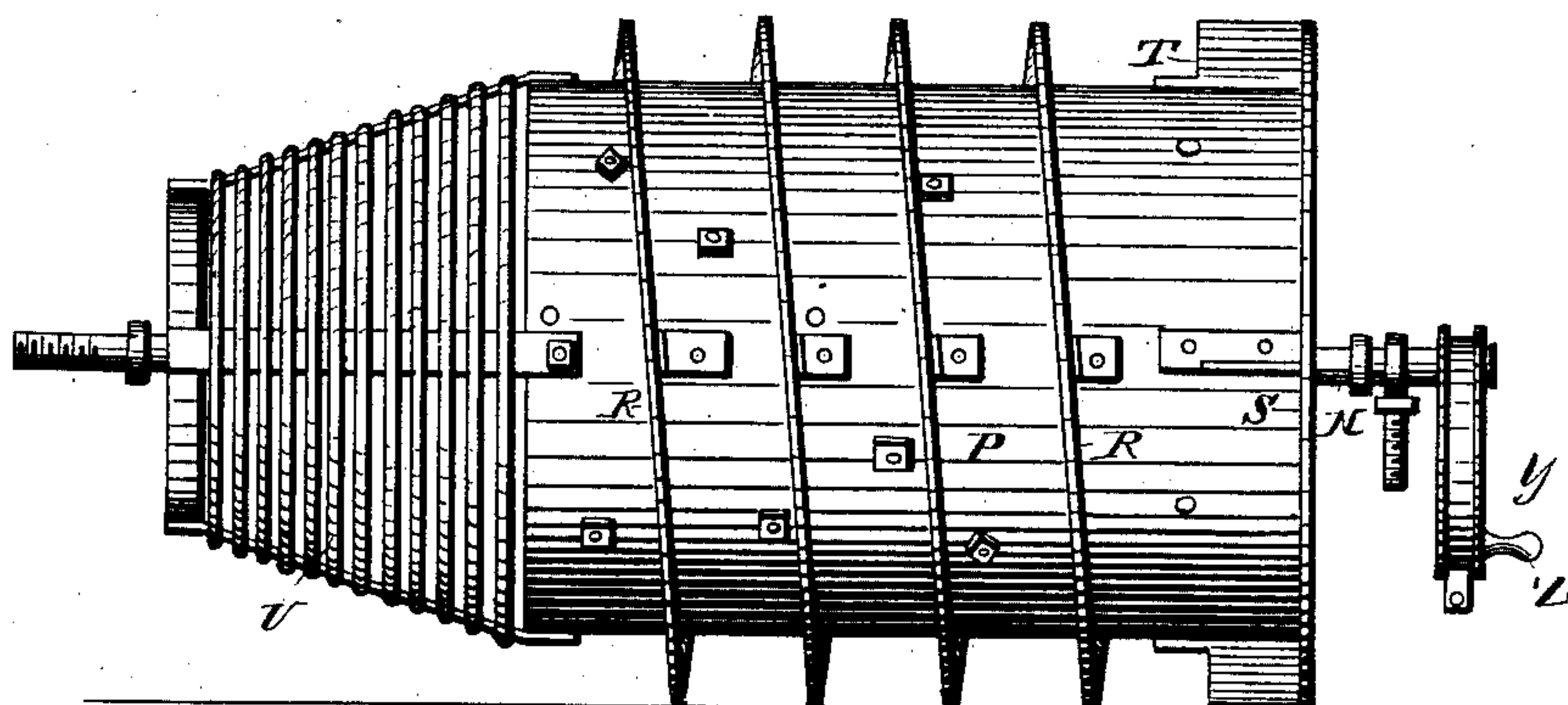


Fig. 4.

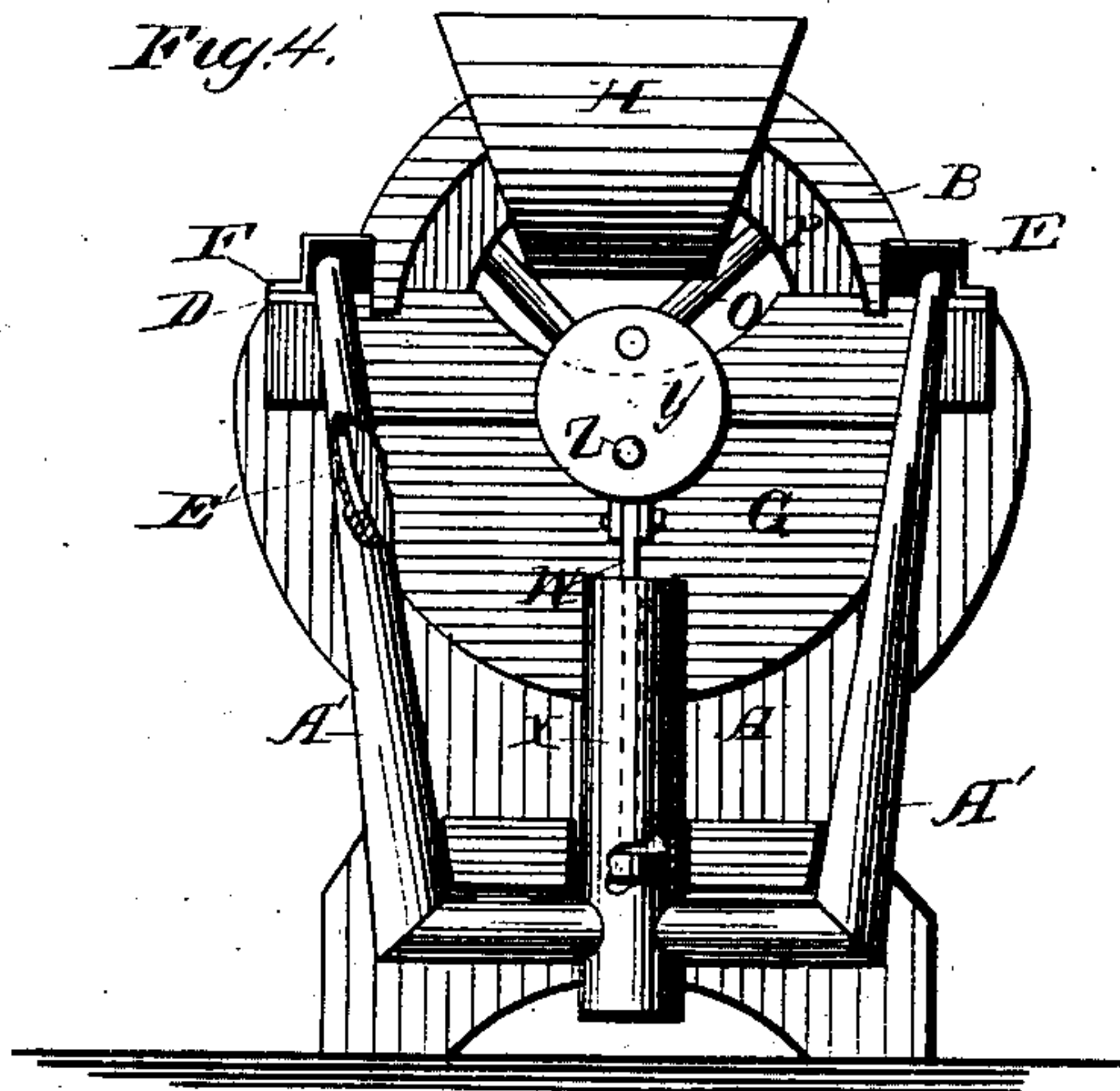
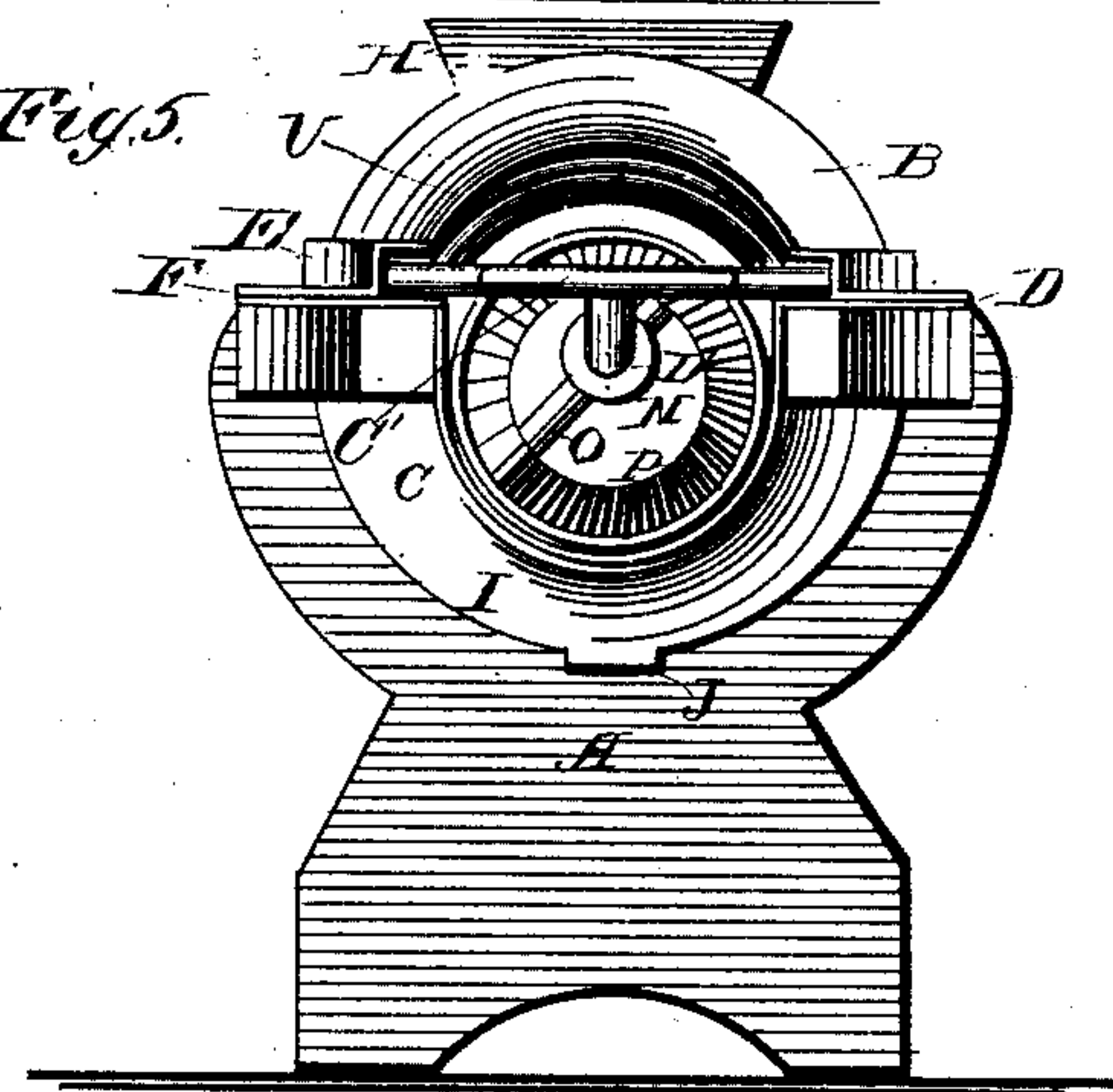


Fig. 5.



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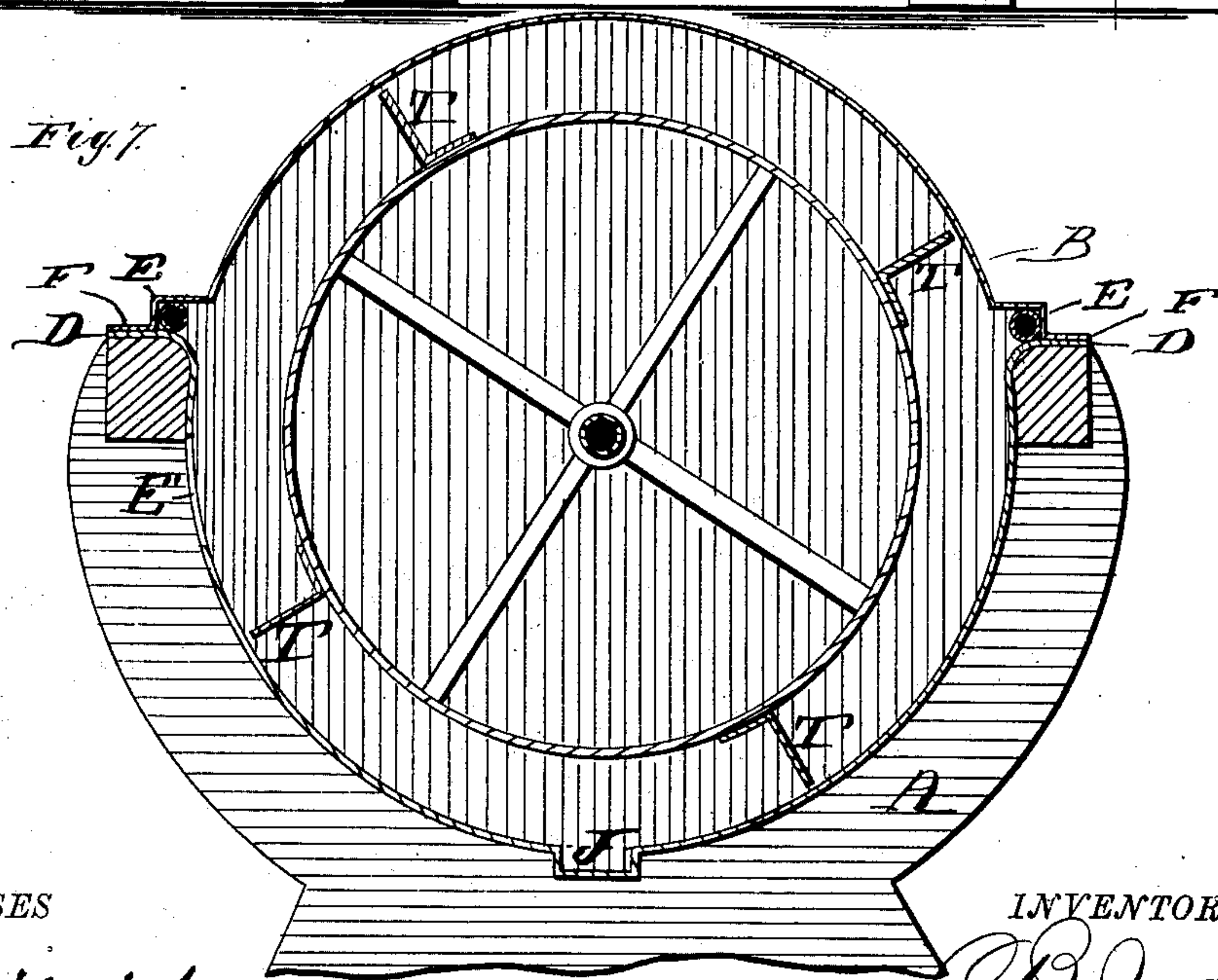
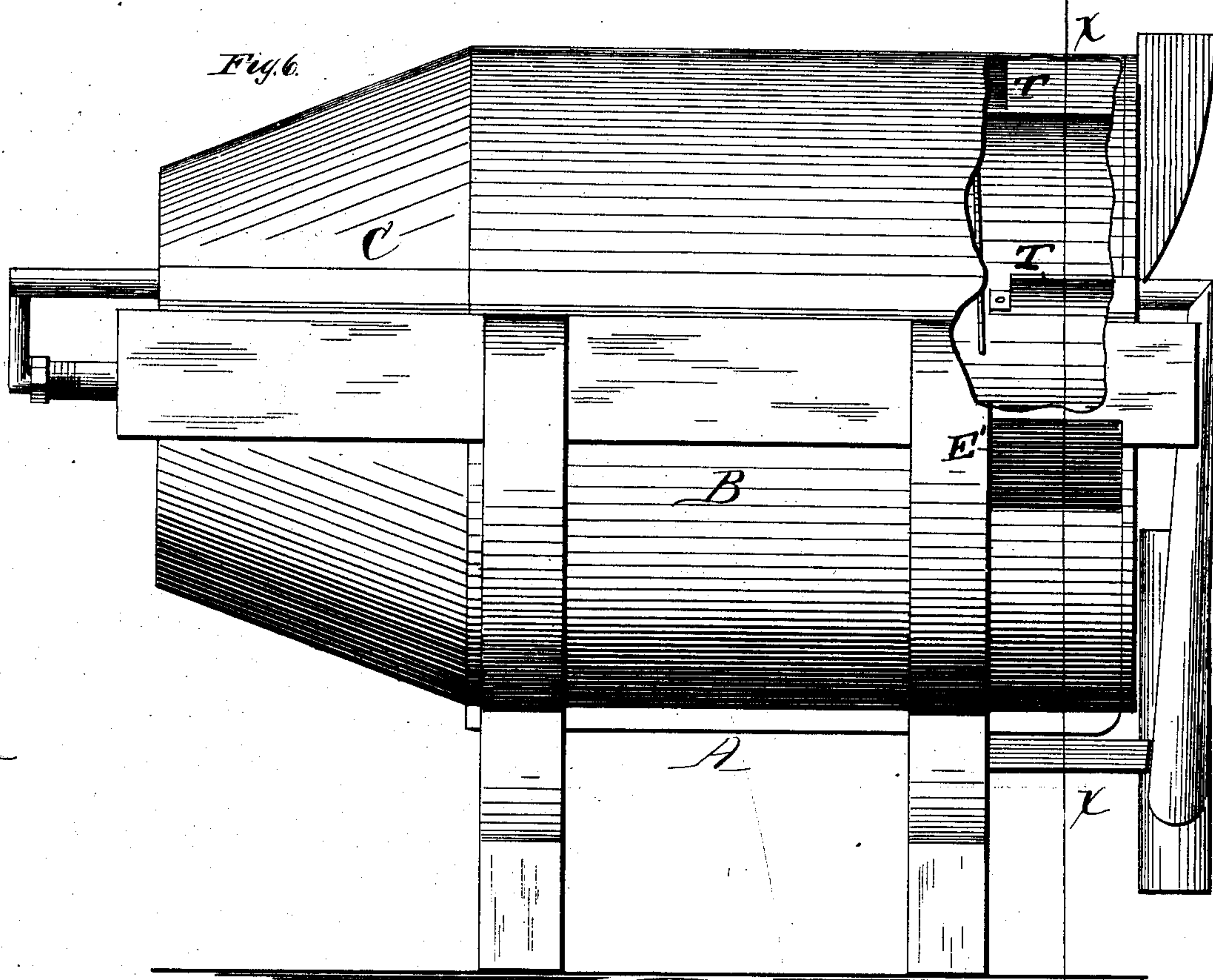
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# UNITED STATES PATENT OFFICE.

CHARLES B. JORDAN, OF DENVER, COLORADO, ASSIGNOR TO DAVID T. SANDERSON, OF SAME PLACE.

## GOLD-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 245,076, dated August 2, 1881.

Application filed May 25, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. JORDAN, of Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Gold-Separators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a longitudinal sectional view of my improved gold-separator. Fig. 2 is a vertical cross-section. Fig. 3 is a detail view of the inner or revolving cylinder. Fig. 4 is a rear-end view of the machine, parts being broken away to show the construction. Fig. 5 is a front-end view or elevation. Fig. 6 is a side view; and Fig. 7 is a vertical section on the line *xx*.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to separators or amalgamators for the purpose of extracting gold from the ore; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A represents a suitably-constructed frame supporting the outer casing or cylinder of the machine, as shown. The body B of the said casing is cylindrical in form and provided at its front end with a conical or funnel-shaped extension, C. The casing is made in two parts, the lower one of which has flanges D, by which it rests and is secured upon the sides of the frame. The upper half has offsets E to accommodate the water-pipes, which will be hereinafter described, and flanges F for securing it to the lower section of the casing and to the frame. The rear end of the casing is partly closed by suitable end pieces, G, and a hopper, H, is provided through which the gold-bearing dirt may be fed into the separating-cylinder.

The lower section, I, of the casing is provided in its bottom with a longitudinal trough, J, extending through the cylindrical portion and forming the mercury-seat. Near the rear end of said section is placed a partition or double wall,

K, having a slanting front side, L, so as to form a closed chamber, M.

Suitable bearings are provided at the front and rear ends of the casing for a tubular shaft, N, having radial arms O, carrying the inner or separating cylinder, P. The latter, as shown in the drawings, consists essentially of a cylindrical shell, provided upon its inner side with a right-hand endless scroll or screw, Q, running through its entire length, and upon its outside with a left-hand endless screw, R, terminating within a short distance of its rear end, which is provided with a flange, S, and a set of wings or paddles, T. The latter are to fit nicely between the rear end of the casing and the wall or partition K in the lower section of the latter, as shown. The rear end of the screw R may also be trimmed so as to fit against the slanting front portion, L, of the double wall or partition.

The front end of the inner or separating cylinder is formed by a conical screen of wire, U, constructed in any suitable manner, and open at the front end. Upon its inner side the said cylinder P is provided with numerous sharp teeth or cutters, V, for the purpose of cutting up the thief mud or clay passing through the machine.

The piston-rod W of a pump, X, located at the rear end of the machine, is operated by an eccentric, Y, upon the rear end of the tubular shaft N, which latter is also provided with a crank, Z, or other means for communicating motion from steam, horse, or other motive power.

From the pump X diverging-pipes A' A' pass along the sides of the casing under the offsets E, upon the upper section of the latter, and having perforations B', through which the water may be forced or discharged between the casing and separating-cylinder. The front ends of the pipes A' converge into a single pipe, C', connected by a suitable packing-box, D', with the front end of the tubular shaft N. The latter is also perforated, so as to permit the escape of sprays or jets of water into said cylinder.

The lower section of the casing is provided, near its rear end, with an opening, E', for the escape of the tailings.

In operation the gold-bearing dirt is fed



through the hopper into the separating-cylinder, which is being continuously revolved, so as to cut the dirt and feed it forward by the endless screw. The screen at the front end of the cylinder sifts the fine dirt into the casing, while rocks and coarse lumps escape at the front end of the machine. The fine dirt is carried back through the casing by the endless screw upon the outside of the inner cylinder over the mercury, which absorbs the gold. The fans or wings T force the tailings out through the opening E'.

If at any time the mercury should be exposed to excessive pressure, it will be forced into the air-chamber M and not be carried off with the floating matter, thus avoiding waste of this expensive article.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the casing B C, of the cylinder having conical screen U and operating mechanism, as described, for the purpose set forth.

2. The casing B C herein described, provided with the mercury trough or seat J and double wall or partition K L, forming air-chamber M, as described, for the purpose set forth.

3. In a gold-separator, the revolving cylinder P, provided upon its inner and outer sides, respectively, with right and left hand endless

screws Q R, and having the conical screen U, in combination with the longitudinal supporting-shaft N and casing B C, as herein described, for the purpose set forth.

4. The cylinder P, constructed as herein described, with the right and left hand screws Q R, conical screen U, and teeth or cutters V, as and for the purpose set forth.

5. The combination, with the casing B C, having partition K L and opening E', of the separating-cylinder P, having endless screw R and wings or paddles T, as herein described, for the purpose set forth.

6. As an improvement in gold-separators, the combination of the casing B C, having mercury-seat J and double-wall K L, forming-chamber M, the pump, having diverging perforated pipes connected at their front ends with the longitudinal perforated shaft N, the cylinder P mounted upon the latter, and having endless screws Q R, screen U, and paddles T, and suitable operating mechanism, all as herein described, for the purpose shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES B. JORDAN.

Witnesses:

OTIS O. MILES,  
J. R. LITTELL.