

No. 661,879.

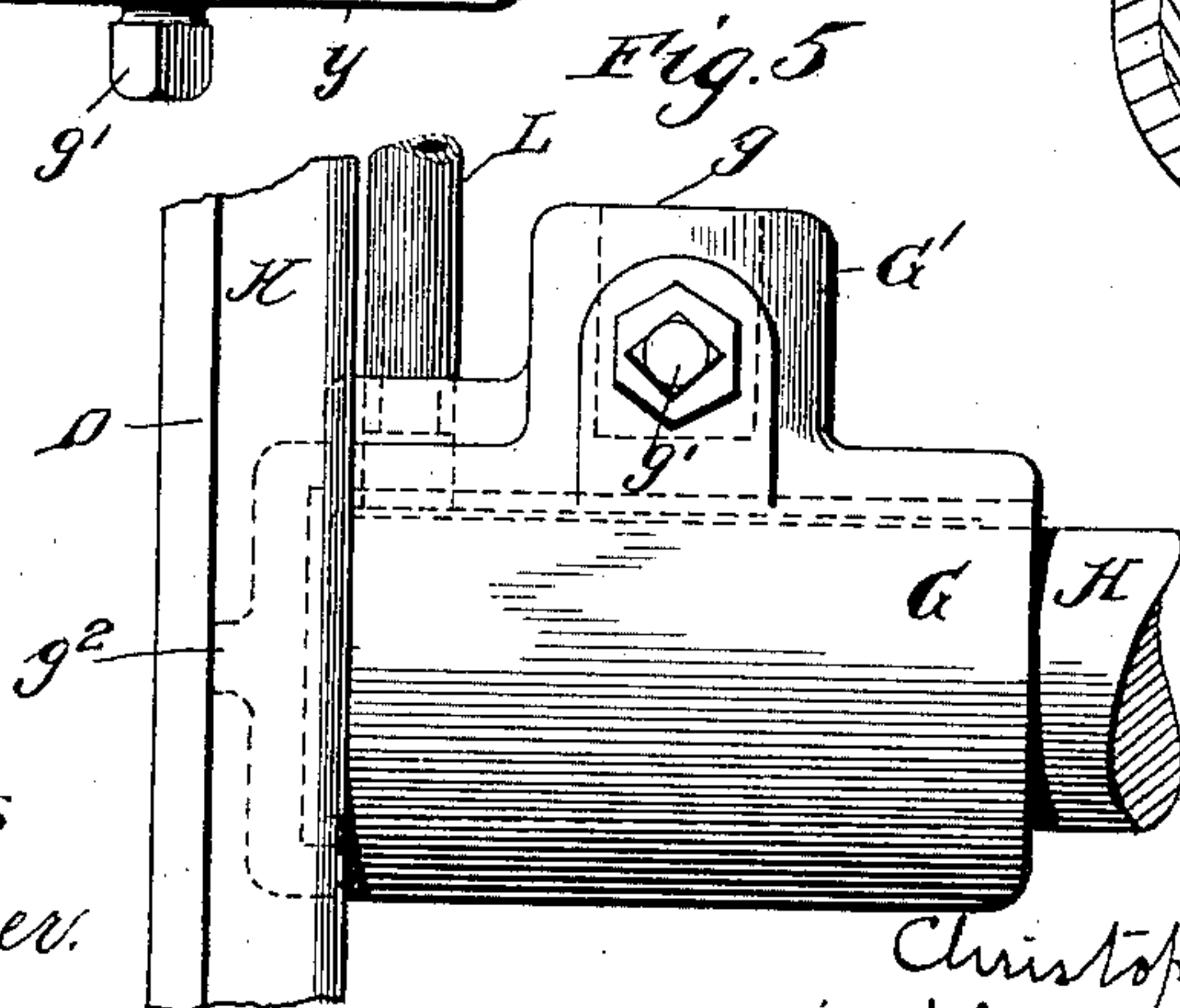
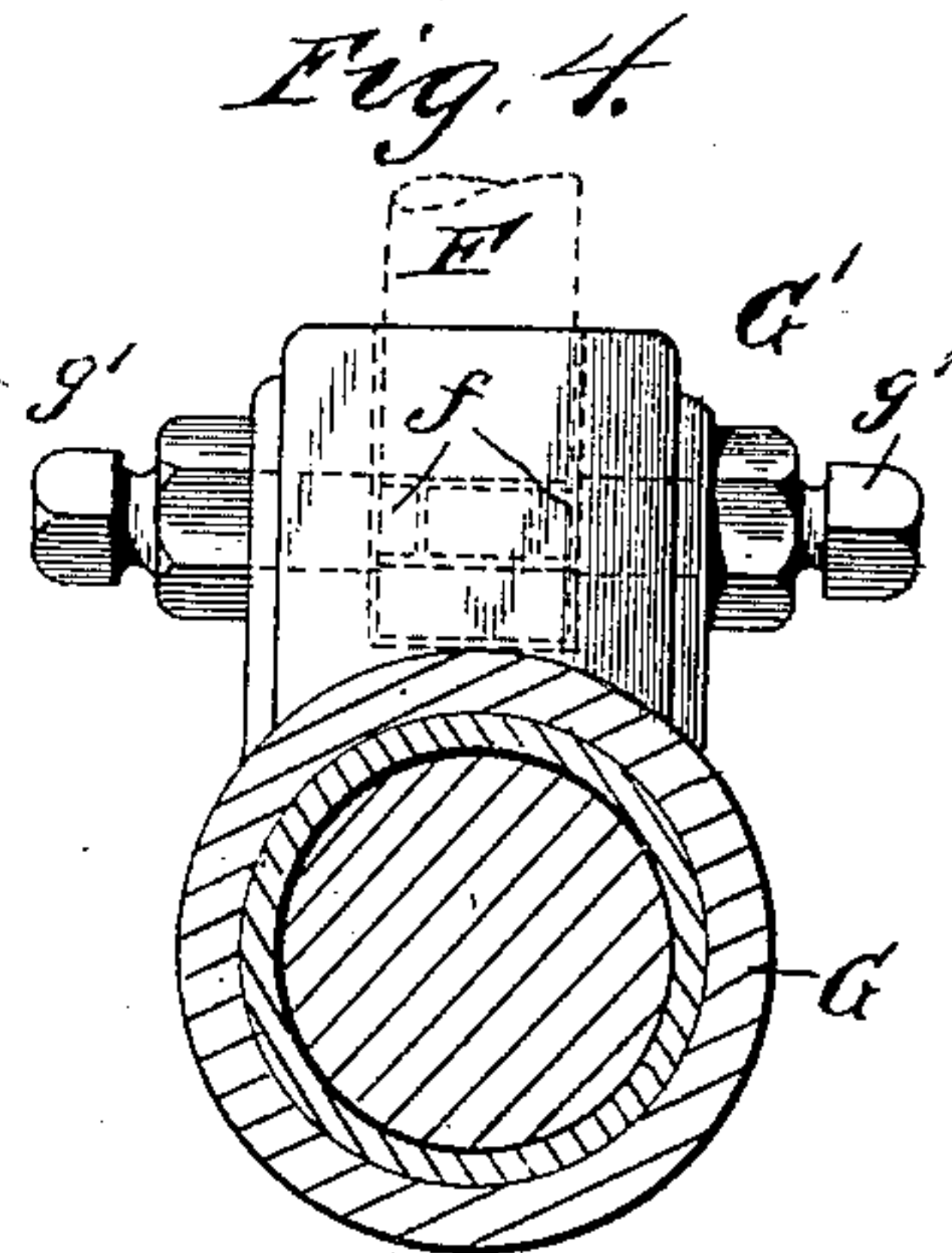
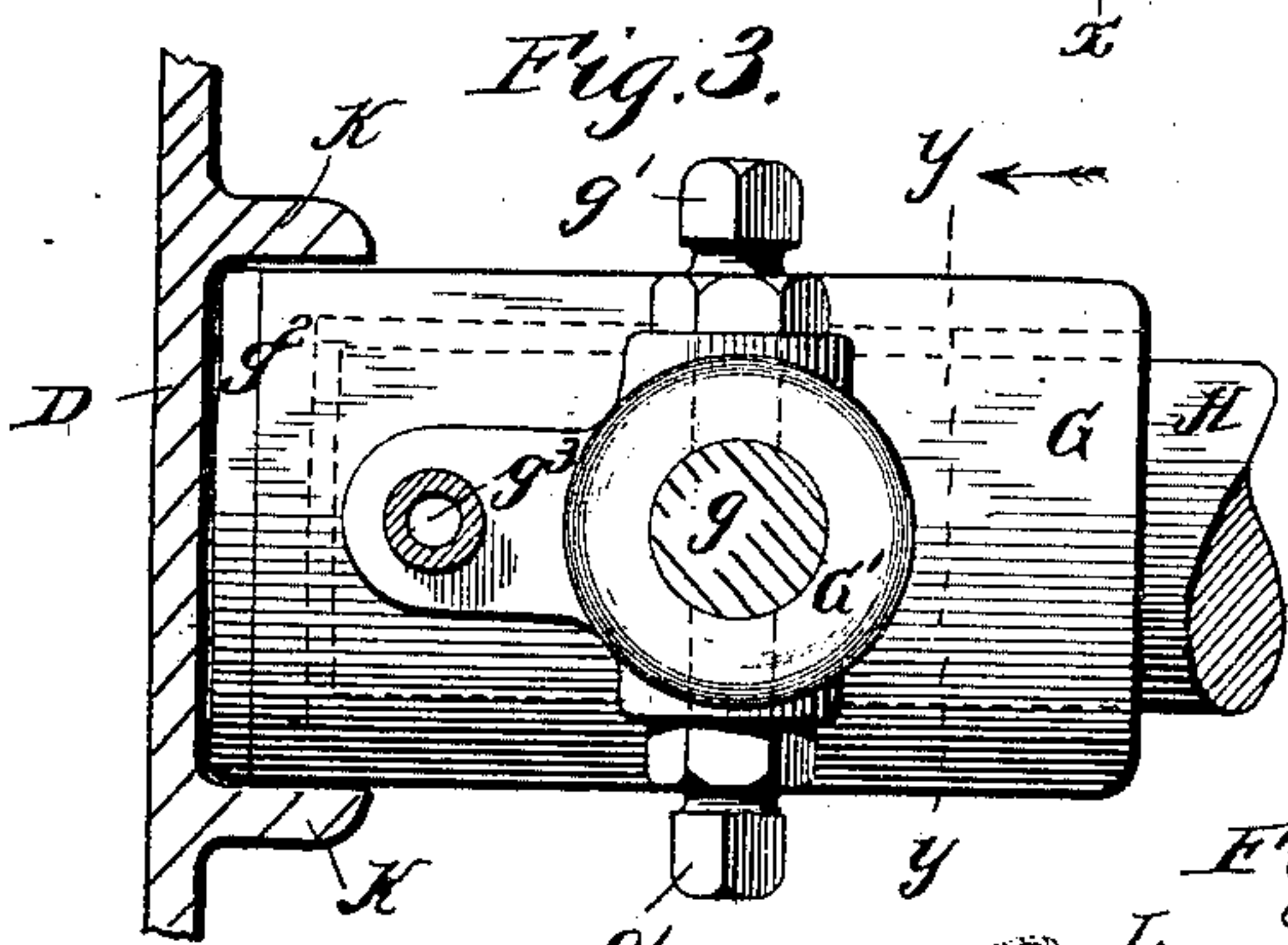
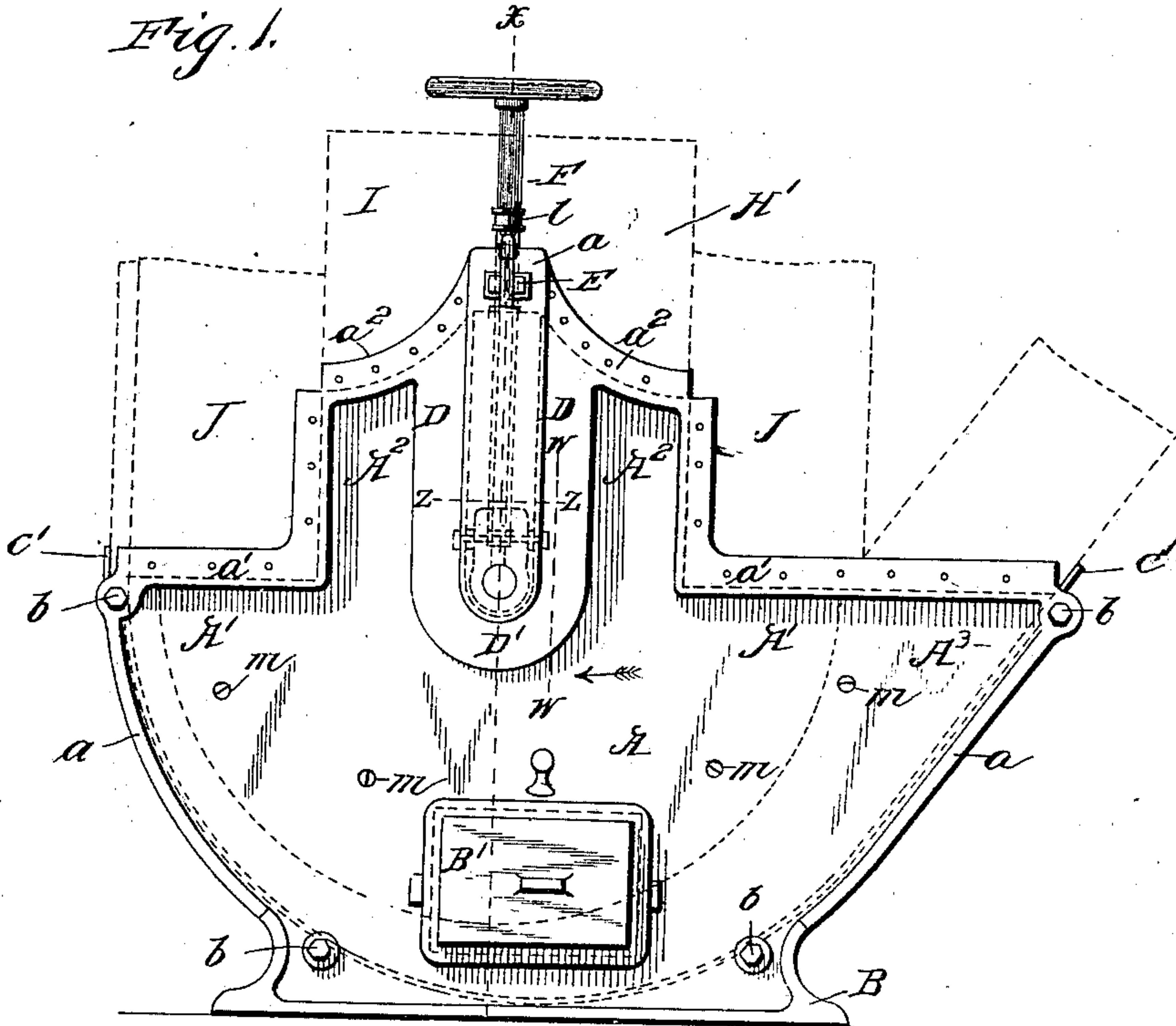
C. W. LEVALLEY.
ELEVATOR BOOT.

Patented Nov. 13, 1900.

(No Model.)

(Application filed Apr. 4, 1899.)

2 Sheets—Sheet 1.



WITNESSES

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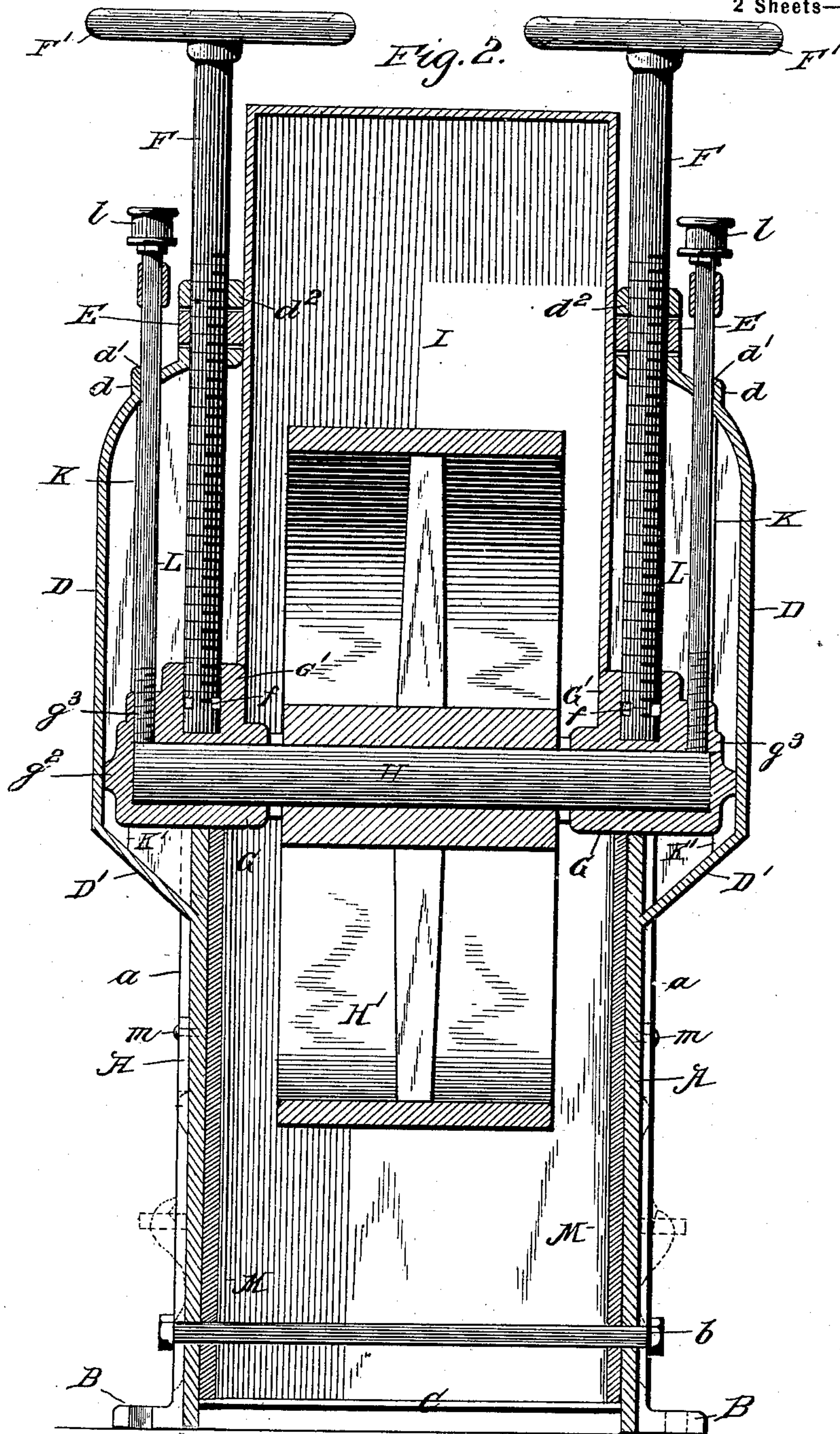
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WITNESSES

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UNITED STATES PATENT OFFICE.

CHRISTOPHER W. LEVALLEY, OF MILWAUKEE, WISCONSIN.

ELEVATOR-BOOT.

SPECIFICATION forming part of Letters Patent No. 661,879, dated November 13, 1900.

Application filed April 4, 1899. Serial No. 711,750. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Elevator-Boots, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The principal object of my invention is to construct the boot of an elevator in such manner that it shall be practically dust-tight, while at the same time its shaft-bearings can be readily oiled and the desired adjustments
15 of the said bearings be effected without in any manner opening the inclosing walls or casings, whereby any escape of dust or other particles of the material being elevated into the surrounding air is effectually prevented,
20 as will be fully set forth hereinafter.

Having thus explained the general character of the improvement, I will proceed to describe one mode in which I propose to carry it into effect.

25 Like reference-letters indicate similar parts in all the drawings.

Figure 1 is a side elevation of the lower part of an elevator embodying my invention. Fig. 2 is a vertical section, enlarged, taken on the line $x x$, Fig. 1. Fig. 3 is a horizontal
30 section taken on line $z z$, Fig. 1. Fig. 4 is a vertical section taken on the line $y y$, Fig. 3, looking in the direction of the arrow on said Fig. 3. Fig. 5 is a side elevation of the parts
35 shown in Figs. 3 and 4.

A A' A' A² A³ represent one of the side walls or casing-plates, of which the sections A' A' receive the lower ends of the elevator-legs, to which the overlapping flanges $a' a'$
40 are or may be screwed in the usual manner. The section A² projects some distance above the horizontal line of the adjacent sections A' A' and constitute the lower parts of the side walls of a housing which preferably practically occupies the full width of the space between the lower ends of the elevator-legs.
45 The section A³ projects out beyond the elevator-leg of that side to receive the inchute, as is customary in boots of this sort. I usually cast a reinforcing bead or rib a at the
50 outer edge of the side wall.

B is the base of the side wall, with holes for the reception of bolts.

B' represents a door arranged to close an opening in the lower part of the elevator-boot, 55 provided for the purpose of cleaning out the boot. It is secured in place in any suitable manner.

C is a curved plate, preferably of sheet metal, which forms the bottom wall of the 60 boot. It is held in place in any suitable way, as by means of the bolts b , which pass through the side walls of the casing.

$c' c'$ are projecting ends of the curved plate C, which are adapted to overlap the adjacent 65 ends of the inchute and of one leg of the elevator.

Each casing-plate has a supplemental housing D D' cast integral therewith to receive one of the shaft-boxes and is provided with 70 an opening d' in its upper face for an oil-tube, to be described. The extreme upper portion of this housing is expanded transversely, so as to form inclosing walls of a nut-receiver d^2 , in which is seated loosely a nut E, which is 75 held from rotation by contact with the receiver-walls.

F is a screw-shaft supported vertically in the said nut, with a hand-wheel F' at its upper end. At the lower end of the screw there 80 is a shaft-bearing G G', of which the part G is fitted to receive one end of the ordinary pulley-shaft H, the upward extension G' being provided with a socket g to receive the lower end of the screw-shaft, which is se- 85 cured therein so that it can be rotated, but cannot be withdrawn therefrom, a convenient way of doing that being shown as consisting of set-screws $g' g'$, mounted in the part G', with their ends entering a circumferential 90 groove f in said shaft near its lower end; so that by rotating the shaft in the nut E the bearing can be adjusted vertically, as may be found desirable, and from an examination of the drawings it will be readily understood 95 that the pulley H' may be drawn up more or less into the continuation I of the boot, which continuation is usually made of wood and wide enough to practically fill the space between the elevator-legs J J, and is secured at 100 its lower edges to the flanges $a^2 a^2$ of the casing-plates.

The end of shaft H fits closely the vertical wall at the inner end of the shaft-seat in the shaft-bearing, and the outer face of said bearing is or may be reduced in size, say, as indicated at g^2 , where it may be case-hardened, and, as is indicated in Fig. 2, those outer faces or ends of the shaft-bearings are in line with the shaft-axis and engage with the inner adjacent walls of the supplemental housings. They (the supplemental housings) serve as guides to support the shaft, the pulley, and the elevator-belt against any to-and-fro movement on the line of the shaft-axis. To prevent undue movement of the same parts on a line at right angles to the shaft-axis, I propose to employ vertical guides or ways upon opposite sides of the shaft-bearings, and one convenient construction for such purpose is illustrated at K K, consisting of plates or ribs cast integral with or attached to the casing-plates or walls of the supplemental housing, as shall be found most desirable in each particular form or size of boot.

L L are oil-tubes provided at their upper ends with closing-cups or grease-cups to contain a lubricant $l l$ and fitted to slide up and down in the openings $d' d'$ of the supplemental housings, the lower ends of the oil-tubes being preferably screw-threaded where they are seated in suitable openings $g^3 g^3$ of said shaft-bearings, so as to rise and fall therewith when the screw-shafts are turned in the proper direction.

As the elevator-legs and the inchute may be of any usual or approved material and construction, they need not be described in detail.

The interior of the boot in whole or in part may be lined with a relatively thin facing of chilled iron, as is indicated by M M, such lining being more important at such places as will be subject to abrasion when the material to be handled is iron ore or something of a similar character. The lining M may be secured to the outer supporting parts by means of screws or rivets $m m$ or their equivalents, as indicated, and may be removed and replaced at will.

By an examination of the drawings in con-

nection with the above description it will be understood that all the operative parts are inclosed within a practically dust-proof casing and housing and may be adjusted and oiled without opening or moving any part of such casing or housing and that the parts through which oil can be introduced are outside of the casing or housing, but maintain a fixed relation to and travel up and down with the bearings which are to be lubricated. It will also be seen that all the parts of the casing-plate and the supplemental housing and the guides or ways for the shaft-bearings and the supports for the upper ends of the screw-shaft and the oil-tube upon either side of the boot are made in one integral piece of metal, or at least their construction and function permit of their being so made.

I do not wish to be limited to the precise details of construction herein illustrated, because many modifications will suggest themselves to a person skilled in the art without departing from the spirit of my invention or going outside of its scope.

What I claim is—

1. An elevator-boot having its side walls provided with housings D to receive the shaft-bearings, the said housings being provided with ribs or flanges K adapted to engage with the sides of the bearings at their outer ends, substantially as set forth.

2. The combination with an elevator-boot provided with housings D, of a turning pulley for the elevator arranged within the boot, the shaft on which the pulley is mounted and the bearings for the shaft extending into the said housings, the ends of the bearings being closed and reduced in size, as at g^2 in line with the shaft, the said reduced portions of the bearings constituting bearing-surfaces adapted to engage with the outer walls of the said housings, substantially as set forth.

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

CHRISTOPHER W. LEVALLEY.

Witnesses:

WM. C. FRYE,
V. I. KLOFANDA.