

(No Model.)

G. D. HUNTER.

EXHAUST NOZZLE.

No. 300,319.

Patented June 10, 1884.

Fig-1-

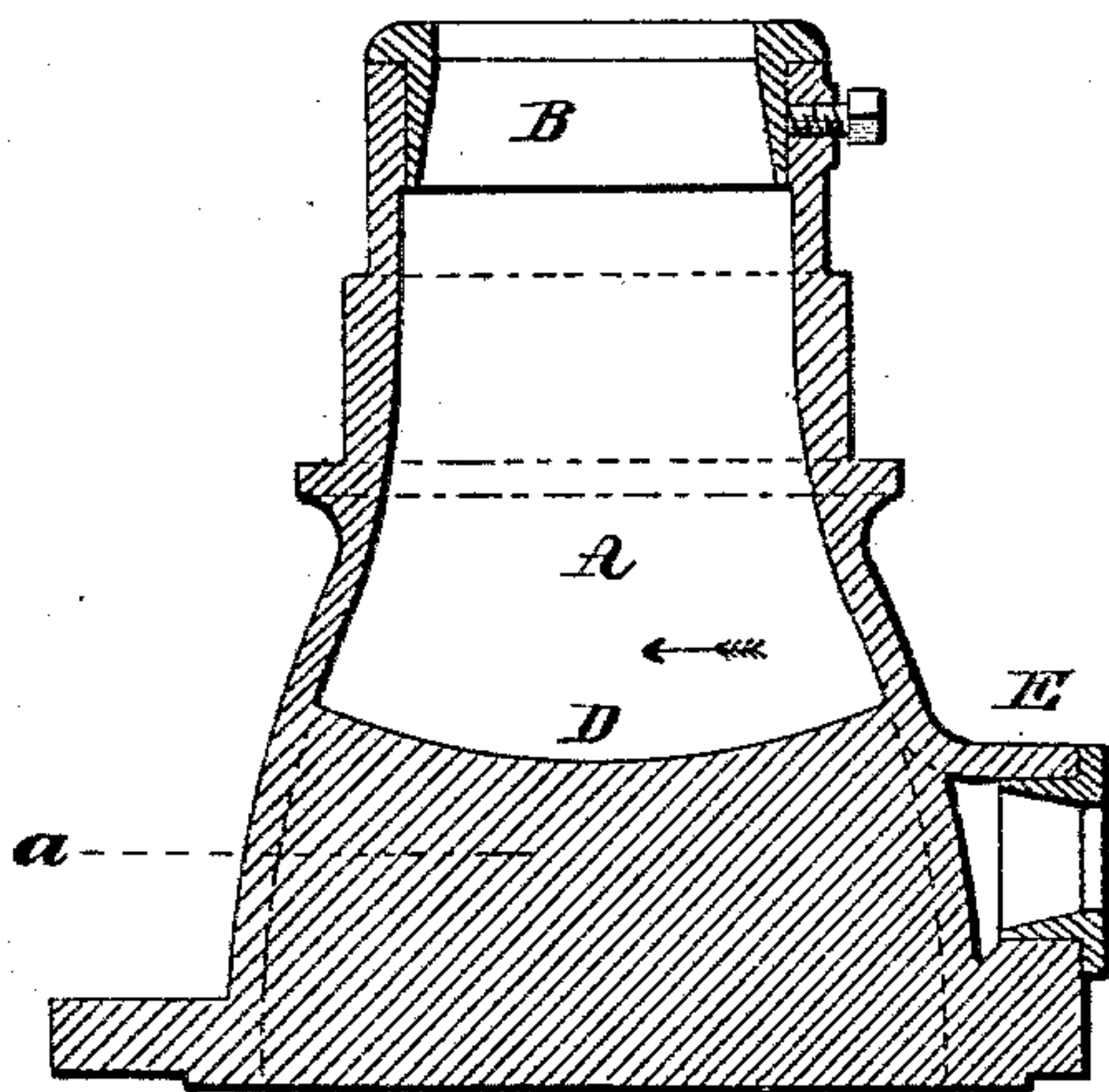


Fig-2-

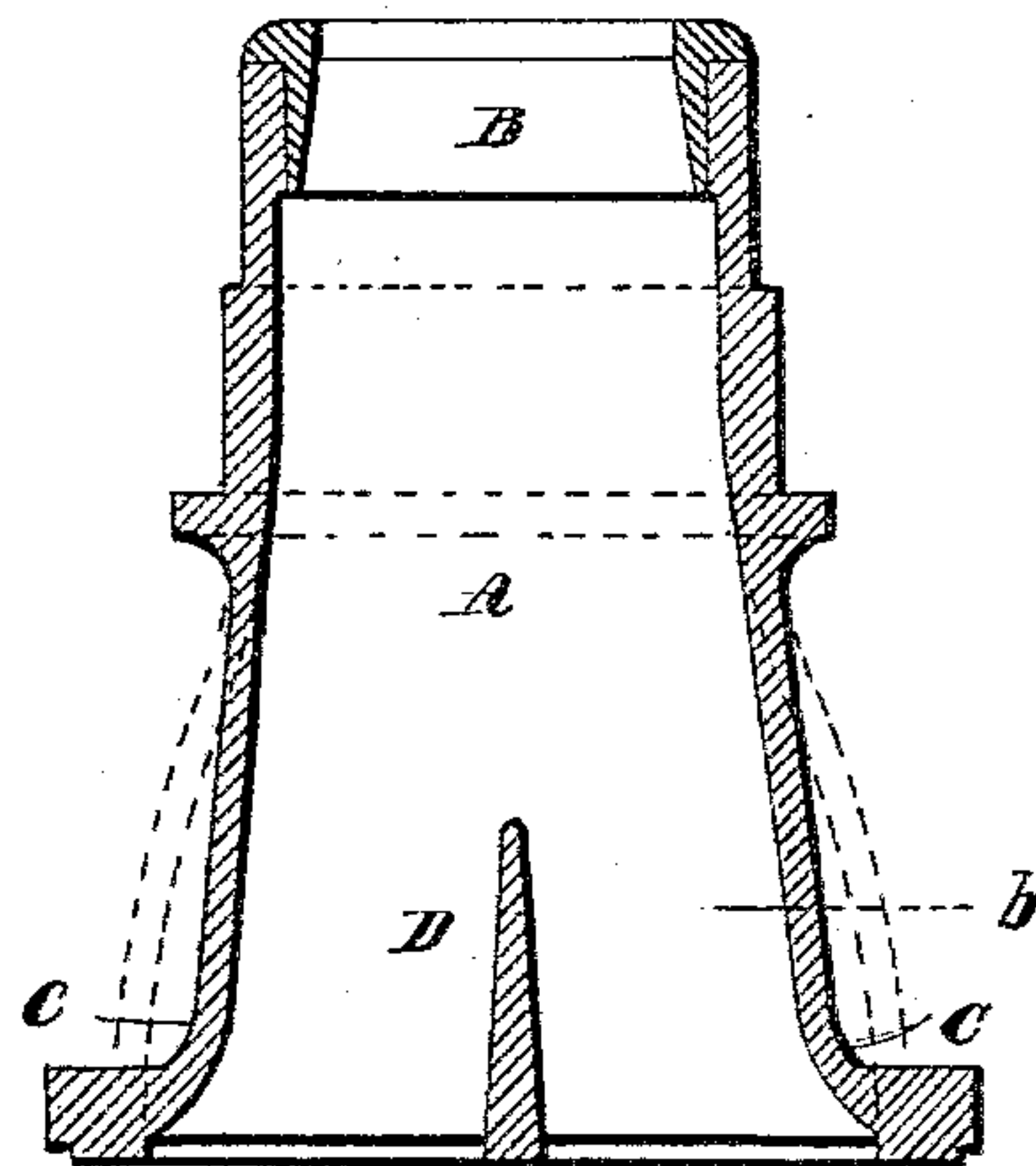


Fig-3-

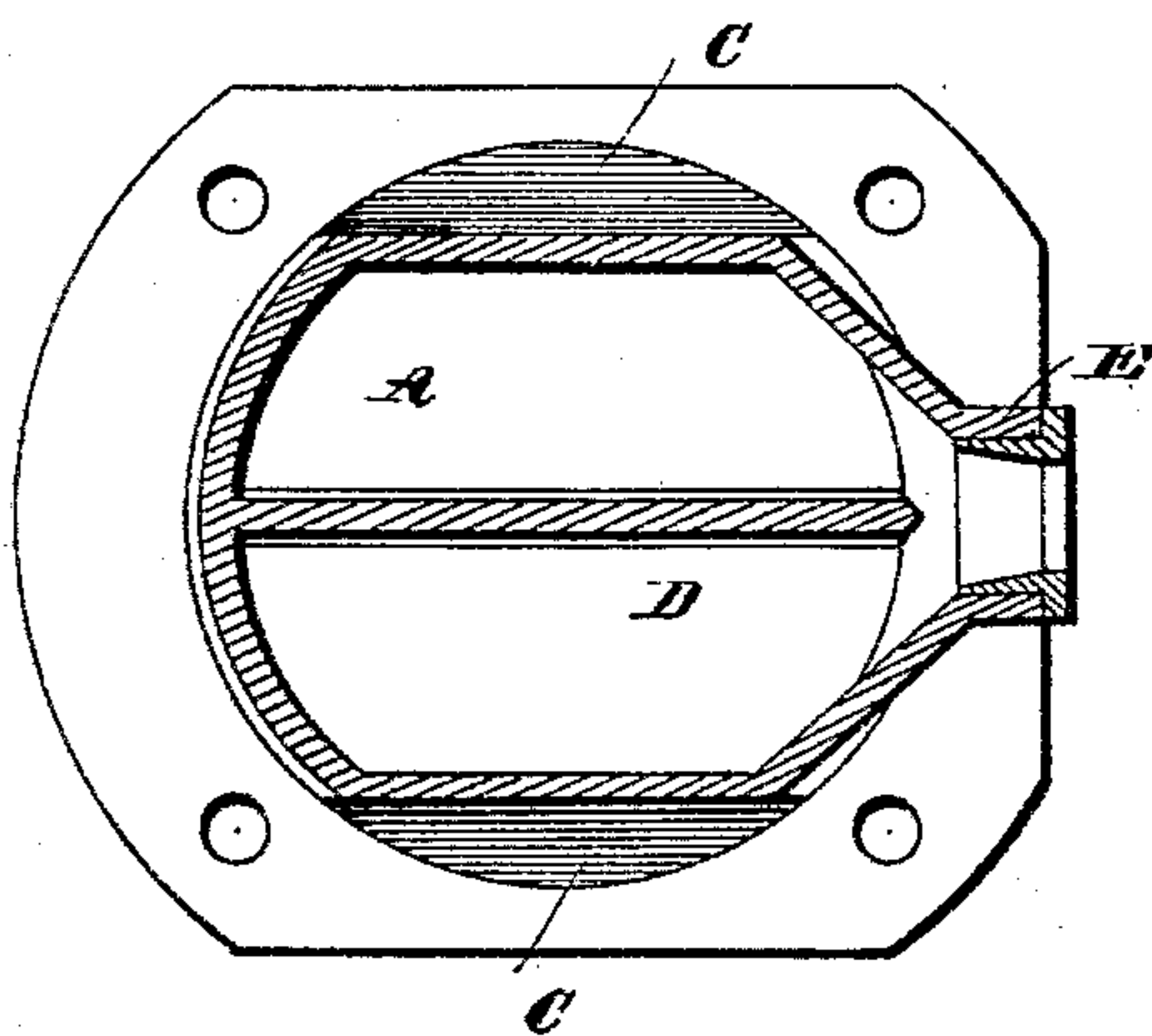
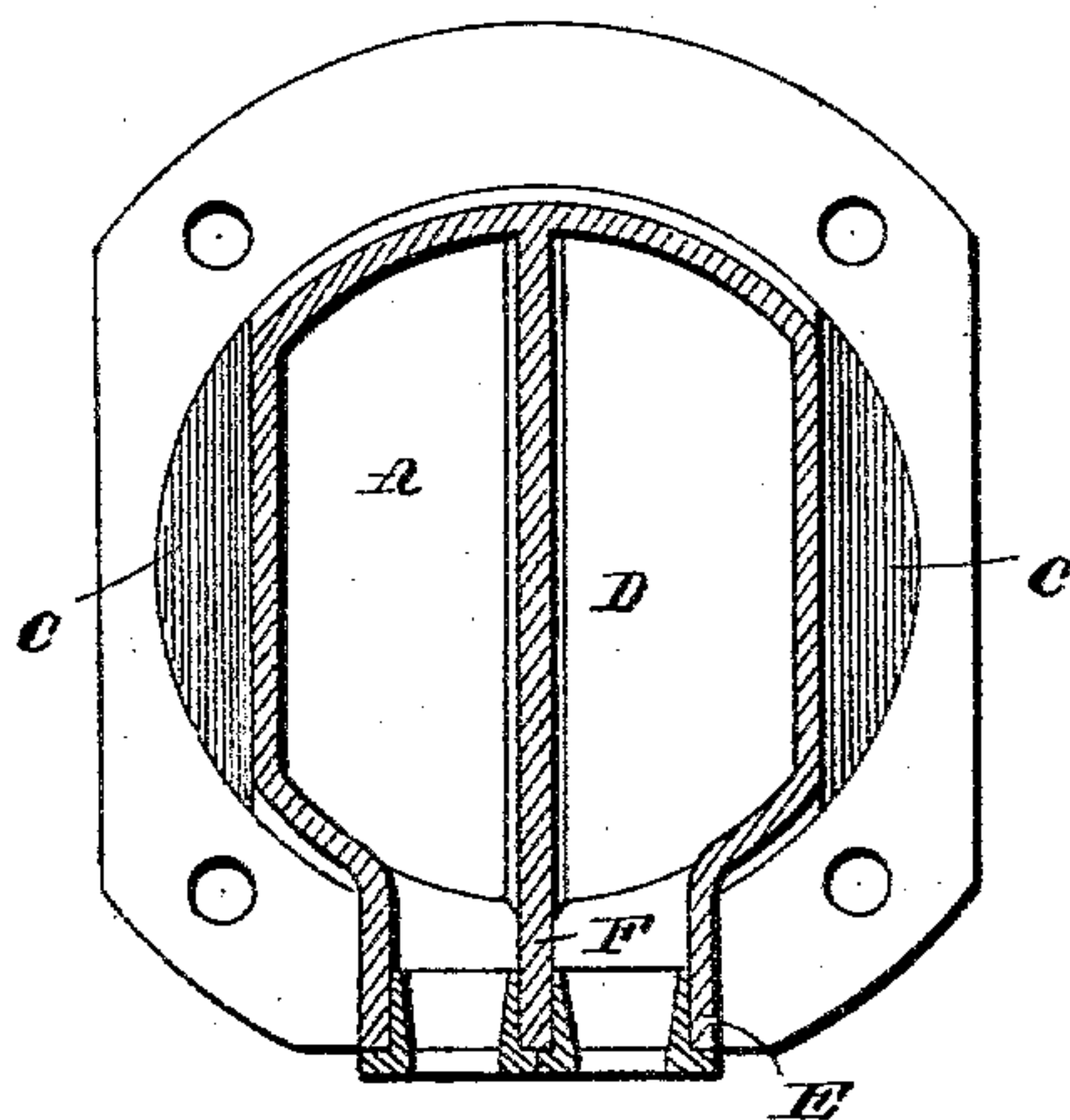


Fig-4-



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE D. HUNTER, OF TERRE HAUTE, INDIANA, ASSIGNOR OF TWO-THIRDS
TO MORTON C. HUNTER AND THOMAS C. VAN NUYS, BOTH OF BLOOMING-
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EXHAUST-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 300,319, dated June 10, 1884.

Application filed February 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. HUNTER, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Exhaust-Nozzles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in steam-exhaust nozzles, and it has special reference to that class used in locomotives.

The invention has for its objects, first, to provide an exhaust-nozzle having a partition in the lower part thereof, with a lateral discharge-neck having more than one passage through it; second, to provide an exhaust-nozzle having its walls contracted at diametrical points, and a partition located in the lower part thereof, with a lateral discharge-neck; third, to provide an exhaust-nozzle having its walls contracted at diametrical points, and a partition located in the lower part thereof, with a lateral discharge-neck having one or more passages through it; and, fourth, to provide an exhaust-nozzle having its walls contracted at diametrical points, with a lateral discharge-neck having one or more passages through it.

With these ends in view my invention consists, essentially, of a tubular tapering nozzle having its walls contracted at diametrical points, and a partition in its lower portion, and provided with a lateral discharge-neck.

In the accompanying drawings, forming a part of this specification, and on which like letters of reference indicate corresponding features, Figure 1 represents a vertical sectional view of my improved exhaust-nozzle as constructed with a lateral discharge-neck having one passage through it, the section being taken on a line coincident with the longitudinal axis of the locomotive-boiler when the nozzle is placed in position; Fig. 2, a vertical sectional view of the nozzle, taken on a line at right angles to the line of the above section, looking in the direction of the arrow, as seen in Fig. 1; Fig. 3, a horizontal sectional view of

the nozzle on the line *a b*, and Fig. 4 a similar view showing more than one passage through the discharge-neck.

The letter A indicates the body of my improved exhaust-nozzle, the same being constructed, preferably, of cast-iron and of tapering form, as indicated in the drawings. At its upper end it is provided with a thimble, B, which serves to contract the mouth thereof to any requisite degree. Near its base, and at diametrical points, preferably, its walls are contracted and curved inwardly, as represented by the letter C, the object of which is to prevent the exhaust-steam from accumulating or being obstructed, and to make it discharge centrally through the nozzle. Should the curvature of the wall of the nozzle be in the opposite direction, as shown in dotted lines, the tendency would be to direct or deflect the steam from one side of the nozzle toward the other, instead of allowing it to escape in a direct way. The nozzle is also provided near its base with a vertical partition, D, which extends up to about one-third the height of the nozzle, and there terminates, whereby the discharge of the steam is caused to issue in a single volume. This partition also aids in directing the steam upwardly, as above described. Extending from the forward side of the nozzle, embracing the plane occupied by the partition D, is a lateral discharge-neck, E, an aperture being formed in the wall of the nozzle at this point, whereby direct communication is established between the interior of the nozzle at either side of the partition with the smoke-box. The wall of the nozzle, a short distance at each side of this neck, is slightly flattened, so as to form a tapering lead to the passage through the neck, whereby a more ready lateral discharge of the steam is induced. This neck may be divided longitudinally about the center by a distended portion, F, of the partition D, or by a separate partition, each passage being provided with thimbles G, whereby the area of the mouth may be contracted, as required. It will be observed that by reason of this lateral discharge of the steam the sparks, cinders, or other more solid

particles of combustion collecting in the lower part of the smoke-box are forced into a conduit so located as to receive and conduct them to a suitable receptacle, such as shown and described in my Letters Patent numbered 285,899 and 285,900, and dated October 2, 1883.

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

10 1. An exhaust-nozzle having a partition in the lower part thereof, and provided with a lateral discharge-neck having more than one passage through it.

2. An exhaust-nozzle having a lateral discharge-neck and a partition in the lower part thereof distended through said neck.

15 3. An exhaust-nozzle having its walls contracted at diametrical points and a partition located in the lower part thereof, and provided with a lateral discharge-neck.

20 4. An exhaust-nozzle having its walls con-

tracted at diametrical points and a partition located in the lower part thereof, and provided with a lateral discharge-neck having one or more passages through it.

25 5. An exhaust-nozzle having its walls contracted, and a lateral discharge-neck, and provided with a partition in the lower part thereof distended through said neck.

6. An exhaust-nozzle having its walls contracted at diametrical points, and provided with a lateral discharge-neck having one or more passages through it.

7. An exhaust-nozzle having its walls contracted at diametrical points, and provided with a discharge-neck.

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

GEO. D. HUNTER.

Witnesses:

SAMUEL R. HAMILL,
G. W. FARIS.