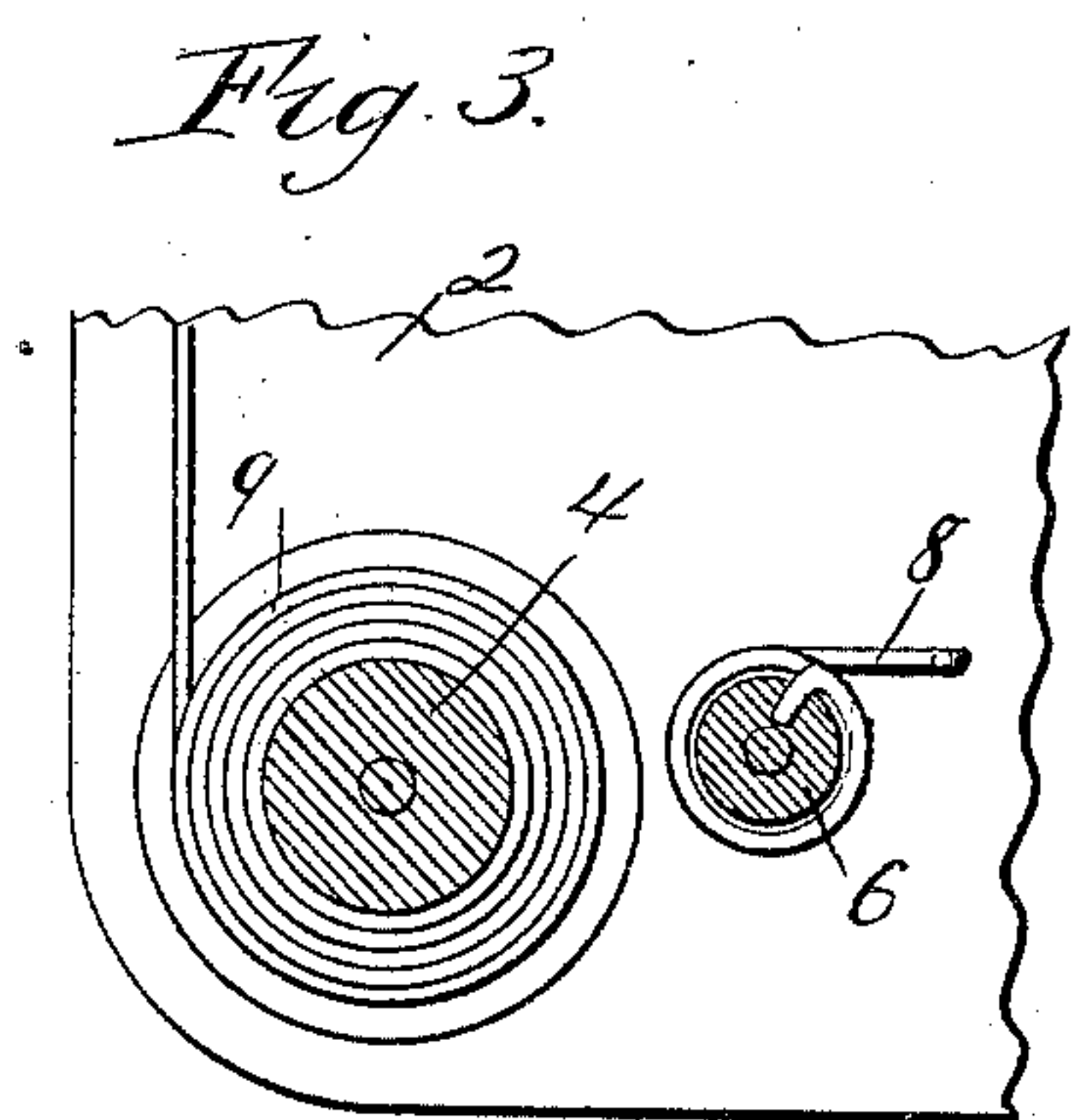
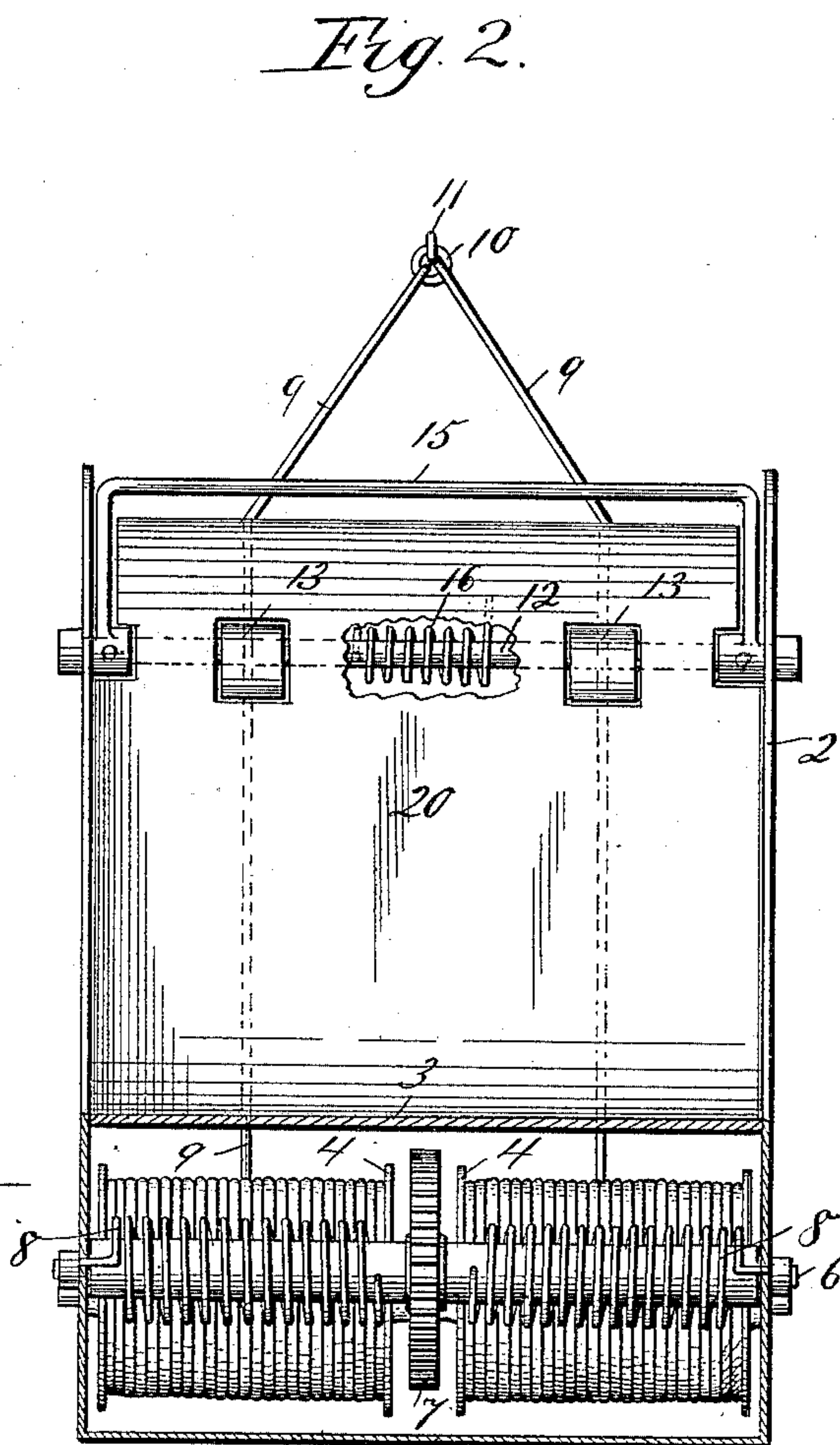
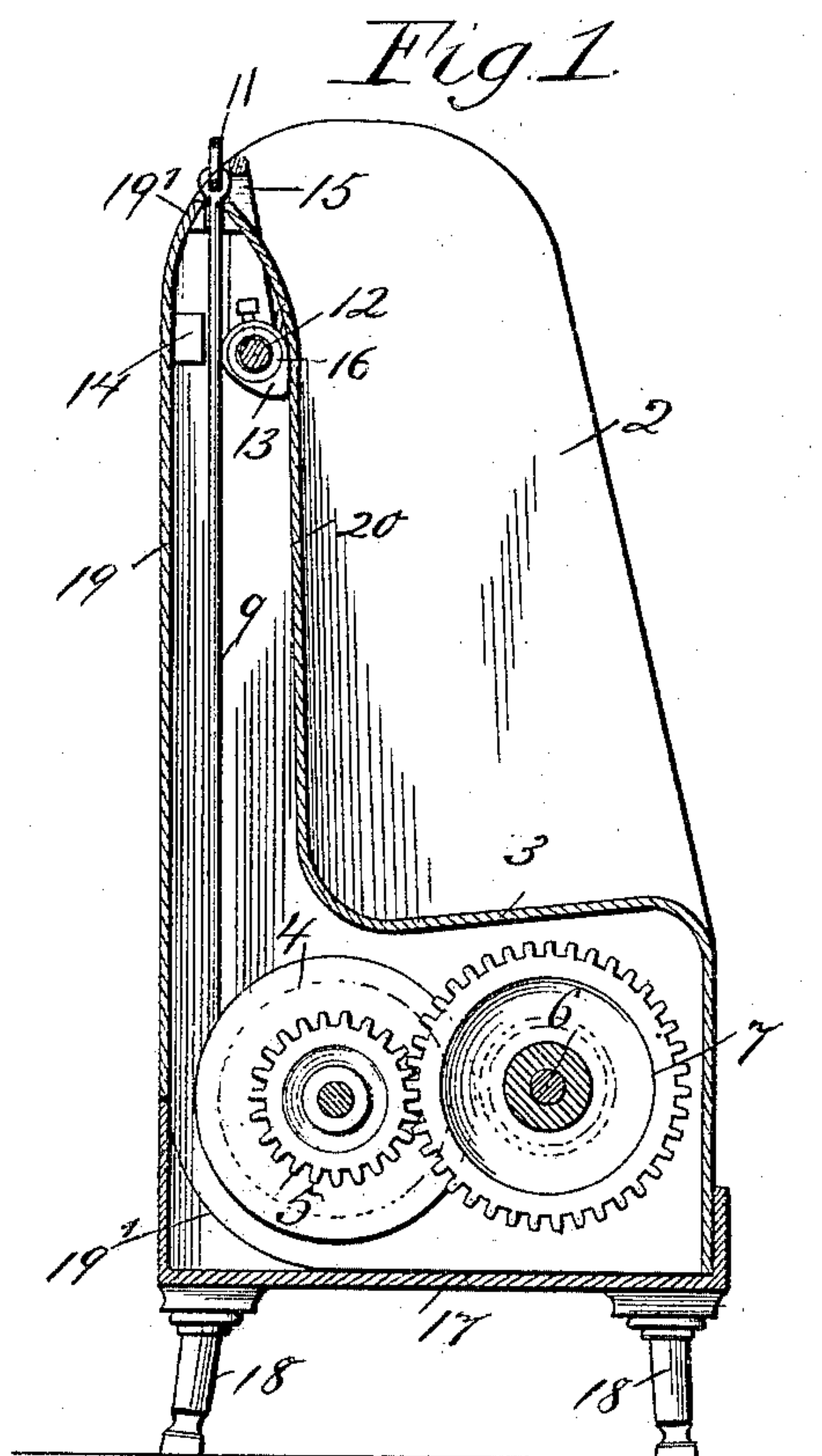


(No Model.)

E. RANK.
FIRE ESCAPE.

No. 430,592.

Patented June 17, 1890.



Witnesses
J. J. J. J.
J. H. Roberts

Inventor
Erdman Rank

By Paul & Munn Attys

UNITED STATES PATENT OFFICE.

ERDMAN RANK, OF ST. PAUL, MINNESOTA.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 430,592, dated June 17, 1890.

Application filed January 25, 1890. Serial No. 338,116. (No model.)

To all whom it may concern:

Be it known that I, ERDMAN RANK, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Fire-Escapes, of which the following is a specification.

My invention relates to improvements in devices for furnishing means of escape from burning buildings; and it consists in providing a portable device which may ordinarily be deposited in a room and used as a chair, but which in case of fire can be attached to a suitable support outside of a window and serve as a carrier for transporting persons from the building to the ground, the device being automatically returned to its point of suspension when relieved of its load.

My invention further consists in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation and partial section of my improved fire-escape shown to serve as a chair when not in use as a fire-escape. Fig. 2 is a front elevation and partial section of the same, showing the manner in which it is supported when used as a fire-escape, and showing also the mechanism by means of which it is automatically raised and lowered; and Fig. 3 is a detail sectional view of the drum or roll upon which the supporting rope or cable is wound and the spring-controlled shaft geared to the same, which under the tension of its springs tends to turn the drum and wind the rope upon it.

In the drawings, 2 represents the frame or body of the device, which is so shaped as to be adapted for use in the room as a chair, the part 3 serving as the seat of the chair. Arranged underneath the seat, and suitably journaled in the frame of the device, is the double drum 4, provided with the gear 5, arranged, preferably, at or near the center, and also the shaft 6, parallel with the drum 4, and also provided with a gear 7, meshing into the gear 5. Upon this shaft 6 are arranged the coil-springs 8, secured at one end to the shaft and at the other to the frame of the device. Secured to each part of the drum 4 is a cable or rope 9, leading from the drum upward

through the device and joined to a common supporting-ring 10, by means of which the device may be attached to and suspended from a fixed support or hook 11, arranged outside the window on the outer wall or window-casing of the building. These ropes are so connected to the drum and the drum and spring-shaft so adjusted that the spring tends to turn the shaft and wind the ropes or cables completely upon the drum and with sufficient tension to overcome the entire weight of the device, so that if the device is suspended by the ring 10 the tension of the springs will wind the supporting-ropes upon the drum and thus lift the device to its upper limit. In order to protect the ropes 9 and cover them from contact with a person in or upon the device they are concealed between the back of the device and the covering or upholstering 20, between which there is sufficient space for the ropes to freely run and move laterally when winding upon or unwinding from the drums.

In order to control and check the movement of the device when loaded, as desired, I prefer to arrange a cross-shaft 12 in the back of the device near the top, upon which are arranged cam-shaped clutches 13, adapted when the shaft is turned in its bearings to bear upon the ropes 9 underneath and press them against the blocks 14, so as to either retard or stop their movement.

In order to operate the shaft 12 at will conveniently, I prefer to secure to it a bail-shaped lever or handle 15, extending substantially the whole width of the device, and in a position to be readily grasped by the hand of a person sitting or standing in it, and upon being pulled downward will turn the shaft and operate the clutches. A coil-spring 16, arranged upon the shaft, tends to turn the handle or bail upward and thus hold the clutches out of engagement with the ropes. The mechanism of the device, except the projecting ends of the ropes 9 and the handle or bail 15, which lies normally at the top of the back of the device, is entirely concealed from view, except when in use as a fire-escape.

In order to furnish a convenient and firm support for the device when standing upon the floor, I prefer to arrange a support 17, having legs or standards 18 of any desired length,

into which the device may be firmly fitted and remain until required for use as a fire-escape. In order that when in use for the latter purpose it may readily pass over any
 5 projections or obstructions—such as window caps or sills—I prefer to give both to the top and bottom of the back of the device a forward curve or slant 19', which will first strike against any obstruction and slide over the
 10 same in its movement either up or down.

Operation: When not in use, the device stands in its support 17, in which it may be placed or moved from place to place, as desired, in a room. In case of fire the device is
 15 taken from its support, passed through the window, and attached to the support 11 by means of the ropes or ring 10. The person about to descend in it then grasps the bail or handle 15, and, bearing down upon it, clutches
 20 the ropes 9, so as to hold the apparatus in position. Then one or more persons, according to its capacity, can stand or seat themselves in the device, and the clutches being released the apparatus descends by reason of its load
 25 overcoming the tension of the springs 8, the movement being entirely and at all times under the control of the person holding the handle 15. Upon reaching the ground and being relieved of its load, the handle 15 also being
 30 released, so as to free the clutches from the ropes 9, the tension of the springs 8 rotates

the shaft 6, and it causes the drum 4 to rotate winding the ropes 9 upon it, and thus automatically lifting the apparatus back into its original position, from which position it
 35 may be operated as before or transported to another support and there used.

I claim—

1. The combination, with the chair-shaped frame having the seat portion 3 and the back 40 19, of the drum 4, arranged in said seat portion and having the gear 5 secured thereto, the shaft 6, having the gear 7 meshing with the gear 5, springs arranged upon said shaft, and the suspending-ropes upon the shaft ex- 45 tending through said back 19, substantially as described.

2. In a device of the class described, the combination, with the chair-shaped frame having the seat portion 3 and the back 19, of 50 the spring-controlled drum arranged in said seat portion, the suspending - ropes wound upon said drum and extending through said back 19, clutches arranged in said back engaging said ropes, and an operating-lever for 55 said clutches, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of January, 1890.

ERDMAN RANK.

In presence of—

T. D. MERWIN,
 S. W. ROBERTS.