

(No Model.)

2 Sheets—Sheet 1.

L. NORRIS.
PNEUMATIC STACKER.

No. 559,196.

Patented Apr. 28, 1896.

Fig. 1.

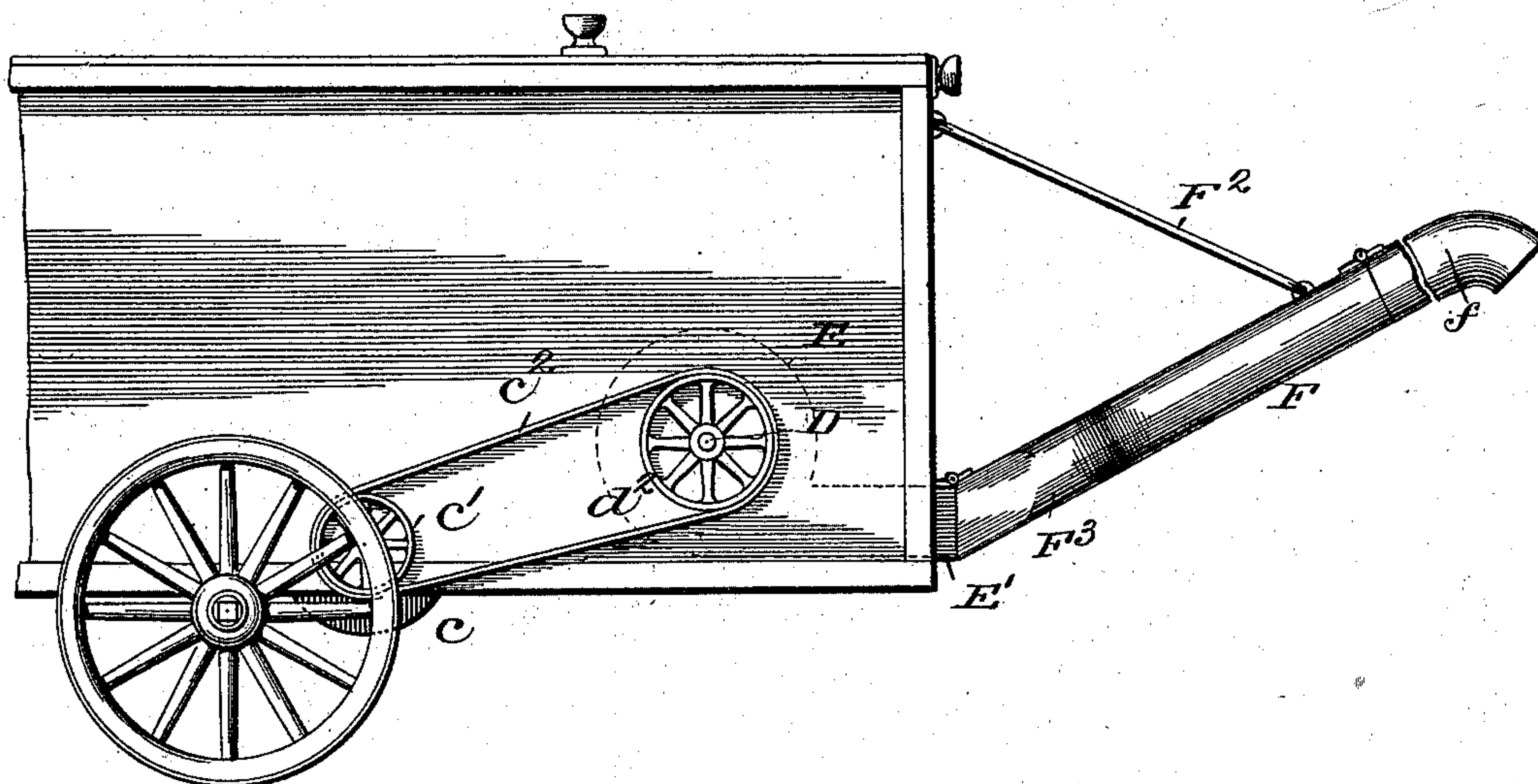
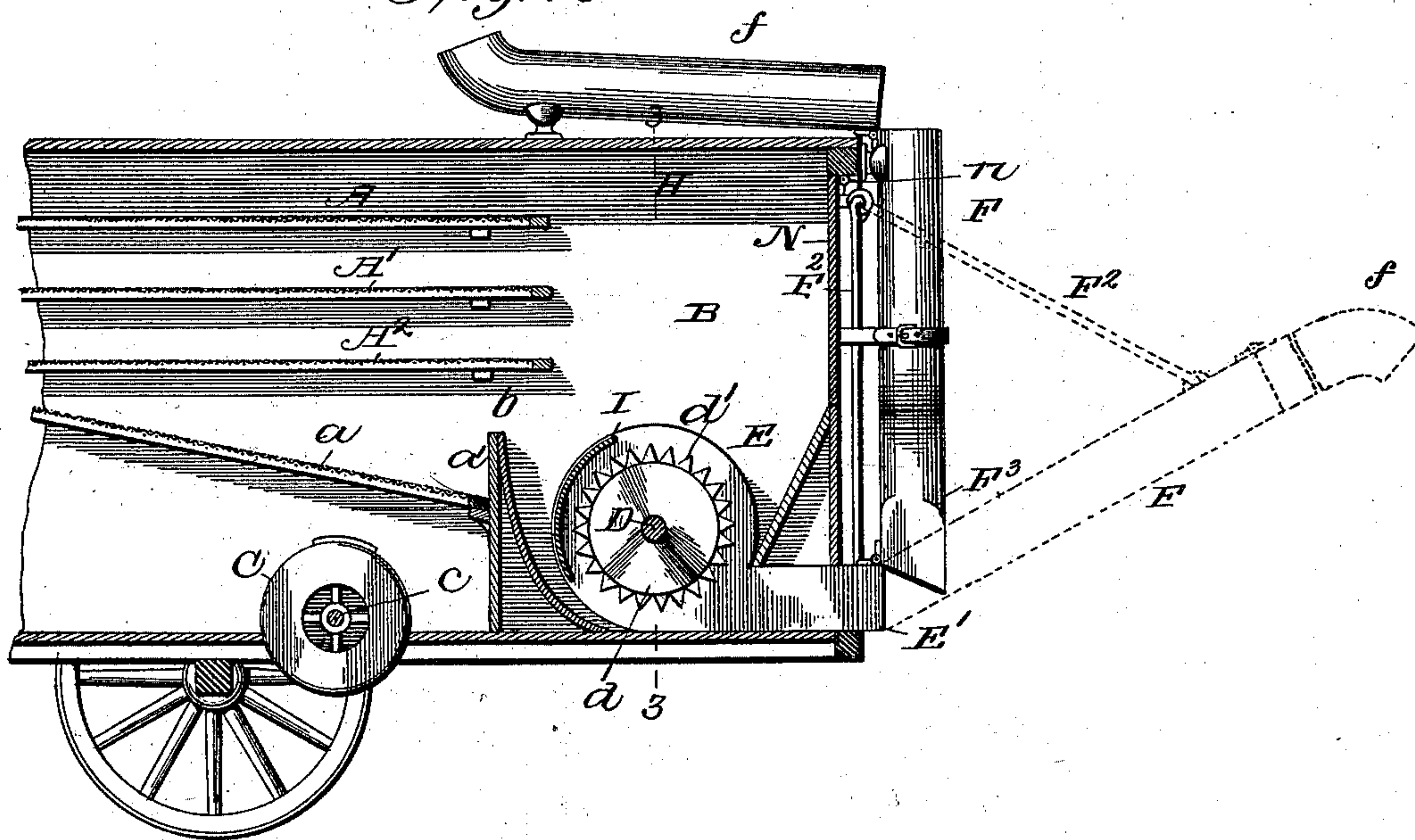


Fig. 2.



WITNESSES

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2 Sheets—Sheet 2

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Fig. 3.

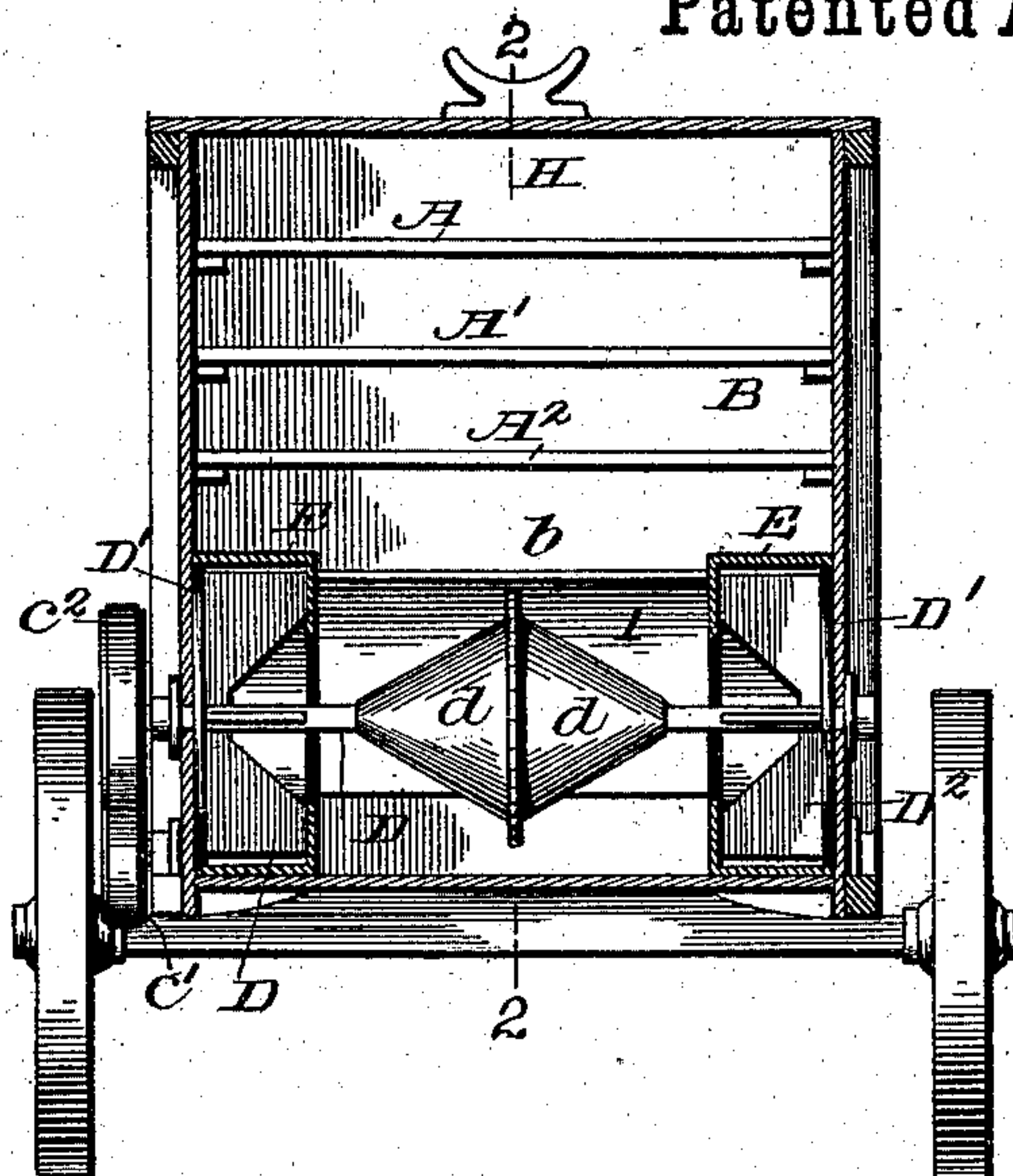


Fig. 4.

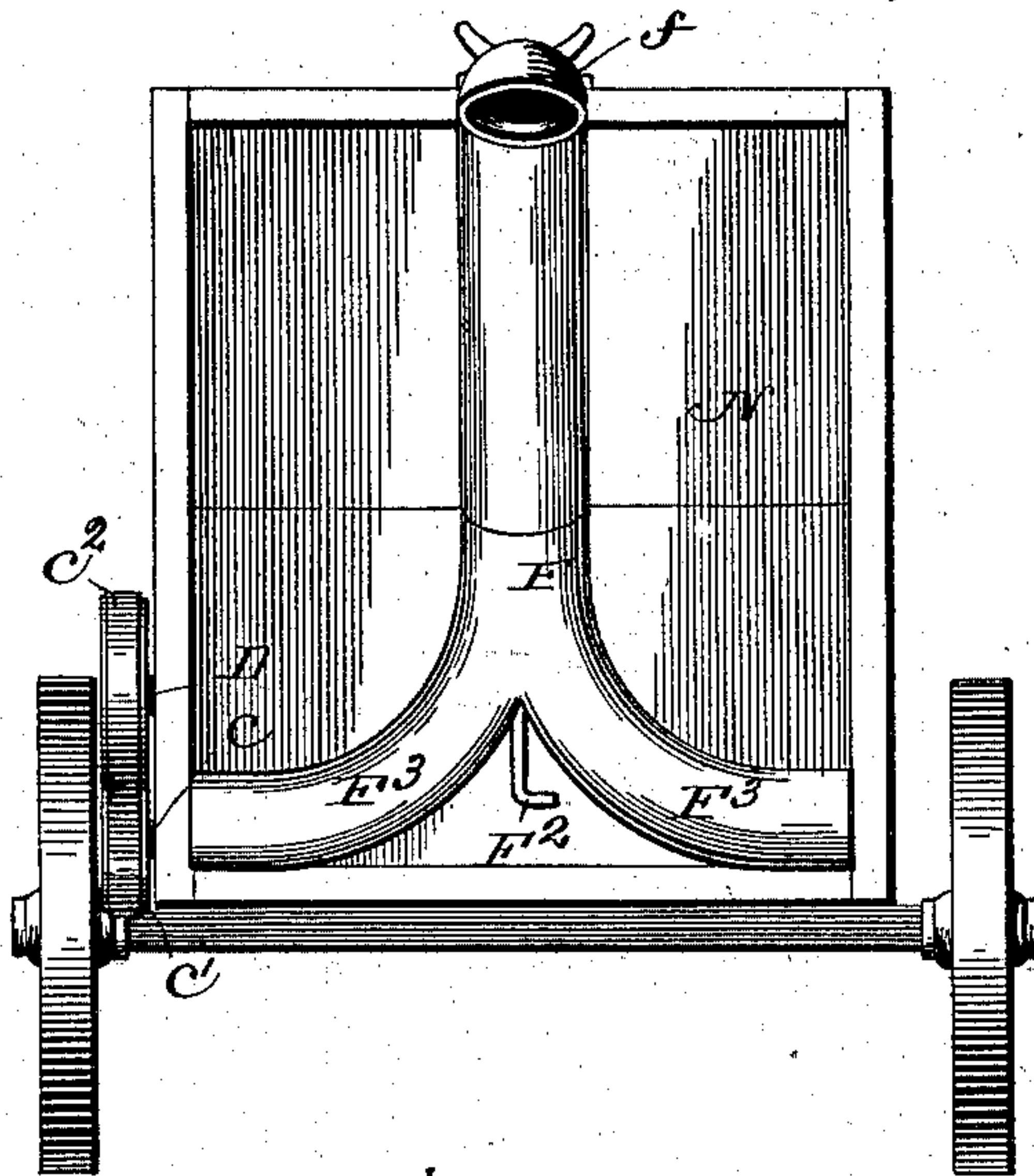
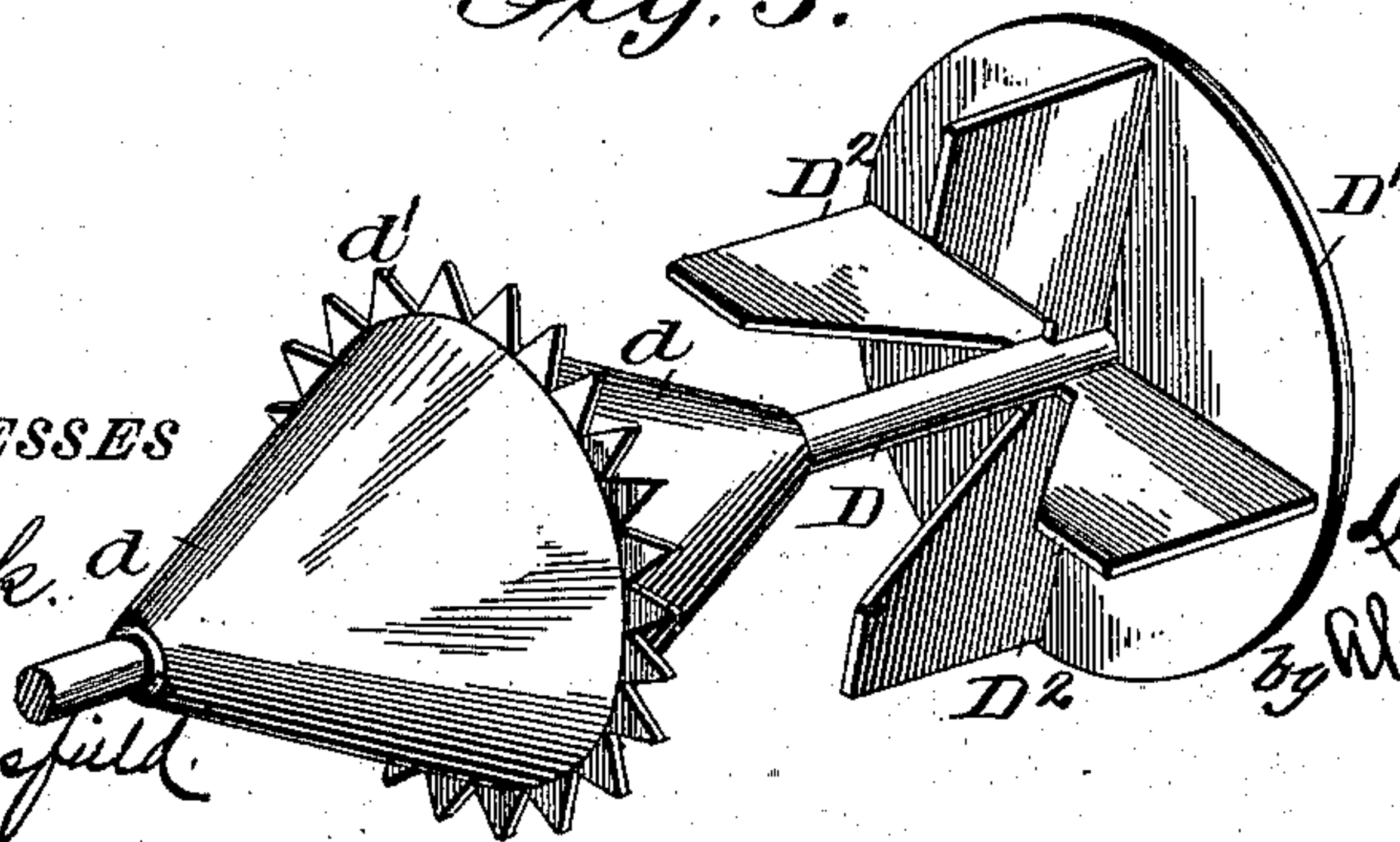


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

LEONIDAS NORRIS, OF SOUTH BEND, INDIANA.

PNEUMATIC STACKER.

SPECIFICATION forming part of Letters Patent No. 559,196, dated April 28, 1896.

Application filed September 19, 1895. Serial No. 563,047. (No model.)

To all whom it may concern:

Be it known that I, LEONIDAS NORRIS, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Pneumatic Stackers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention is an improvement in pneumatic stackers especially designed for clover-hulling machines; and its object is to divide the waste products of the machine—such as straw-stalks, chaff, dust, &c.—into two parts and carry them out of the machine by the direct suction of fans without other auxiliary mechanical discharge devices, the two streams of waste products being reunited outside the machine in a common discharge-spout.

The invention therefore consists in the novel and improved constructions and combinations of parts set forth in the claims, and the accompanying drawings illustrate a useful form of the apparatus.

In said drawings, Figure 1 is a side elevation of the rear portion of a hulling-machine embodying the invention. Fig. 2 is a longitudinal section on line 2 2, Fig. 3. Fig. 3 is a transverse vertical section on line 3 3, Fig. 2. Fig. 4 is a rear end view. Fig. 5 is a detail view of the divider and a fan.

The huller is of usual construction or other preferred form, and has a series of vibrating screens $A A^1 A^2$ upon which the straw-stalks, &c., are carried forward to the discharge-chamber B at the rear end of the machine, the seed falling successively through the screens and finally onto a sieve a , through which the seed pass to the discharge, while the chaff and light impurities are driven up (by a blast of air from a fan C in a casing below the screen) over a partition a' into chamber B.

The bottom of chamber B is hopper-shaped, and extending transversely through the chamber is a shaft D, on which are fixed two disks D' , one at each side of the chamber or each end of the hopper-bottom thereof, and on the inner faces of said disks are wedge-shaped blades D^2 , constituting fans, said fans being

inclosed in casing E, each having an eye on its inner side communicating with chamber B, and a bottom lateral discharge-pipe E' , communicating with one of the bifurcations F^3 of a pipe F, attached to the rear end of the machine. To the upper end of pipe F is hinged a discharge-spout f . When in position for use, as indicated in Fig. 1, pipe F is upheld by a brace-rod F^2 , as shown. When on the road, pipe F is turned up against the rear end of machine and spout f turned down on top thereof, as indicated in Fig. 2.

On shaft D, intermediate of the fans D' , are secured two cones d , between the bases of which (which abut at the center of the shaft) is secured a serrated disk d' . Obviously these parts might be formed in one, if desired.

The cones and disk d' constitute what I term the "divider," and are not designed to cut but merely to separate the straw and waste material entering chamber B into two parts, one half of which is thrown to one side and is taken in by one of the fans and the other half is thrown to the other side and then is taken up by that fan. The blast from these two fans, together with the material with which it is laden, are passed through the branched pipe F, and the two currents join each other and passing through spout f are discharged on the stack in the usual manner.

The object of the double cone is not merely to start the dividing material to the respective fans on the sides of the machine, but principally to prevent the straw from winding about the shaft D, the cones being of such diameter as will prevent the straw from engaging the shaft and being wound up around it. Of course the straw does incidentally slide off to one side or the other from these cones until it is caught by the suction from the fans, when it is drawn in through the fan-eyes and discharged.

A curved shield I is placed beside and partly over the divider at the side next screen a , so as to prevent the divider throwing or blowing material back over partition a' .

The blast from fan C passes up through sieve a and serves to separate the light chaff from the seed. This chaff is then blown through opening b into the receiving-chamber and is taken in by the fan to which it is nearest, and the suction of said fan by the

aid of this dividing-cone takes the finer refuse and dust from the interior of the machine and discharges them in the open air on the stack. The suction of the fans may be regulated by narrowing the throat *b* or by admitting air in the receiving-chamber, as usual.

The straw falls ahead of the deflector onto the divider, by which it is separated into two parts.

10 The particular features of this machine are the dispensing with any mechanical feeder or stoker for the discharge of the waste products, the dividing of such products, and the separate withdrawal of the divided products directly by the suction of the fans.

15 Shaft D may be driven by a belt *c*² and pulleys *d*² *c*' from the shaft *c* of fan C, the latter being driven by the usual means. (Not shown.)

20 The rear end N of the main frame is hinged at *n* to the top bar and may be turned up when the spout is fully lowered, allowing access to the chamber B for cleaning or repairs.

Having thus described my invention, what I therefore claim as new, and desire to secure by Letters Patent thereon, is—

1. In a clover-huller the combination of the discharge-chamber, and the fans on opposite sides thereof adapted to divide material entering the chamber by their suction into two portions and to eject said portions from the chamber, with a divider for dividing the products entering the chamber into two portions, and deflecting a part to each fan, for the purpose and substantially as described.

2. The combination of the discharge-chamber, the hopper therein, the transverse shaft, the separate exhaust-fans on said shaft at opposite sides of the chamber, and the fan-casings communicating at center with said chamber and having separate discharge-pipes leading out of the chamber; with means for dividing the waste products entering the chamber into two parts and directing one part to each fan, substantially as described.

3. The combination of the discharge-chamber, the suction-fans on opposite sides thereof, and separate discharge-pipes from the fan-casings; with the rotary double conical divider intermediate of the fans, substantially as described.

4. The combination of the discharge-cham-

ber, the suction-fans on opposite sides thereof, and separate discharge-pipes from the fan-casings; with the rotary double conical divider intermediate the fans, and a common discharge-spout exterior to the discharge-chamber communicating with both fans, substantially as described.

5. The combination in a thrashing-machine, of a discharge-chamber, a pair of suction-fans therein, separate discharge-pipes from the fan-casings, substantially as described, and a common discharge-spout with which said pipes connect; with a rotary divider in said chamber, and a shield beside the divider, substantially as described.

6. The combination of the discharge-chamber, the suction-fans on opposite sides thereof adapted to withdraw material therefrom by suction, and separate discharge-pipes from the fan-casings; with the rotary divider intermediate the fans, and a shield partly over the divider at the inlet side of the chamber, substantially as described.

7. The combination of the discharge-chamber, the hopper therein, the transverse shaft, the fans on said shaft at opposite sides of the chamber, and the fan-casings communicating at center with said chamber and having separate discharge-pipes leading out of the chamber; with the double cones on said shaft intermediate the fans, and the divider or serrated disk between the cones, substantially as and for the purpose described.

8. The combination of the discharge-chamber, the hopper therein, the transverse shaft, the exhaust-fans on said shaft at opposite sides of the chamber, and the fan-casings communicating at center with said chamber and having separate discharge-pipes leading out of the chamber; with means for dividing the waste products entering the chamber and directing part to each fan, a bifurcated discharge-pipe hinged to the discharge-pipe of the fans, and the spout hinged to said bifurcated pipe, substantially as described.

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

LEONIDAS NORRIS.

Witnesses:

JAMES DUSHANE,

T. B. BUNNEL.