

No. 812,500.

PATENTED FEB. 13, 1906.

E. KAUNTZE.
DOOR RELEASING MECHANISM.
APPLICATION FILED NOV. 25, 1904.

Fig. 1.

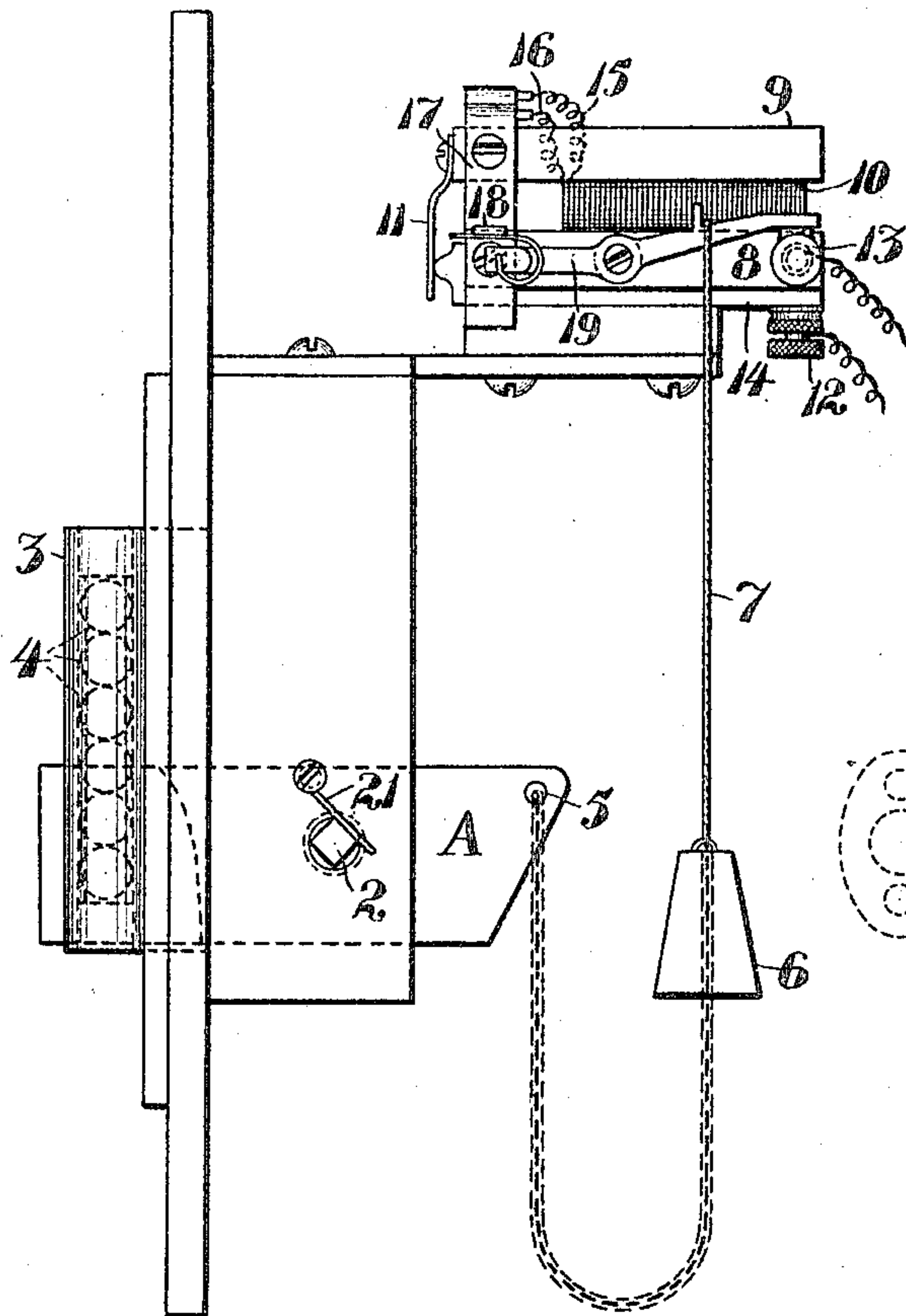


Fig. 2.

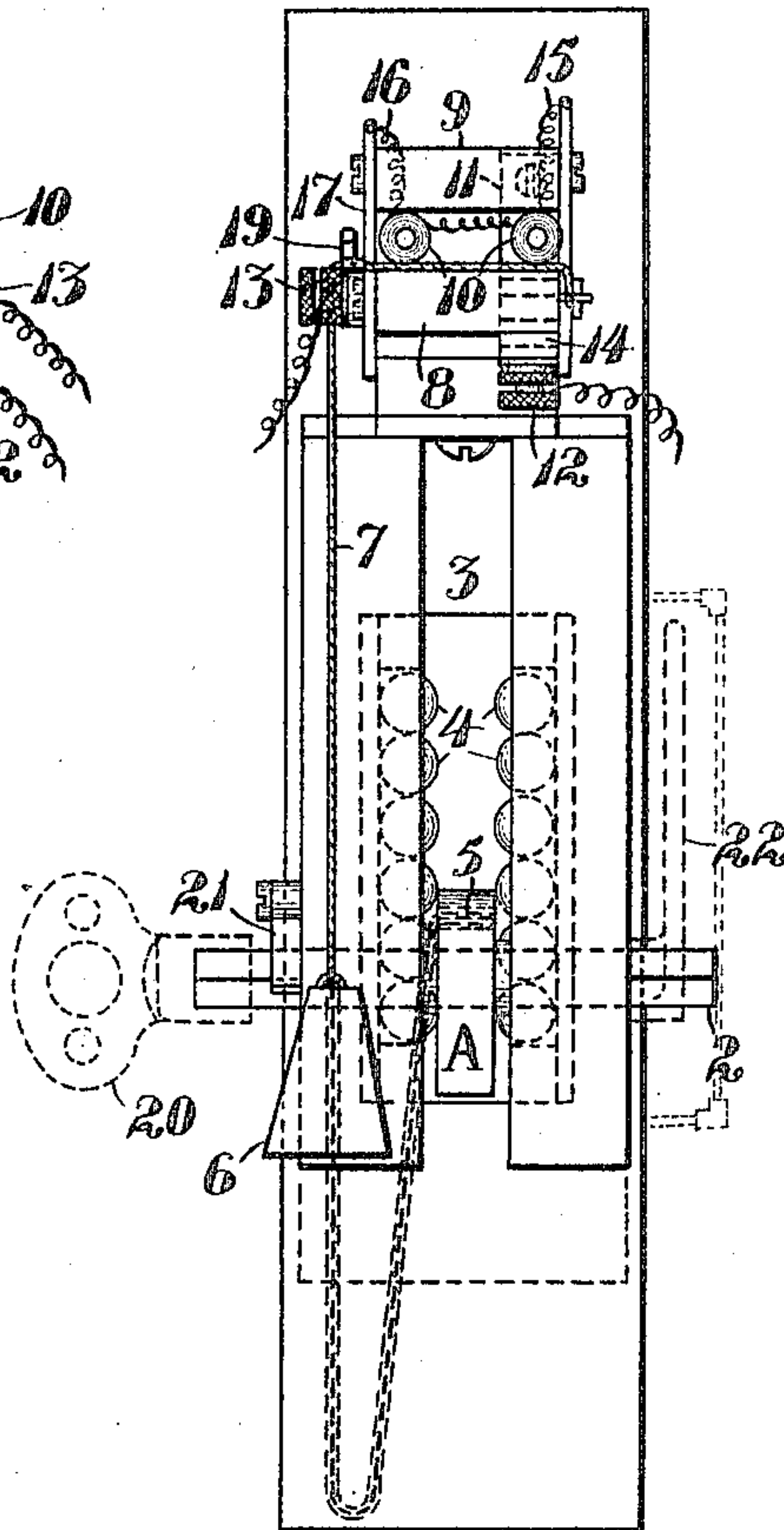
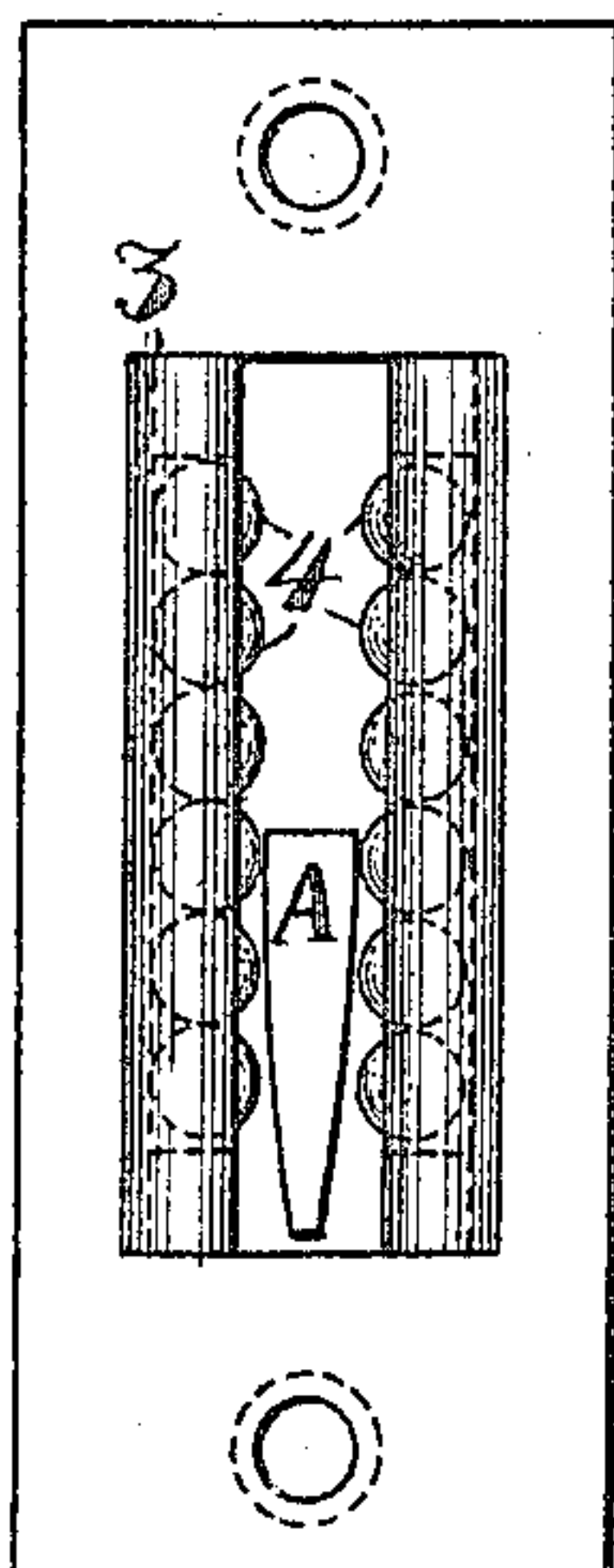


Fig. 3.



Witnesses:-
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UNITED STATES PATENT OFFICE.

EDWARD KAUNTZE, OF HANFORD, CALIFORNIA.

DOOR-RELEASING MECHANISM.

No. 812,500.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed November 25, 1904. Serial No. 234,226.

To all whom it may concern:

Be it known that I, EDWARD KAUNTZE, a citizen of the United States, residing at Hanford, in the county of Kings and State of California, have invented new and useful Improvements in Door - Releasing Mechanism, of which the following is a specification.

My invention relates to a device which is designed for convenient and instantaneous releasing of doors.

It consists of a suitable lock by which the door is normally secured, a weight or equivalent device by which the latch may be disengaged and the door released, a destructible support upon which the weight is normally carried, and an electrical device by which the weight may be released to unlock the door.

It also comprises combinations of parts and details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my device. Fig. 2 is an end view of same. Fig. 3 is a rear view of the keeper, showing a tapered latching-bolt engaging the balls.

My invention is designed for the rapid releasing of doors in an emergency, and is especially available for theaters and other buildings where large public gatherings occur and in which by reason of fire or other accident it is necessary to promptly open exits which are normally locked.

As shown in the accompanying drawings, A is a latching-bolt of any suitable construction, and this bolt is turnable upon a fulcrum-pin 2, the bolt being thus pivoted so as to be easily swung into a transverse position in which one end engages a keeper, as at 3.

In the case of single doors the locking-bolt may be preferably journaled in the door-casing and the keeper carried by the door; but in the case of double doors it will be necessary to carry one portion upon one part of the door and the other upon the other portion of the door, this not being material to the operation of my invention.

As the door will be subjected to heavy pressure in case of sudden rush, I have shown the keeper having ball-races upon each side of the slot in which the bolt will be engaged, and within these races balls, as at 4, are fitted, so that when the bolt is turned into locking position it engages with these balls.

Any means by which the bolt is turnable to release the door will operate it against any pressure that can be brought upon it because

of the freedom with which the balls will allow it to move.

The opposite end of the bolt is provided with an opening or attachment, as at 5, and from this end of the bolt a weight 6 is suspended of sufficient capacity to turn the bolt when the weight is released. It will be understood that a weight or equivalent substitute for the weight may be employed.

In order to hold the weight out of action, a cord, as at 7, is so connected as to prevent the weight from acting to disengage the bolt. At some portion of its length this cord is passed through a device by which it may be destroyed and the weight released whenever desired.

As at present shown the device comprises two non-conducting plates 8 and 9, hinged together at the rear end, and between these plates is an electrically-resistant substance which may become incandescent and destroy the cord whenever an electrical current is passed through it. I have here shown this resistance as consisting of fine wire wound around to form cylinders, as 10, fixed to the upper section 9, and when the parts are closed together the destructible cord passes beneath these cylinders and is pressed down against the surface of the lower section. Any equivalent of this device may be employed.

A spring or equivalent, as at 11, controls the movement of the hinge portion and insures its remaining closed when desired and also completes an electrical circuit to be hereinafter described.

An electrical circuit is completed through the cylinders or their equivalents 10 by connecting wires from a source of electrical energy with the binding-posts 12 and 13. The circuit is then completed from the binding-post 12 through the conductor 14 to the rear of the lower part of the device, thence through the spring 11 to the upper plate 9, thence through the wire or conductor 15 to the cylinders 10, thence through the wire 16 to a contact-piece 17 and a spring 18 to a lever 19, which is fulcrumed upon the lower non-conducting plate 8.

The cord 7, by which the weight is prevented from acting, passes beneath the coils 10, thence over the lever 19, and the weight upon the cord is sufficient to bring the outer end of the lever 19 down into contact with the binding-post 13, so that this circuit is complete.

The wires upon the binding-post may lead to any distant or convenient point within reach

of the proper official, so that in any case of emergency the circuit is closed at this distant point, thus energizing the parts herein described, and the devices 10 will be heated to such an extent as to destroy the cord 7, thus releasing the weight, which immediately falls and acts to swing the latch or bolt out of engagement with the keeper, and the door is thus instantly released.

10 In order to open and close the door without interfering with the electrical apparatus herein described, I have shown the bolt or pin upon which the latch is turnable as extended through the sides of the door and made polygonal, so as to receive a key, as shown at 20. This can be operated by the watchman or other employee whenever it is desired to open the door in the usual manner or from the outside.

20 A spring, as at 21, is adapted to press upon the sides of the polygonal shank with sufficient force to hold the latch in position when either engaged or disengaged with the keeper.

In order to make it possible to open the door without recourse to the electrical device in case of destruction of connections or other accident by which such device might not work, I have shown a lever, as at 22, connected with one end of the turnable pivot-pin of the bolt or latch, and this is normally inclosed in a destructible casing upon which may be marked instructions to break the casing in case of emergency. The casing being thus broken exposes the lever or crank, so that any one may turn it and instantly open the doors.

In order to reduce friction of the latch under pressure, it may be made wedge-shaped, as shown in Fig. 3, so that only its upper portion contacts with the balls or rollers 4. This allows it to move more easily in the arc in which it travels.

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

45 1. In a door-releasing device, a latch pivoted and turnable upon one member of the door structure, a vertically-slotted keeper upon the other member, with which the latch may be engaged, a weight suspended from the inner end of the latch, a destructible cord connected therewith by which said weight is normally held out of action, and means controlled from a distant point for destroying the cord and thereby releasing the suspended weight to allow it to disengage the latch.

2. In a door-releasing device, a pivoted vertically-turnable latch carried upon one member of the door structure, a keeper carried upon the other member having a vertical slot and antifrictional devices within the slot with which the latch engages, a suspended weight so connected with the opposite end of the latch that when disengaged it will act to

swing the latch and release the door, a destructible cord connecting with the weight and normally holding it out of action, and means controlled from a distant point for generating a destructive heat by which said cord is destroyed and the weight released.

3. In a door-releasing device, a latch and a keeper located upon the door-frame and the door, a weight connecting with the inner end of the latch, a cord by which the weight is normally suspended out of action, an electrically-heated part with which the cord is maintained in contact, means for completing an electrical circuit whereby said part is heated, the cord destroyed and the weight allowed to act to disengage the latch.

4. In a door-releasing device, a turnable latch and a keeper located upon the door and the frame thereof, a weight connected with the latch, a cord by which said weight is normally held out of action, a device by which said cord may be destroyed, said device consisting of electrical conductors capable of being heated, plates between which said conductors are carried, electrical circuits established through said conductors a spring-pressed lever over which and in contact with the parts to be heated the suspending-cord is passed, whereby the lever is held in position to form part of the electrical circuit and distant contacts by which said circuit may be closed and the cord destroyed.

5. In a door-releasing device, an antifrictional keeper located in one member of the door structure, a vertically-turnable latch, a shaft upon which said latch is centrally fixed with its ends projecting in opposite directions, a weight acting upon one end of the latch to disengage the other end from the keeper, a destructible retaining device and an electrically-actuated means controlled from a distant point for generating a destructive heat by which said device may be destroyed and the weight released.

6. In a door-releasing device, a latch and keeper located respectively in the door-casing and door, a pivot-pin to which the latch is centrally fixed, said pivot-pin having projecting ends and attachment by which it is turnable, a destructible casing inclosing said ends, a weight connecting with one end of the latch, a device by which said weight is normally suspended out of action and means by which the suspending device may be destroyed.

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

EDWARD KAUNTZE.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.