No. 658,584. Patented Sept. 25, 1900.

I. F. REDLEFSEN.

DOOR LOCKING DEVICE.

(Application filed June 27, 1900.)

(No Model.)

Fig. 1

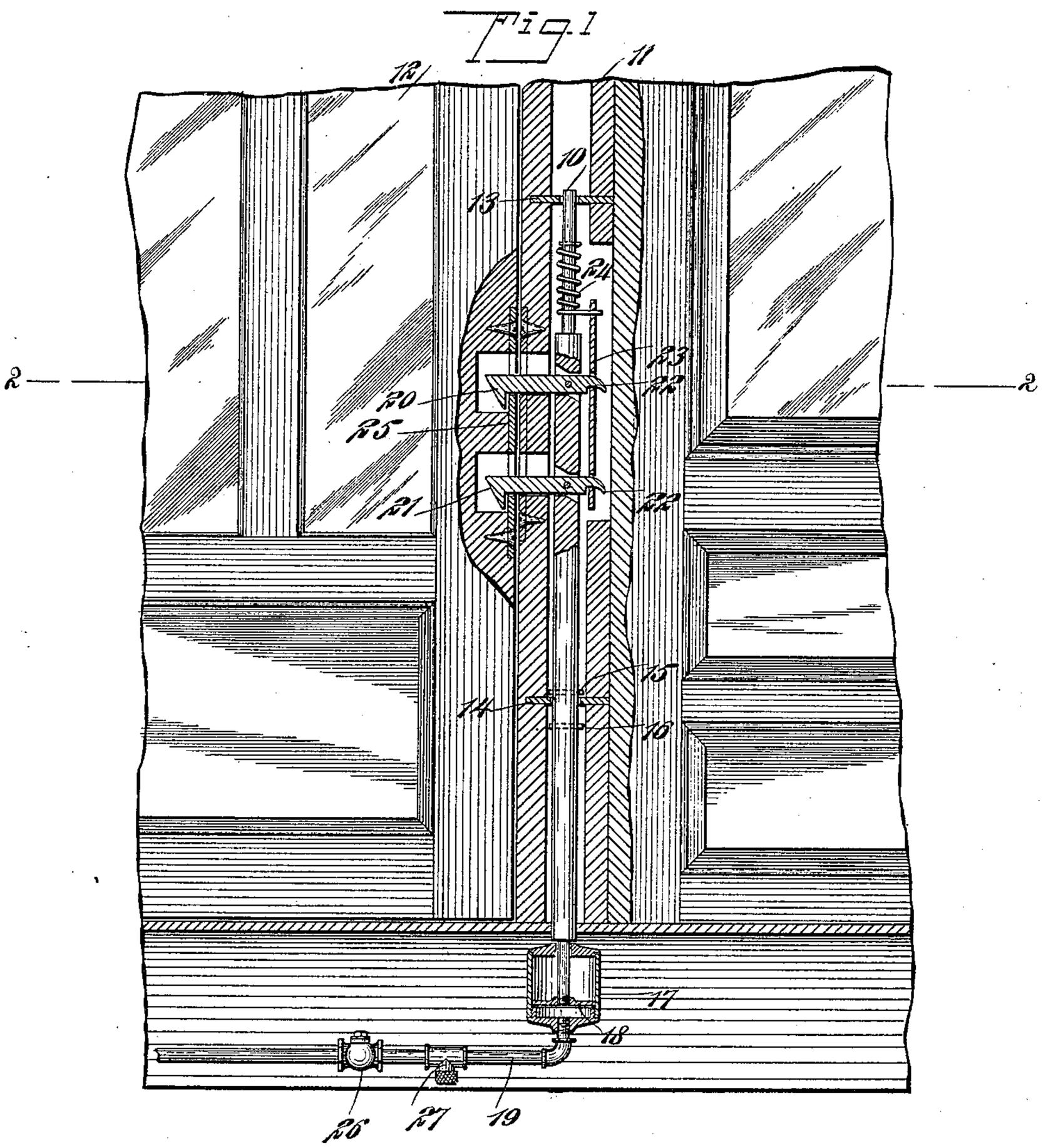
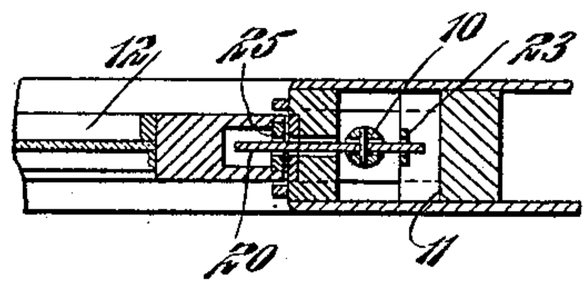


Fig. 2



WITNESSES:

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DOOR-LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 658,584, dated September 25, 1900.

Application filed June 27, 1900. Serial No. 21,736. (No model.)

To all whom it may concern:

Be it known that I, INGWER FRANK REDLEFSEN, a citizen of the United States, and a resident of Texarkana, in the county of Miller and State of Arkansas, have invented a new and Improved Door-Locking Device, of which the following is a full, clear, and exact description.

This invention relates to improvements particularly in means for simultaneously unlocking or releasing a number of doors—such as sliding doors for cars, residences, barns, cells, or the like; and the object is to provide a simple means for releasing a door or number of doors from any determined point.

I will describe a door-locking device embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional elevation showing a door locking and releasing device embodying my invention, and Fig. 2 is a section on the line 2 2 of Fig. 1.

The locking device comprises a rod 10, movable vertically in a door-casing 11 adjacent to the latch edge of the door 12. This rod is guided in its movements by means of plates 13 and 14, fixed in the door-casing, and to limit the vertical movements of said rod pins 15 16 are passed through the same above and below the plate 14. The lower end of the rod 10 passes into a cylinder 17, where it is provided with a piston 18, and a motive agent, such as air or steam, is admitted to the cylinder at the under side of the piston through a pipe 19, which may lead from any convenient point. When it is turned on, the motive agent moves the rod in a direction to release a door or number of doors.

Carried by the rod 10 are hook-shaped latches 20 and 21. These latches extend through openings formed in the rod, the upper and lower walls of said openings being inclined, as clearly indicated in Fig. 1. The inner ends 22 of these latches are turned slightly downward and project through openings in a fixed plate 23, and to this fixed plate one end of a spring 24 is attached, the other end of said spring being attached to the rod 10, the object of the spring being to move the rod downward. The outer ends of the latches 20 and 21 extend through openings in the jamb of the door-casing and are adapted to pass through openings in and engage with a latch-plate 25, attached to the edge of the door 12. I have shown two latches 20 21; but it is to be understood that one latch will answer for a locking device. Therefore I do not limit my invention to more than one latch.

Fig. 1 shows the door 12 in a locked position. When it is desired to release the door, air or other similar agent is to be admitted to the pipe 19, and this air by engaging the under side of the piston 18 will cause the rod 10 to move upward, and as the latches 20 and 21 are pivoted to said rod and have their inner ends engaged with the fixed plate 23 the hook or outer ends of said latches will be swung upward, so that the door 12 may be slid to an open position manually or by means of a spring or the like.

While I have shown but one door and its locking mechanism, it is to be understood that in a train of cars each door will be provided with a locking and releasing mechanism, and the pipe 19 will have connection with each of the cylinders 17, so that by turning on the air all of the doors will be simultaneously released. When used on a train of cars, there will be flexible connections with the pipe 19 between the several cars, and the valve for turning on and off the air or steam supply will be under the control of a person in the locomotive. Should the locomotive be detached from the train, however, and it is desired to open a door, the valve 26 in the pipe 19 adjacent to the cylinder 17 is to be closed. Then an ordinary hand-pump may be attached to a nipple 27 and operated to lift the rod, as before described. Of course upon sliding a door to its closed position the inclined lower edges of the latches will engage with the lower walls of the openings through the latch-plate, causing said latches to first swing upward and then to fall by gravity to their locking position. As the air is exhausted from underneath the piston 18, the spring 24 will move the rod 10 downward to its normal position. When the

locking and releasing device is employed for doors in a building or the like, the air or steam may be controlled from any desired point.

As the latches are wholly within the woodwork, it is obvious that they cannot be tampered with to release a door and cannot be released by an unauthorized person without using a hand air-pump in connection with the nipple 27, as before described.

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

1. A locking and releasing means for sliding doors, comprising a longitudinally-movable rod, a cylinder into which one end of said rod extends, a piston on the rod within the cylinder, a motive-agent pipe leading into said cylinder, and a door-engaging latch carried by and adapted to be moved out of locking engagement by a movement of the rod, substantially as specified.

2. A locking and releasing device for doors, comprising a vertically-movable rod, a cylinder in which the lower end of said rod engages, a piston on the rod within the cylinder, means for supplying a motive agent to the interior of said cylinder, a hook-latch extended through an opening in said rod and having pivotal connection with the rod, and a fixed plate having an opening into which the inner end of said latch passes, substantially as specified.

3. A door locking and releasing device, comprising a vertically-movable rod, latches extended through openings in said rod and pivoted to the rod, a fixed plate having openings through which the inner ends of said latches pass, a keeper-plate having openings to receive the outer hook ends of said latches, the said keeper-plate being secured to the door, a spring for moving the rod downward, and an air-pressure mechanism for moving the rod upward to release the latches from their locking connection with the door, substantially as specified.

4. A locking and releasing mechanism for doors, comprising a vertically-movable rod, latches having swinging conneection with said rod and adapted for engagement with the door, a cylinder in which the lower end of said rod engages, a piston on the rod within the cylinder, a pipe leading into the cylinder below the piston, a valve in said pipe, and a nipple on said pipe between the valve and cylinder and adapted for attachment to a pump, substantially as specified.

5. A locking and releasing device for doors, comprising a cylinder connected with a motive-agent supply, a piston in the cylinder, a sliding rod with which the piston is connected, a latch pivoted to the rod, and a fixed part with which the latch engages to swing it on its pivot when the rod is moved, substantially as described.

6. A locking and releasing device for doors, comprising a cylinder connected with a motive-agent supply, a piston in the cylinder, a sliding and spring-pressed rod having one end connected with the piston, a latch pivoted between its ends to the rod, and a fixed part with which one end of the latch engages, substantially as and for the purpose set forth.

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

INGWER FRANK REDLEFSEN.

Witnesses:
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F. M. WELLSFORD.