

(No Model.)

W. L. MATHEWS.  
WHEAT STEAMER.

No. 575,550.

Patented Jan. 19, 1897.

Fig. 1.

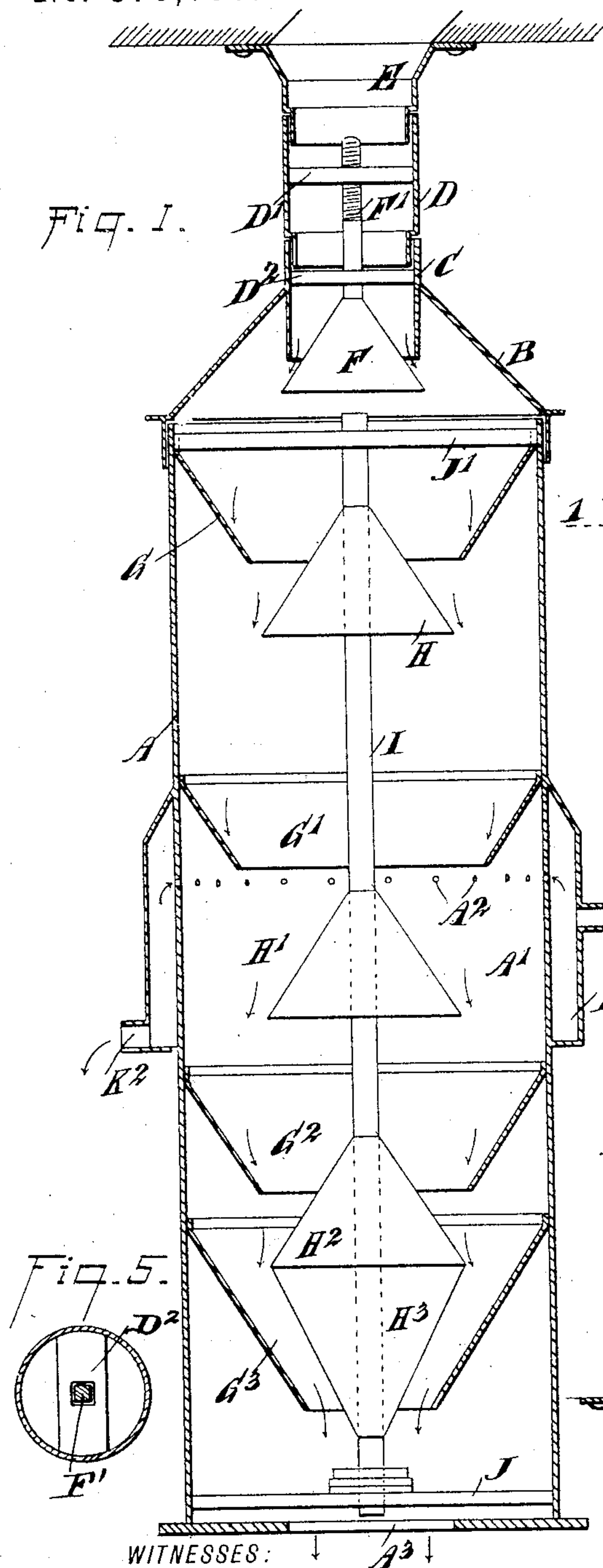


Fig. 2.

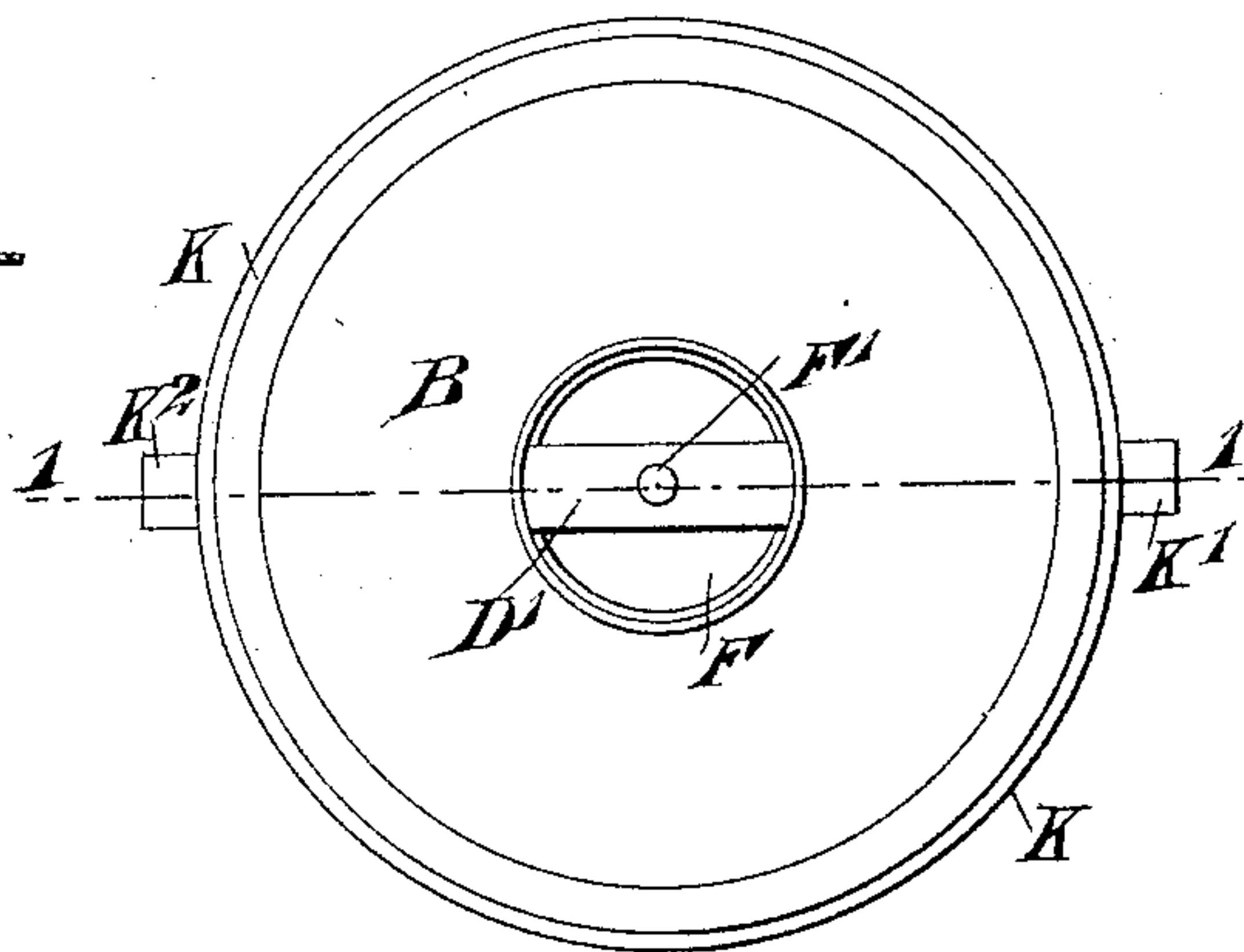


Fig. 3.

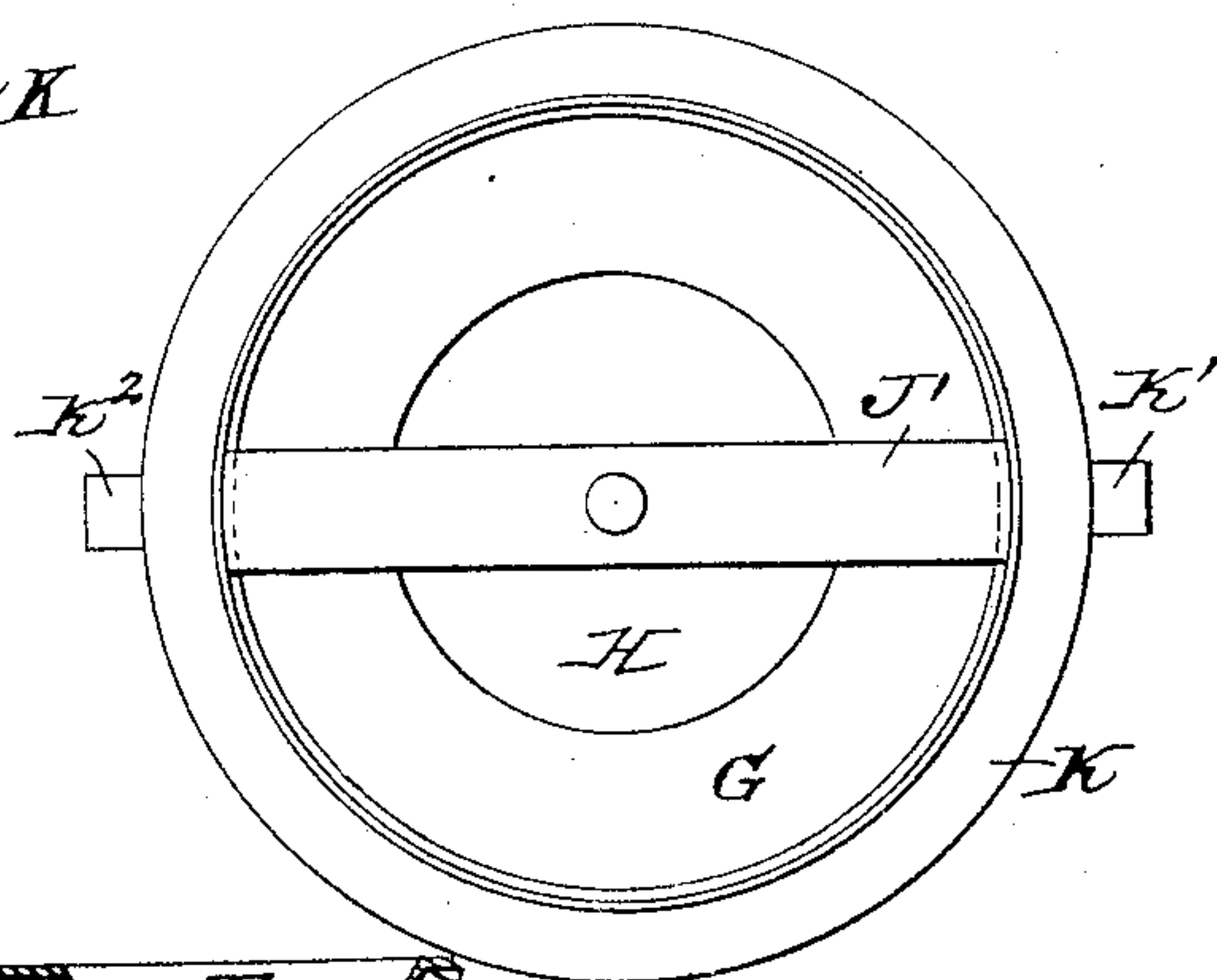


Fig. 5.

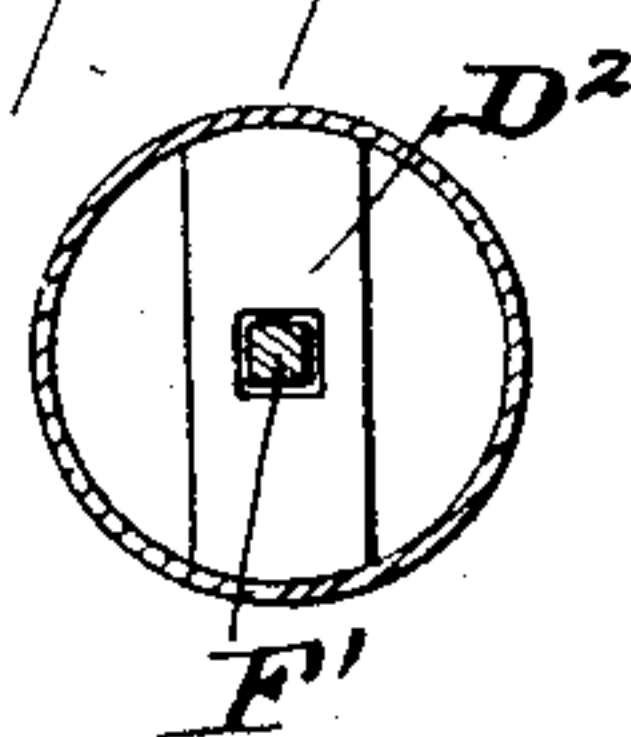
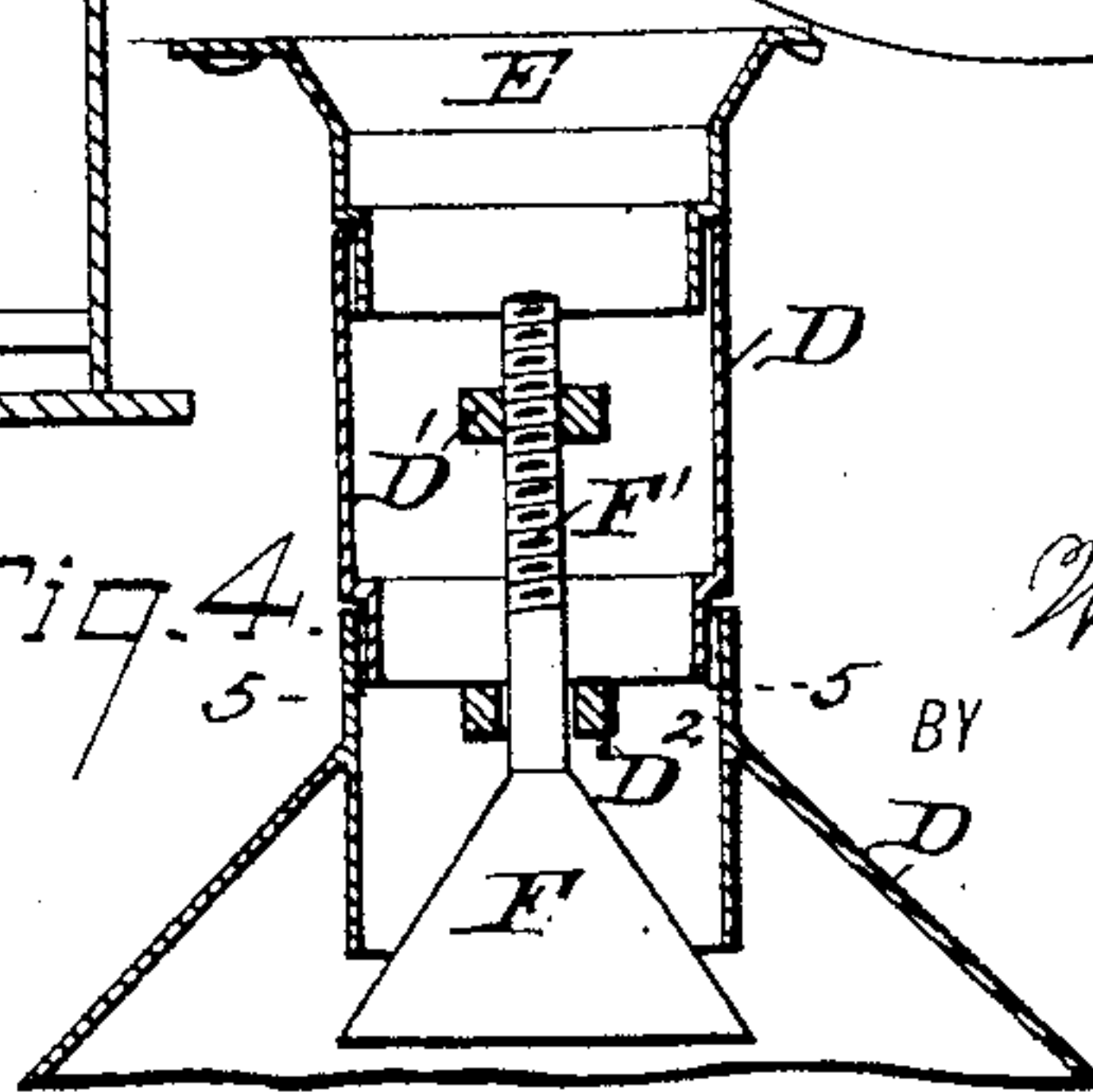


Fig. 4.



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## WHEAT-STEAMER.

SPECIFICATION forming part of Letters Patent No. 575,550, dated January 19, 1897.

Application filed February 25, 1896. Serial No. 580,667. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. MATHEWS, of Marlette, in the county of Sanilac and State of Michigan, have invented a new and Improved Wheat-Steamer, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wheat-steamer which is simple and durable in construction, very effective in operation, and arranged to hold or retard the constantly-moving grain for a considerable length of time to insure a proper absorption of the steam by the kernels.

The invention consists principally of a casing provided with a series of annular hoppers located one above the other, and deflecting-cones, one for each hopper, and arranged centrally below the same to cause a discharge of the grain from one hopper upon the next cone below, and an outward deflection from this cone into the next hopper below.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement on the line 1 1 of Fig. 2. Fig. 2 is a plan view of the same. Fig. 3 is a plan view with the cap and upper portion removed, and Fig. 4 is a vertical section of the upper portion of the device. Fig. 5 is a section on the line 5 5 of Fig. 4.

The improved wheat-steamer is provided with a suitably-constructed casing A, provided at its upper end with a conically-shaped cap B, supporting a centrally-arranged and vertically-disposed pipe C, on the upper end of which is mounted to turn a short regulating-pipe D, into which fits the lower end of the hopper E, receiving the grain to be steamed from a suitable chute, as indicated in Fig. 1.

The short regulating-pipe D is provided with a cross-piece D', in which screws the upper threaded end of a rod F', carrying at its lower end a feed-regulating cone F, arranged in the lower end of the central pipe C, to regulate the feed of the grain passing through the pipe C into the casing A. The

lower portion of the rod F' is made square and fits into a correspondingly-shaped opening in a cross-piece D<sup>2</sup>, fixed in the pipe C, and consequently when the pipe D is turned by the operator the rod F' and the cone F are moved upward or downward, according to the direction in which said pipe D is turned, so that more or less of a feed-opening is made between the surface of the cone and the lower end of the pipe C. By this arrangement the operator is enabled to give more or less feed to the grain to insure a positive feed of the grain in an annular stream. The cone F also deflects the grain outward into a hopper G, made in the shape of an inverted frustum of a cone, said hopper being secured at its upper end to the inside of the casing A. The hopper G discharges the grain upon a deflecting-cone II, arranged centrally to the hopper G and with its base below the lower end of the hopper, as plainly indicated in Fig. 1. This deflecting-cone II is secured on a central rod I, extending vertically in the casing A and secured at its lower and upper ends in cross-pieces J J', held in the casing A'.

The deflecting-cone II deflects the grain outwardly into a second hopper G', similar to the hopper G, and secured in the casing A below the hopper G and cone II, as shown in Fig. 1. The hopper G' discharges the grain in an inward direction into the steaming-compartment A' of the casing A and upon a deflecting-cone II', similar to the cone II and likewise secured to the rod I.

The steaming-compartment A' is provided with steam-inlet apertures A<sup>2</sup>, formed in the wall of the casing A below the lower end of the hopper G', said openings leading to an annular steam-chamber K, surrounding the casing A. The steam-chamber K is provided on one side and near its middle with an inlet-pipe K', connected with a suitable source of steam-supply, and from the bottom of said steam-chamber leads a discharge-pipe K<sup>2</sup> for carrying off the water of condensation. Now it will be seen that by this construction of a steam-chamber only dry steam passes through the openings A<sup>2</sup> into the steam-compartment A' of the casing A, as the openings A<sup>2</sup> are above the inlet K', and the outlet for the water of condensation is below the inlet K'. The steam thus entering the compartment



A' comes in direct contact with the kernels of grain passing down the hopper G', so that a proper steaming of all the grain takes place.

The deflecting-cone H' deflects the grain outwardly into another hopper G<sup>2</sup>, located below the cone H' and secured in the casing A, and this hopper G<sup>2</sup> discharges the grain in an inward direction upon the deflecting-cone H<sup>2</sup>, secured to the rod I and arranged relatively to the hopper G<sup>2</sup> in the same manner as the cone H is relatively to the hopper G. The deflecting-cone H<sup>2</sup> causes the grain to be deflected outwardly into the last hopper G<sup>3</sup>, arranged in the lower part of the casing A and discharges the grain to an outlet-opening A<sup>3</sup>, formed in the bottom of the casing A.

In order to prevent clogging of the grain in the lower hopper G<sup>2</sup>, I provide an inverted cone H<sup>3</sup>, fitting with its base upon the base of the cone H<sup>2</sup>, and likewise secured to the rod I, to extend centrally in the hopper G<sup>3</sup>. The bases of the cones H H' H<sup>2</sup> are somewhat less in diameter than the diameters of the lower ends of the hoppers G G' G<sup>2</sup> to permit of removing said cones and rod I from the casing A when the latter is opened at the top by the removal of the cap B. By this arrangement convenient access can be had to all the parts of the steamer for repairs and other purposes.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A wheat-steamer, comprising a casing having a cap supporting a central feed-pipe, a regulating-pipe mounted to turn on said feed-pipe and provided with a cross-piece, a

non-rotary screw-threaded rod engaging in a tapped opening in said cross-piece, a regulating-cone on the lower end of the rod, a series of annular hoppers arranged one above another in said casing, a deflecting-cone below and for each hopper, and an inverted cone in the lower hopper of the series to prevent clogging, substantially as shown and described.

2. A wheat-steamer, comprising a casing having a cap supporting a central feed-pipe, a regulating-pipe mounted to turn on said feed-pipe and provided with a cross-piece, a screw-rod screwing in said cross-piece, means for preventing a rotary movement of the screw-rod and a cone fitting into the lower end of said feed-pipe and secured to said rod, to permit of regulating the feed-opening between the cone and feed-pipe upon turning said regulating-pipe, substantially as shown and described.

3. A wheat-steamer, comprising a casing having a cap supporting a central feed-pipe, a regulating-pipe mounted to turn on said feed-pipe and provided with a cross-piece, a screw-rod screwing in said cross-piece, a cone fitting into the lower end of said feed-pipe and secured to said rod, to permit of regulating the feed-opening between the cone and feed-pipe upon turning said regulating-pipe, and a fixed cross-piece in which the said rod is fitted to slide but prevented from turning, substantially as shown and described.

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Witnesses:

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