

**No. 693,651.**

**Patented Feb. 18, 1902.**

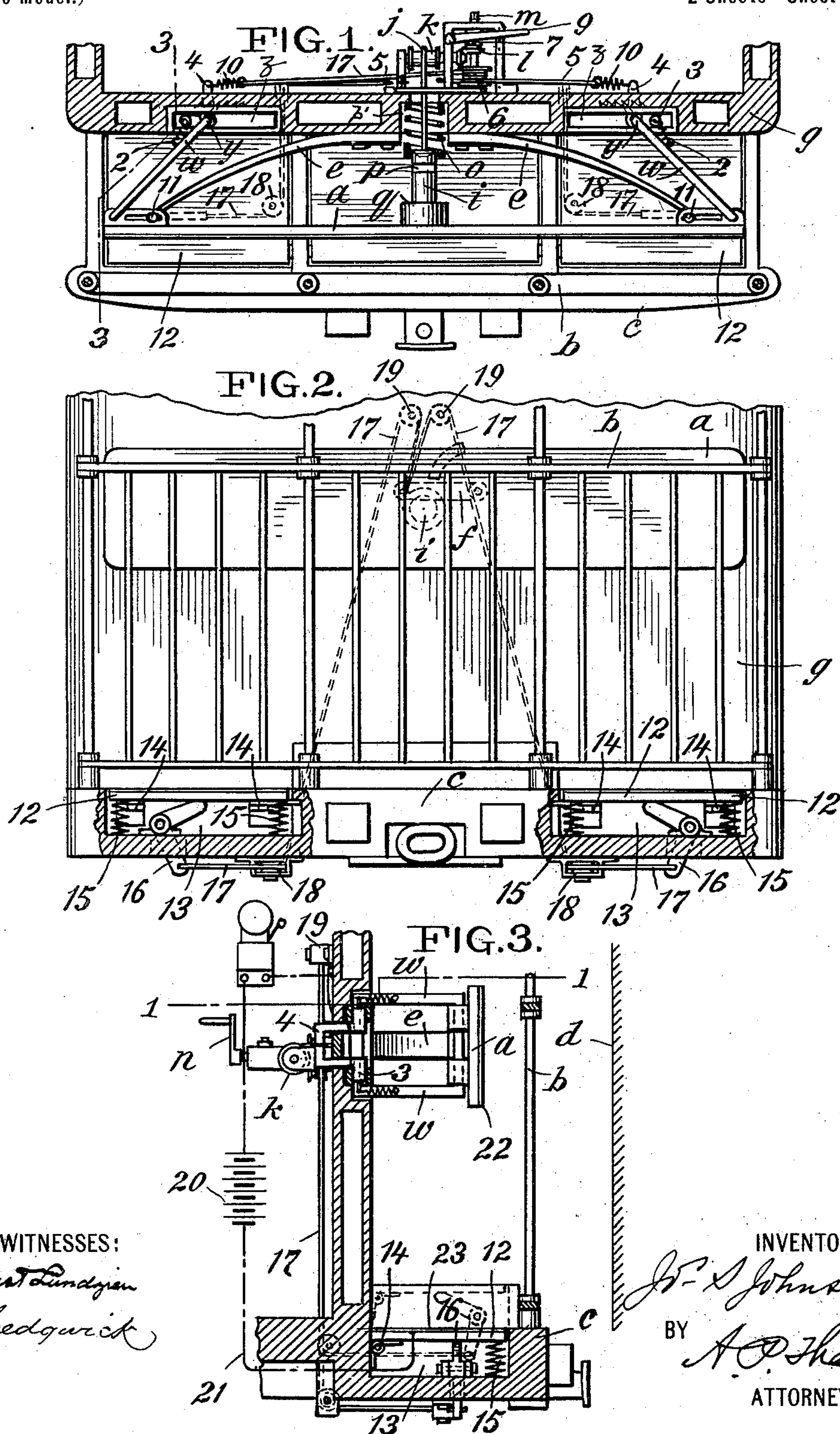
**J. S. JOHNSON.**

# AUTOMATIC TRAIN ROBBER INTERCEPTING APPARATUS.

(Application filed Sept. 9, 1901.)

(No Model.)

**2 Sheets—Sheet 1.**



**WITNESSES:**

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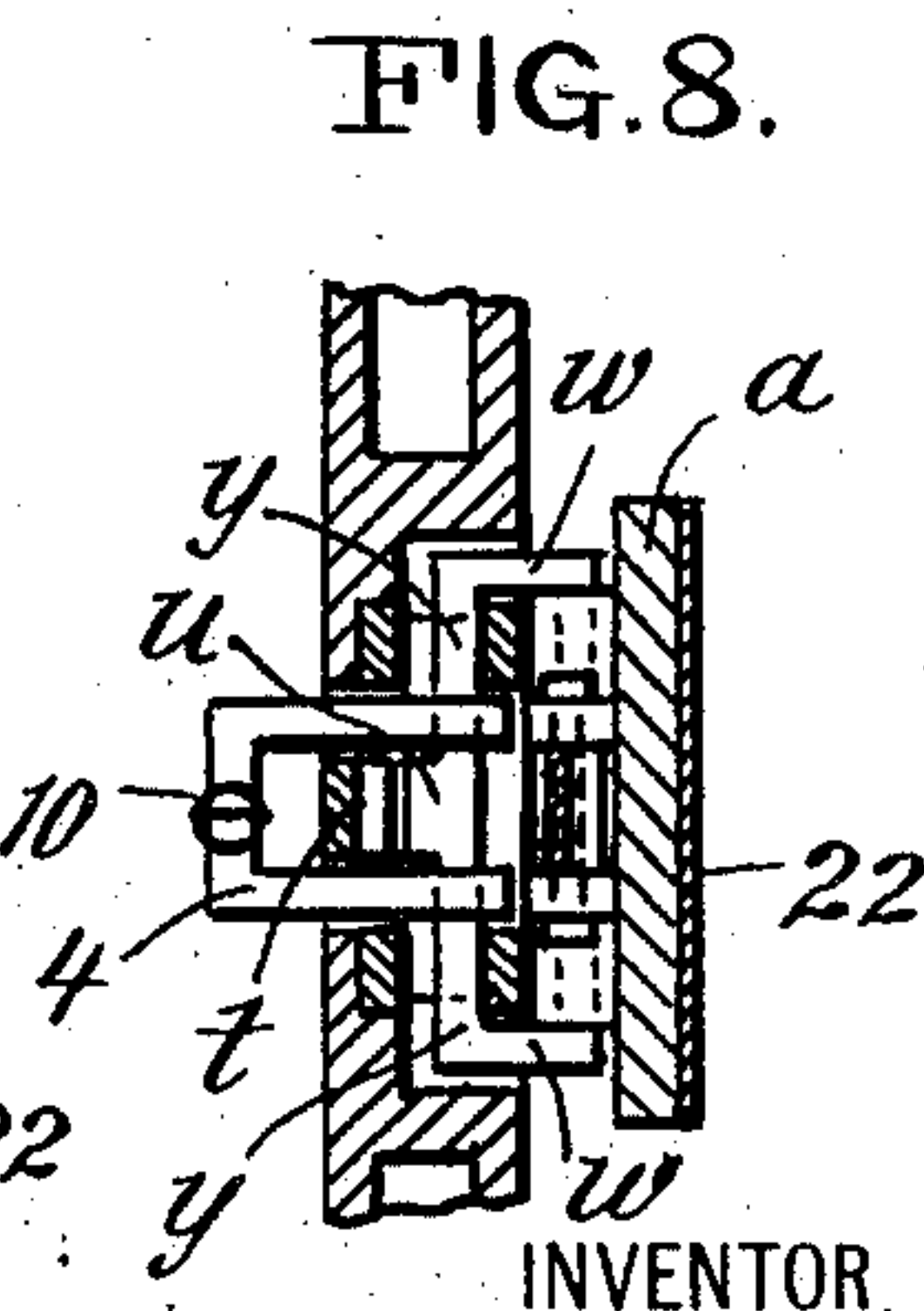
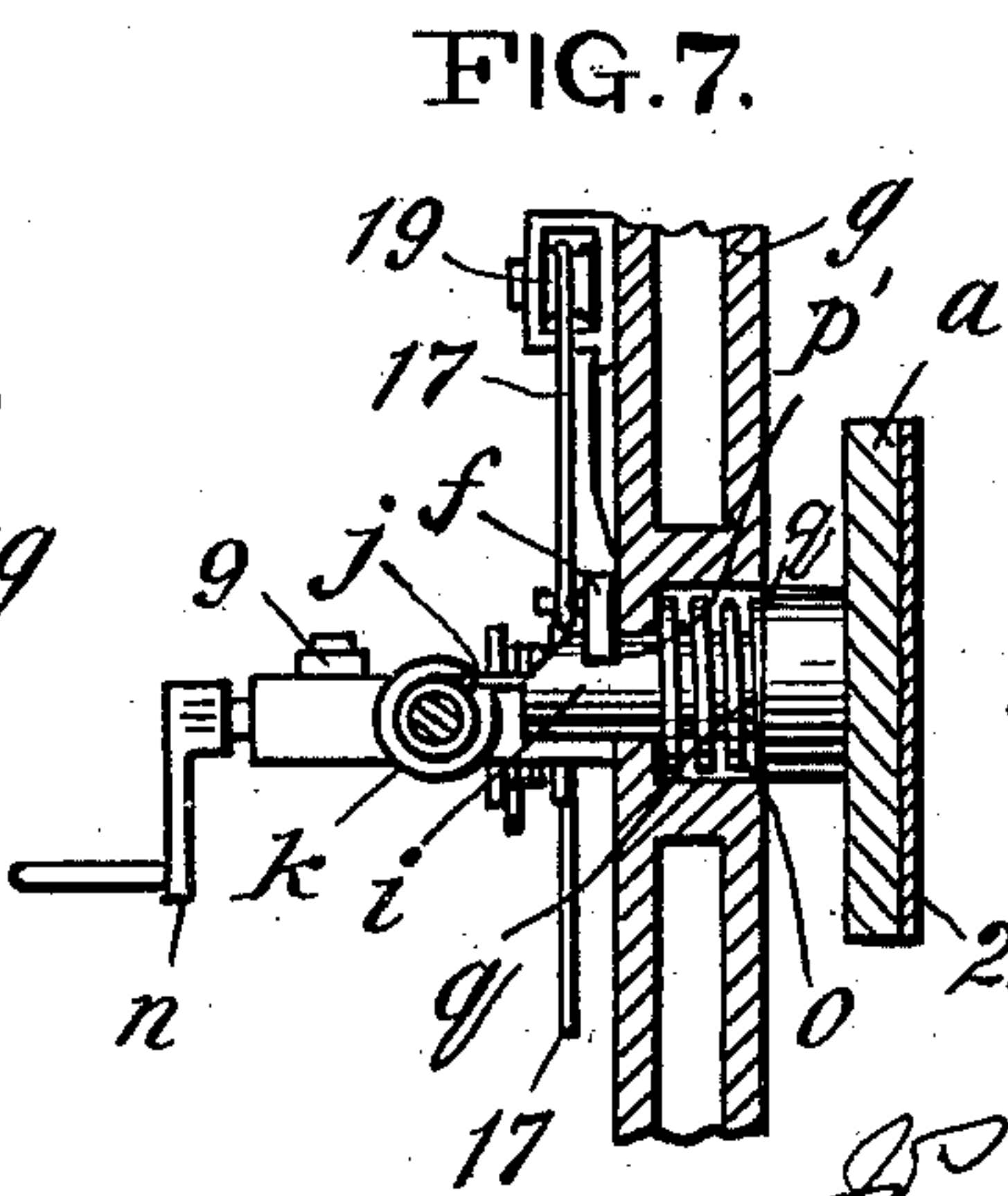
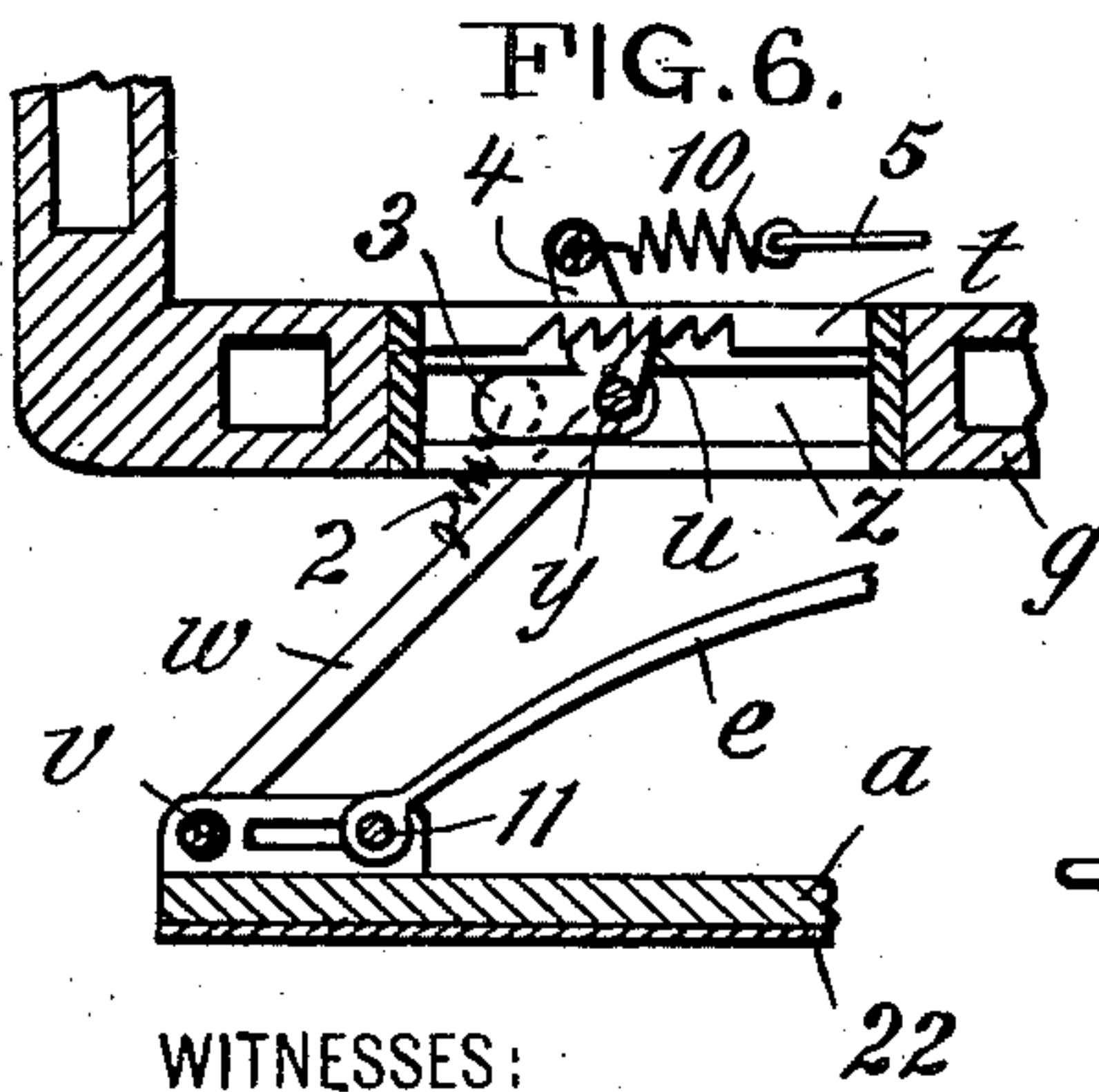
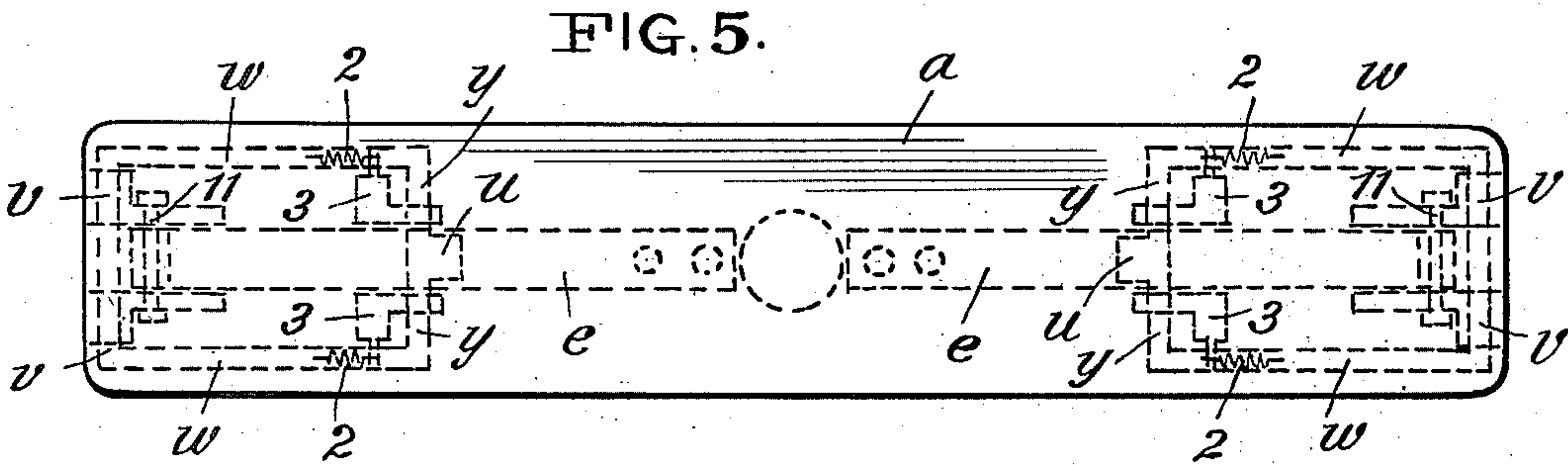
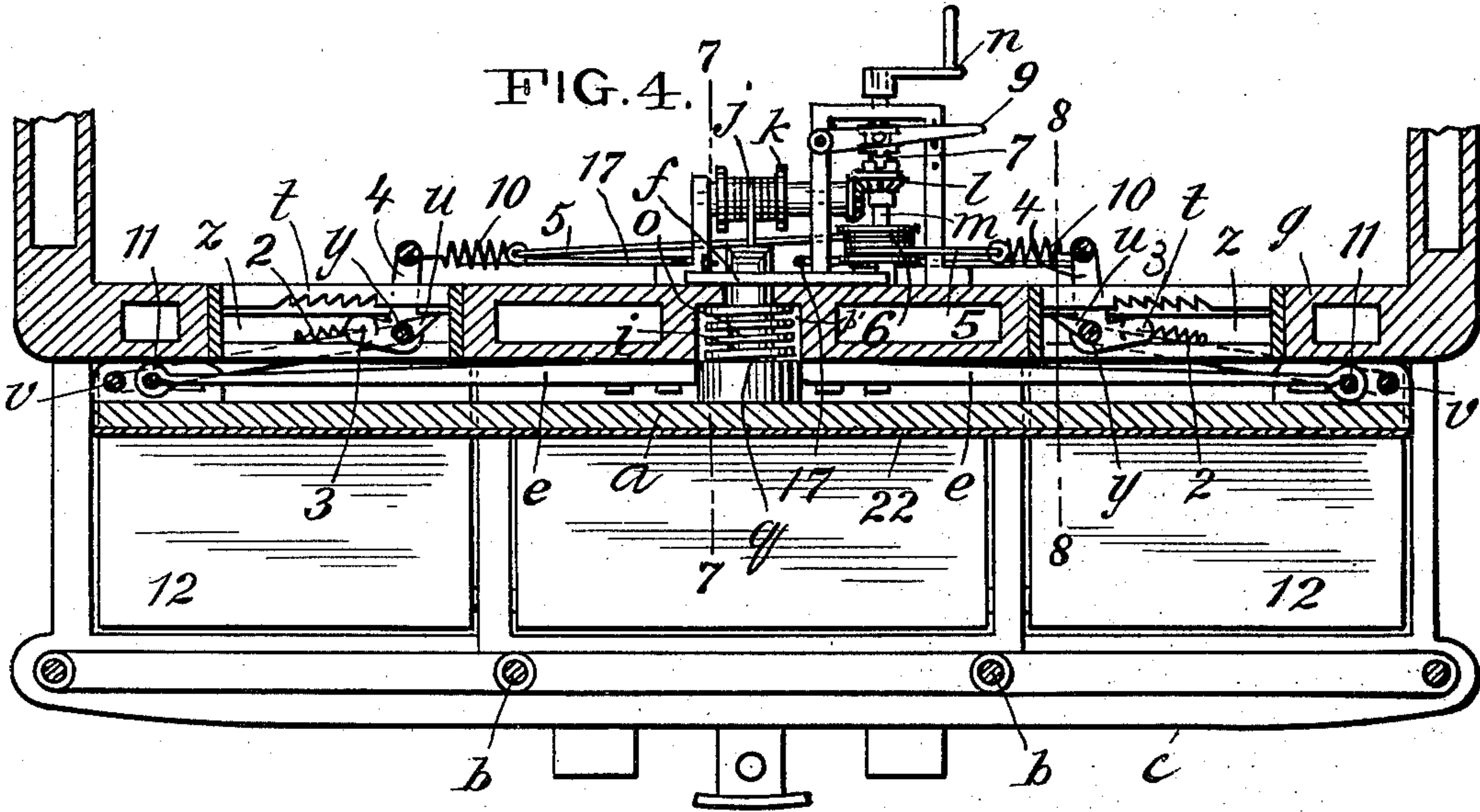
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AUTOMATIC TRAIN ROBBER INTERCEPTING APPARATUS.

(Application filed Sept. 9, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC TRAIN-ROBBER-INTERCEPTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 693,651, dated February 18, 1902.

Application filed September 9, 1901. Serial No. 74,806. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH S. JOHNSON, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Automatic Train-Robber-Intercepting Apparatus, of which the following is a specification.

The object of my invention is to provide means for automatically intercepting the operations of train-robbers whose practice is to sneak aboard trains at obscure stations in the night and keep in hiding until the train reaches the locality of confederates posted along the road and then suddenly take position on the platform of the blind-baggage or other car next behind the locomotive-tender and cover the engineer and fireman with guns, and thus force them to stop the train for the operations of the confederates.

The invention consists of trap mechanism adapted when sprung by the robber on taking position on the platform to grip him against the end rail of the car or against the end of the tender in the absence of such rail, so as to hold and incapacitate him for further operations; and the invention also comprises electric apparatus for turning on an electric current at the same time of such power as may be expected to neutralize or hinder the efforts of the robber to free himself, all as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a horizontal section of the front end of a car equipped with my improved intercepting apparatus. Fig. 2 is a front end elevation of such car in part with some parts in vertical section. Fig. 3 is a detail in longitudinal vertical section on line 3 3 of Fig. 1. Fig. 4 is a horizontal section in a higher plane than the section of Fig. 1 and is drawn to a larger scale. Fig. 5 is a front elevation of the jaw for gripping the robber against the railing or the tender. Fig. 6 is a detail in the same horizontal section as Fig. 1, but detached from other parts for greater clearness. Fig. 7 is a detail in vertical section on line 7 7 of Fig. 4. Fig. 8 is a detail in vertical section on line 8 8 of Fig. 4.

In the middle and western portions of the United States, where train-robbing mostly

prevails because of the more favorable opportunities afforded by the more sparsely settled regions of the country, the cars generally connected next to the locomotive-tender in the train are of the character indicated by the term "blind," as blind-baggage, &c.—that is, having no door, window, or other opening at the front end—which the robbers take advantage of, because they cannot be seen from within the car. These platforms are quite narrow, not being required for use by the trainmen, and hence are favorable to the application of my intercepting apparatus, as will be seen farther on, the essential features of which are a gripping-jaw *a*, suitably placed relatively to the end railing *b* of the platform *c*, or to the hind end of the tender *d* in case the car has no railing, for gripping the body of a man at or about the middle of his height against said railing or tender, and one or more powerful springs, as *e*, which being released from the set position will thrust the jaw forward and so grip the intruder, together with means for setting and holding the springs and means for automatically tripping and releasing them through the instrumentality of one or more false platforms adapted for being suitably operated by the weight of the intruder when taking his position on, as he supposes, the ordinary platform.

The following-described setting and tripping apparatus is such as I have chosen at the present time as an example of what I consider efficient means for carrying out the invention; but it is manifest that it may be modified in various particulars, and I do not, therefore, limit myself to the contrivances and arrangements thereof herein represented.

In Figs. 1, 2, 3, and 6 the gripping-jaw *a* is represented as having been tripped and thrust forward by the springs, but without the entrapped intruder, as would be in actual use. In Figs. 4, 7, and 8 the said jaw *a* is represented in the set position and being held in such position by a latch *f*, suitably pivoted on the inside of the end *g* of the car-body to drop into the notch *p'* of a bevel-ended stud *i*, projecting from the back of the jaw *a*, suitably to reach through a hole in said end and receive said latch when the jaw is forced back. For so forcing the jaw back against



the springs *e* into the setting position a cord *j* is attached to the inner end of stud *i* and extended to and connected to the drum *k* for winding it thereon, said drum being geared by a pair of bevel-wheels *l* with a shaft *m*, having a hand-crank *n* for turning it. When the jaw *a* is thus forced back, the latch *f* drops into the notch *p'* and locks the jaw in the set position, as seen in Figs. 4 and 7.

The crank *n* is detachable from shaft *m*, as indicated in Fig. 1, to relieve the drum from hindrance by the crank when the springs are released for entrapping the culprit, thus relieving the jaw of the drag of the crank, which would hinder quick action of the jaw.

The springs *e* are reinforced by a helical spring *o*, placed in a socket *p'* of the outside of the car end *g* centrally to the jaw *a* and receiving the stud *i* within its coil, so that a shoulder *q* of the base of said stud compresses the spring for delivering its effect on the jaw simultaneously with the action of spring *e*. In this case this spring is represented as somewhat shorter than the full range of the jaw, and thus only giving effect on the jaw in the first part of its thrust; but it will be made longer for following up the jaw to a greater extent, if desired.

How the latch is released for springing the jaw will appear farther on in connection with the release of certain retaining mechanism, which will be first described, for taking effect to prevent recoil of the spring and the consequent reduction of its holding power after its expansive force has been reduced by the thrust, the apparatus being contrived to release the latch and said retaining mechanism together and by the same crank mechanism. The said retaining mechanism consists in this example of my invention of a stationary toothed ratchet-bar *t*, located in a slot or received in the end of the car-body behind each outer extremity of the jaw *a*, and a pawl *u* for coaction therewith, said pawls pivoted to the extremities of the jaw, respectively, at *v*. These pawls have for their carrying bar or stock a rectangular frame comprising two side bars *w*, one end bar *x*, by which they are pivoted at *v*, and another end bar *y*, which carries the pawl-bit *u*. One purpose of this frame construction is to afford sufficient length of pivot-bearing at *v* to afford practicable support of the pawl vertically edgewise on the back of the gripping-jaw *a* and another is to straddle the spring *e* and carry the pawl-bit *u* in the horizontal plane of the spring and in the longitudinal center of the jaw *a* for distributing the stresses uniformly. The end bar *y* of the pawl-frame is confined in slideways *z* in the car end, along which it shifts one way or the other, according as the springs *e* are contracted or let free, and at the same time that the said springs are let free the pawl-bits *u*, pivoted on the end bars *y*, engage with the ratchet and lock the jaw *a* against retraction by the reaction to which the springs *e* would be subject except for

such retaining device, thus more effectually insuring retention of the culprit. The slots *z*, in which the pawl-bit-carrying end bars *y* run, are sufficiently wider than the thickness of said end bars to allow the pawl-bits to drop clear of the teeth of the ratchet-bars *t* when not forcibly held in connection with said teeth to permit the pawl-bits to slide clear of them when the gripping-jaw *a* is to be reset.

To insure the engagement of the pawl-bits with the ratchet-teeth in case the pawl-bits should escape them when the jaw *a* is thrust out, springs 2 are connected to the pawl-bars *w*, which are adjusted to apply sufficient stress in the direction of said teeth for effecting such engagement, said springs being connected to trunnions 3 of bell-crank levers 4, which are pivoted on the bars *y* of the pawl-frames, and said trunnions run in the slideways *z* as the bars *y* shift along them, carrying springs 2 in suitable relation to the pawls for maintaining the bits in engagement with the teeth. To disengage these pawl-bits from the ratchet-teeth preparatory to resetting the jaw *a*, the bell-cranks 4 are connected by cords 5 with a drum 6 on the crank-shaft *m*, which also turns drum *k* for resetting the jaw at the same time; but as the pawls have to be released before the jaw can begin its retracting movement the bevel-wheels *i* are connected to shaft *m* by a clutch 7, with a lever 9 for operating it, so that drum *k* may be disconnected while the pawls are being released, and then be connected again to maintain the disconnection of the pawls while they are being drawn back along the ratchets during the retraction of the jaw. Should there be any difference in the movements of the pawls relatively to the movement of the jaw tending to conflict with the winding of the cords on the respective drums, such difference will be compensated by the spiral springs 10, connecting the cords 5 to the bell-cranks 4. It is to be noted that the trunnions 3 in the slideways *z* serve for the bell-cranks 4 for swinging the bars *y* downward to release the pawl-bits *u* from the ratchet-teeth, which is permitted by the slack of said bars *y* in the slideways. The springs *e* are connected to the gripping-jaw *a* by sliding pivots 11, which compensate for the movements of said pivots by the expanding and contracting actions of the springs.

False platforms, as 12, are provided in recesses 13 of the main platform *c* and hinged at one side at 14 and resting on springs 15 at the other side, with bell-cranks 16 under the sides supported by the springs, so that when the robber steps on them cords 17, connecting the bell-cranks with the latch *f*, will be operated to lift the latch and release the jaw-actuating springs. These cords are carried on suitable guide-pulleys 18 19.

In this example of my invention I have represented two false platforms for tripping the latch, with a blank middle space between them whereon the robber might, perhaps,



avoid tripping the jaw; but it is manifest that another tripping platform may be applied in this space, if desired.

In Fig. 3 I represent an electrical device the purpose of which is to electrify the one caught in the interrupter sufficiently to prevent him from releasing himself in case he may happen to have his hands free and also to transmit a bell or other signal of the captive, the said device consisting of an electric battery 20 in a circuit 21, connecting electrodes 22 and 23 of the jaw *a*, and the false platforms between which the one caught will close the circuit, and thus expose himself to such a disabling charge of current as will insure his detention until he may be arrested.

What I claim as my invention is—

1. The combination with the end of a car-body, also with the car-platform and means adapted for constituting the stationary jaw of a gripping device, of a movable gripping-jaw mounted on said car suitably for coacting with said stationary jaw, a spring or springs for actuating said gripping-jaw, means for setting said movable jaw-actuating spring or springs under tension, a movable false platform on the main platform and means for tripping and releasing said gripper-jaw spring through the instrumentality of said false platform.

2. The combination with the end of a car-body, also with the car-platform and means adapted for constituting the stationary jaw of a gripping device, of a movable gripping-jaw mounted on said car suitably for coacting with said stationary jaw, a spring or springs for actuating said gripping-jaw, means for setting said movable jaw-actuating spring or springs under tension, a movable false platform on the main platform and means for tripping and releasing said gripper-jaw spring through the instrumentality of said false platform, and means to prevent recoil of the expanded spring for retaining the object caught.

3. The combination with the end of a car-body, also with the car-platform and means adapted for constituting the stationary jaw of a gripping device, of a movable gripping-jaw mounted on said car suitably for coacting with said stationary jaw, a spring or springs for actuating said gripping-jaw, means for setting said movable jaw-actuating spring or springs under tension, a movable false platform on the main platform and means for tripping and releasing said gripper-jaw spring through the instrumentality of said false platform, means to prevent recoil of the expanded spring for retaining the object caught, said retaining means consisting of pawls pivoted to the springs near their extremities, and ratchet-bars carried on the

end of the car-body, said pawls carried in slideways along the rack-bars to control the engagement of the pawls with said rack-bars.

4. The combination with the end of a car-body, also with the car-platform and means adapted for constituting the stationary jaw of a gripping device, of a movable gripping-jaw mounted on said car suitably for coacting with said stationary jaw, a spring or springs for actuating said gripping-jaw, means for setting said movable jaw-actuating spring or springs under tension, a movable false platform on the main platform and means for tripping and releasing said gripper-jaw spring through the instrumentality of said false platform, means to prevent recoil of the expanded spring for retaining the object caught, said retaining means consisting of pawls pivoted to the springs near their extremities, and ratchet-bars carried on the end of the car-body, said pawls carried in slideways along the rack-bars to control the engagement of the pawls with said rack-bars and means to release the pawls from the rack-bars preparatory to setting the gripping-jaw consisting of the bell-cranks pivoted on the pawl-bars, and having trunnion-pivots in the slideways, and connected by cords with the drum of the crank-shaft.

5. The combination with the gripping-jaw and its operating-springs, of the pawl-and-ratchet devices for preventing recoil of the gripping-jaw springs, bell-crank devices for releasing the pawls from said ratchets, crank-shaft drum and cords for actuating the bell-cranks, drum and cord for retracting the gripping-jaw, said drum geared with the crank-shaft, and a clutch for permitting independent action of the pawl-releasing mechanism prior to the operation of the jaw-retracting devices.

6. The combination with the gripping-jaw and its operating-springs, of the pawl-and-ratchet devices for preventing recoil of the gripping-jaw springs, bell-crank devices for releasing the pawls from said ratchets, crank-shaft drum and cords for actuating the bell-cranks, drum and cord for retracting the gripping-jaw, said drum geared with the crank-shaft, a clutch for permitting independent action of the pawl-releasing mechanism prior to the operation of the jaw-retracting devices, and the compensating springs in the drum and bell-crank-connecting cords.

Signed at New York city this 15th day of August, 1901.

JOSEPH S. JOHNSON.

Witnesses:

A. P. THAYER,  
C. SEDGWICK.