No. 717,326. Patented Dec. 30, 1902.

W. BILKOWITZ.

STREET CAR FENDER.

(Application filed Oct. 11, 1902.)

(No Model.) 2 Sheets—Sheet 1.

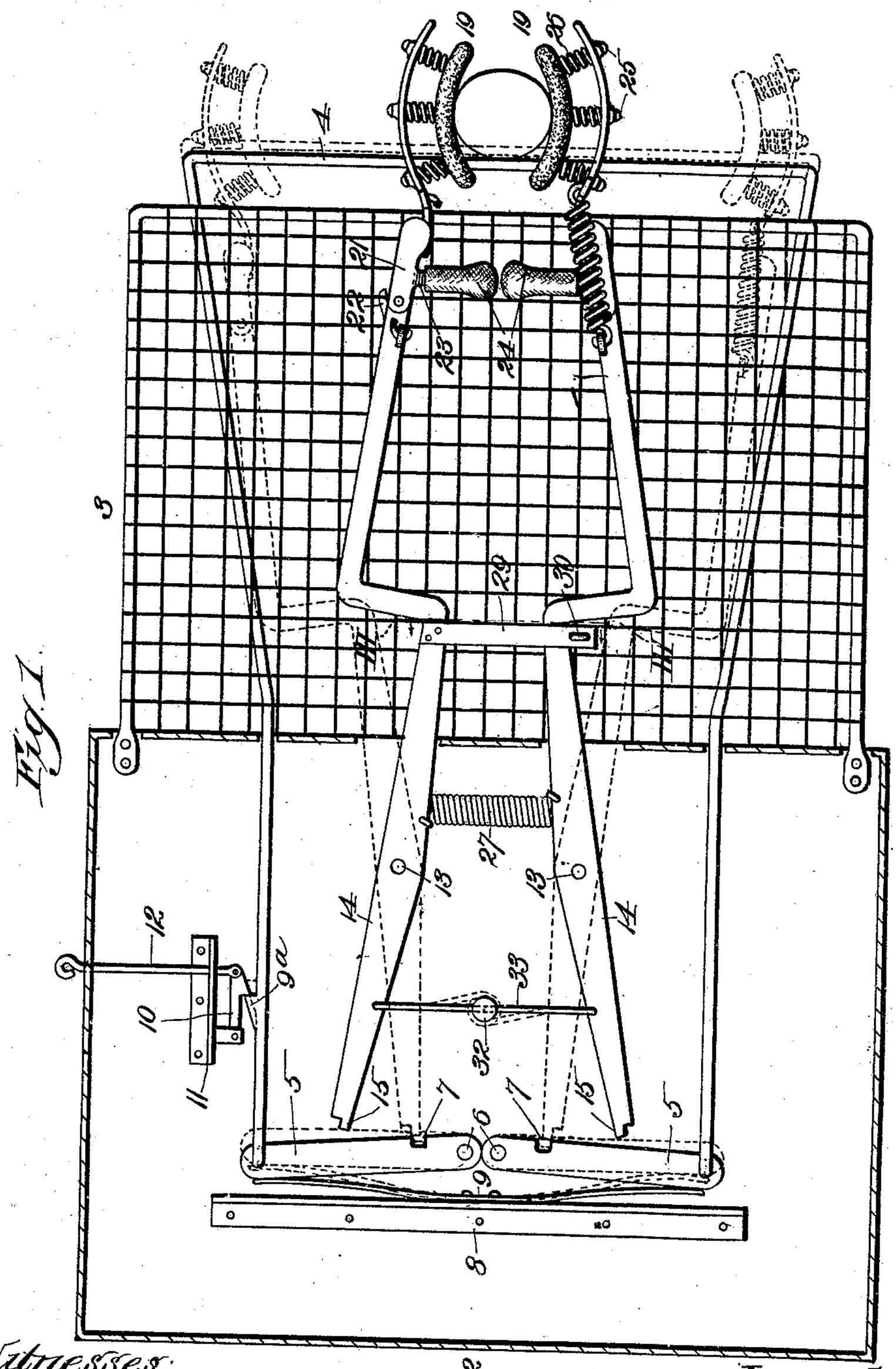

Fig. 1.

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Fig. 2.

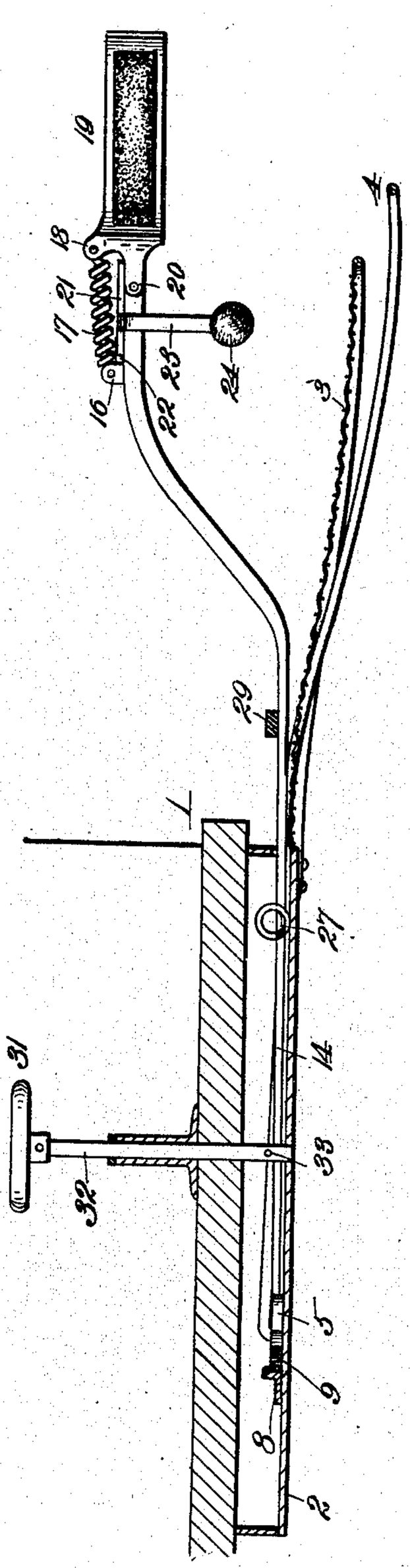


Fig. 4.

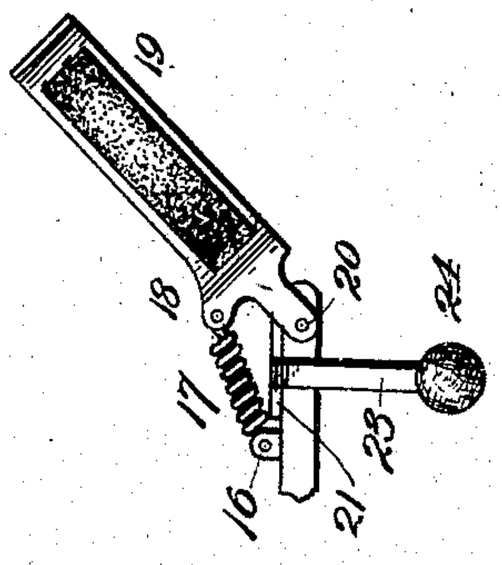
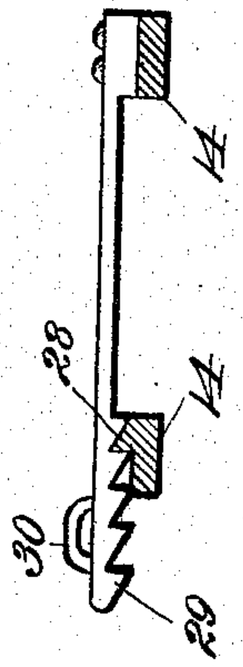


Fig. 3.



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UNITED STATES PATENT OFFICE.

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STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 717,326, dated December 30, 1902.

Application filed October 11, 1902. Serial No. 126,884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BILKOWITZ, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Street-Car Fenders, of which the following is a specification.

My invention relates to fenders for street-cars, and my object is to produce a device of this character which will not only catch and support a person upright upon the track, but will also elevate such person, so as to eliminate danger of injury from being dragged upon the ground.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a horizontal section of a street-car fender embodying my invention. Fig. 2 is a central vertical longitudinal section of the same. Fig. 3 is a cross-section taken on the line III III of Fig. 1. Fig. 4 is a detail view showing the spring gripping-jaws in the position they occupy after raising the object caught from the ground.

Referring now to the drawings, 1 designates a car of any suitable type, and 2 a rectangular casing secured under the platform of said car and provided with a forwardly-projecting portion 3, constituting the fender proper, the same having its front end above and slightly rearward of the corresponding end of a sliding trip-frame 4, this trip-frame being of approximately U shape in plan view and lying partly below the fender proper and partly within the casing, its rear ends being pivotally connected to catches 5, pivoted, as at 6, within the casing and adapted for horizontal movement, the front edges of these catches being formed with notches 7 for a purpose which hereinafter appears.

Rearward of the pivoted catches 5 is an angle plate or shoulder 8, to which is secured a spring 9 for pressing forwardly against the outer ends of the catches, and thereby holding the trip-frame advanced with a yielding pressure, the forward movement of the trip-frame being limited at times through the automatic engagement of its beveled tooth 9^a with a dog 10, pivoted to a lug projecting from angle-plate 11, the free end of the dog being connected pivotally to a pull-rod 12, which extends through angle-plate 11 and the contiguous side of the casing.

Pivoted, as at 13, within the casing, so as to work horizontally is a pair of rock-levers 14, having their rear ends formed with tongues 15 for engagement with the catch-notches 7. Their front ends are bent upward and overhang the fender proper and are provided with upwardly-projecting lugs 16, connected by exceedingly stiff springs 17 to the upwardly-projecting lugs 18 of a pair of curved gripping-jaws 19, said gripping-jaws being pivoted, as at 20, to said levers and adapted at times for vertical operation. The tendency of springs 17 is to swing said jaws upwardly, as shown in Fig. 4; but they are normally prevented from assuming such position by means of the locking-plates 21, pivoted, as at 22, to the levers and having their front ends overlying said jaws, as shown clearly in Fig. 1. These plates are provided at their inner edges with depending angle-arms 23, the substantially horizontal portions of the same being incased in rubber or other soft casings, as at 24. The jaws preferably comprise outer portions and inner portions, the latter being heavily upholstered and provided with guide-pins 25, which project through the outer portions and are headed at their outer ends, stiff coil-springs 26 being mounted upon said rods and bearing at their opposite ends against said inner and outer portions of the jaws, and in this connection it should be stated that it is contemplated to upholster the outer portions and the springs as well as the inner portions; but as such upholstering fails to embody invention it is deemed best to omit it from the drawings.

For the purpose of automatically operating the gripping-jaw-carrying levers a stiff spring 27 is arranged within casing 2 forward of pivotal points 13 and connected at its opposite ends to said levers, and forward of said springs one of the levers is provided with a tooth 28 and the other with a resilient rack-

bar 29 for engagement with said tooth to lock the levers in the position to which they are thrown by said spring.

Assuming now that the parts are disposed as shown in dotted lines, Fig. 1, and that a person walking across the track is struck and tripped by the tripping-frame, it will be seen that the resistance offered by the object will force the tripping-frame backward a slight distance to the position shown in full lines, said figure, and thus effect the disconnection of catches 5 with levers 14. The result is said levers under the action of spring 27 swing inward and catch the person on the track between the upholstered portions of the jaws while such person is falling over toward the fender, as they will invariably do if struck by the tripping-frame. The action is so quick that the person will be caught just as he begins to fall, and consequently will be supported in an upright position. As the person is caught in the manner explained the bumpers 24 come together, and thereby overcome the friction between the gripping-jaws and plates 21 and throw the front ends of the latter outwardly, the result being springs 17 are permitted to retract and swing the gripping-jaws and the person carried thereby toward the position shown in Fig. 4, the distance the springs raise the person being determined largely by the weight, though in no case will the jaws move higher than the position shown in Fig. 4. This automatic elevating action, which takes place at the same instant the person is caught, eliminates any possibility of injury by being dragged upon the ground. It furthermore prevents any danger of broken ankles. Should the person tip over after being caught between the gripping-jaws and fall toward the car, he will be caught and sustained without injury by the cushioned bumpers 24, and where a person is not caught by the gripping-jaws while in an upright position the bumpers are apt to be especially serviceable. To prevent the natural struggles or body movement from springing the levers apart, and thus releasing the person, the locking mechanism shown in Fig. 3 is provided, this locking mechanism automatically preventing the levers moving apart, as will be readily understood by reference to Figs. 1 and 3. To release the person caught, the conductor grasps the handle 30 of rack-bar 29, and at the same instant the motorman or gripman grasps wheel 31 and turns drum 32, so as to wind the cable 33 upon said drum, said cable being connected at its opposite ends to levers 14, rearwardly of their pivotal point, as shown clearly in Fig. 1. As the trip-frame slides rearwardly in the movement hereinbefore mentioned to release the members 14 its tooth 9^a engages dog 10 and is held by the latter from again springing forwardly under the pressure of spring 9 and remains in such position until after the motorman or gripman has swung levers 14 back to their original position, as shown by dotted lines, after which the conductor by pulling upon rod 12 trips dog 10 from the path of tooth 9^a and permits spring 9 to throw the catches 5 forward and cause the reëngagement of their notches with the tongues of levers 14, so as to simultaneously lock said levers in operative position and the slide-frame in its advanced position.

The object of using tooth 9^a and dog 10 is to hold the trip-frame and connections retracted until after levers 14 have been retracted to their original position by the motorman or gripman in the manner above explained, it being obvious that if the trip-frame were permitted to spring forwardly instantly after effecting the disengagement of levers 14 and catches 5 the former, not being retracted to the original position, would have to operate frictionally against the front edges of the catches and overcome the resistance of spring 9. After the levers are retracted to their original position it is necessary to depress the jaws and lock them in such position by swinging angle-plates 21 inward until they overlap the jaws.

From the above description it will be apparent that I have produced a car-fender which embodies the feature of advantage enumerated as desirable in the statement of invention and which may obviously be modified in many particulars without departing from its spirit and scope.

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

1. In an apparatus of the character described, a pair of levers suitably supported for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, means to trip said catches, and means to throw the front ends of the levers toward each other immediately the catches are tripped.

2. In an apparatus of the character described, a pair of levers suitably supported for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, means to trip said catches, means to throw the front ends of the levers toward each other immediately the catches are tripped, and means to automatically lock said levers in the position to which they are thrown.

3. In an apparatus of the character described, a pair of levers suitably supported for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, means to trip said catches, means to throw the front ends of the levers toward each other immediately the catches are tripped, a tooth on one of said levers, and a spring rack-bar on the other to engage said tooth and automatically lock the levers in the position to which they are thrown.

4. In an apparatus of the character described, a pair of levers suitably supported

for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, means to trip said catches, means to throw the front ends of the levers toward each other immediately the catches are tripped, and means to restore the levers to their original positions.

5. In an apparatus of the character described, a pair of levers suitably supported for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, means to trip said catches, means to throw the front ends of the levers toward each other immediately the catches are tripped, a drum, and a flexible connection between said drum and said levers to restore the latter to their original positions.

6. In an apparatus of the character described, a pair of levers suitably supported for horizontal operation, and having gripping-jaws at their front ends, catches holding said levers with said jaws wide apart, a slidable trip-frame to trip said catches, and means to throw the front ends of the levers toward each other immediately the catches are tripped.

7. In an apparatus of the character described, a pair of levers having gripping-jaws at their front ends, spring-actuated catches holding said levers with said jaws wide apart, a slidable trip-frame pivotally connected to said catches to operate them and release said levers, and a spring to operate said levers and cause their jaws to approach each other.

8. In an apparatus of the character described, a pair of levers having gripping-jaws at their front ends, spring-actuated catches holding said levers with said jaws wide apart, a slidable trip-frame pivotally connected to said catches to operate them and release said levers, a spring to operate said levers and cause their jaws to approach each other, and means to hold said slidable frame retracted.

9. In an apparatus of the character described, a pair of levers having gripping-jaws at their front ends, spring-actuated catches holding said levers with said jaws wide apart a slidable trip-frame pivotally connected to said catches to operate them and release said levers, a spring to operate said levers and cause their jaws to approach each other, a dog for holding the slidable trip-frame retracted, and means to trip said dog and permit the slidable frame to be readvanced.

10. In an apparatus of the character described, a pair of levers to swing toward and from each other in a substantially horizontal plane, a pair of gripping-jaws pivoted to and adapted for vertical movement independently of the levers, springs tending to throw said jaws upward, and means for normally holding said jaws depressed.

11. In an apparatus of the character described, a pair of levers to swing toward or from each other in a substantially horizontal plane, a pair of gripping-jaws pivoted to and adapted for vertical movement independently of the levers, springs tending to throw said jaws upward, means for normally holding said jaws depressed, and bumpers for tripping said means and permitting the springs to elevate said jaws.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM BILKOWITZ.

Witnesses:
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H. C. RODGERS.