

H. L. MOEBECK.
AUTOMATIC ALARM FOR GRAIN BINS.
APPLICATION FILED MAR. 10, 1904.

2 SHEETS—SHEET 1.

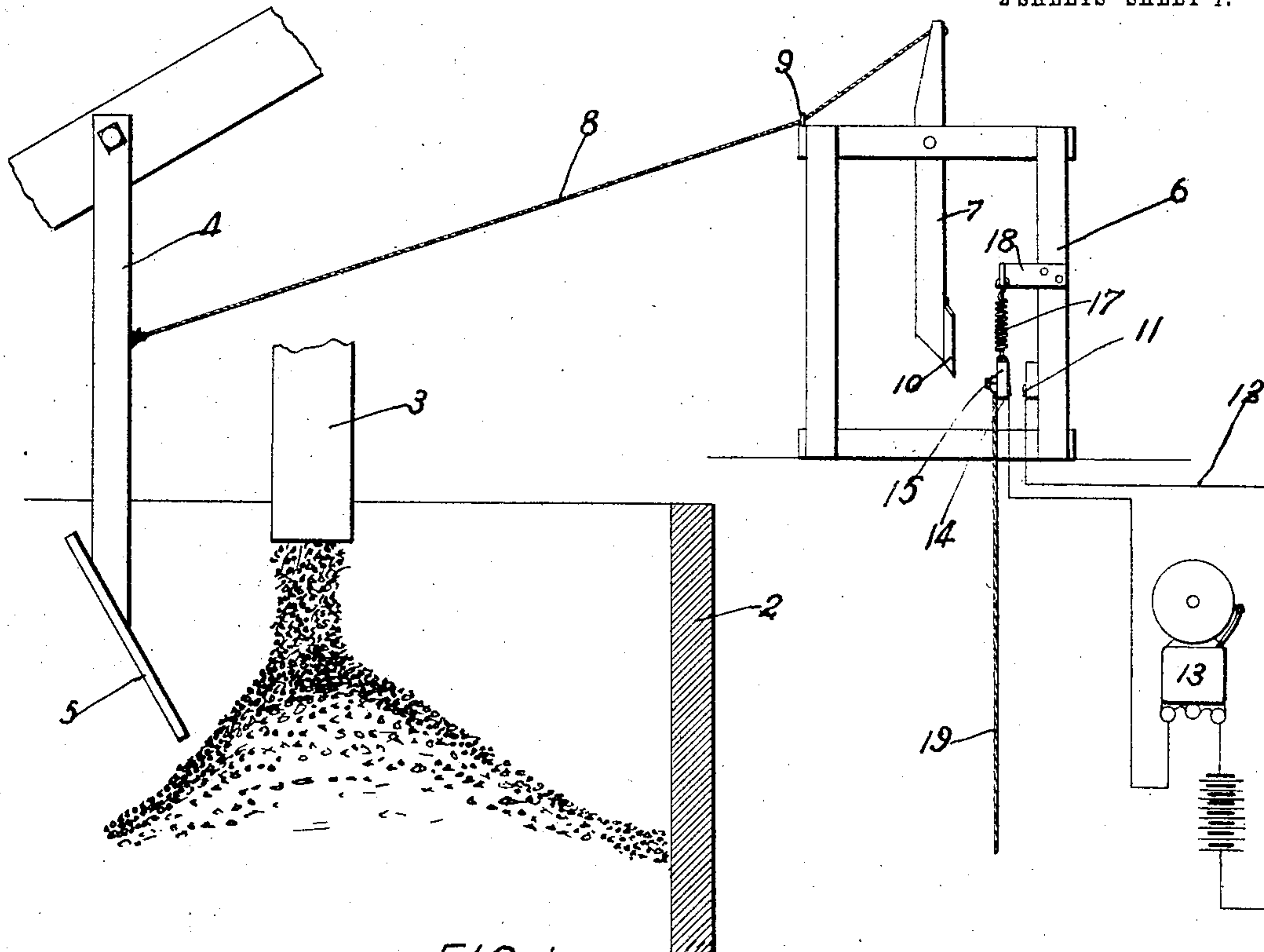


FIG. 1.

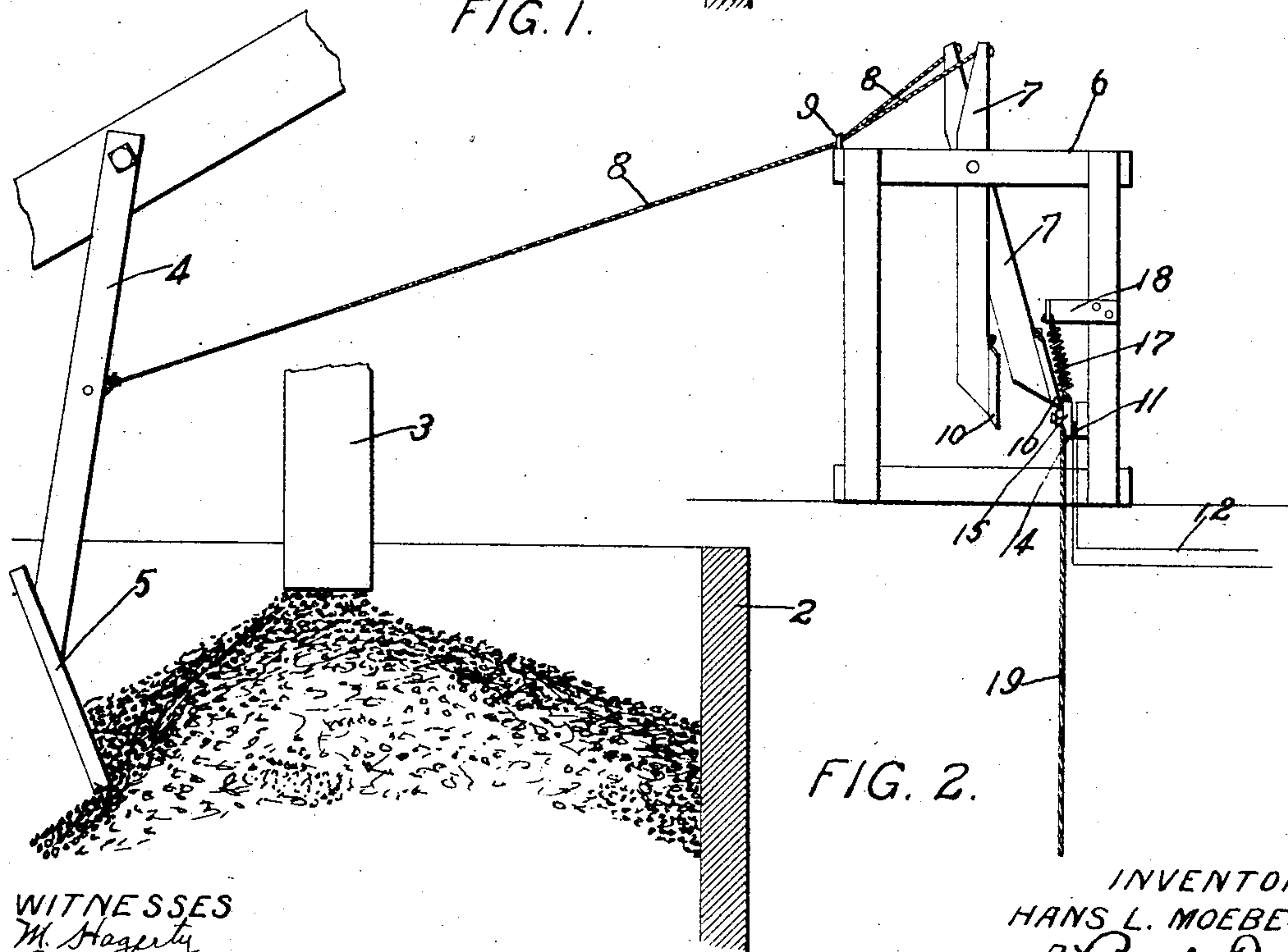


FIG. 2.

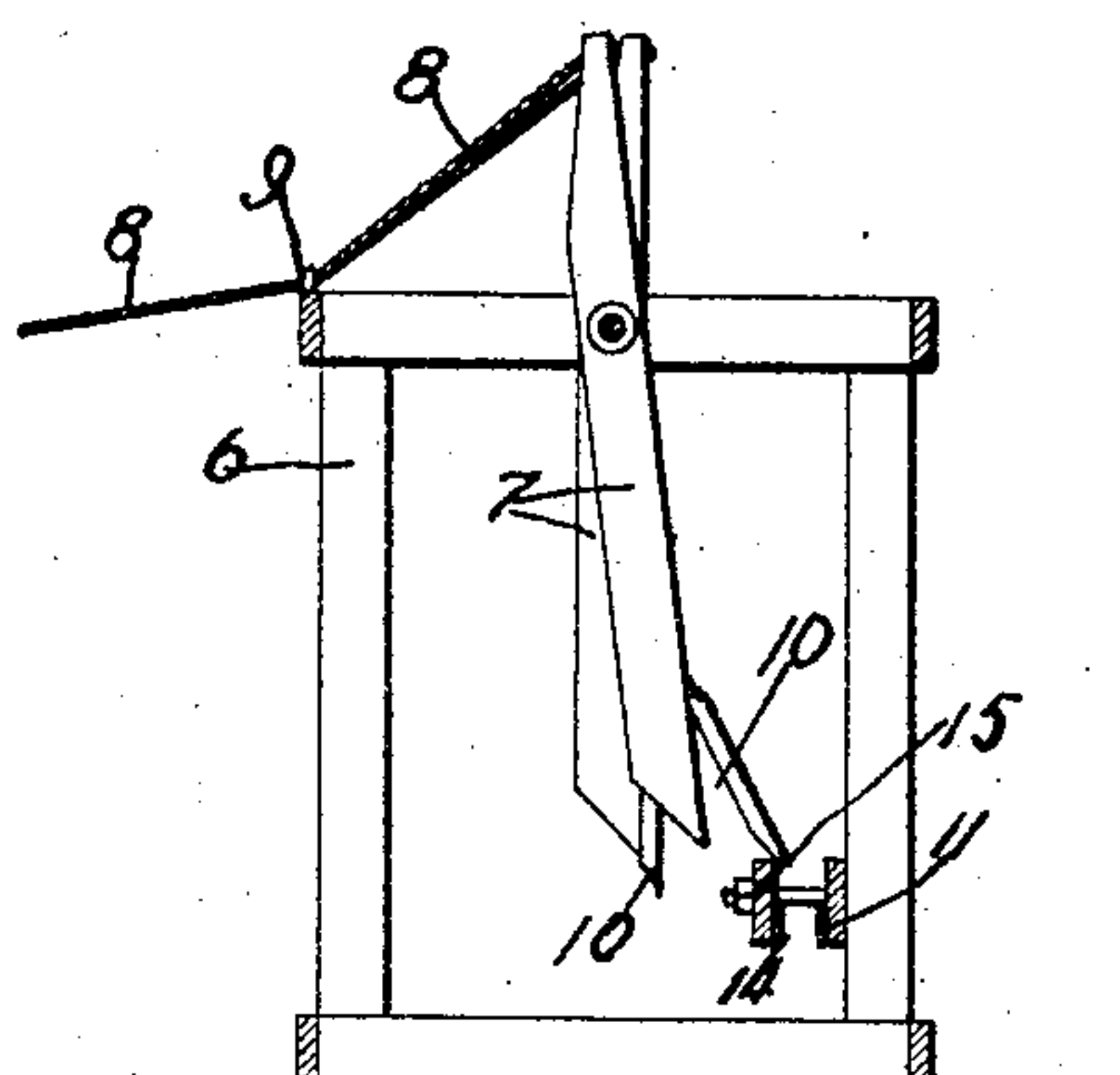
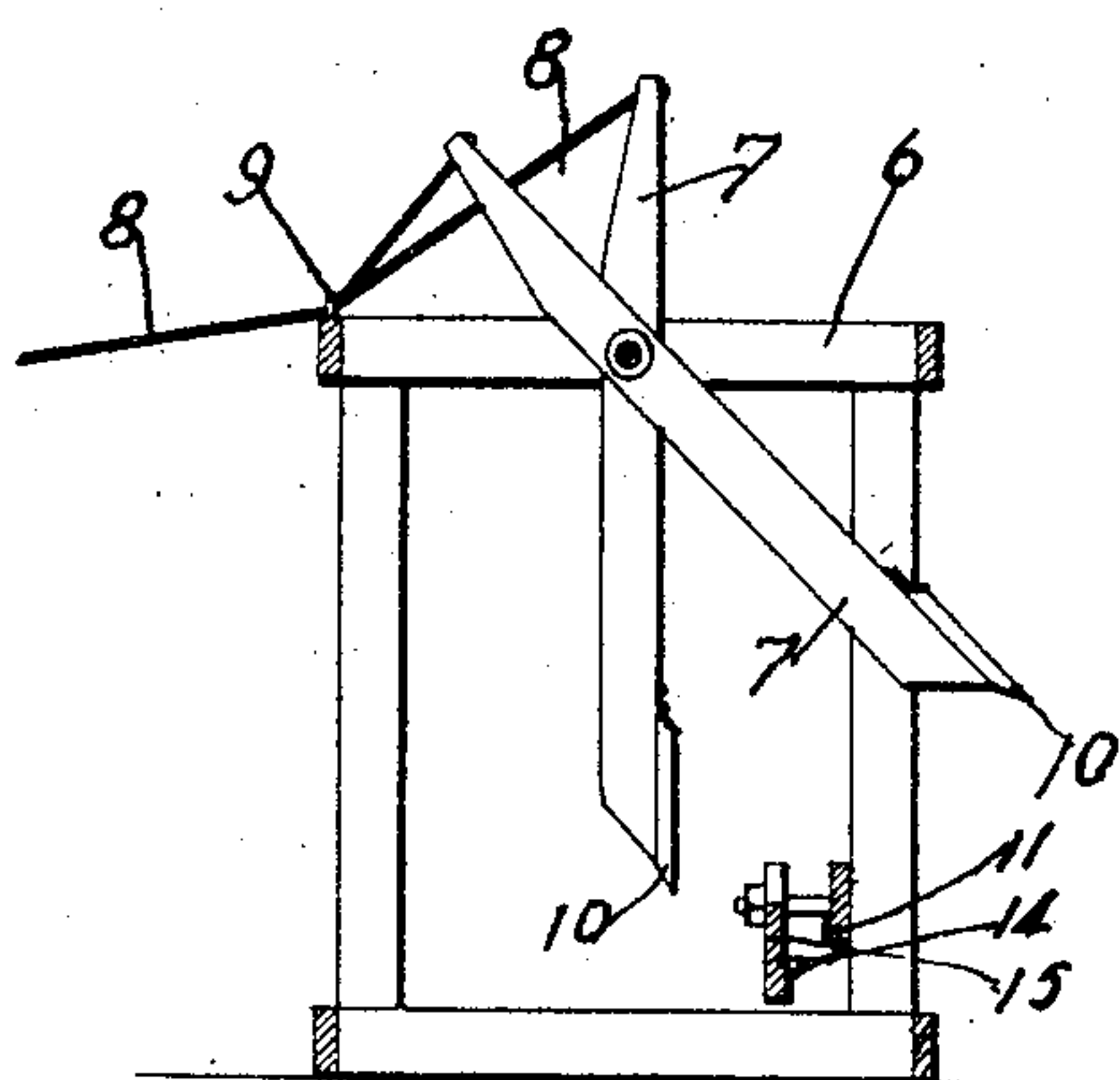
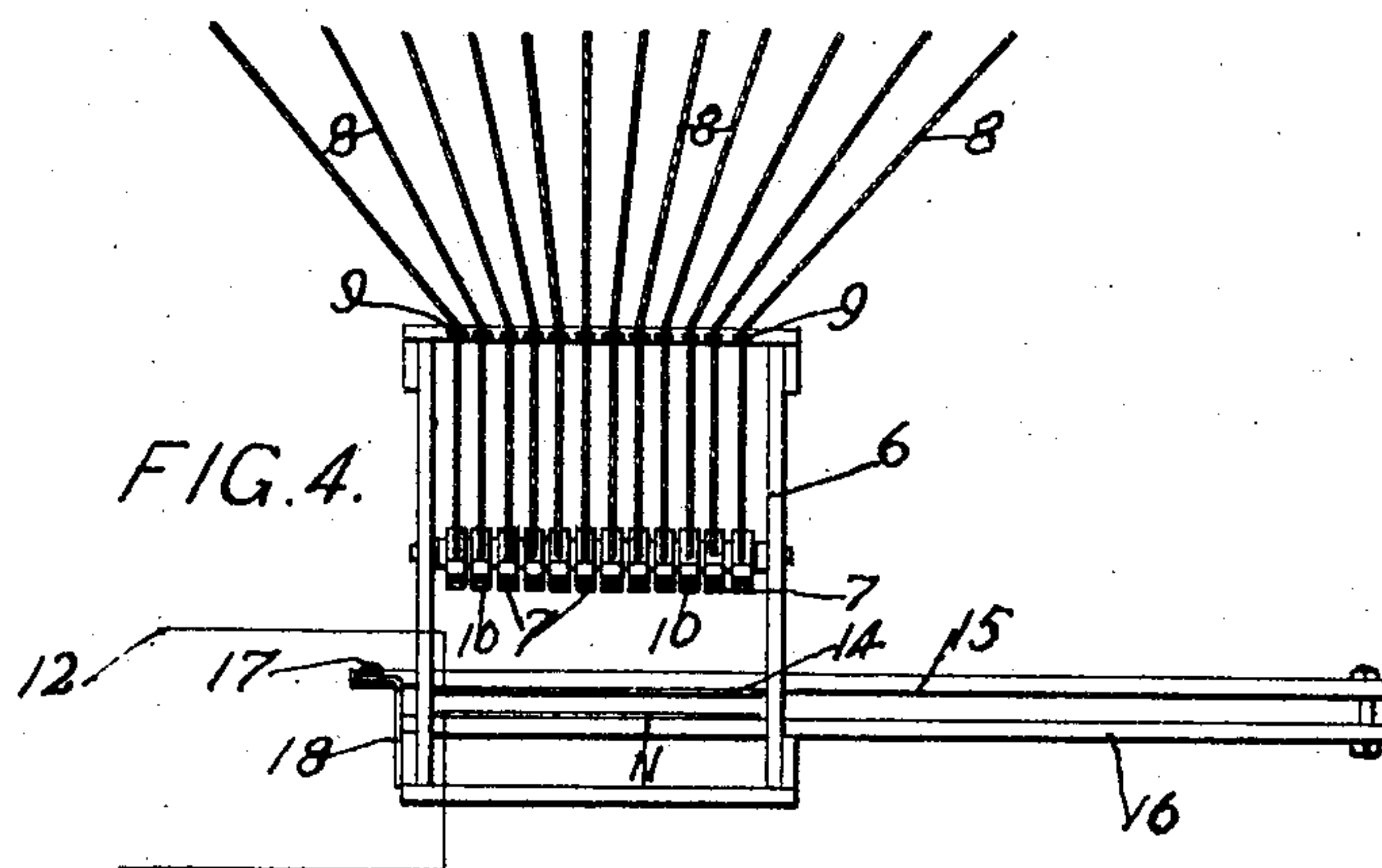
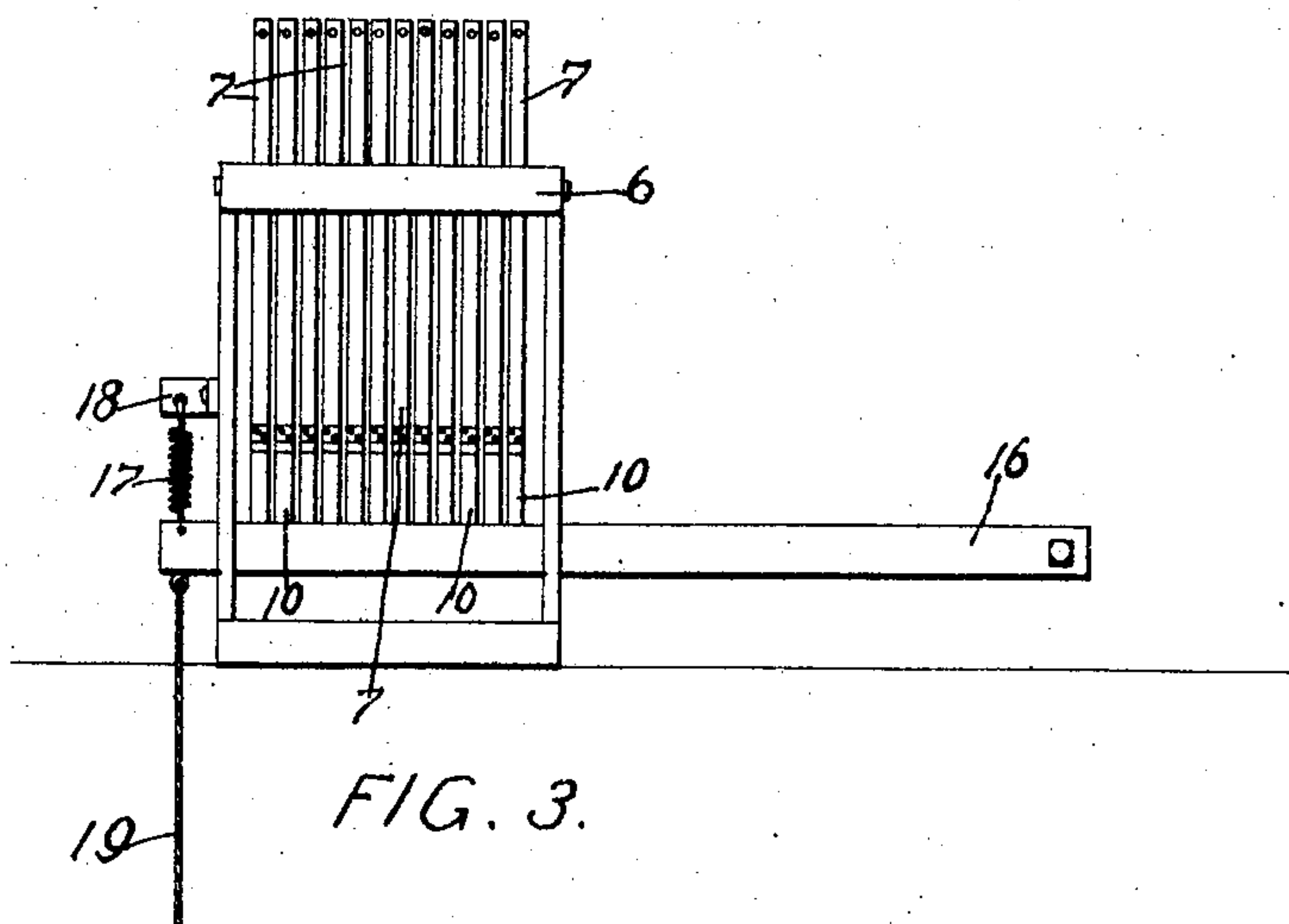
WITNESSES
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HIS ATTORNEYS.

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2 SHEETS—SHEET 2.



WITNESSES
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P. L. Houser.

INVENTOR
HANS L. MOEBECK
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UNITED STATES PATENT OFFICE.

HANS L. MOEBECK, OF ULEN, MINNESOTA, ASSIGNOR OF ONE-HALF TO
N. O. HENRICKS, OF FARGO, NORTH DAKOTA.

AUTOMATIC ALARM FOR GRAIN-BINS.

SPECIFICATION forming part of Letters Patent No. 781,444, dated January 31, 1905.

Application filed March 10, 1904. Serial No. 197,402.

To all whom it may concern:

Be it known that I, HANS L. MOEBECK, of Ulen, Clay county, Minnesota, have invented certain new and useful Improvements in Automatic Alarms for Grain-Bins, of which the following is a specification.

My invention relates to devices designed for use in connection with grain-bins for sounding an alarm when the grain has risen to a certain predetermined point in the bin.

The object of my invention is to provide a simple positively-acting mechanism which can be readily applied to one or a series of bins and operated under pressure of the grain to sound an alarm at a given point.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of an alarm mechanism embodying my invention, showing its application to a grain-bin. Fig. 2 is a similar view showing the device operated by the pressure of the grain. Fig. 3 is a detail view showing the manner of supporting the movable circuit-closers. Fig. 4 is a plan view showing the flexible connections running from the circuit-closers to the bins. Figs. 5 and 6 are details illustrating the manner of closing the circuit and the different positions assumed by the circuit-closing mechanism.

In the drawings, 2 represents the top of a grain-bin into which grain is being discharged through a spout 3. It sometimes happens, through accident or forgetfulness on the part of the operator, that the grain will overflow the top of the bin into the adjoining one, resulting in a mixture of grain and consequent annoyance and delay. To avoid this objection to the ordinary way of filling a bin and to prevent the attendant from neglecting his duty, I provide over each bin, of which there may be a series arranged in rows within the elevator, a bar 4, pivotally supported at its upper end and depending within the open top

of the bin and provided at its lower end with a plate 5, mounted on the lower end of the bar at an angle with respect thereto. Near the series of bins I provide a framework 6, wherein a series of bars 7 are pivotally supported at a point intermediate to their ends, and the upper ends of these bars 7 are connected with the bars 4, one for each bin, by flexible connections 8, that pass through screw-eyes or other suitable guides 9 on the frame 6. These flexible connections, as shown in Fig. 4, will be parallel between the ends of the bars 7 and the screw-eyes and after leaving the screw-eyes will diverge to the different bins. A plate 10 is hinged at its upper edge on the lower end of each of the bars 7. On the frame 6 I provide a fixed metallic contact-point 11, connected by a wire 12 with an alarm-bell 13, that is located at any suitable point in the elevator, preferably on the ground floor where it can be easily heard by the attendant. After passing through the battery and the alarm-bell the wire is conducted to a movable contact-surface 14, that is carried by a bar 15. This bar is pivoted at one end, as shown in Fig. 4, on a bar 16, to which a fixed contact-plate is secured, and the other end of the bar 15 is supported by a coil-spring 17, carried by a bracket 18. A flexible connection 19 leads from the bar 15 down to one of the lower floors.

The operation of the device is as follows: The grain having risen to a certain predetermined height in a bin and come in contact with the plate 5 will swing the bar 4 on its pivot and operate the bar 7 to swing the movable contact 14 against the fixed contact 11 and close the alarm-circuit. The alarm having been sounded, the attendant will draw down the flexible connection 19 and break the circuit and allow the bar 7 to be swung by the pressure of the grain to the tilted position. (Shown in Fig. 5.) When the bin has been emptied or the grain therein lowered sufficiently to clear the plate 5, the bar 4 will draw back to its normal position and the hinged plate 10 will swing on its pivot, as shown in Fig. 6, to

clear the bar 15 and allow the bar 7 to return to its vertical position, when the operation described can be repeated.

It will be understood that an independent apparatus, except the alarm-circuit, is provided for each bin, each apparatus operating independently of all the others to cause an alarm to be sounded when the grain in the bin has risen to a certain height.

I claim as my invention—

1. The combination, with a grain-bin, of a member depending therein and adapted to be actuated by the pressure of the grain, a pivoted bar connected with said member, a hinged plate carried by said bar, an alarm-circuit having a fixed contact-surface, a movable contact-surface pivotally supported at one end and yieldingly held at the other and normally in the path of said hinged plate, and means for drawing down said movable contact-surface against the tension of said spring to clear said plate.

2. The combination, with a grain-bin, of a bar 4 pivotally supported above the same, a plate 5 secured at the lower end of said bar and depending within the bin in position to be engaged and moved by the pressure of the grain, a second bar 7 also pivotally supported and connected with said bar 4, and an alarm-circuit arranged to be closed by the movement of said bar 7 a predetermined distance, substantially as described.

3. The combination, with a series of grain-bins and their delivery-spouts, of bars 4 pivotally supported above said bins, plates carried by said bars and depending within said bins in position to be engaged and moved by the pressure of the grain when it rises to a certain predetermined height, a series of bars 7 provided outside said bins, flexible connections interposed between said bars 7 and 4, each of said bars 7 being operable independently of the others, and an alarm-circuit ar-

ranged to be closed by the movement of either of said bars 7 for a certain predetermined distance.

4. The combination, with a grain-bin, of a pivoted bar depending therein and adapted to be oscillated by the pressure of the grain when it rises to a certain predetermined point in said bin, a second bar pivotally supported outside said bin and connected with said first-named bar, a hinged plate carried by said second bar, an alarm-circuit having a fixed contact-surface, and a movable contact-surface pivotally supported at one end and yieldingly held in the path of said hinged plate, substantially as described.

5. The combination, with a grain-bin having a delivery-spout, of a pivoted bar depending within said bin near said spout, a plate carried by said bar and arranged to be engaged and oscillated with said bar by the pressure of the grain when it rises to a certain predetermined point, an alarm-circuit, and mechanism connected with said bar and arranged to be actuated by the movement thereof to close said circuit.

6. The combination, with a suitable support, of a series of bars 7 pivoted therein and movable independently of each other, a hinged plate carried by each of said bars, an alarm-circuit arranged to be closed by engagement with any one of said plates, a series of grain-bins, and mechanism therein connected respectively with said bars 7 to actuate the same and close said circuit when the grain rises above a certain predetermined point in the respective bins.

In witness whereof I have hereunto set my hand this 27th day of February, 1904.

HANS L. MOEBECK.

In presence of—

J. T. JOHNSON,
H. J. PEARSON.