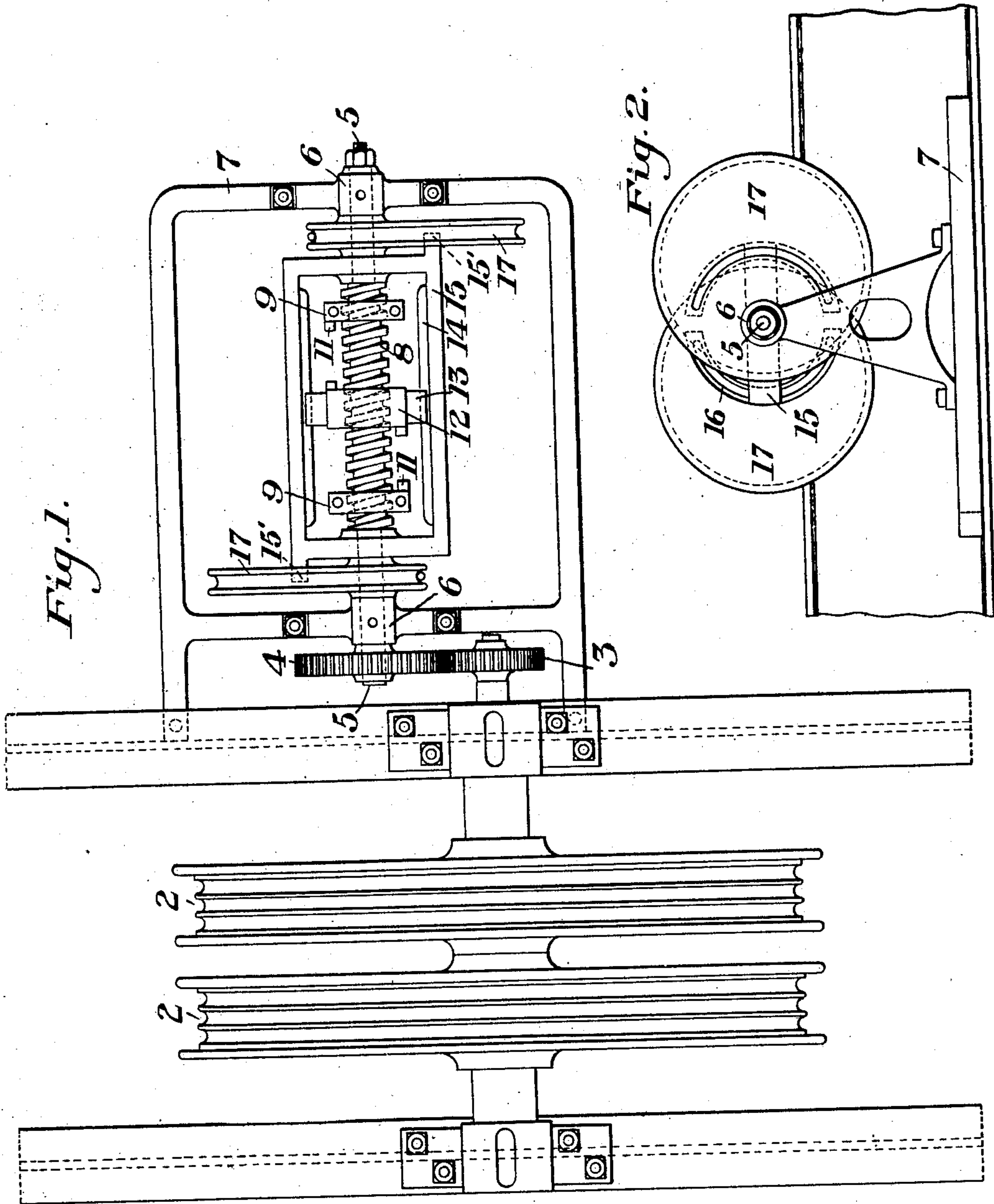


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CUT-OFF DEVICE FOR ELEVATORS.  
APPLICATION FILED APR. 18, 1906.

2 SHEETS—SHEET 1.



WITNESSES

R. A. Balderson  
Warren W. Swartz

INVENTOR

Walter B. Jones  
by Balderson & Swartz  
his attys

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2 SHEETS—SHEET 2.

Fig. 3.

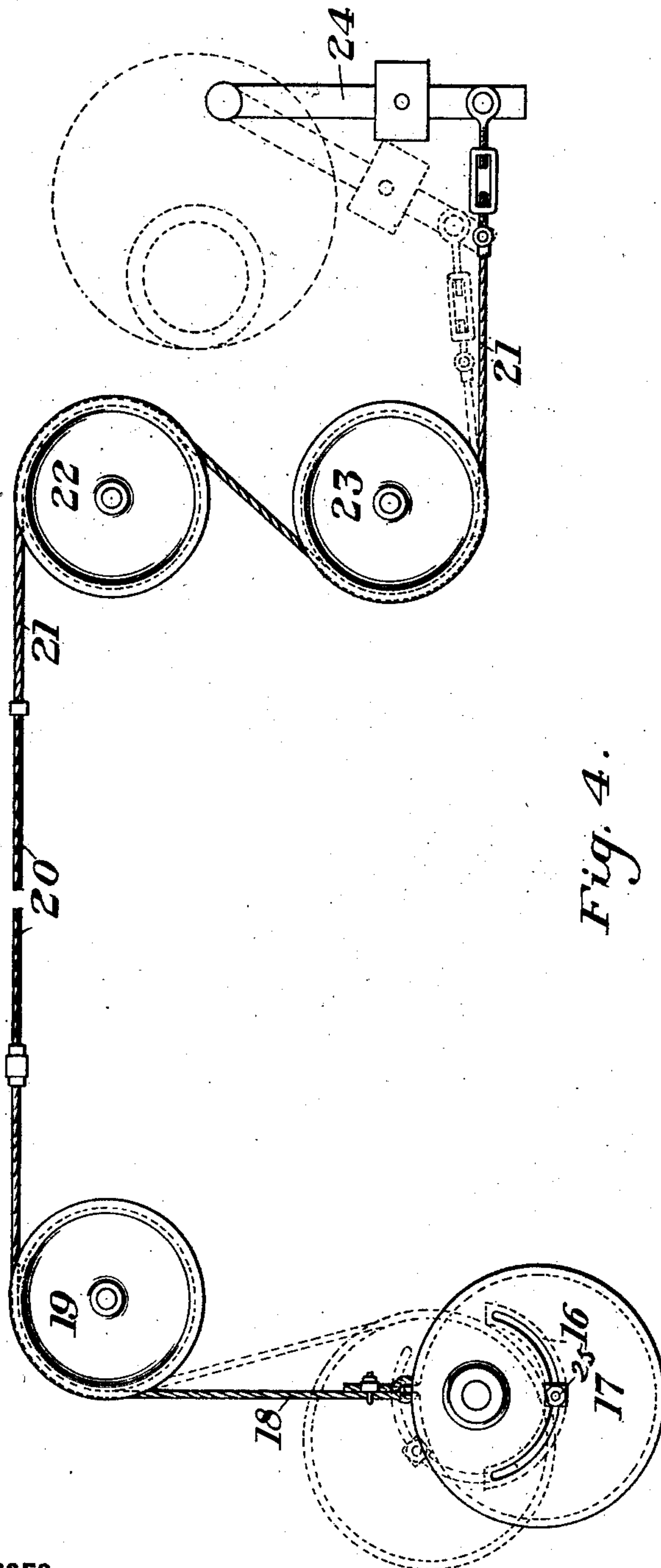
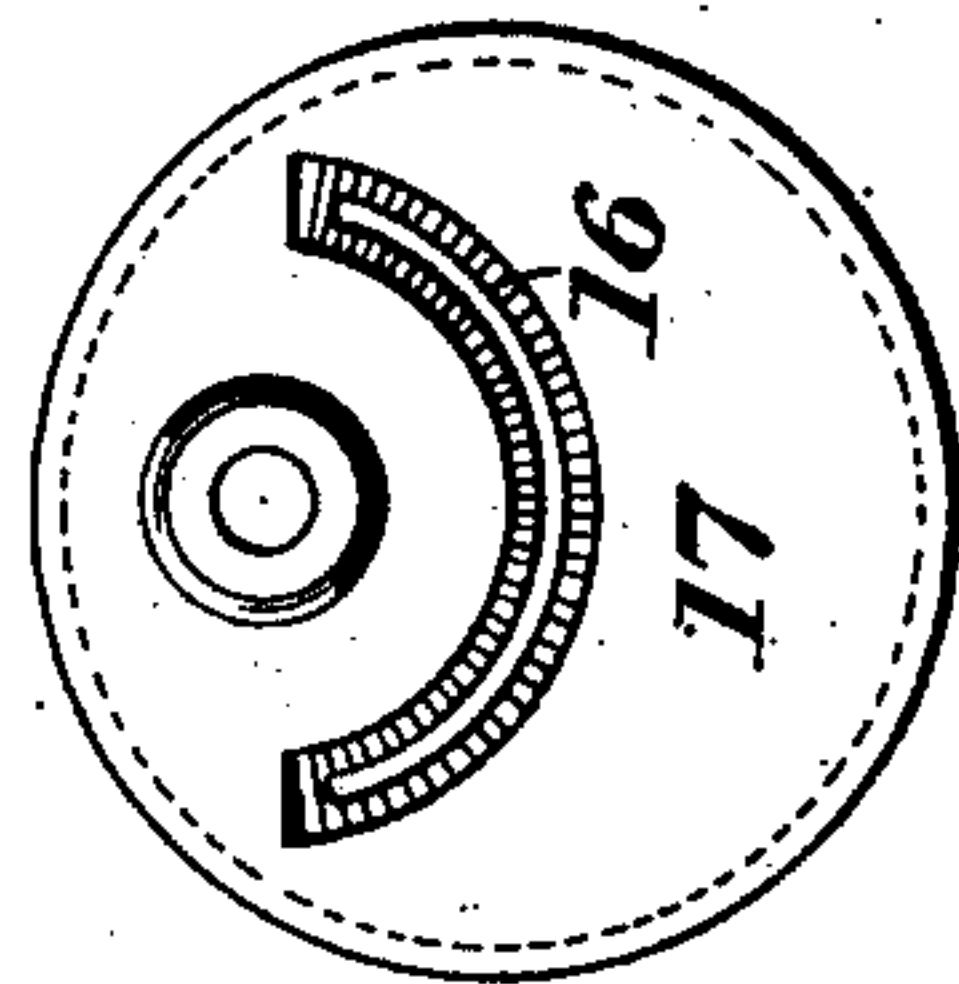


Fig. 4.



WITNESSES

R. A. Balderoon  
Warren W. Swartz

INVENTOR

Walter B. Jones  
by Balderoon & Swartz  
his attys



# UNITED STATES PATENT OFFICE.

WALTER B. JONES, OF ALLEGHENY, PENNSYLVANIA.

## CUT-OFF DEVICE FOR ELEVATORS.

No. 826,858.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed April 18, 1906. Serial No. 312,333.

*To all whom it may concern:*

Be it known that I, WALTER B. JONES, of Allegheny, Allegheny county, Pennsylvania, have invented a new and useful Cut-Off Device for Elevators, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved device. Fig. 2 is an end elevation showing the eccentric device. Fig. 3 is a diagrammatic view of the cable connections, and Fig. 4 is a detail view of one of the eccentric-plates.

My invention relates to the limit-stop devices which automatically slow down and stop an elevator or accumulator at or near the ends of its travel.

The object of the invention is to enable the cut-off valves and devices to be placed in any desirable location independent of the elevator-well.

It is further designed to provide a stop device which will operate only near the ends of the travel of the elevator and will be at rest through the intermediate part of the travel.

A further object is to afford a gradual and easy stop without shock to the machinery.

In the drawings, in which I have shown my invention as applied to an elevator having hoisting-cables, 2 2 represent the drums or hoisting-pulleys for the cables. On the shaft of these drums is secured a pinion 3, intermeshing with a toothed wheel 4 on an auxiliary shaft 5. This shaft 5 is mounted in suitable bearings 6 6 of a framework 7, and its intermediate portion is provided with a screw 8. To this screw are adjustably clamped clutch members 9 9, each having a tooth or teeth 11 arranged in opposite sides. These teeth are arranged to engage corresponding teeth of a traveling clutch member 12, which surrounds the screw and is provided with guide extensions 13, traveling upon guides 14, secured to an oscillating frame 15, carried loosely on the shaft. The frame 15 is provided at its opposite ends and on opposite sides with projecting lugs 15', which are arranged to travel in arc-shaped grooves or slots 16 of eccentrics 17. These eccentrics extend in opposite directions and are loosely mounted on the shaft beyond the ends of the oscillating frame. The grooves or slots in the eccentrics are so arranged that while the one lug of the oscillating frame is

traveling idly through its arc-shaped frame the other lug will be acted upon by the other eccentric to actuate the corresponding connection to the cut-off valve. The length of the slot may be adjusted by a limit device or stop 25, which may be bolted in a slot of the groove.

In the form shown the connection to the cut-off valve comprises tiller-cables 18, one end of which is secured to the corresponding eccentric at the point nearest its axis. The tiller-cable is shown as extending over a drum or pulley 19 and secured to a hard cable 20, the other end of which is secured to another tiller-cable 21, which extends over pulleys 22 and 23 to a counterweighted lever-arm 24. This lever-arm may be mounted on the shaft which actuates the cut-off valve or connected to the valve in any other desirable manner.

In the use of the device the pair of clutch members are adjusted to the proper position on the screw of the counter-shaft and are then clamped. As the elevator nears the end of its travel in either direction one of the pair of clutch members will engage the intermediate clutch member and will thereby rock the oscillating frame. This rocking motion of the frame will turn one of the eccentrics, so that it will begin to act upon its connected tiller-cable. As the movement of the eccentric continues the movement of the tiller-cable will be increased in speed, and the valve will be thus closed and the elevator gradually brought to a stop. During this movement the other eccentric is moving idly, since the lug of the frame is simply traveling through its arc-shaped slot or groove.

The advantages of my invention result from the fact that the stop device is only in movement near the ends of the travel of the elevator. The tiller-cables are of a pliable nature to allow their winding over the pulleys, while the main length of the cable may be of a hard character not adapted to wind over drums or pulleys. This enables the tiller-cables to be replaced when worn out without replacing the main portion of the cable, which is subject to little or no wear. The eccentric movement starts the closing of the valve gradually and then increases it, thus giving an easy stop. The cut-off valve on these devices may be placed in any desired location relative to the elevator machinery, thus rendering it easily accessible.

The device is applicable to all types of elevators and also accumulators.



Many changes may be made in the form and arrangement of the screw device, the frame, the eccentrics, and the connection between the eccentrics and the cut-off valve without departing from my invention.

I claim—

1. A cut-off for elevators having a screw-clutch device, and an oscillating frame arranged to be moved near the end of the travel of the elevator; substantially as described.

2. In a cut-off device, an oscillating frame, sets of connections between said frame and the cut-off valve, and means for operating one of said connections, while the other is idle; substantially as described.

3. In a cut-off for elevators, an oscillating frame, an eccentric, a connection between the eccentric and the cut-off valve, and means for moving the frame near the end of the travel of the elevator; substantially as described.

4. In cut-off devices for elevators, an oscillating frame, and a pair of eccentrics, the frame being arranged to act upon one eccen-

tric while moving idly relative to the other, and connections between the eccentrics and the cut-off device; substantially as described.

5. In cut-off devices for elevators, a double cable connection to the cut-off valve, and means for actuating said connections alternately near the end of the travel of the elevator, they being at rest during the intermediate parts of its travel; substantially as described.

6. In a cut-off device for elevators, a rotating screw, clutch devices actuated thereby near the end of the travel of the elevator, and eccentrics actuated by the clutch devices alternately, and connections between the eccentrics, and a cut-off valve device; substantially as described.

In testimony whereof I have hereunto set my hand.

WALTER B. JONES.

Witnesses:

N. M. GRIFFIN,  
H. M. CORWIN.