

(No Model.)

E. A. TRAPP.
LOCOMOTIVE.

No. 278,470.

Patented May 29, 1883.

Fig: 2

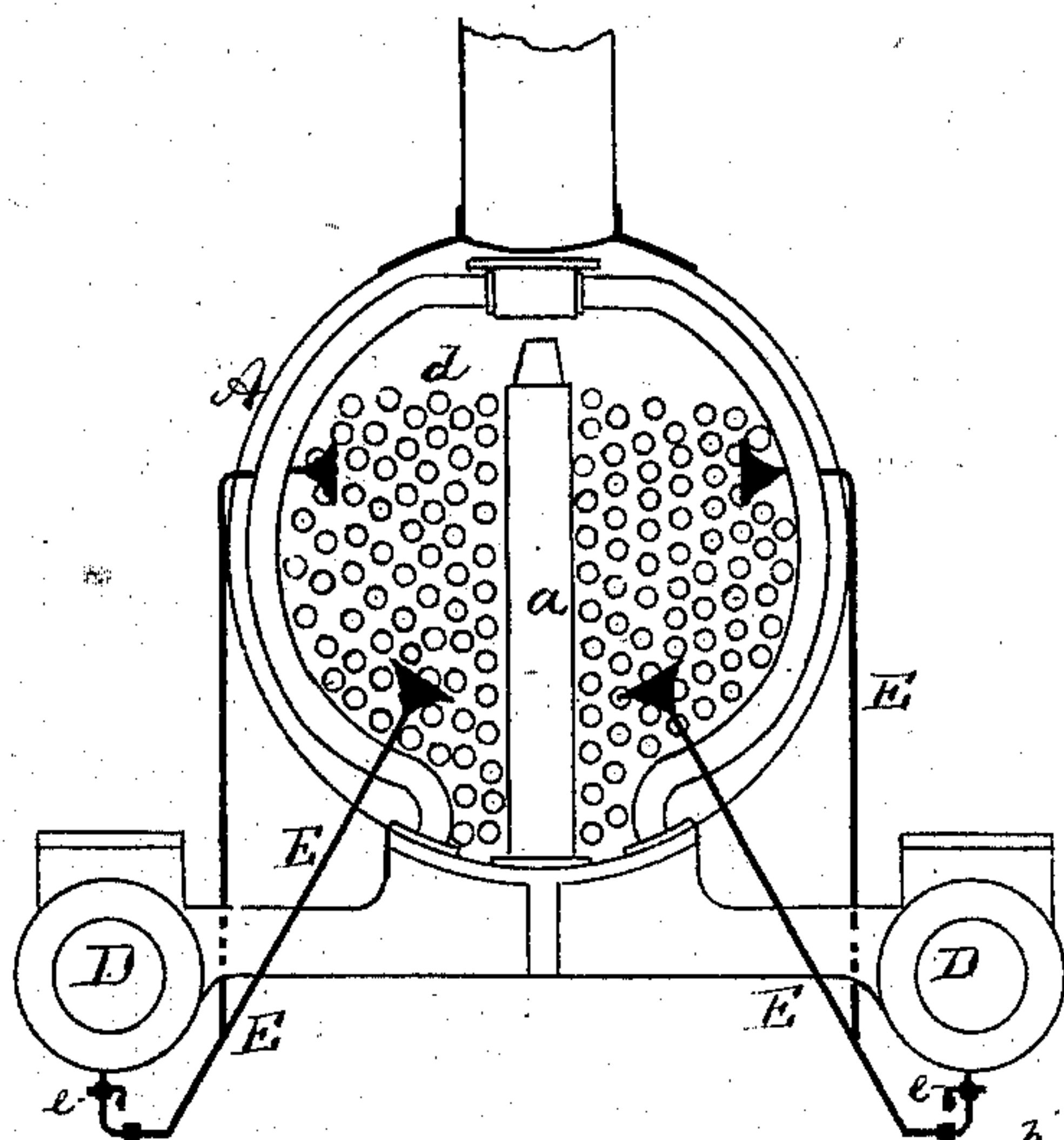


Fig: 1

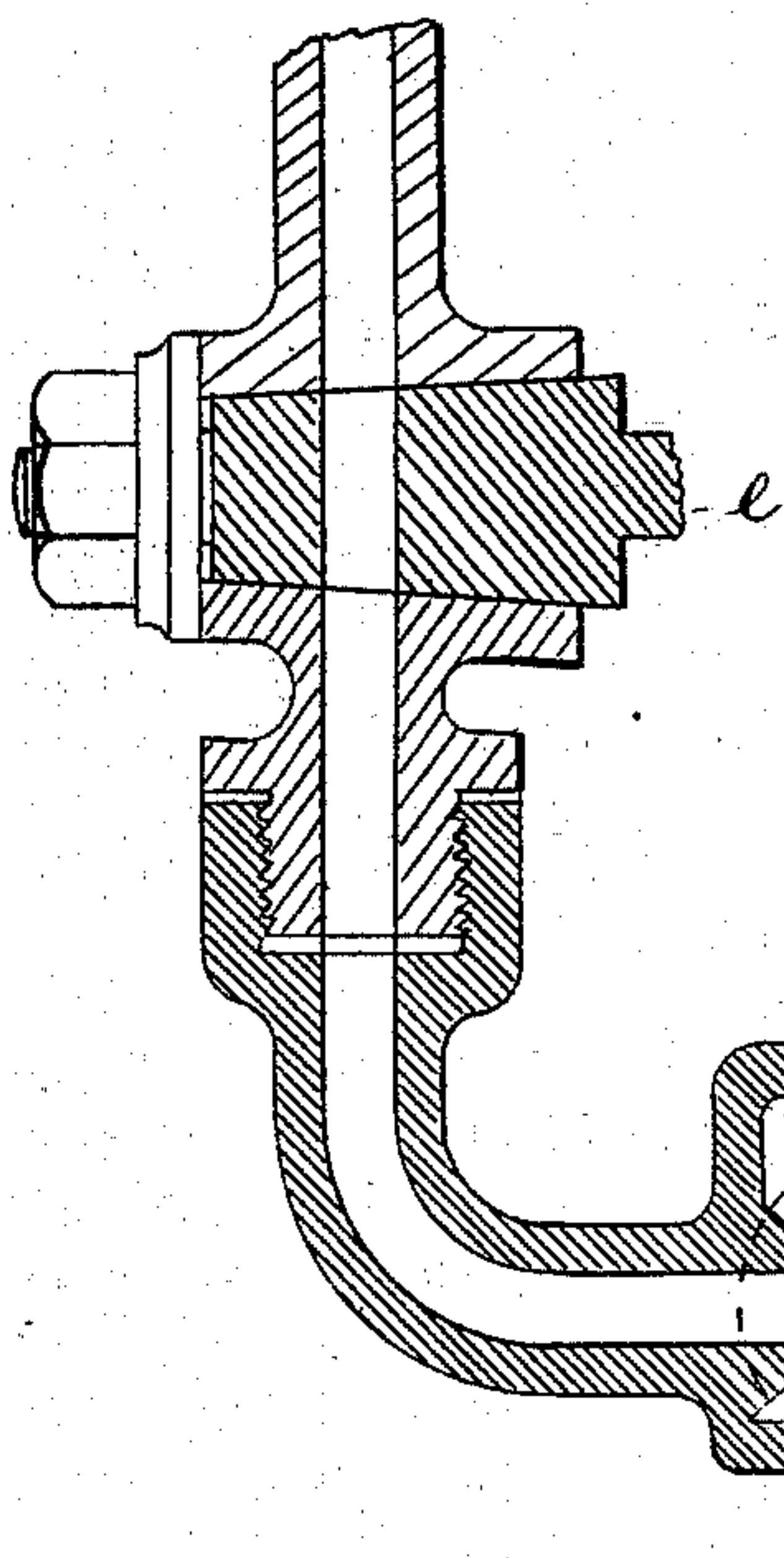
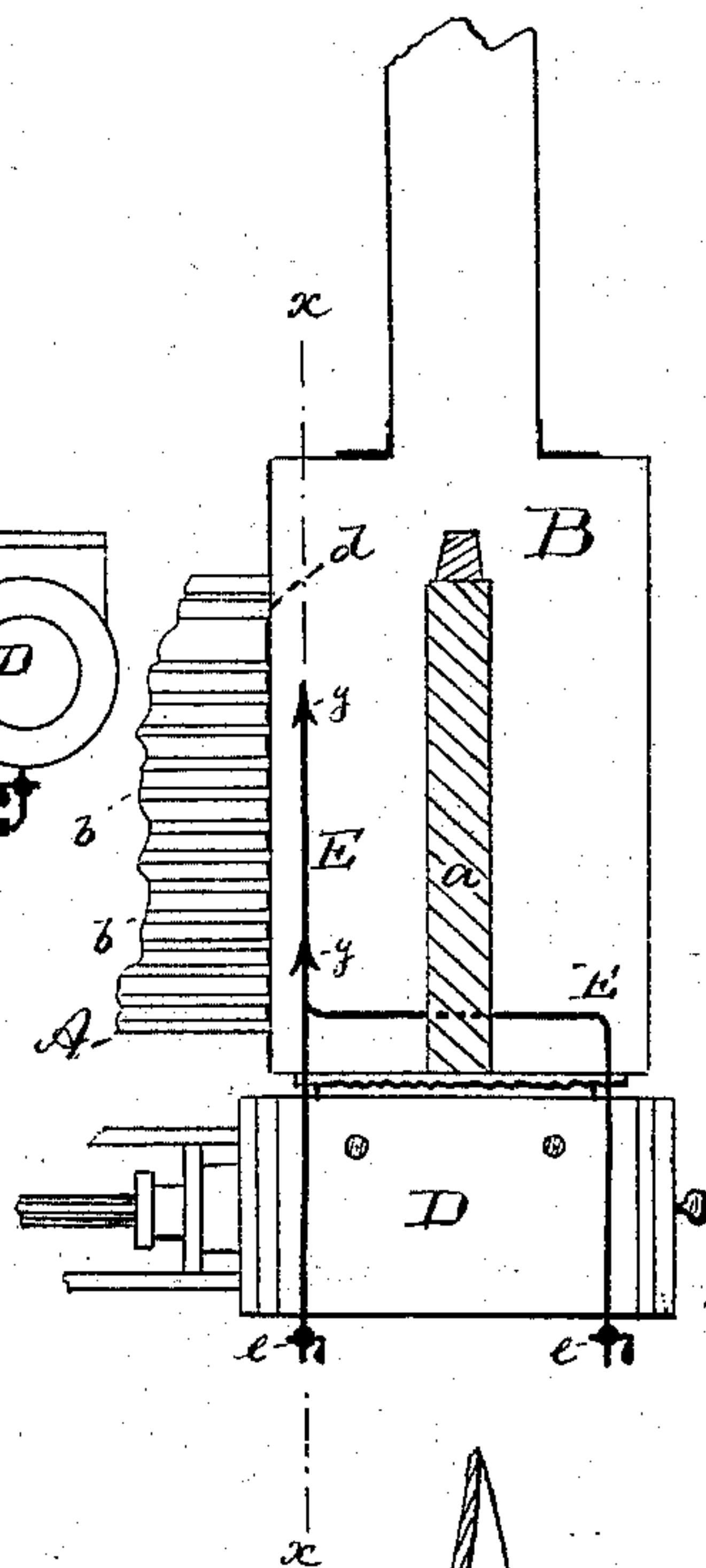


Fig: 3

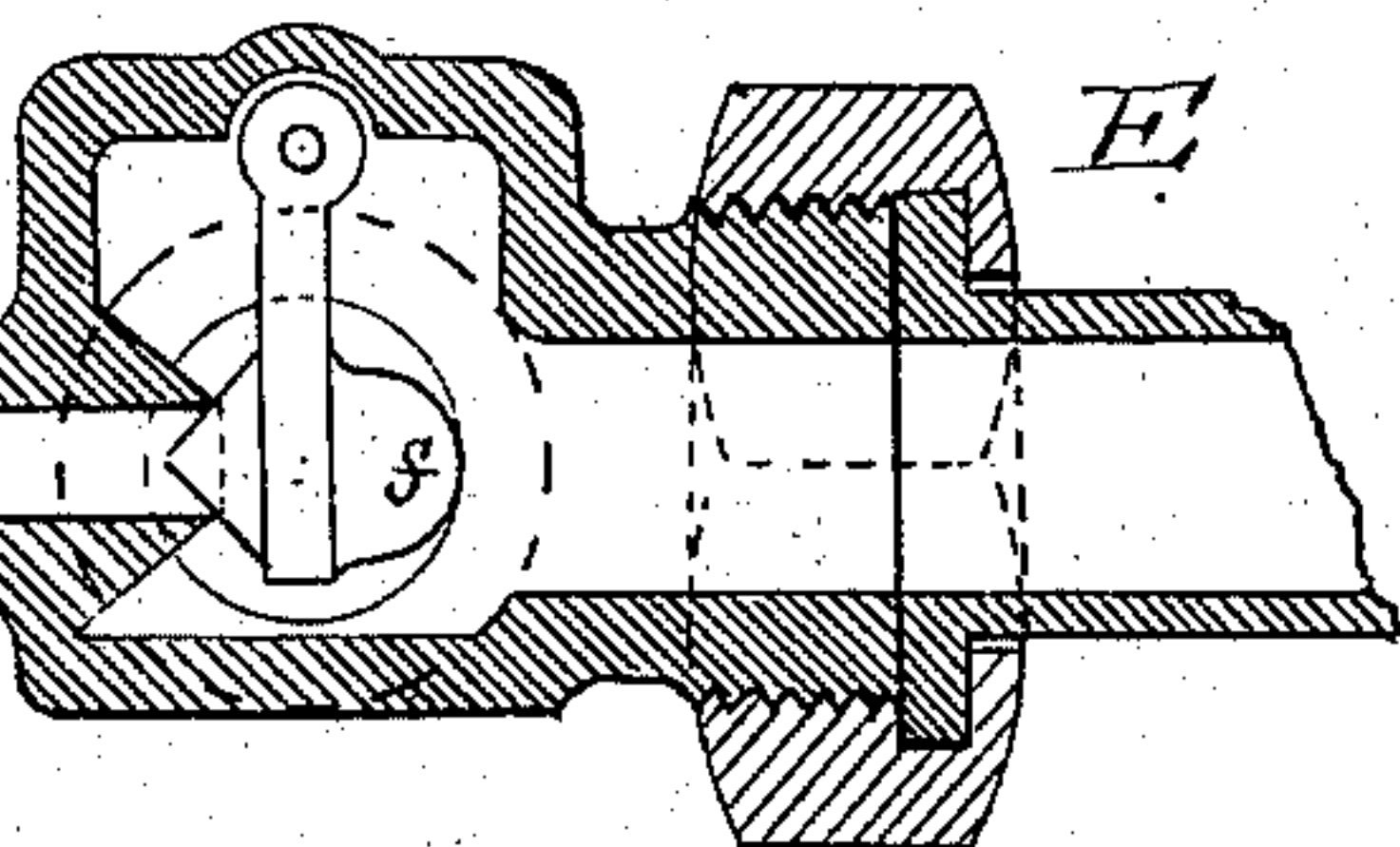
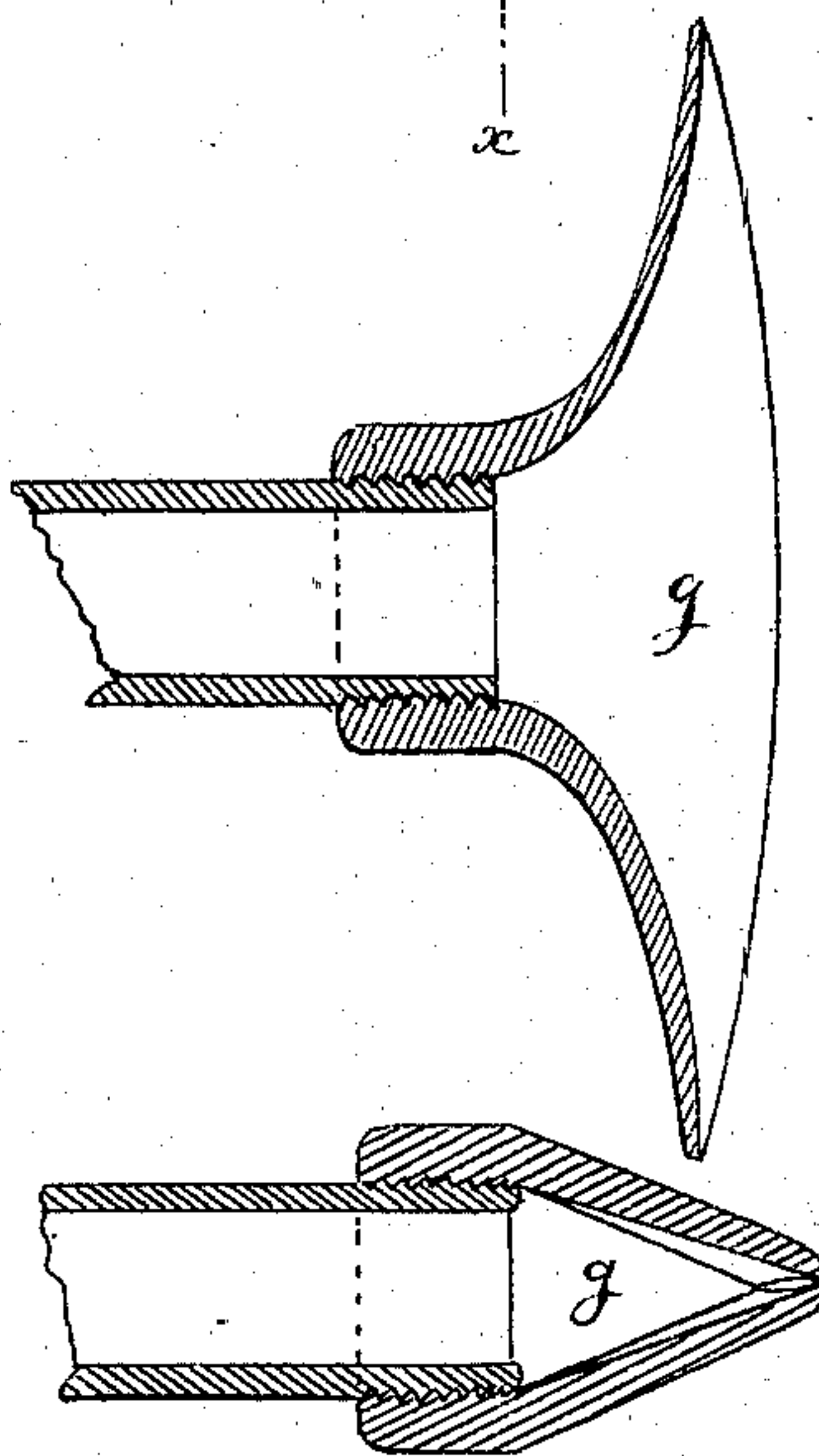
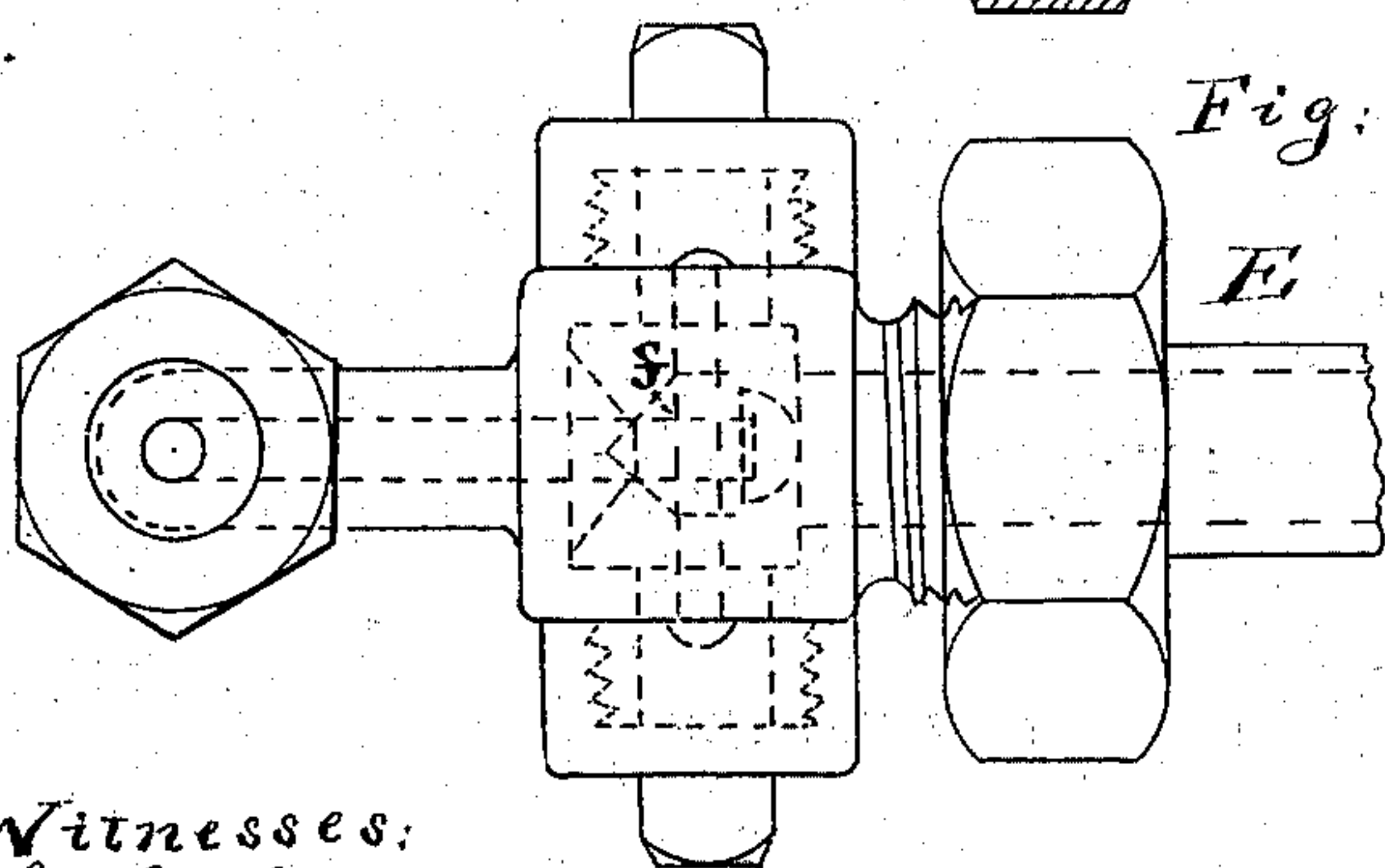


Fig: 4



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD A. TRAPP, OF NEW YORK, N. Y.

LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 278,470, dated May 29, 1883.

Application filed February 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. TRAPP, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Locomotives, of which the following specification is a full, clear, and exact description.

This invention relates to an attachment to the cylinders of a locomotive by which the condensed water is carried from the cylinders up to the smoke-box. In this way the water is no longer blown off into the streets at the sides of the locomotive through the petcocks. At the same time the water is divided into a spray in the smoke-box and acts as a spark-arrester.

The invention consists, principally, in the combination of the locomotive-cylinders with pipes containing a check-valve, and extending from the two ends of each cylinder to the smoke-box in front of the flue-sheet; also, in the shape of the pipe-nozzles, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a vertical longitudinal central section of a locomotive smoke-box having the saddle broken off to expose one of the cylinders. Fig. 2 is a vertical transverse section on the line *xx*, Fig. 1; Fig. 3, a detail vertical longitudinal section through my improved cylinder attachment; and Fig. 4, a top view of said attachment, showing the pipe-nozzle in section.

Similar letters of reference indicate corresponding parts in all the figures.

The letter A represents the boiler of a locomotive, B is the smoke-box, D D are the cylinders, *a* is the exhaust-pipe, *b b* are the boiler-flues, and *d* is the flue-sheet, all as customary.

ee are the petcocks, one at each end of each cylinder, for blowing off condensed steam. Each of these petcocks connects with a pipe, E, which leads upward and terminates in the smoke-box B, in front of the flue-sheet *d* and between said flue-sheet and the exhaust-pipe *a*. The pipes E are each provided with a check-valve, *f*, which permits water to flow out of but not into the cylinders. At the upper end the pipes E terminate in peculiar nozzles, *g*.

(More clearly shown in Figs. 3 and 4.) These nozzles have a very long but narrow mouth, thus discharging the water or steam in a wide but thin or narrow sheet.

The operation is as follows: As the piston reciprocates, the condensed water in the cylinders will be forced from each end into one of the pipes E. The check-valves *f* will prevent the suction created by the receding piston from drawing the water back. The water will rise in the pipes E and be eventually forcibly discharged through nozzles *g* into the smoke-box. The discharged water, in the form of spray or sheets, will be thrown up in front of the flue-sheets *d*. The current of smoke and sparks from the flues *b*, entering the smoke-box through the flue-sheet, will strike the spray from the pipes E at or about at right angles, both currents will commingle, the water from the cylinders will be evaporated by the sparks, while the latter will be extinguished by the spray. In this way the pipes E serve as well as spark-arresters as vehicles for taking the water from the cylinders.

I claim as my invention—

1. The combination, in a locomotive, of the cylinders D with the pipes E E, having check-valves *f*, and extending from the ends of the cylinders to the smoke-box, substantially as specified.

2. The combination, in a locomotive, of the cylinders D with the pipes E, which terminate in front of the flue-sheet *d*, all being so arranged that the current from the pipes E is intercepted by the current from the flues *b*, substantially as and for the purpose specified.

3. The combination, in a locomotive, of the pipes E, terminating in front of the flue-sheet *d*, with the nozzles *g*, said nozzles having a long and narrow mouth to discharge water in a spray in front of said flue-sheet, substantially as herein specified.

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Witnesses:

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