

No. 661,242.

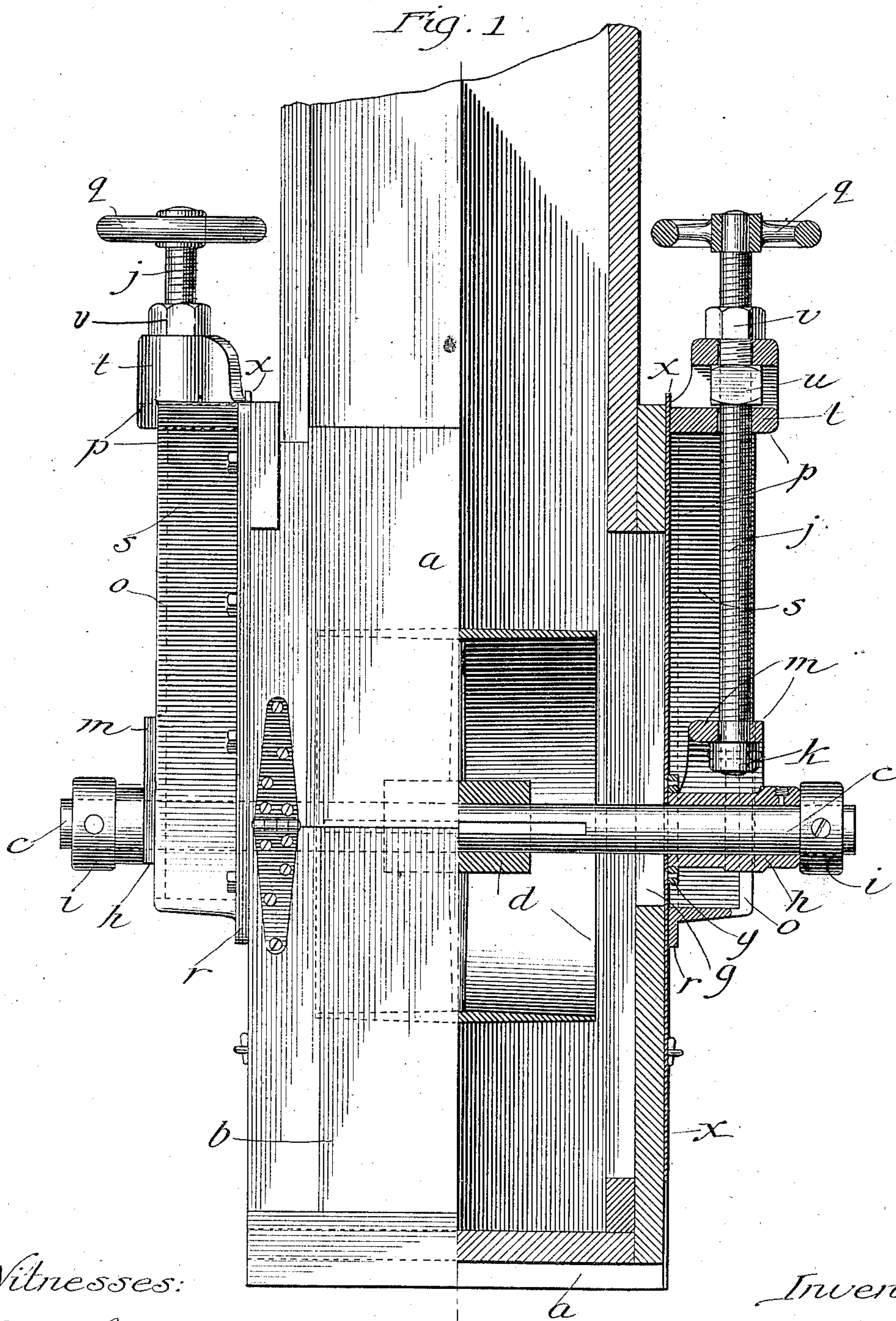
Patented Nov. 6, 1900.

H. J. FLOOD.
ELEVATOR BOOT.

(Application filed Jan. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

Frank S. Blanchard

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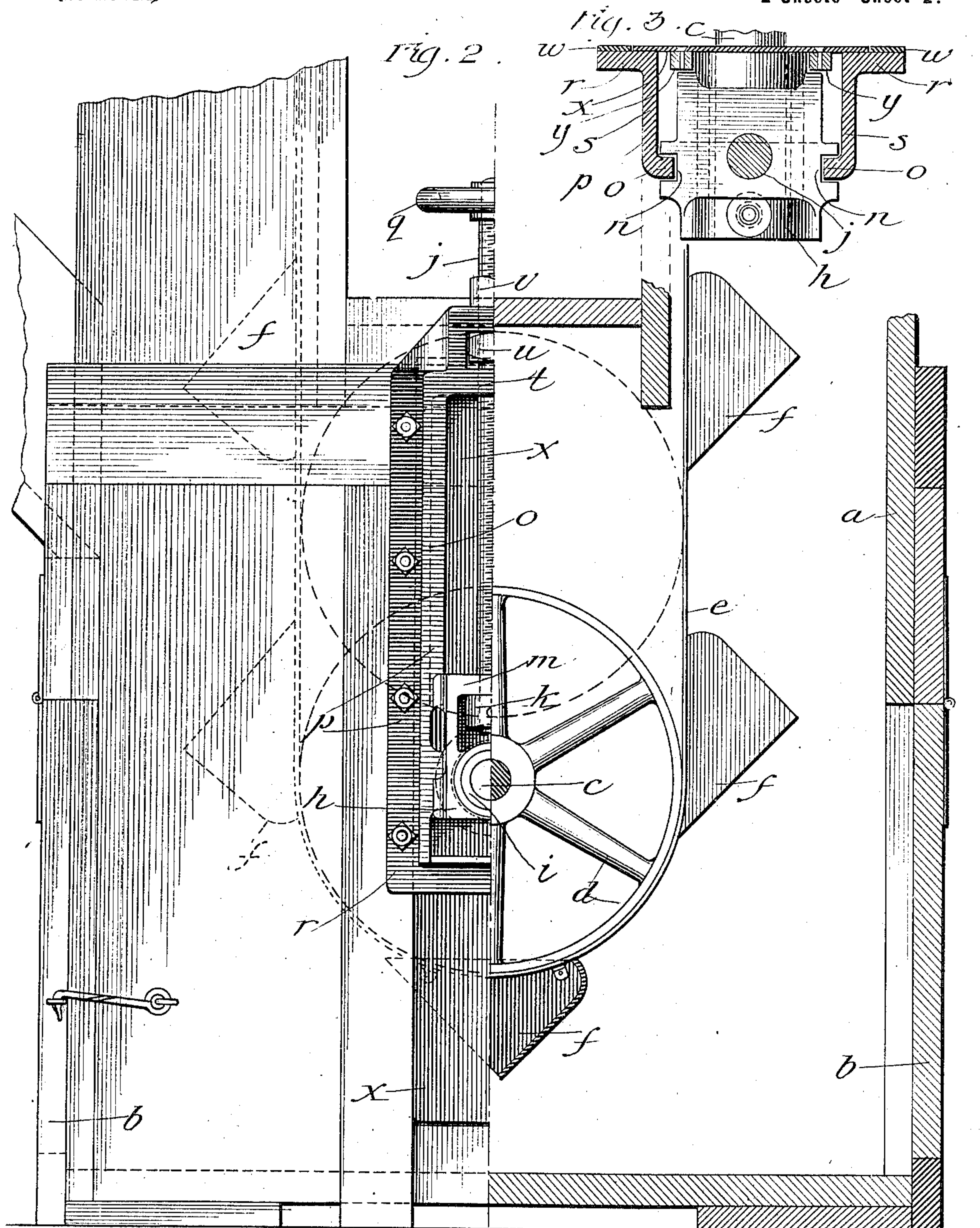
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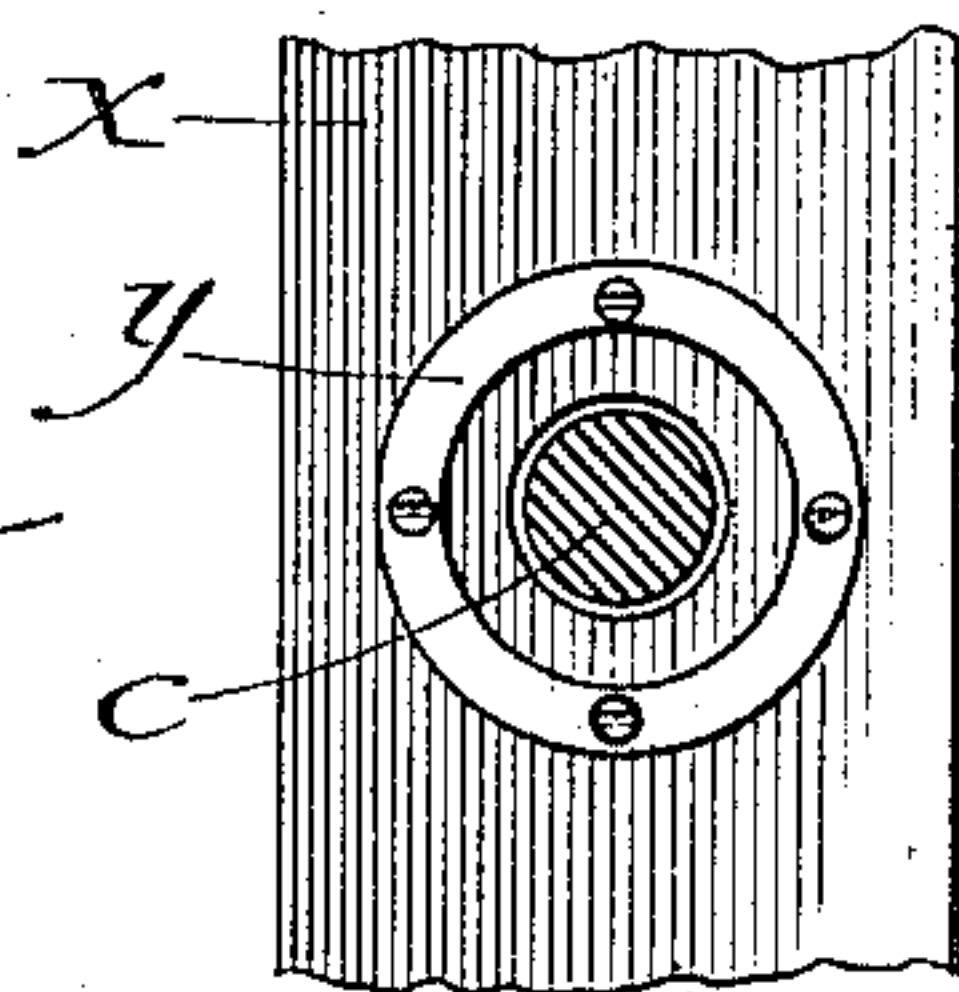


Fig. 4. Inventor:
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UNITED STATES PATENT OFFICE.

HARRY J. FLOOD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHISHOLM, BOYD & WHITE COMPANY, OF ILLINOIS.

ELEVATOR-BOOT.

SPECIFICATION forming part of Letters Patent No. 661,242, dated November 6, 1900.

Application filed January 24, 1900. Serial No. 2,616. (No model.)

To all whom it may concern:

Be it known that I, HARRY J. FLOOD, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Elevator-Boots, of which the following is a specification.

My invention relates to elevator-boots of the type used in connection with mechanism for hoisting and conveying grain and various materials employed in the industrial arts.

As usually constructed heretofore, the outer framework or casing of the boot is slotted to permit the adjustment of the pulley and pulley-shaft, and a portion of the material to be elevated escapes through the slots in said casing, either passing entirely out of the boot or in some constructions being collected in an outer hood or receptacle. In the latter case said material comes into contact with the shaft-boxes, causing great annoyance and also danger if said material is inflammable.

The object of my invention is to provide means whereby the side slots may be closed at all times and in all positions of the shaft, thereby preventing said material from escaping or coming into contact with the shaft-bearings. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in end elevation of an elevator-boot embodying my invention. One-half of said boot is shown in vertical section taken through the axis of the pulley-shaft. Fig. 2 is a view of the boot in side elevation, one-half being shown in section taken on a vertical plane located between the boot-pulley and the portion of the casing nearest the observer. Fig. 3 is a plan view of a take-up box wherein the shaft is journaled and also shows in horizontal section the take-up frame and sliding cover. Fig. 4 is a face view of a portion of one of the sliding covers and shows the relative positions of the shaft and the ring, whereby said cover is supported upon the take-up boxes.

Similar letters refer to similar parts throughout the several views.

The outer casing *a* constitutes the main framework of the boot and is provided with hinged doors *b b* for affording access to the

interior thereof. Within said casing *a* and mounted upon the shaft *c* is the boot-pulley *d*, around which passes the belt *e*. To said belt are attached the elevator-buckets *f f*, which convey the material from the boot to the point of delivery in the usual manner. In order to maintain the most advantageous working tension in the belt *e*, it is necessary at intervals to adjust the position of said pulley and shaft within said casing, and to allow for this adjustment said casing is provided with the slots *g*, wherethrough said shaft projects. Said shaft *c* is journaled in the take-up boxes *h h* and is secured in its proper position therein by means of the set-collars *i i*. Said boxes *h h* lie without and on opposite sides of the casing *a* and are supported and adjusted by means of the take-up screws *j j*. The connection between said boxes and take-up screws is effected by means of the collars *k k*, which are securely attached to the lower extremities of said screws *j* and are immovable longitudinally thereon. Said collars *k* bear against the lower surface of the arches or cross-bars *m m*, which latter are formed upon said take-up boxes above the journal-bearings therein and constitute an integral part of said boxes. Said bars *m* are apertured, so as to afford a free passage for the take-up screws *j*, but engage and bear upon the said collars *k* on said screws. Said boxes *h* are held in position and are guided in their travel during adjustment by the grooves or rabbets *n n*, formed in the lateral edges of said boxes, said grooves receiving the tongues or flanges *o o* of the take-up frames *p p*, as shown in detail in Fig. 3 of the drawings.

The adjusting or take-up screws *j j*, above mentioned, support the boxes *h h* and consist of threaded rods or shafts of a length somewhat greater than the distance through which the pulley *d* is adjustable. Said screws determine the position of the boxes *h h* within the take-up frames *p p* and are operated by means of the hand-wheels *q q*, secured to their upper extremities. Said take-up frames are preferably elongated box-like metallic castings having two opposite sides thereof open to permit the adjustment of the shaft *c*. Said frames *p* are provided with the laterally-projecting flanges *r r*, by means whereof said

frames are bolted or affixed to the boot-casing *a*. The location of said take-up frames is such that the open sides thereof are in juxtaposition to the slots *g* in said casing, and the width of said frames or the distance between the parallel sides *s s* thereof is sufficient to receive both the shaft *c* and the take-up boxes *h h*, wherein said shaft is journaled.

10 The lugs or bosses *t t* constitute an integral portion of the frames *p p* and extend between the sides *r r* of the latter at the upper extremities thereof. Said bosses form the supports for the take-up screws *j j* and are apertured, so as to receive the same without coming into contact therewith. The bosses *t t* are horizontally chambered for receiving and preventing the rotation of the nuts *u u*, whereby said screws may be locked in any desired position. The nuts *v v* occupy a position upon said screws *j j* and have a bearing upon the upper surface of said bosses *t t*. Said nuts *v v* cooperate with the said nuts *u u* to lock said screws *j j* in position.

25 Lying between the boot-casing *a* and the take-up frames *p p* are the strips *w w*, which are of a thickness slightly greater than the thickness of the sliding covers *x x*. Said strips extend along the lateral edges of said frames, and, in conjunction with said casing and frames, constitute guides wherein said covers may travel. Said covers *x x* consist of plates, preferably of metal, and are somewhat wider than the slots *g* in the boot-casing *a*. Said covers are so apertured as to receive the shaft *c* and closely approach the same without making contact therewith, as shown in Fig. 4, thereby permitting the free rotation of said shaft and yet preventing the passage of material in either direction through said covers. Herein lies an important feature of my invention, for by this construction none of the material within the boot-casing can escape therefrom nor gain access to any part of the shaft-bearing. Moreover, every part of the take-up or adjusting mechanism is wholly outside of the boot-casing *a* and may therefore be easily kept in suitable working condition.

50 The covers *x x* are maintained in their proper position relatively to said shaft *c* by means of the annular collars *y*, which are screwed or otherwise fastened to said covers and encircle and have a bearing upon the take-up boxes *h h*. Said covers *x x* therefore move with said shaft and take-up boxes when the boot-pulley *d* is being adjusted. The length of said covers is such as to extend to the upper extremity of the casing-slot *g* when the pulley *d* is at its lowest point of adjustment and to the lower extremity of said slot when said pulley is at the highest point of its adjustment. Said slot *g* is therefore completely closed in all positions of said pulley.

65 What I claim as new, and desire to secure by Letters Patent, is—

1. In an elevator-boot having slots in the

boot-casing, and a pulley-shaft vertically adjustable therein, slot-covers consisting of plates vertically adjustable with the boot-shaft; said covers extending substantially the entire length of said slots for all positions of said shaft; and said covers forming individual parts of said boot separate from said shaft, and parts for supporting and adjusting said shaft. 75

2. In an elevator-boot, the combination of a slotted boot-casing, a pulley-shaft extending through the slots of said casing, vertically-adjustable boxes for supporting said shaft, and covers adjacent to said casing and extending across the slots therein, said covers being separate from and supported by said boxes. 80

3. In an elevator-boot, the combination of a slotted boot-casing, a pulley-shaft extending through the slots in said casing, vertically-adjustable boxes for supporting said shaft, covers for closing the casing-slots, said covers being separate from and supported by said boxes, and frames rigidly secured to the sides of said casing at the said slots therein, said frames serving as guides for said covers, and affording means for adjustably supporting said boxes and covers. 85 90 95

4. In an elevator-boot, a casing having slots for permitting the vertical adjustment of the pulley-shaft, boxes for supporting said shaft, slot-covers adjacent to the outside of said casing, said covers having apertures of a diameter substantially equal to the diameter of said boot-shaft for permitting the passage of said shaft, and means for supporting said covers free from said shaft in a position between said casing and said shaft-boxes. 100 105

5. In an elevator-boot, a casing slotted to permit the adjustment of the boot-shaft, boxes for supporting said shaft, and slot-covers lying between said casing and said boxes, said covers closely encircling said shaft and thereby preventing the access of material from within said casing to said boxes, and rings or collars secured to said covers and resting upon said boxes, thereby supporting said covers upon said boxes. 110 115

6. In an elevator-boot, the combination of a slotted casing; frames forming separate individual parts of said boot and being rigidly secured to the outside of said casing at the slots therein; slot-covers held in proximity to said casing by said frames, said covers constituting individual parts of said casing; and vertically-adjustable shaft-boxes located outside of said casing and covers, and forming supports for said covers; and means for adjustably suspending said boxes in said frames. 120 125

7. In an elevator-boot, the combination of a slotted boot-casing, a pulley-shaft, covers for closing the casing-slots said covers forming individual parts of said boot, boxes for supporting said shaft in said covers, said boxes having arches or cross-bars formed thereon which are apertured to afford a passage for take-up screws, take-up frames rig- 130

idly secured to the sides of said casing, said frames having bosses suitably apertured to afford a passage for said screws, said bosses being chambered to receive and prevent the
5 rotation of nuts upon said screws, and take-up screws as aforesaid, having collars at or near their lower extremities for supporting the arches or cross portions of said boxes, said screws extending upward through said

apertured bosses, and being adapted to be supported thereon by means of nuts, one nut being located above the boss, and the second nut lying within the chamber thereof, and being thereby prevented from rotating.

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Witnesses:

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