

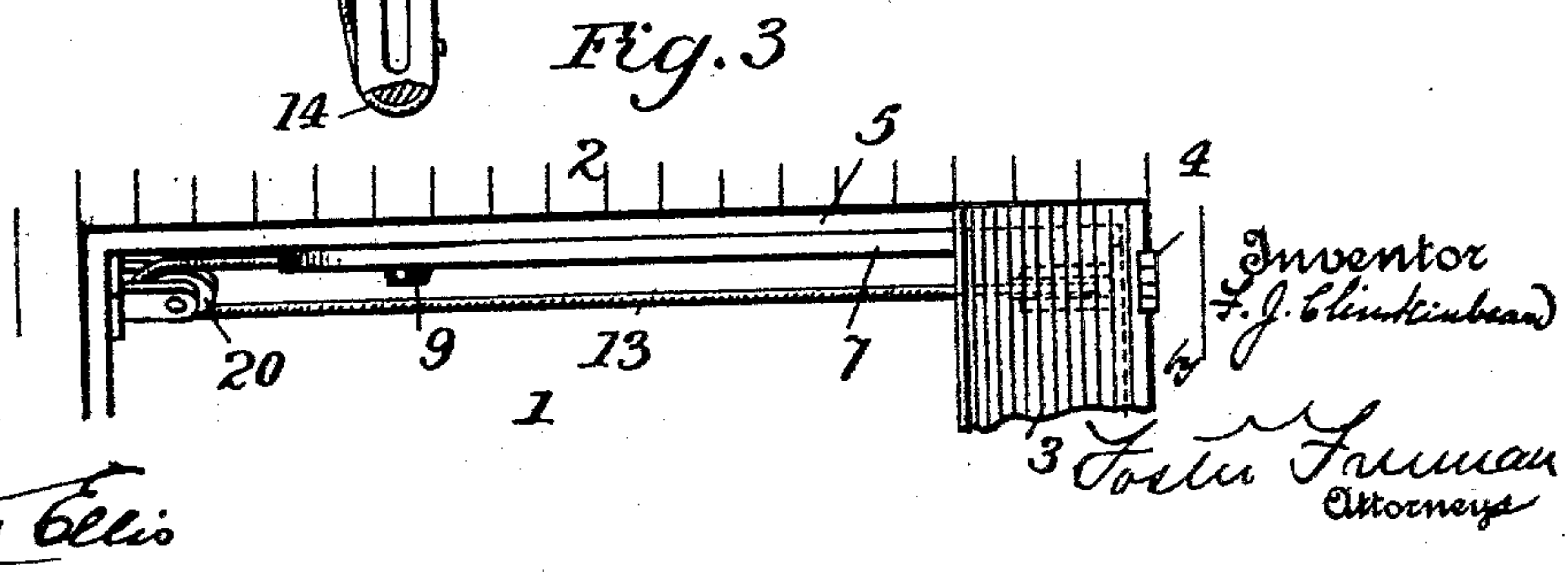
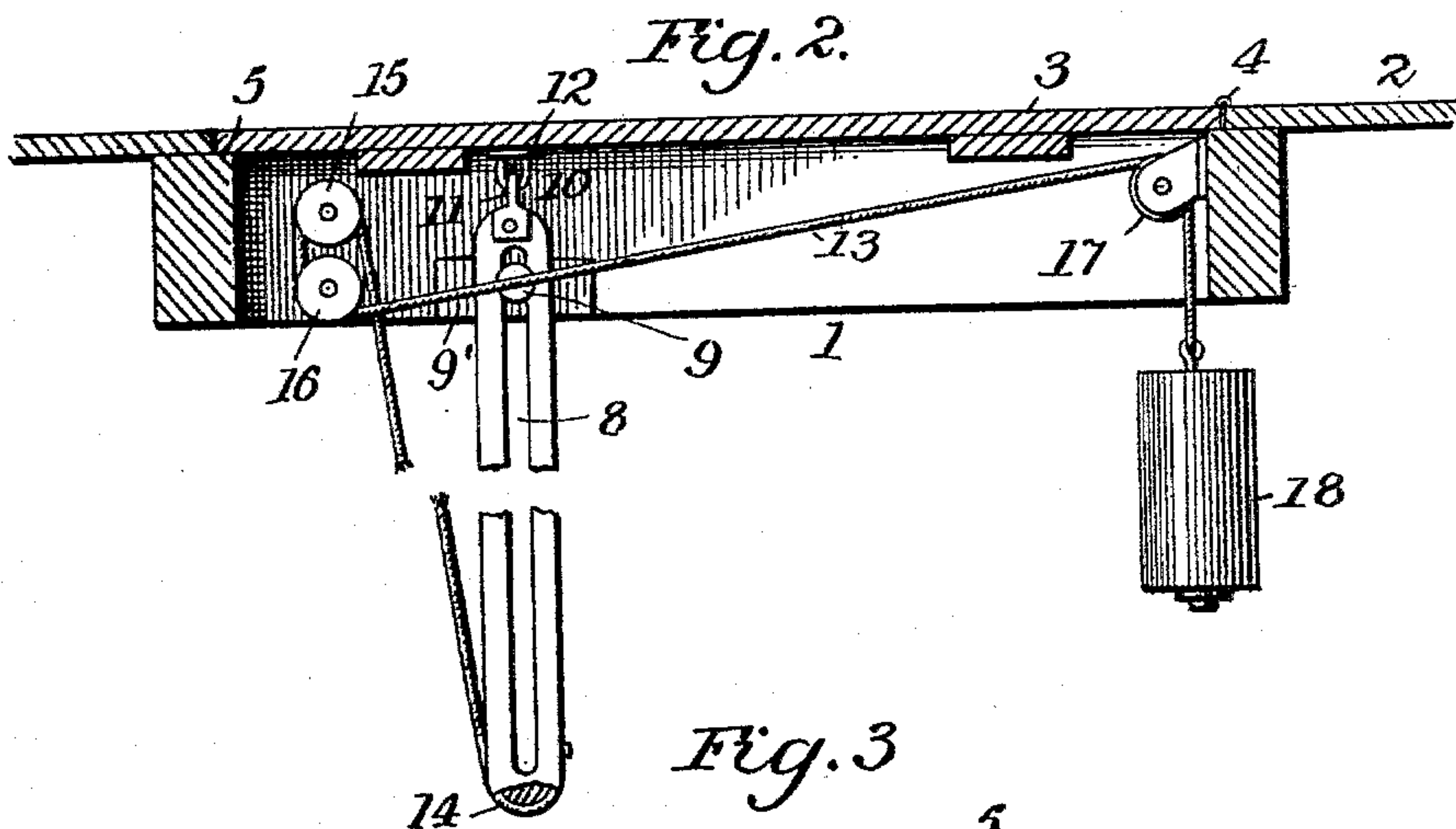
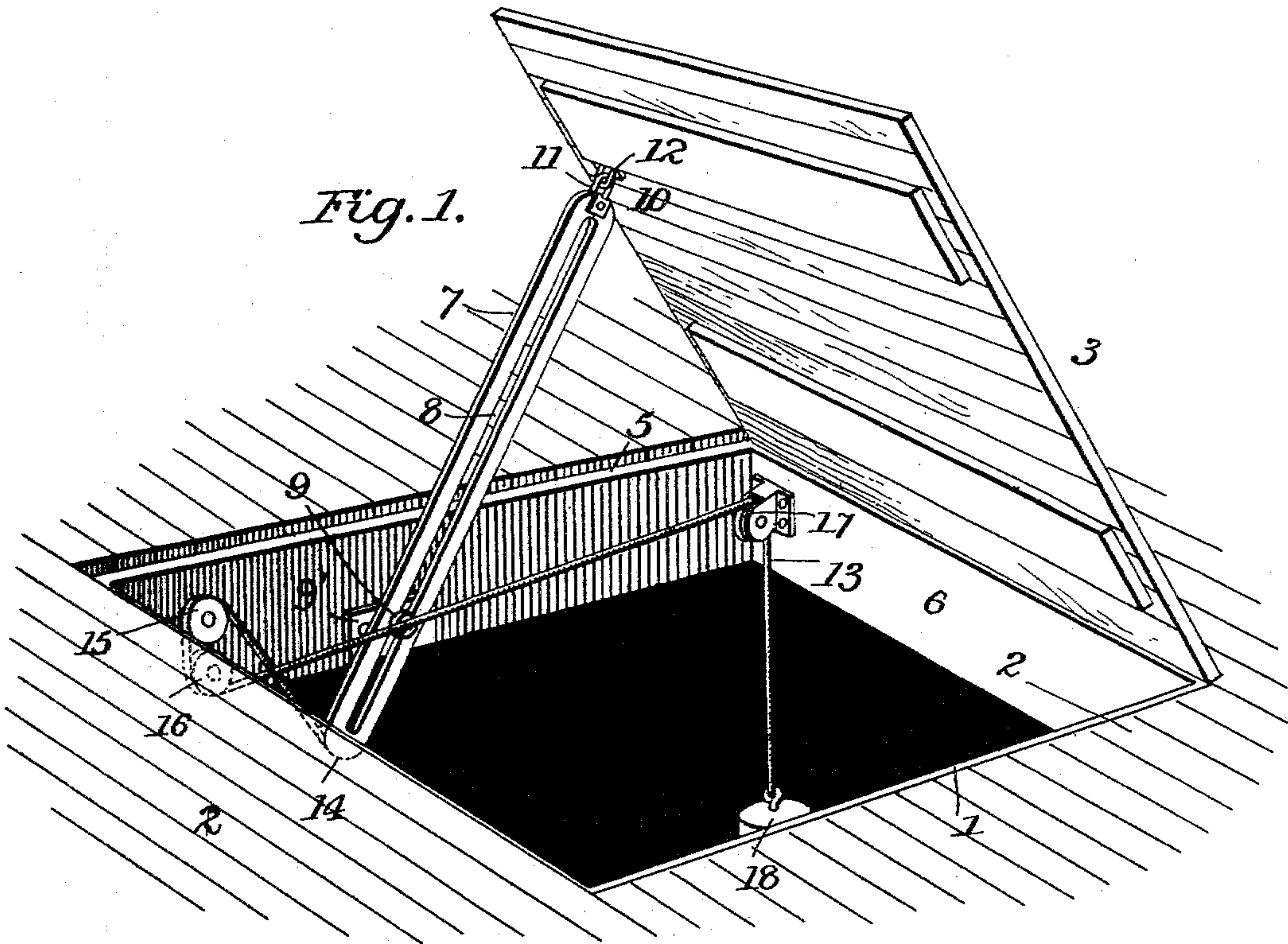
(No Model.)

F. J. CLINKINBEARD.

DEVICE FOR RAISING OR LOWERING CELLAR DOORS.

No. 597,457.

Patented Jan. 18, 1898.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FAGAN J. CLINKINBEARD, OF WINDSOR, MISSOURI, ASSIGNOR OF ONE-HALF TO ALVA J. CALHOUN, OF SAME PLACE.

## DEVICE FOR RAISING OR LOWERING CELLAR-DOORS.

SPECIFICATION forming part of Letters Patent No. 597,457, dated January 18, 1898.

Application filed October 3, 1896. Serial No. 607,766. (No model.)

*To all whom it may concern:*

Be it known that I, FAGAN J. CLINKINBEARD, a citizen of the United States, residing at Windsor, in the county of Henry and State of Missouri, have invented certain new and useful Improvements in Devices for Raising and Lowering Cellar-Doors, of which the following is a specification.

This invention relates to certain new and useful improvements in means for opening and closing the doors of cellars, holds, and other like places; and it consists substantially in such features of construction, arrangement, and combination of parts as will hereinafter be more particularly described.

The invention has for its object the opening and closing of the doors of cellars and other like places with facility and to enable the door to be opened to any desired extent and held without the use or interposition of any outside support.

The invention also has certain other objects in view, substantially as will hereinafter more fully appear, when taken in connection with the accompanying drawings, wherein—

Figure 1 is a view in perspective representing an opening cut in a floor or deck and leading to a cellar or hold and also showing a door for closing the opening as well as my improved devices for operating the door. Fig. 2 is a sectional view taken through the floor and door when the latter is closed and showing the position the operating devices then occupy. Fig. 3 is a view looking down upon the devices when the door is opened to its fullest extent and representing another embodiment of my invention.

While I have herein selected for illustration certain constructions and arrangements of my improved operating devices which in practice have been found to work with advantage, and which are therefore the preferred devices, it will be understood that I am not limited thereto in detail, owing to the number of different embodiments of which my invention is capable.

In the accompanying drawings, 1 represents an opening or hatchway made in an ordinary floor or deck 2, by which access may be had to the cellar or hold beneath, and 3 designates a door that is hinged at one of its

edges at 4 and is adapted to close the opening or hatchway and which when closed is supported in a position flush with the floor or deck by means of strips 5, secured to the framework 6, surrounding the said opening or hatchway. The said door may be provided with any of the usual means for locking the same when closed, if so desired.

I have shown two embodiments of my invention, one of which is shown in Figs. 1 and 2 and consists of an arm or strip 7, of wood or metal, formed with a longitudinal slot 8, extending practically its entire length. This arm or strip works or moves upon a stud or pin 9, projecting from a plate 9', secured to the framework 6. At its upper end the arm is loosely attached at 10 to the under side of the hinged door at a suitable distance from the free longitudinal edge of the latter. This connection or attachment of the end of the arm or strip with the door could be effected in different ways, but preferably by interlocking loops or staples 11 12, one being secured to the arm and the other to the door. The said slotted arm or strip describes both a sliding as well as an axial movement upon the stud or pin 9 whenever the door is opened or closed, and the working thereof is very free and easy, with no strain upon the operator and with no liability of the door falling down accidentally, as will subsequently appear. Attached by one end to the slotted arm at near the lower end of the latter on one edge is a cord or chain 13, which passes around the rounded lower end 14 of said arm, thence up and over a pulley 15, supported from the framework 6, and down beneath a lower pulley 16, similarly supported, and thence across the opening 1 and down over a pulley 17, its free end having a counterbalancing-weight 18, attached or fastened thereto. This weight is just heavy enough to balance or sustain the door at any degree to which it may be opened, and the facility with which the door may be both opened and closed is evident. Preferably the rounded lower end of the arm is grooved, so as to hold the cord or chain in place.

The pulley 17, it will be observed, is mounted upon or supported by that portion of the framework 6 to which the door is hinged and



which portion is at right angles to the portion to which the pulleys 15 and 16 are attached or mounted. This arrangement brings the pulley 17 in a plane slightly inside of the plane of operation of said pulleys 15 and 16, and as a result the cord or chain 13 takes a slightly-oblique direction as it leaves pulley 16 to pass to pulley 17, and in this way there is sufficient clearance afforded between the portions of cord which cross each other to prevent wear and breakage.

The other embodiment of my invention is shown in Fig. 3 and which is also so arranged that a clearance is had between the portions of the cord or chain which cross each other, as well as between the cord or chain and the slotted arm. In lieu in this instance of the two guide-pulleys 15 and 16 I employ only a single pulley 20, which is slanted from a vertical, as shown, so that the cord or chain is brought into a different plane on the lower edge of the pulley from that which it occupies on the upper edge, and in this way portions of the said cord or chain will be prevented from moving or working against each other as well as against the arm, which would result in wear and breakage of said cord in time.

It is obvious that the arrangement of the several parts could be modified in many ways, and therefore, without limiting myself in these respects,

I claim—

1. The combination with a cellar-door or the like, of an arm pivotally suspended by one of its ends from the inner side of the door, and describing a combined longitudinal and axial movement on the opening and closing of the door, a cord or chain fastened to the arm and passing around the lower end thereof, a weight at the free end of the cord or chain adapted to hold the door to any position to

which it may be brought, and means for guiding said cord or chain and for effecting a clearance between the portions thereof which cross each other, substantially as shown and described.

2. The combination with a cellar-door or the like, of a longitudinally-slotted arm sliding and turning on a stud passing through the slot, and grooved at its lower end, a loose or pivotal connection uniting the upper end of the arm with the inner side of the door, a cord or chain fastened to the arm and passing through the groove in the end of the same, a counterbalancing-weight, and means for guiding the said cord or chain and for effecting a clearance between those portions thereof which cross each other, substantially as described.

3. The combination with a cellar-door or the like, of a movable arm pivotally suspended by one of its ends from the inner side of the door, a cord or chain fastened to the arm and passing around the lower end thereof, a guide-pulley slanted from a vertical plane, an additional guide-pulley, and a counterbalancing-weight, substantially as described.

4. The combination with a cellar-door or the like, of an arm connected to the door at its upper end, a guide for the arm adapted to permit free longitudinal and lateral movement thereof, a counterbalance-weight, a flexible connection between the weight and the lower end of the arm, and a guide for said flexible connection, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FAGAN J. CLINKINBEARD.

Witnesses:

J. S. CALFER,

J. F. WALL.