

(No Model.)

N. M. BERGQVEST.

JOURNAL BOX LUBRICATOR.

No. 278,309.

Patented May 29, 1883.

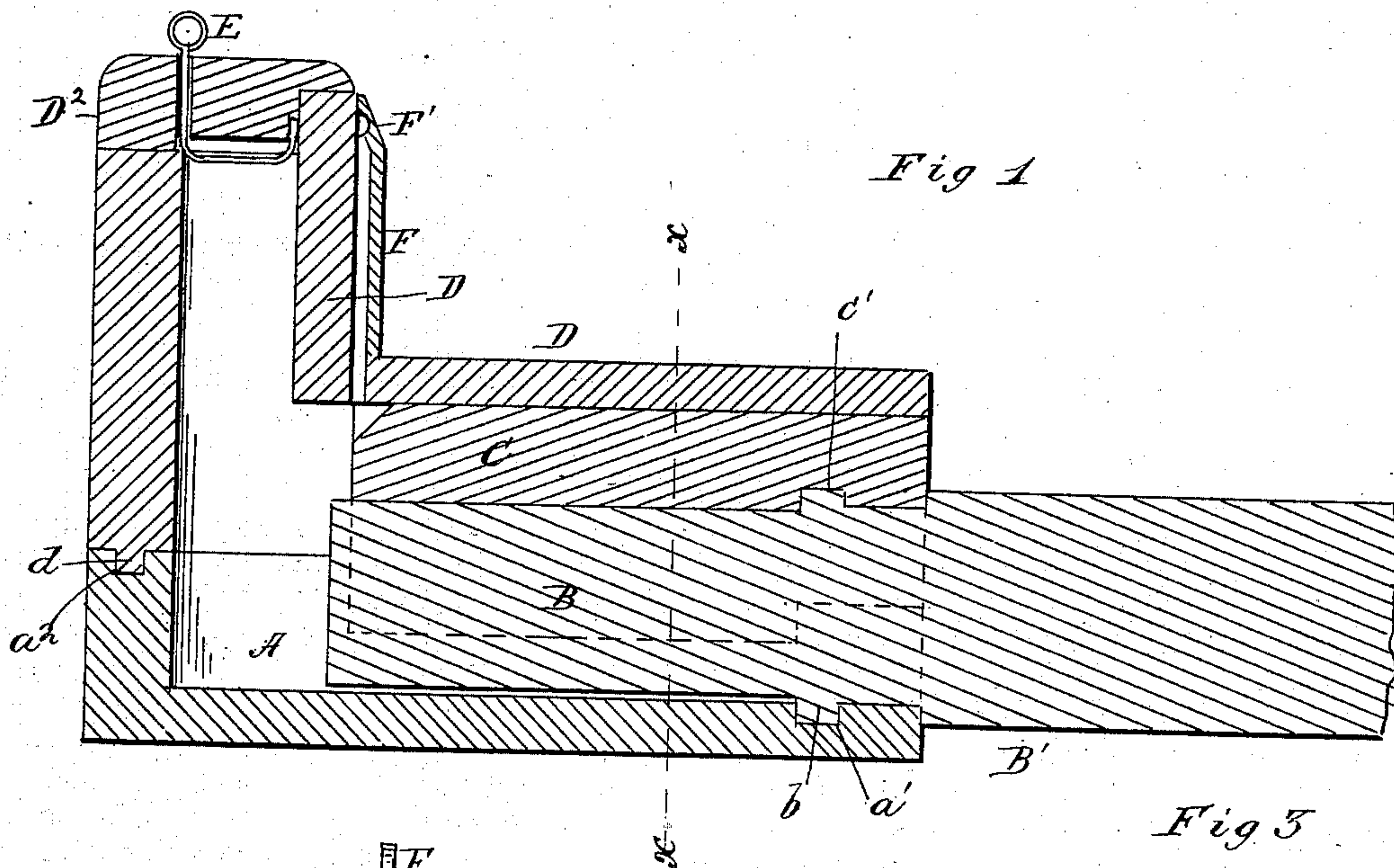


Fig 1

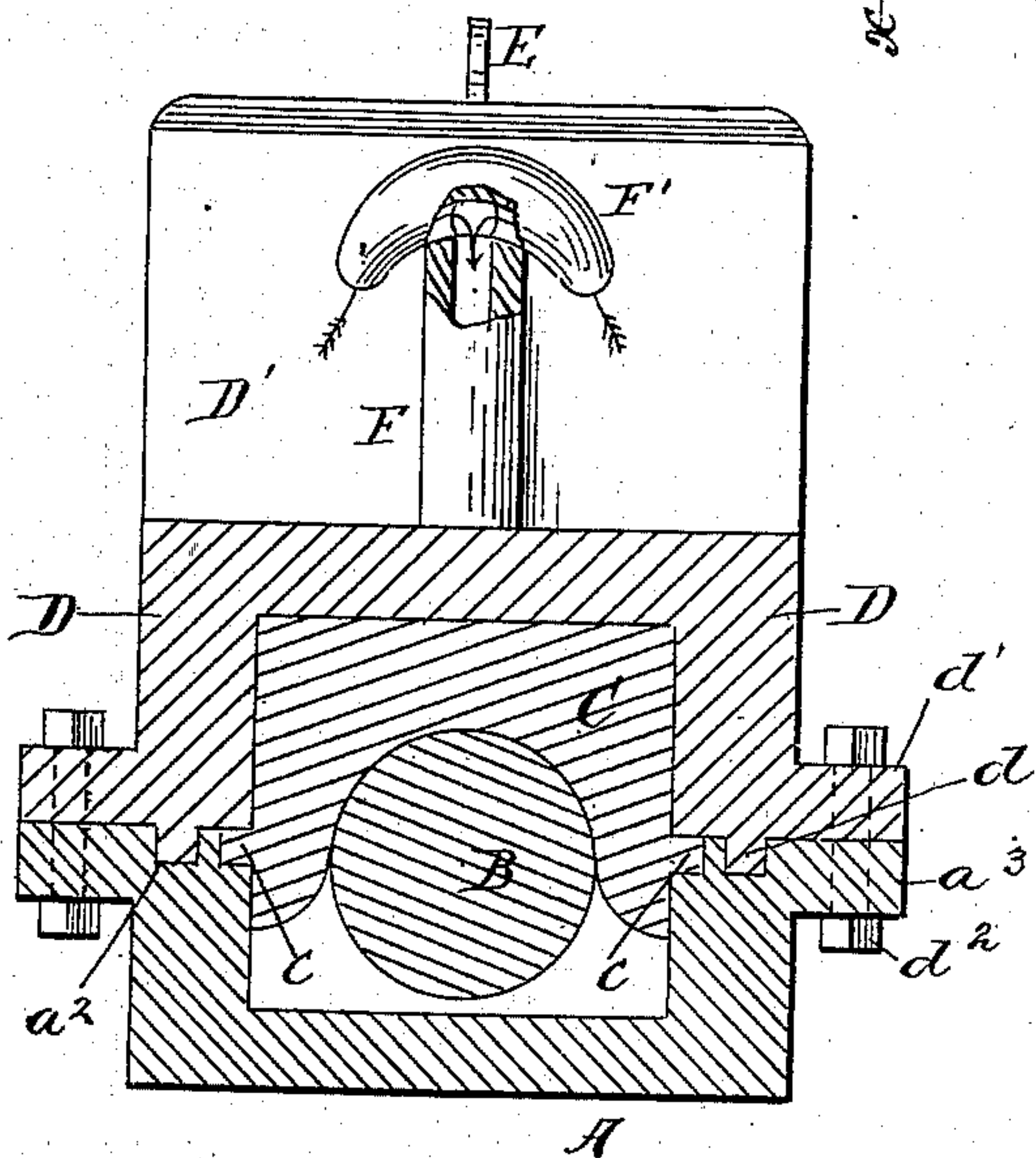


Fig 2

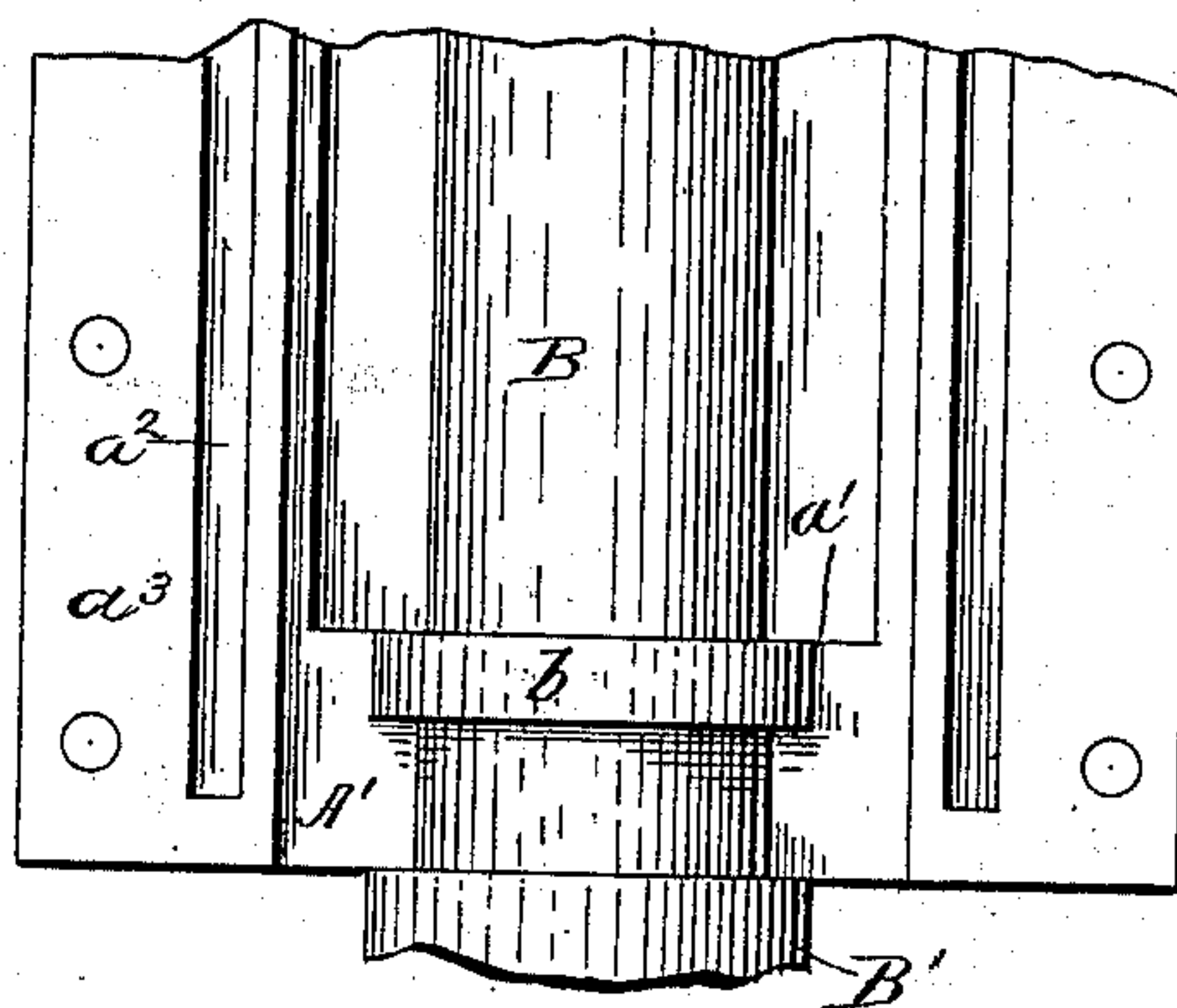
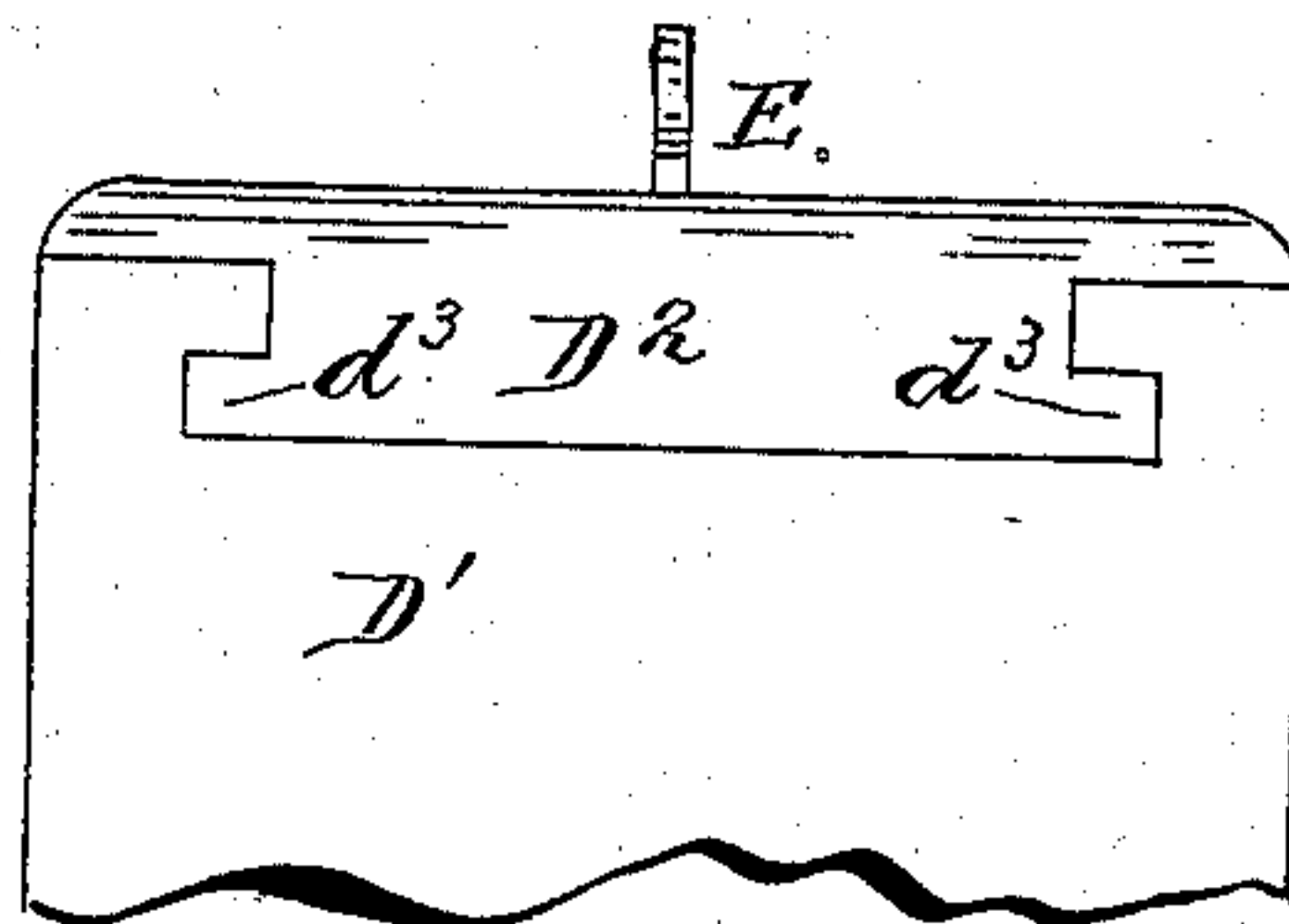


Fig 4



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# UNITED STATES PATENT OFFICE.

NELS M. BERGQVEST, OF CHICAGO, ILLINOIS.

## JOURNAL-BOX LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 278,309, dated May 29, 1883.

Application filed October 30, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, NELS M. BERGQVEST, a subject of the King of Sweden, residing at the city of Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Lubricating Journal-Boxes, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a journal-box (with axle in place) having my improvements. Fig. 2 is a section on the line  $x x$  in Fig. 1, looking toward the left. Fig. 3 is a plan view of the lower half of the box for part of its length. Fig. 4 is a left end view, showing the upper part of the oil-receiver.

The same letters denote the same parts in all the figures.

My invention relates to journal-boxes for machinery and vehicles; and the object of it is to combine complete lubrication and entire exclusion of dust with simplicity and economy of construction.

To this end it consists in the several devices and combinations of devices, which will be fully set forth hereinafter, and definitely pointed out in the claims.

In the drawings, A denotes the lower half of the outer part of the box. It is in form a trough, whose depth slightly exceeds the half-diameter of the journal B of the axle or shaft. At the end where the journal enters it, it is closed by the pillow A', which rises no higher than the semi-diameter of the journal, so that its highest points are a little below those of the other walls of the trough. A groove,  $a'$ , parallel to the circumference of the axle or shaft, is sunk in the pillow, and a ring,  $b$ , raised on the surface of the journal fits into it.

The upper bearing-block, C, is not quite so wide as the interior of the trough A. It has lugs or flanges  $c$  arranged on its sides a little above the lower margins, and these flanges rest on steps or shoulders  $a$ , formed on the side walls of a trough and level with the top of the pillow A', so that the sides of the block C come down into the trough below the level of the top of the pillow, except where they are cut away opposite the pillow so as to rest on its upper edge, the pillow and the upper block thus forming together a bearing for the entire cir-

cumference of the journal, and the downwardly-extended sides of the upper block locking against the pillow, so that the former cannot slide out of the trough. A groove,  $c'$ , in the inner surface of the block C, similar to the groove  $a'$  of the pillow, receives the ring  $b$  of the journal, which is thus secured against longitudinal motion and closely jointed with the bearing-blocks. That part B' of the axle or shaft which is without the box is preferably larger than the journal, and fits close against the outer ends of the bearing-blocks.

The trough A has in the upper edge of each of its three walls a groove,  $a^2$ , and a horizontal flange,  $a^3$ , level with the top of the wall projects from each side.

A cover, D, is fitted to the trough by means of a tongue,  $d$ , on its under margin, corresponding to the groove  $a^2$ , and a pair of horizontal flanges,  $d'$ , corresponding to the flanges  $a^3$ . By means of screw-bolts  $d^2$  passing through both flanges the whole box is firmly and tightly joined together. The groove  $a^2$  is made preferably somewhat larger than the tongue, so that a packing of india-rubber, cotton, or other suitable material may be set in it.

Both the trough A and cover D are somewhat longer than the journal and its upper bearing-block, and these again are considerably longer than the pillow A, which extends only far enough in to constitute a thick wall for the trough. For a little more than the length of the upper bearing-block the cover is of a form to fit close on that. For the remainder of its length it is considerably increased in height, forming an oil-receiver, D', provided with a sliding top, D<sup>2</sup>, which fits it by means of a tongue,  $d^3$ , on each of the two shorter edges of the top, and corresponding inner grooves in the walls of the receiver. A very close joint is thus made between the sides and top of the receiver.

A rod or bar spring, E, passes through the top into the interior of the receiver close to that wall through which the top slides. It is there bent horizontally backward, and is fastened at its end to the under side of the top, as shown in Fig. 1. It thus resists any force tending to move the top horizontally. By pulling it up by its upper end its horizontal part will be drawn up into a slot provided for it in the under side of the top, and the top can



then be slid out through its grooves for the purpose of pouring in oil. The receiver is preferably kept full of oil, so that there may be a constant pressure toward the parts around the journal.

An air-tube, F, passes up from the top of the low part of the cover D on the side of the inner wall of the receiver D', and terminates at its top in an arched transverse tube, F', open at each end. A free, and at the same time effectually-protected, air-passage is thus provided.

It is obvious that by the construction which I have described the thorough lubrication of the journal is secured, as nearly half its surface is continually immersed in the oil which fills the trough, while access is readily had to every part of the box, and at the same time dust is effectually excluded from the bearing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a journal-box, the cover D, consisting of a low portion arranged over the bearing, and an elevated portion arranged beyond it, substantially as and for the purpose described.

2. In a lubricating journal-box, the air-tube F, provided at its outer end with the arched transverse outlet-tube F', substantially as and for the purpose described.

3. The cover D of the journal-box, provided with the elevated oil-receiver D', in combination with the upright air-tube F and the arched transverse tube F', constructed and arranged substantially as and for the purpose described.

4. A journal provided with a projecting ring, b, in combination with bearing-blocks provided with a corresponding groove, a' c', substantially as and for the purpose described.

5. In a lubricating journal-box, a trough, A, whose breadth considerably exceeds the diameter of the journal, provided with horizontal supports on its inner sides, a pillow, A', arranged at one end of the trough and extending from side to side thereof, and an upper bearing-block, C, narrower than the inside of the trough, and provided on its sides above their lower margins with lugs whose united breadth is equal to the surplus breadth of the trough, all in combination, substantially as and for the purpose described.

6. The upper and lower bearing-blocks, in combination with the trough A, having the groove a<sup>2</sup> in its upper edges and the projecting lateral flanges a<sup>3</sup> on the same, and the cover D, having on its lower edges the tongue d and projecting lateral flanges d', substantially as and for the purpose described.

7. The sliding top D<sup>2</sup> of the oil-receiver, having a vertical orifice, and on its underside a horizontal slot, in combination with the spring E, passing through the orifice and bent parallel to the slot, substantially as and for the purpose described.

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Witnesses:

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