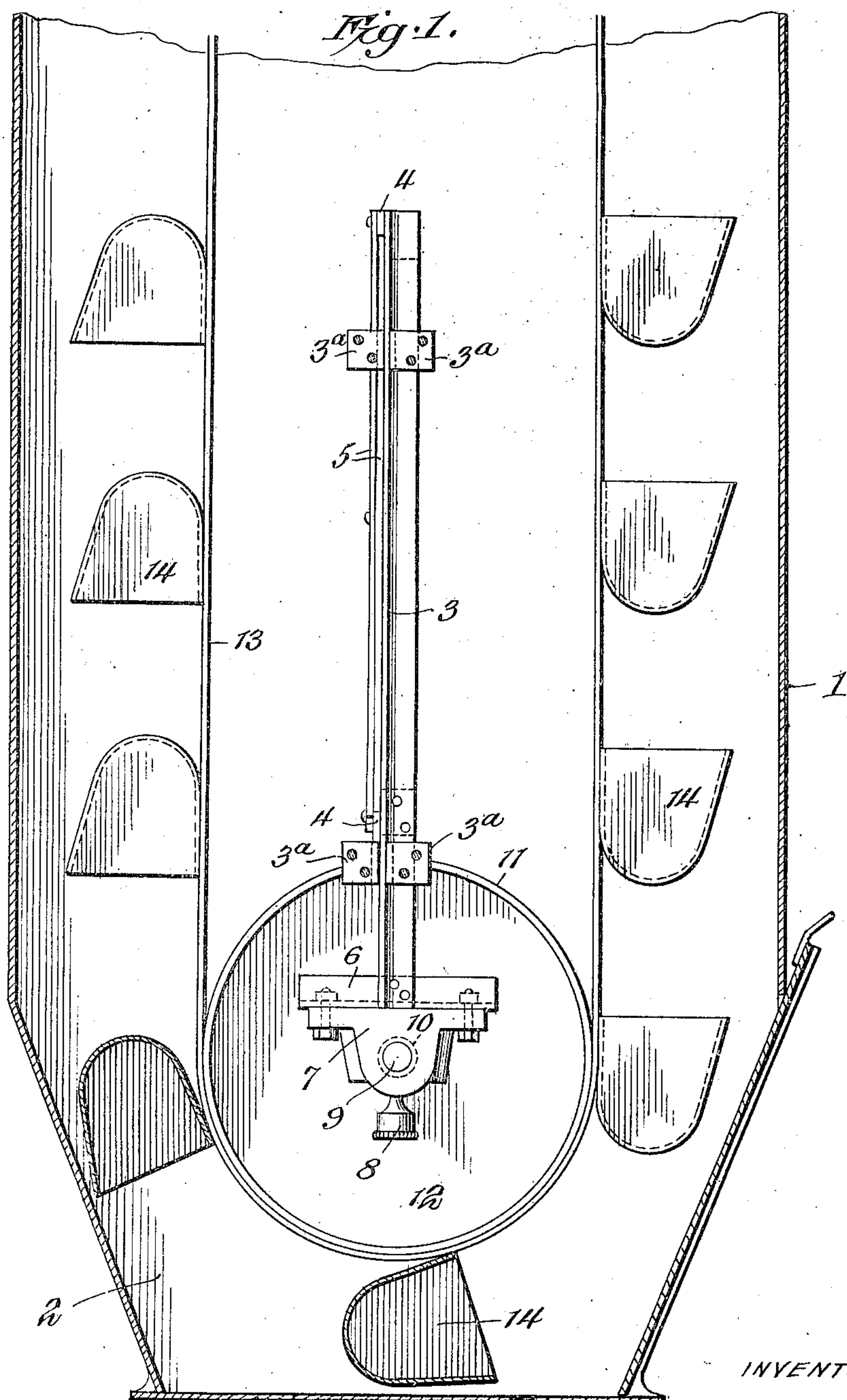


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C. M. WALL.
SELF ADJUSTING ELEVATOR BOOT CONTROL.
FILED MAR. 30, 1922.

2 SHEETS—SHEET 1.



INVENTOR

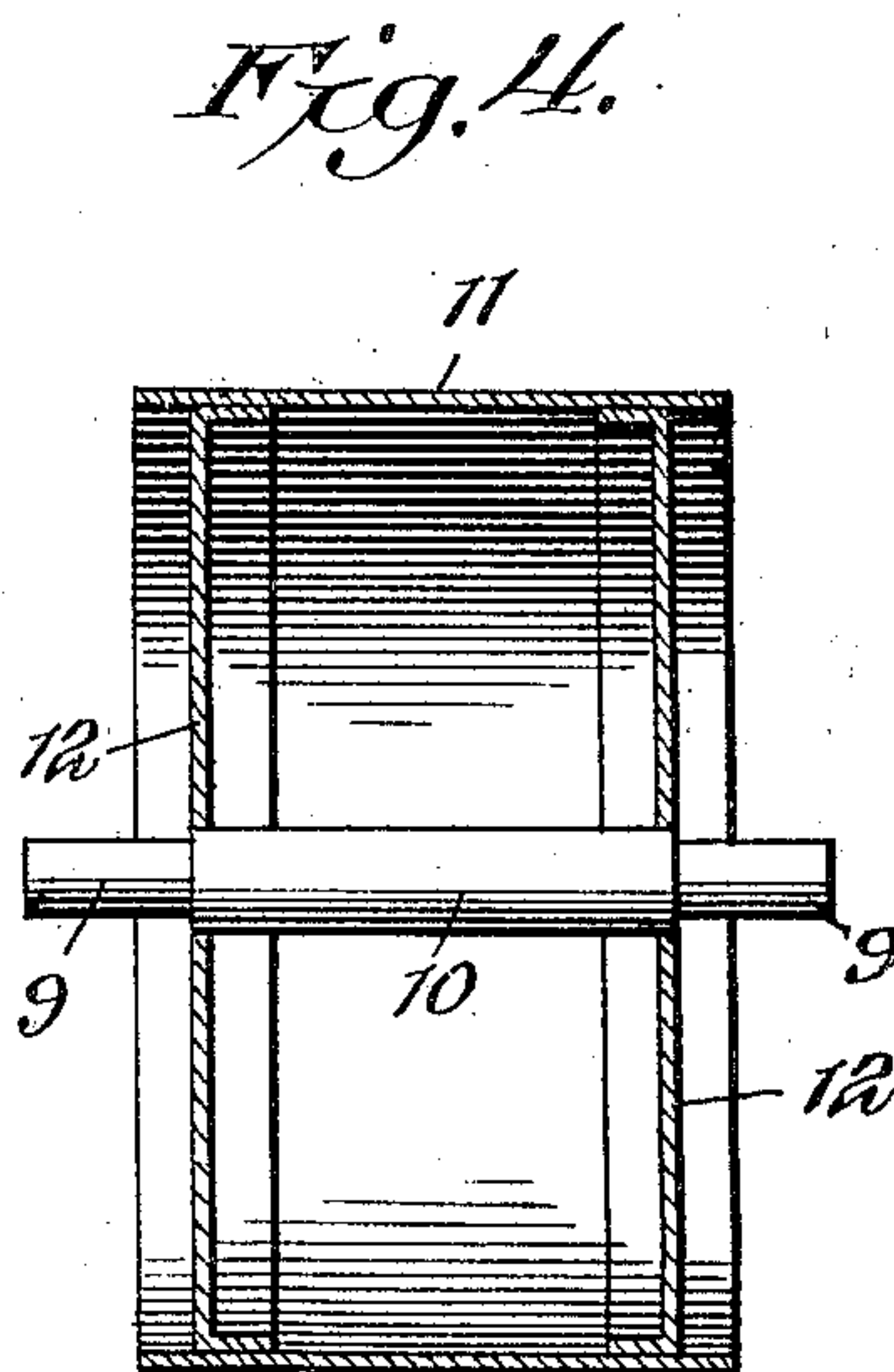
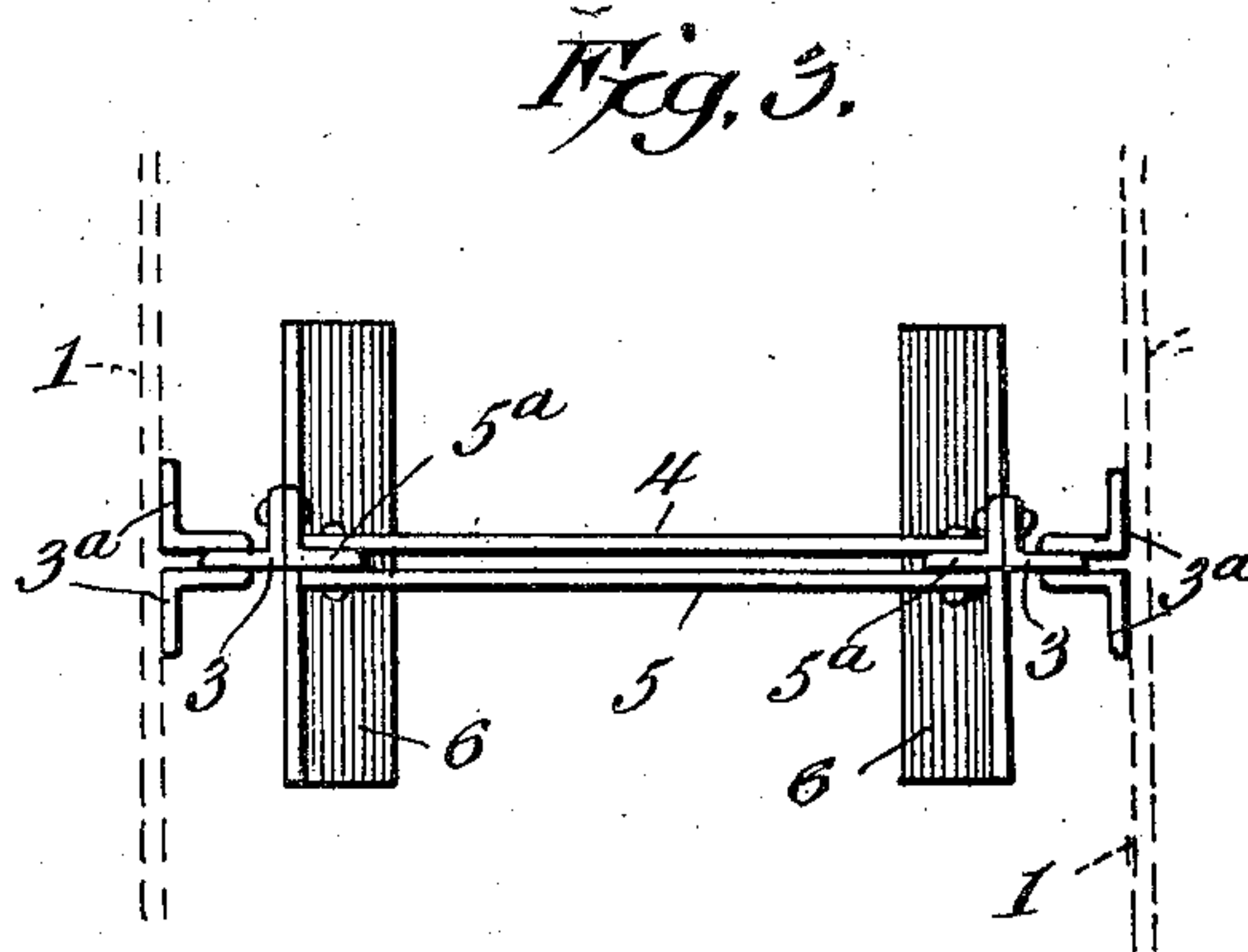
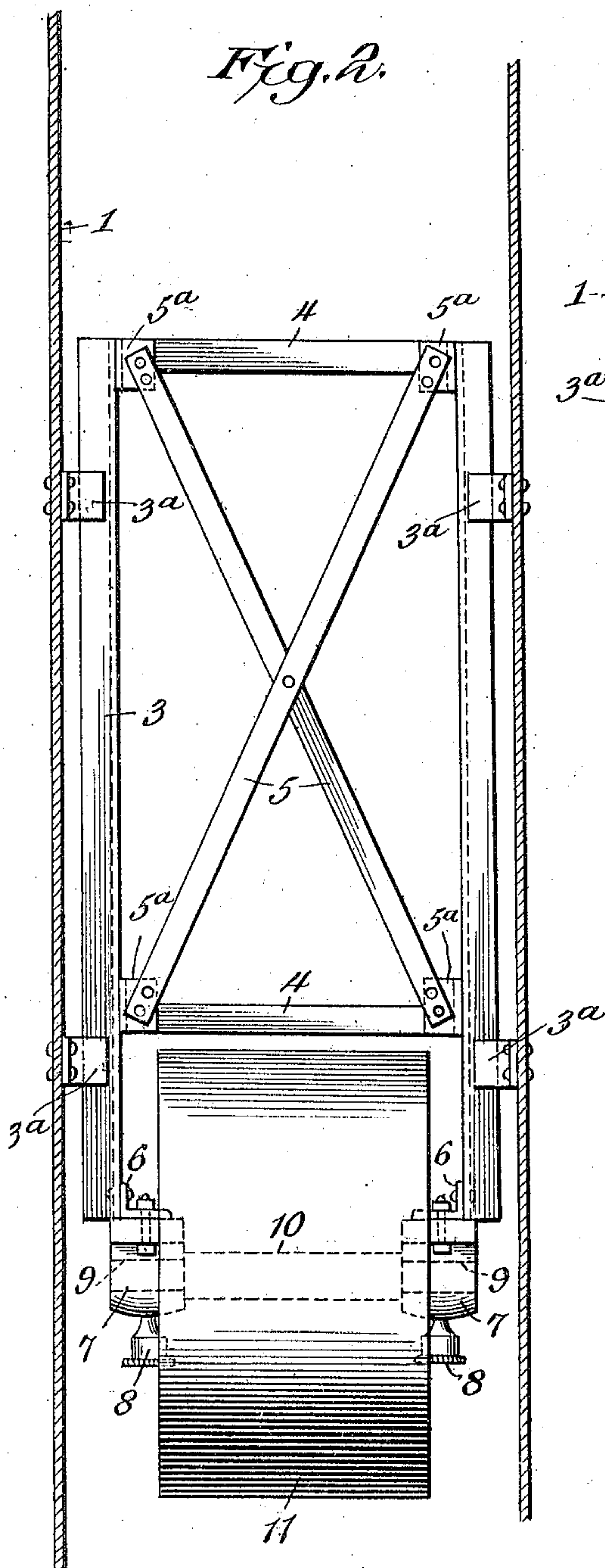
BY Charles M. Wall
James M. Wall
ATTORNEYS

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2 SHEETS—SHEET 2.



INVENTOR,
BY Charles M. Wall
James J. Sheehy & Co.
ATTORNEYS.

Patented Jan. 2, 1923.

1,441,137

UNITED STATES PATENT OFFICE.

CHARLES M. WALL, OF CURWENSVILLE, PENNSYLVANIA.

SELF-ADJUSTING ELEVATOR-BOOT CONTROL.

Application filed March 30, 1922. Serial No. 548,086.

To all whom it may concern:

Be it known that I, CHARLES M. WALL, a citizen of the United States, residing at Curwensville, in the county of Clearfield and State of Pennsylvania, have invented new and useful Improvements in Self-Adjusting Elevator-Boot Controls, of which the following is a specification.

My present invention pertains to elevating devices, and it contemplates the provision of a device through which the elevating belt will be self adjusting, and any shrinkage or slacking of the belt during operation will be automatically taken care of.

With elevating means now in the market, the control pulley or tightener is held either rigid or is screw adjusted but neither of these forms is satisfactory because where the travelling carrier is a belt and the boot pulley is rigidly held in one position, the belt will stretch and drop away from the pulley and run wild in the boot and shortly wear through the pulley or casing. If the pulley is adjustable by screws on the outside of the casing, it is almost impossible for an attendant to adjust the pulley to align with the belt since the attendant cannot see what has taken place in the casing. This also holds good if the tightener is a sprocket wheel in lieu of a pulley. My device is therefore so constructed that the belt and pulley cannot get out of alignment and the crown face of the pulley prevents the belt from striking the sides of the casing.

The invention in all of its details will be fully understood from the following description and claim, when the same are read in connection with the drawings, accompanying and forming part of this application, in which:

Figure 1 is a view partly in side elevation and partly in elevation illustrating the elements of my novel device.

Figure 2 is an end elevation illustrating my novel means with the elevating buckets or conveyors removed.

Figure 3 is a view illustrating the elevating casing and my novel belt adjusting frame and its relative arrangement with respect to the casing.

Figure 4 is a view illustrating in detail the arrangement of the master pulley on the shaft thereof.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

My novel means are arranged and secured within the casing 1 having the boot or lower portion 2, in one wall of which is arranged in any approved manner, a hinged portion through which access may be gained to the lower or boot portion of the casing.

Mounted with respect to the frame 1 and movable with respect thereto is a device comprising the upstanding brace rods 3 and upper and lower brace rods 4, and in order to firmly secure these members 3 and 4, to each other and prevent collapse thereof, I provide the cross bars or braces 5. Secured between the brace rods 4 and 5 by means of rivets or other fastening devices are members 5^a of L-shaped construction that are also riveted to the L-shaped bars or brace members 3. Secured to the walls of the casing 1 at intervals in the length thereof, are guide brackets 3^a, and these brackets are so constructed that the brace members 3 travel in and are confined by said brackets 3^a during upward and downward movement of the entire frame, as will be set forth hereinafter.

At their lower ends, the members 3 are riveted or otherwise secured to the depending L-shaped brackets 6 that serve to receive bolts or other fastening means through which bearings 7 are secured thereto and arranged on the bearings are grease cups 8 as shown.

A master pulley 12 or if desired a sprocket wheel or other elevating means keyed or otherwise fixedly secured on the shaft 10, having the ends 9 of decreased circumference, is adapted to rotate the belt 13 or if desired a chain or other means having buckets 14 and it will be readily seen that during rotation of the pulley 12, the portions 9 of shaft 10 will likewise be free to rotate in the bearings 7. The pulley 12 is preferably crown-faced to prevent slipping off of the belt or conveyor but not so shown in the drawing.

It will be gathered from the foregoing that during operation of the elevating means 12, the belt or if chain is employed will travel thereover with a view to elevating the buckets 14, and during such operation, it frequently occurs that the strain imposed upon the belt often causes same to become slack and a great deal of lost motion of consumption of power without deriving any benefit therefrom. On the other hand, it frequently happens that the belt will shrink

during certain kinds of weather and from non-use, and this condition will very often cause the belt to break when sudden strain is imposed thereon. When for any reason, 5 the belt either shrinks or becomes slack, the master pulley will be elevated and lowered due to the fact that strain imposed upon the belt due to shrinkage will lift the pulley upwardly and naturally the bearing as well 10 as the elements of the frame will also be lifted upwardly with respect to the casing 1.

However, the slack that takes place in the belt will not decrease the efficiency of the motive power due to the fact that during 15 such slacking of the belt, the pulley will be pulled downwardly by the weight of the frame etc.

It will be noted that the guide members will assure the even upward and downward 20 movement of the frame members, and that the device will maintain the belt under an even tension irrespective of the condition of the belt, and hence the device automatically holds the belt at proper tension and 25 greatly reduces the liability of lost energy and assures the economical operation of the elevator.

The invention is extremely simple in construction and operation and comprises no 30 delicate parts such as are liable to become inoperative after a short period of use, and because of its simplicity the necessity of repair or the need of an attendant for the repair of the belt is eliminated.

I would have it understood that hand- 35 holes or other provision may be made to enable an attendant to reach the grease cups 8 for re-filling.

Moreover, gears, sprocket-wheels, chains or any form of elevating construction may 40 be used as the elevating belt and pulley shown are merely for purposes of illustration.

Having described my invention, what I claim and desire to secure by Letters-Patent 45 is:—

In means for the purpose set forth, the combination of a boot, a frame mounted therein, guides secured to the frame and equi-distantly mounted on the frame, a 50 frame comprising side and end bars as well as cross brace members; said side bars adapted to travel in the guides with respect to the first frame, a shaft depending from the lower end of the side bars, a pulley mounted 55 on the shaft, a conveyor belt adapted to travel over the pulley, and buckets secured to the belt whereby the contents of the boot may be elevated by the buckets and slack of the belt due to strain and wear may be 60 automatically compensated for.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES M. WALL.

Witnesses:

A. G. WOODWARD,
WILLIAM L. DALE.