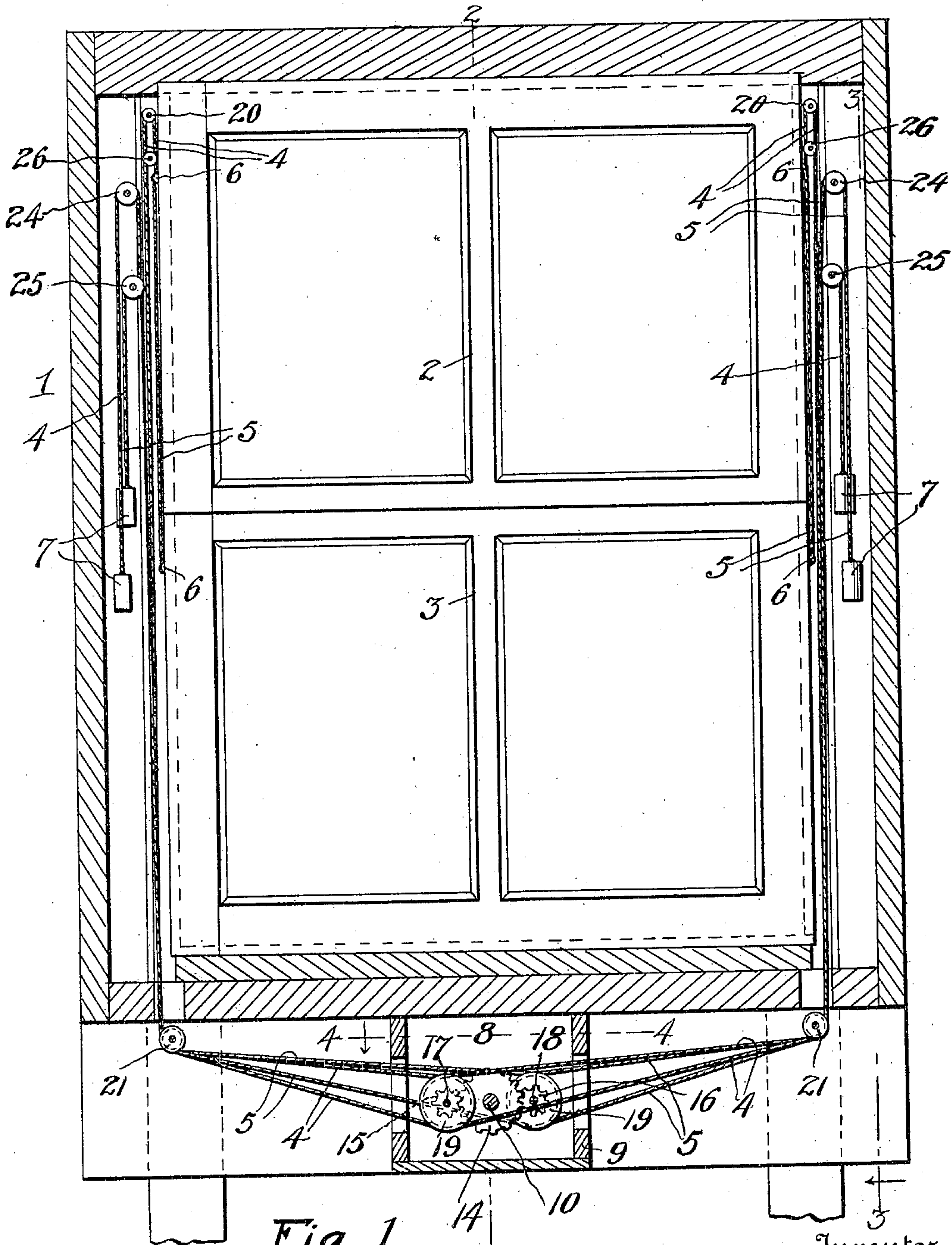


No. 838,515.

PATENTED DEC. 18, 1906.

J. L. BEST.
SASH BALANCE.
APPLICATION FILED JAN. 18, 1906.

2 SHEETS—SHEET 1.



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2 SHEETS SHEET 2.

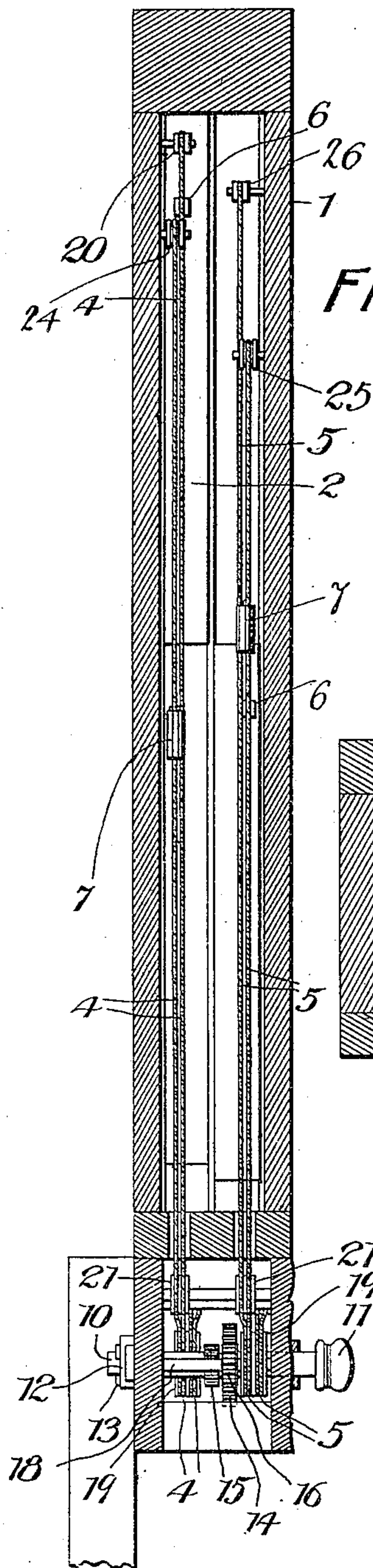


Fig. 3.

Fig. 2.

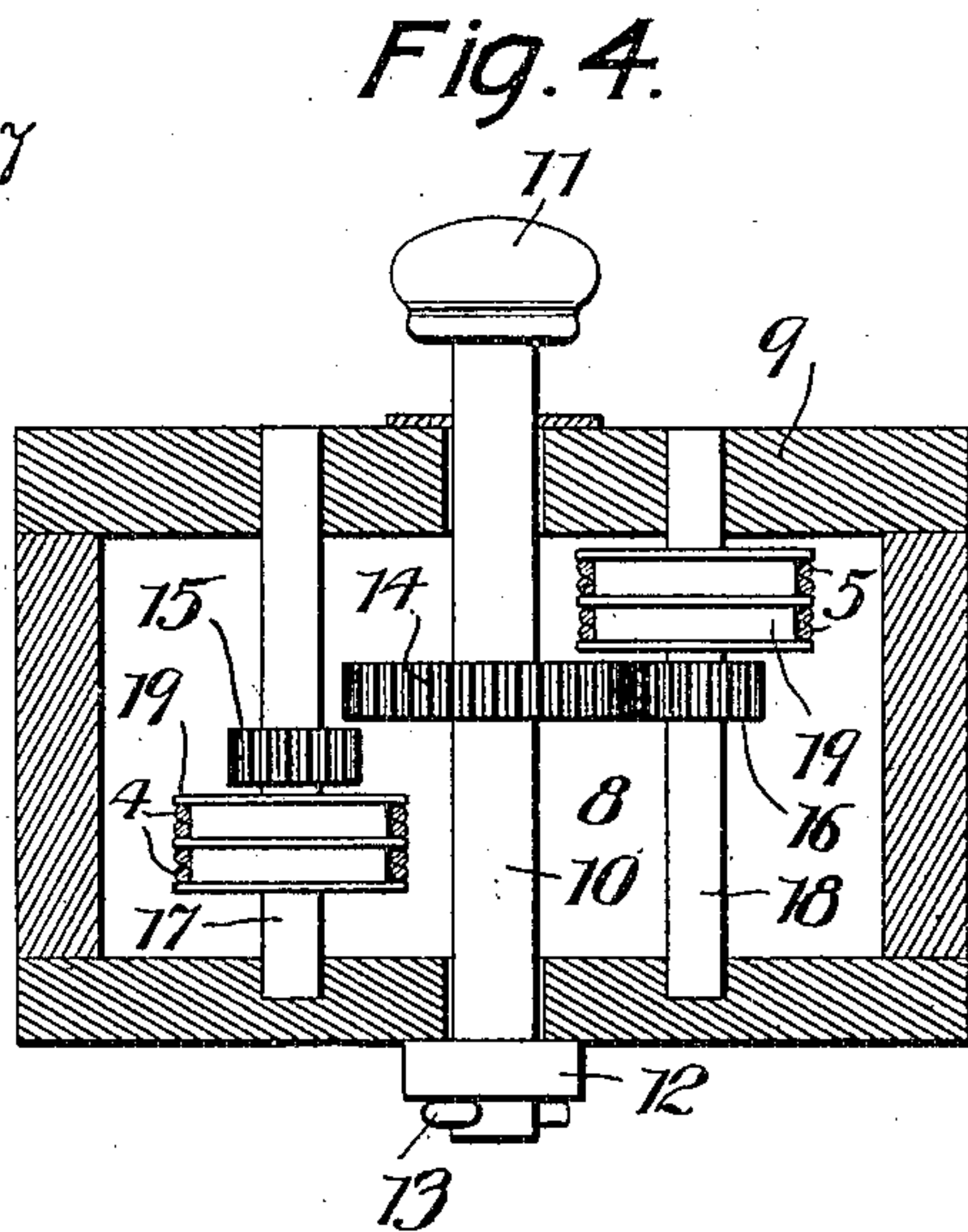
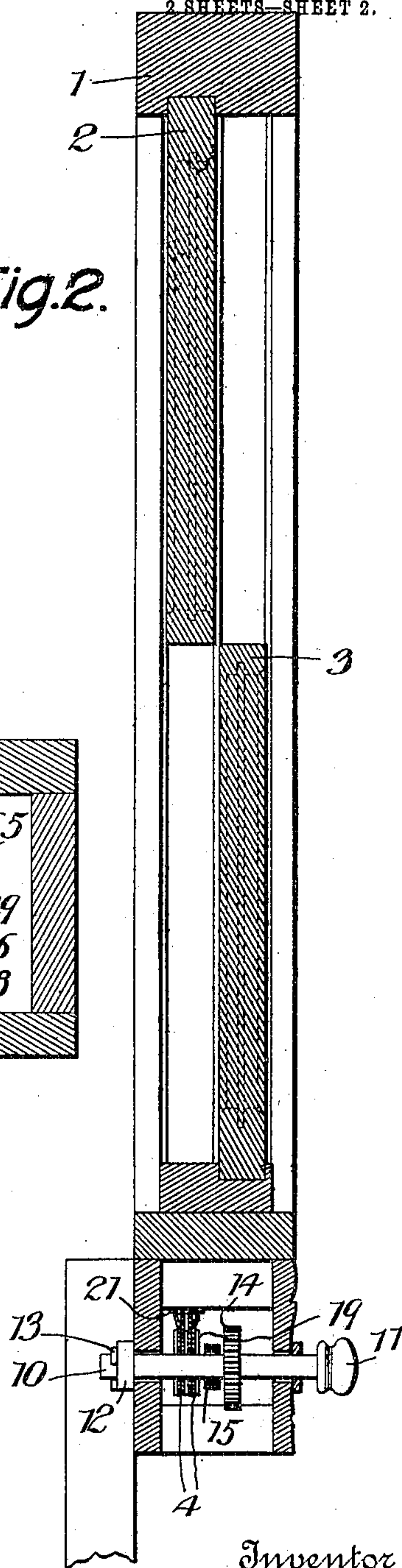


Fig. 4.



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SASH-BALANCE.

No. 838,515.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed January 18, 1906. Serial No. 296,689.

To all whom it may concern:

Be it known that I, JAMES L. BEST, a citizen of the United States, residing at Bremerton, in the county of Kitsap and State of Washington, have invented certain new and useful Improvements in Sash-Balances; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in balancing devices for window-sashes; and it consists of the novel construction, combination, and arrangement of devices hereinafter described and claimed.

The object of the invention is to provide a simple, inexpensive, durable, and efficient balancing device by means of which the window-sashes may be quickly and easily raised and lowered by turning a shaft conveniently arranged beneath the window-sill or at any other suitable point.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view through a window-frame, showing my improvements applied thereto. Fig. 2 is a vertical transverse sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a similar sectional view taken on the line 3 3 in Fig. 1, and Fig. 4 is a horizontal sectional view taken on the line 4 4 in Fig. 1.

Referring to the drawings by numeral, 1 denotes a window-frame of the usual form and construction, in which are mounted upper and lower sliding sashes 2 3. These sashes are respectively supported by pairs of cables 4 4 5 5, each of which has one of its ends secured, as at 6, to one edge of one of the sashes, and upon its other end is a counterbalancing weight 7, which moves in the usual space in the sides of the frame 1. These cords, wires, cables, or the like 4 5 pass over suitable guide-pulleys and are adapted to be controlled by an operating device 8, which is preferably mounted in the frame beneath the window-sill. This device or mechanism 8 comprises a frame or support 9, which is mounted within the window-casing and has extending transversely through its center a main shaft 10. The latter has its forward end extending through the front of the win-

dow-casing beneath the window-sill, and secured upon it is a knob or handle 11 or any other suitable form of operating device. The shaft 10 is mounted to rotate freely and to have a limited longitudinal sliding movement in its bearings in the frame 9. This sliding movement is limited in one direction by the inner end of the knob 11, which engages the outer face of the window-casing, and in its opposite direction by a stop-collar 12, which is secured on the opposite end of the shaft by a cross-pin or the like 13 and which is adapted to engage the outer face of the frame or support 9. This sliding movement of the shaft 10 is provided so as to permit a gear-wheel 14, which is secured upon it, to be moved into mesh with either one of two pinions 15 16, which are secured upon shafts 17 18, mounted in the frame or support 9, as clearly shown in Fig. 4 of the drawings.

Each of the shafts 8 has secured upon it a pair of grooved pulleys 19, around which the cords, wires, or cables 4 5 are twice wound to permit them to be actuated when the shafts 17 18 are rotated. Each of the cords 4 has one of its ends secured at 6 to the upper sash 2 and is passed first over a guide-pulley 20 in the upper portion of the frame 1, then downwardly around one of a series of pulleys 21, mounted beneath the lower ends of the frame, as shown in Fig. 3, then twice around one of the pulleys 19, then back around one of the pulleys 21, then upwardly over a pulley 24, and has one of the weights 7 secured upon its depending end. Each of the cords 5, which support the lower sash 3, has one of its ends secured, as at 6, to one edge of said sash and is then passed upwardly over a pulley 26 in the side of the frame, then downwardly over one of the pulleys 21, then inwardly and twice around one of the pulleys 19, then outwardly over another one of the pulleys 21, then upwardly over a pulley 25, mounted in the frame, and has one of the weights 7 attached to its depending end. It will be observed upon reference to Fig. 4 that the two cords 4 are passed around the two pulleys upon the shaft 17 and that the two cords 5 are passed around the pulleys 19 on the shaft 18; so that the movement of the shaft 17 controls the upper sash and the movement of the shaft 18 controls the lower sash. By connecting and mounting the cords and pulleys in this manner it will be seen that when the shaft 10 is pulled outwardly, so that its gear 14 engages the pinion 15 and

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said shaft 10 is rotated by means of the handle or knob, the shaft 17 may be rotated, in either direction to either raise or lower the sash 4, and that when the shaft 10 is moved inwardly to disengage the gear 14 from the pinion 15 and to engage the former with the pinion 16 and the shaft 10 is rotated its movement will be imparted to the shaft 18, so that the cords 5 will be operated to cause the lower sash 3 to be either raised or lowered.

From the foregoing description, taken in connection with the accompanying drawings, the use and advantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claim.

If desired, ball-bearings may be provided for the shafts of the guide pulleys or rollers and also for the shafts in the casing or frame 9.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described window-frame hav-

ing the upper and lower sliding sashes and the upper and lower guide-pulleys for each side of each sash, the supporting-frame beneath the center of the window-frame, the slidable and revoluble shaft mounted in said supporting-frame and having a stop, a knob, and a gear, operating-pulleys mounted in said supporting frame on opposite sides of said shaft, and each provided with a pinion, said pinions being out of alinement and adapted to be alternately engaged by the gear when the shaft is moved, and the cords each having one end attached to one side of one of the sashes, then passed upwardly over one of the upper guide-pulleys, then passed downwardly under one of the lower guide-pulleys, then doubled and partly wound around one of the operating-pulleys, then passed under another lower guide-pulley, upwardly to and over another upper guide-pulley and having a weight at its opposite end.

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

JAMES L. BEST.

Witnesses:

ARTHUR HOLDEN

JAMES E. ANDERSON.