

No. 661,353.

Patented Nov. 6, 1900.

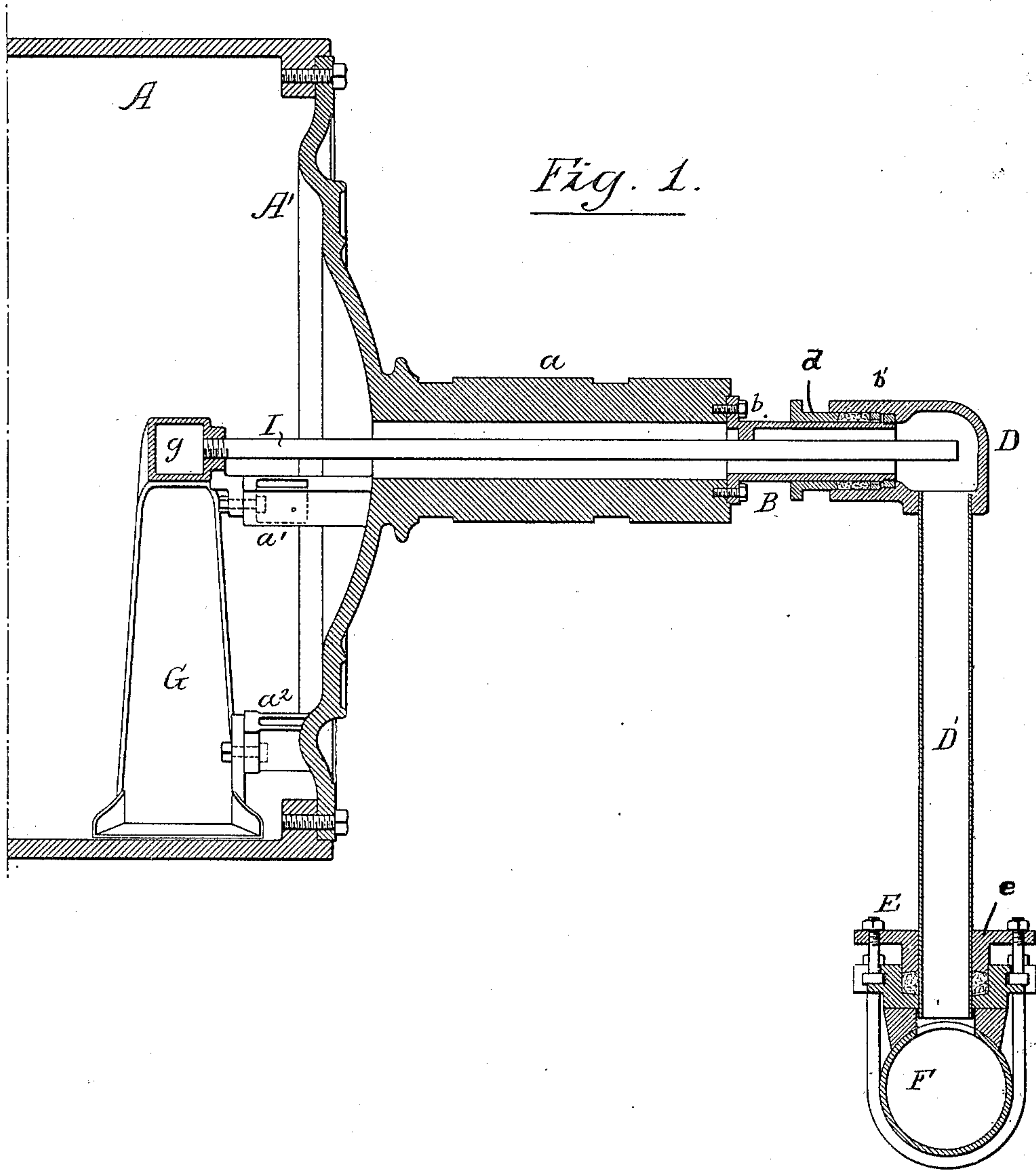
J. W. MOORE, J. A. WHITE & W. T. WIEGAND.

DRYING CYLINDER.

(Application filed Aug. 22, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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Fig. 4.

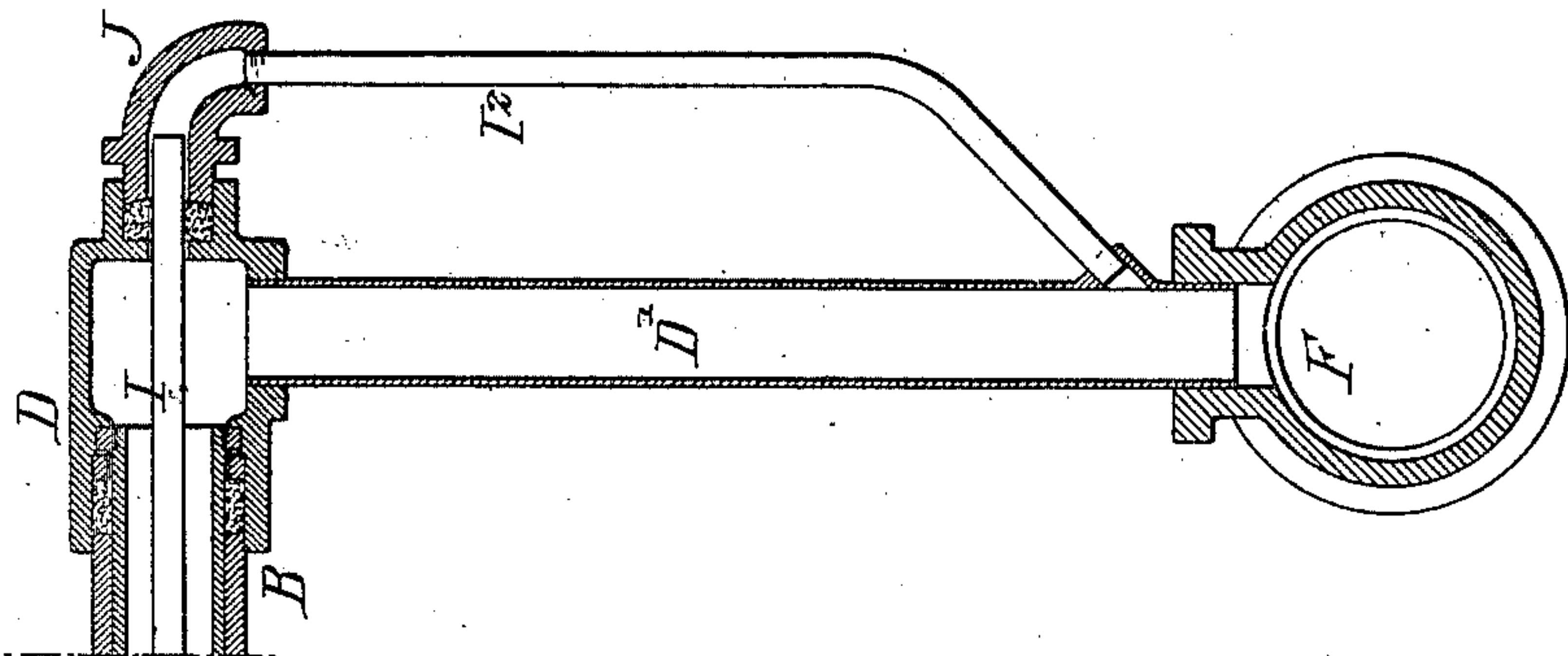


Fig. 5.

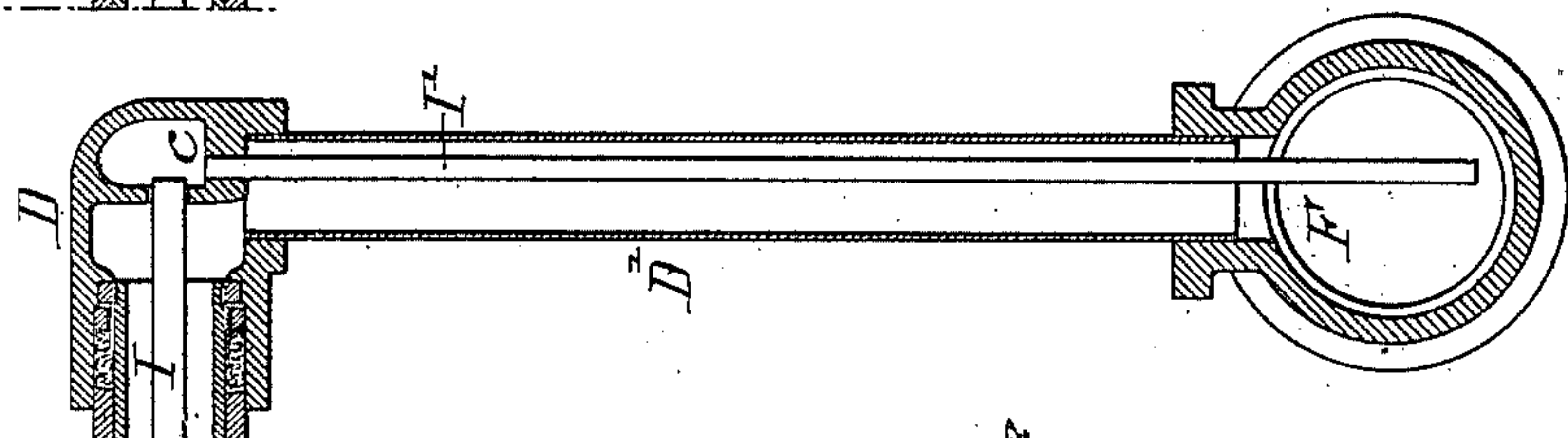
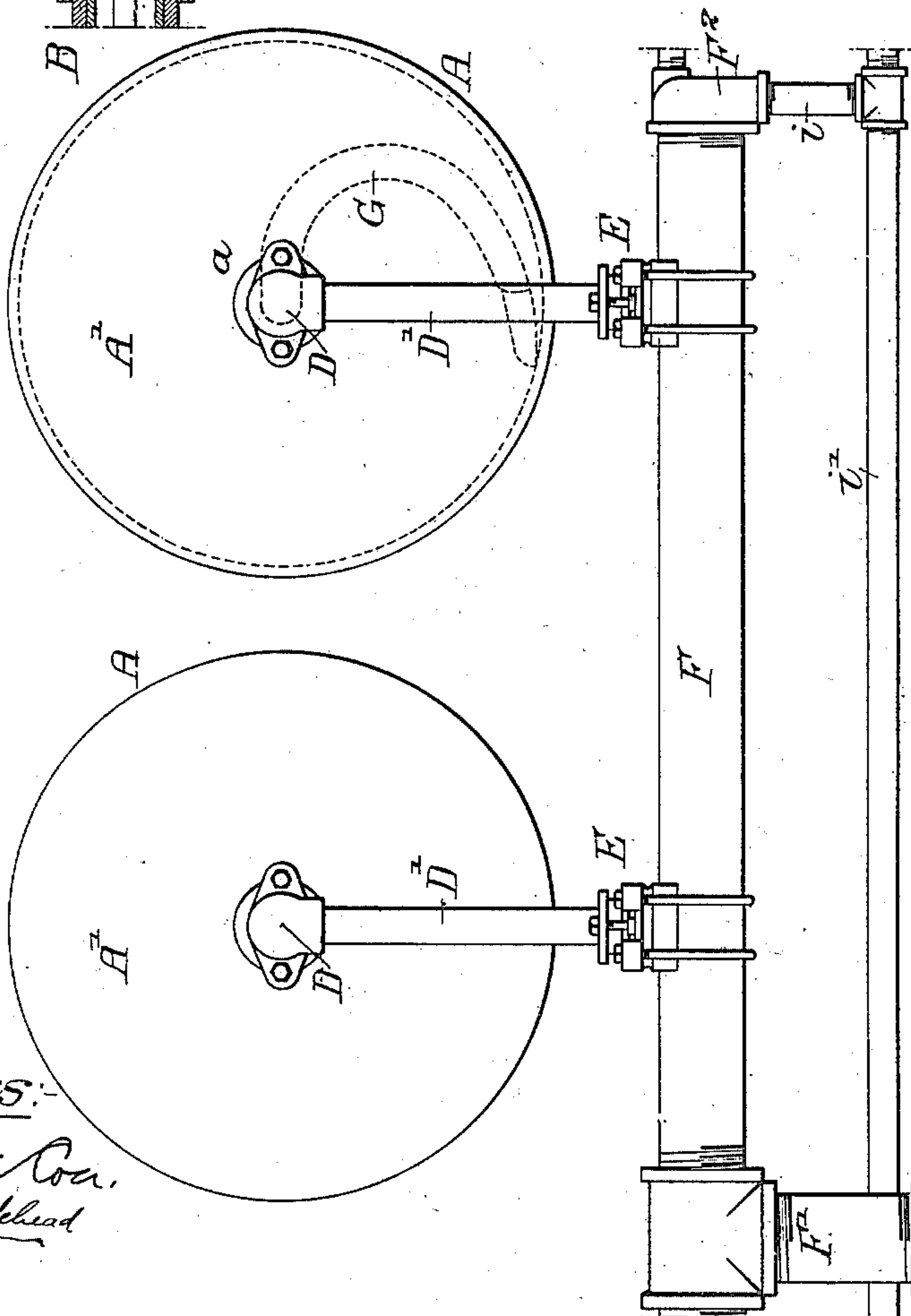


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN W. MOORE, JOSEPH ATWOOD WHITE, AND WILLIAM T. WIEGAND, OF
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DRYING-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 661,353, dated November 6, 1900.

Application filed August 22, 1900. Serial No. 27,682. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. MOORE, JOSEPH ATWOOD WHITE, and WILLIAM T. WIEGAND, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Drying-Cylinders, of which the following is a specification.

The object of our invention is to provide means for draining the water of condensation from the drums of drying-machines and to simplify the construction of the mechanism, as fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a view of sufficient of a drying-machine to illustrate our invention. Fig. 2 is a side view in diagram showing the arrangement of pipes, and Figs. 3 and 4 are views illustrating modifications of the invention.

The common practice in constructing the mechanism for carrying off the water of condensation from drying-cylinders is to use two sets of pipes, one set for steam and the other for the exhaust of the water of condensation. This made the construction expensive and at the same time made a complication of piping at a point where space is an item.

By our invention we simplify the construction of the mechanism considerably.

Our invention is especially applicable to the drying cylinders or drums of paper-drying machinery; but it will be understood that it can be used for draining the cylinders of drying-machines for any purpose.

A is the cylinder or drum, having a head A'. Each head has a trunnion a , which is mounted in a suitable bearing on the frame of the machine. The trunnion is tubular, so as to allow for the passage of steam to the interior of the drum. Secured to the end of the trunnion a is a tubular section B, secured to the trunnion in the present instance by bolts b , and on the end of this section is screwed a collar b' . The section B enters a box in the elbow D, and this elbow is provided with a follower d , so that packing can be placed between the loose collar on the section B and the follower, making a steam-tight joint. Attached to the elbow D is a pipe D', which preferably passes

into a stuffing-box E, coupled to a steam-supply pipe F. This stuffing-box E is made in the ordinary manner, having a follower e , which compresses the packing around the pipe D', making a steam-tight joint. In some instances the box E may be dispensed with and the pipe D' coupled directly to the pipe F, using a T of the ordinary form. The pipe F is connected to a steam-inlet pipe F', as shown clearly in Fig. 2. We use the pipe F not only for the purpose of supplying steam to the drum, but also for the purpose of carrying off the water of condensation from the drums.

Secured to brackets a' a^2 on the interior of the head A' is a curved dipper G, (of the shape clearly shown by dotted lines in Fig. 2.) This dipper extends to a point close to the casing of the drum, as clearly shown in Fig. 1, and has a head g , to which is coupled a pipe I. This pipe extends from the head g to a point within the elbow D, so that as the drum revolves the dipper will scoop up any water of condensation that has collected in the drum and will discharge it into the head g , which is preferably at the center of rotation, and the water will escape from this head through the pipe I and will be discharged into the pipe D', falling into the pipe F. The water will flow through the pipe F to the discharge-pipe i , secured to a head F² on one end of the pipe F, and this pipe i is coupled to a discharge-pipe i' , which may be connected to a steam-trap.

In Fig. 3 we have shown a construction which may be used when it is desirable to prevent the water of condensation from coming in contact with the steam in the pipe D'. We form a bracket c on the interior of the elbow D and secure to the bracket a pipe I', which extends to a point near the bottom of the steam-supply pipe F, so that any water of condensation escaping from the pipe I will flow directly into the pipe I' and will escape at a point near the bottom of the pipe F.

In Fig. 4 we have shown another modification, by which a pipe I² is substituted for the pipe I', and this pipe is on the outside of the pipe D' instead of on the inside. The pipe is attached to a neck J, secured to the elbow D,

and enters the pipe D' near the point where it is attached to the pipe F. In this instance the pipe I extends through the elbow D and into the neck J.

5 We claim as our invention—

1. The combination in a drying cylinder or drum, of a steam-supply pipe, a dipper within the drum arranged to scoop up the water of condensation, a pipe connected to the
10 trough-section and extending through the steam-supply pipe and discharging the water of condensation into the steam-supply pipe, with a water-discharge for said steam-supply pipe, substantially as described.

15 2. The combination of a drying cylinder or drum, a hollow trunnion therefor, a section coupled to said trunnion, an elbow into which the section is free to revolve, a horizontal steam-supply pipe, a vertical pipe coupled to said elbow and communicating with
20 the horizontal supply-pipe, a dipper within the drum and rotating with it, an exhaust-pipe extending through the trunnion of the drum and into the elbow so that the water of
25 condensation as it accumulates in the drum will be scooped up by the trough and discharged through the exhaust-pipe, with provision for conducting said water to the hori-

zontal steam-supply pipe, substantially as described. 30

3. The combination in a drying-cylinder, having a head with a hollow trunnion, a steam-pipe connected to said trunnion, a dipper secured to the inner side of the head, and a pipe connected to the trough, said pipe extending
35 through the trunnion and into the steam-pipe, substantially as described.

4. The combination of a drying-cylinder having a hollow trunnion, an elbow connected to the trunnion, a steam-pipe connected to
40 the elbow and communicating with a steam-supply pipe, a dipper within the drum, a pipe extending from the trough through the trunnion into the elbow, and provision in the steam-pipe, connected to the elbow, for con-
45 ducting water gathered by the dipper to the steam-supply pipe, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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JOSEPH ATWOOD WHITE.

WILLIAM T. WIEGAND.

Witnesses:

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