(No Model.) 2 Sheets—Sheet 1.

H. W. WAIT.

SAFETY EXPRESS CAR.

No. 544,702. Patented Aug. 20, 1895.

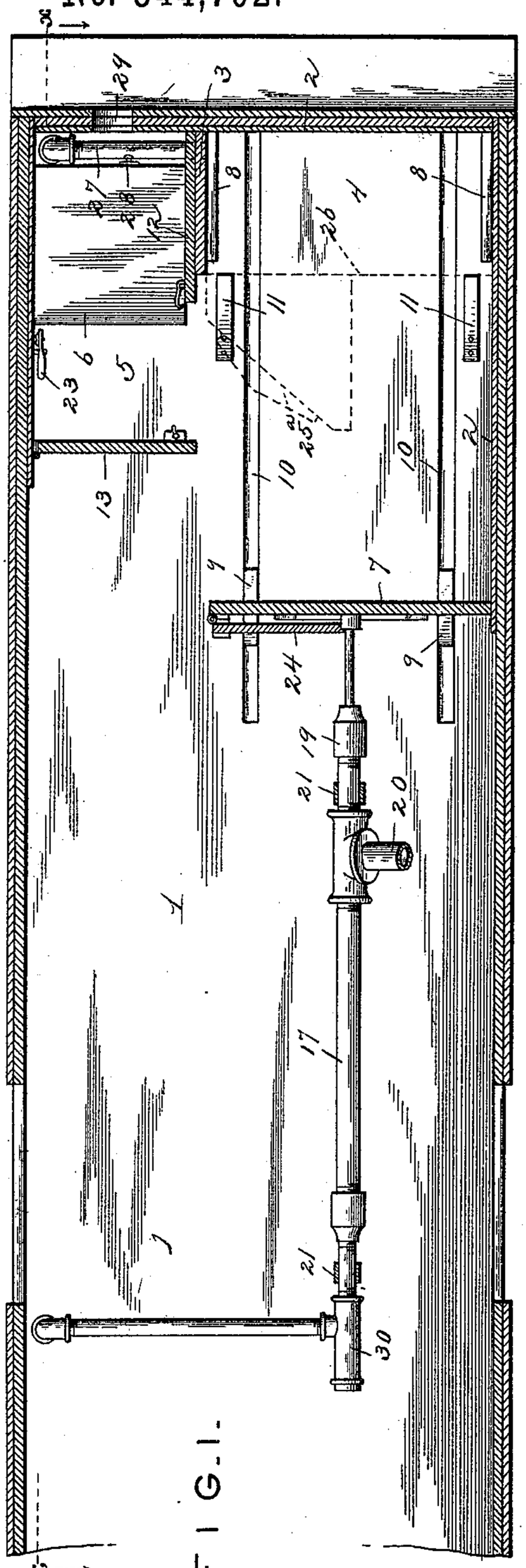

FIG. 1.

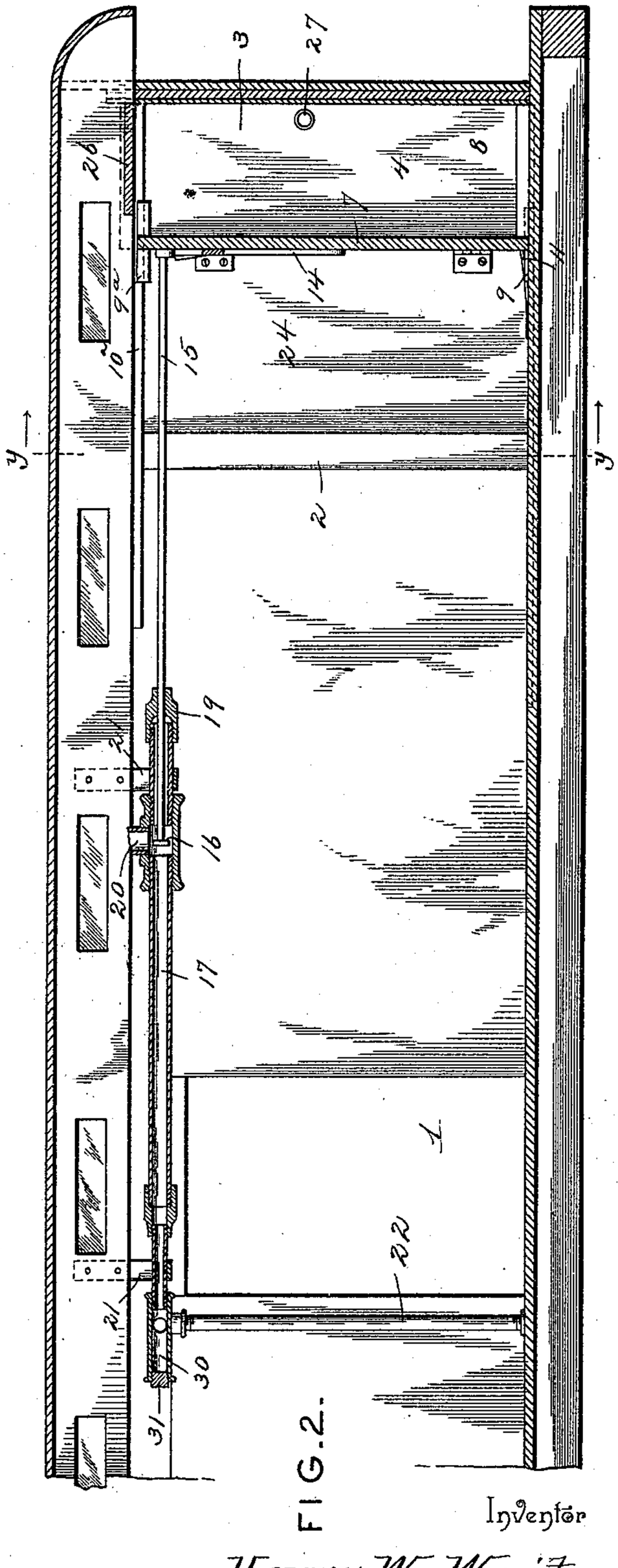

FIG. 2.

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Harry L. Amer.
J. H. Riley

Inventor
Henry W. Wait.

By His Attorneys,
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

H. W. WAIT.

SAFETY EXPRESS CAR.

No. 544,702. Patented Aug. 20, 1895.

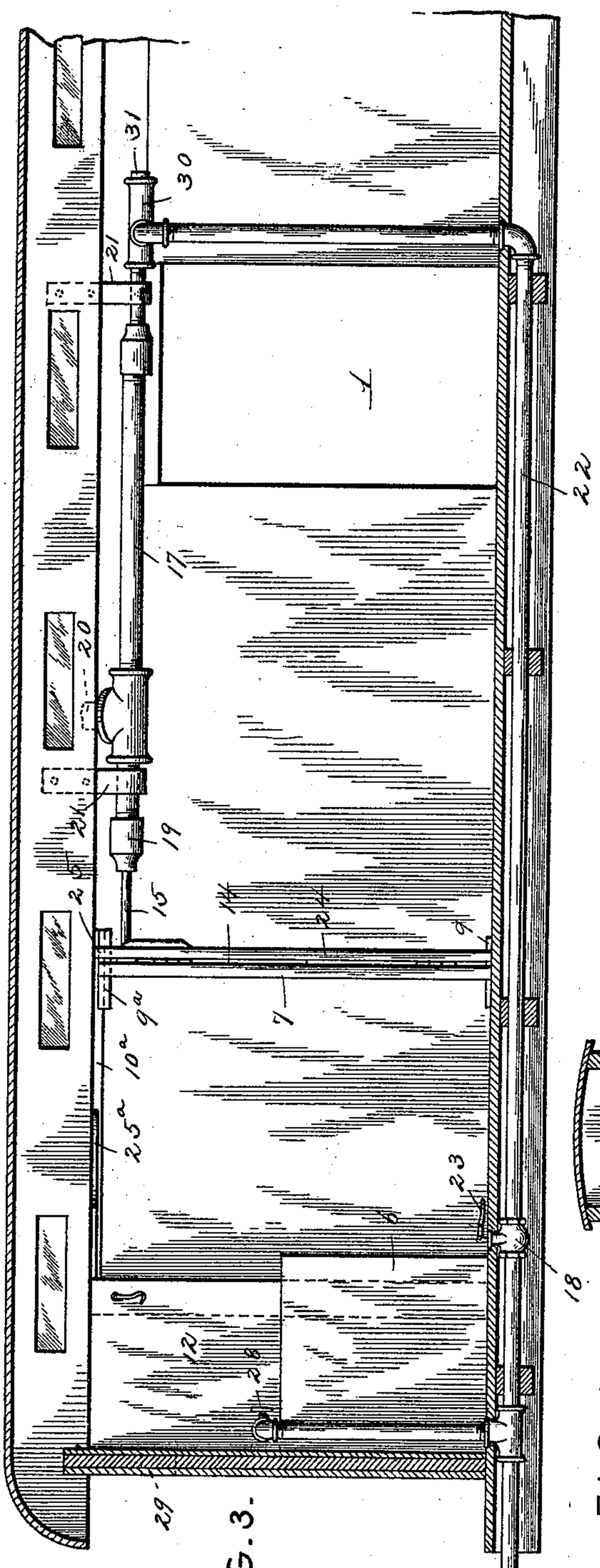

FIG. 3.

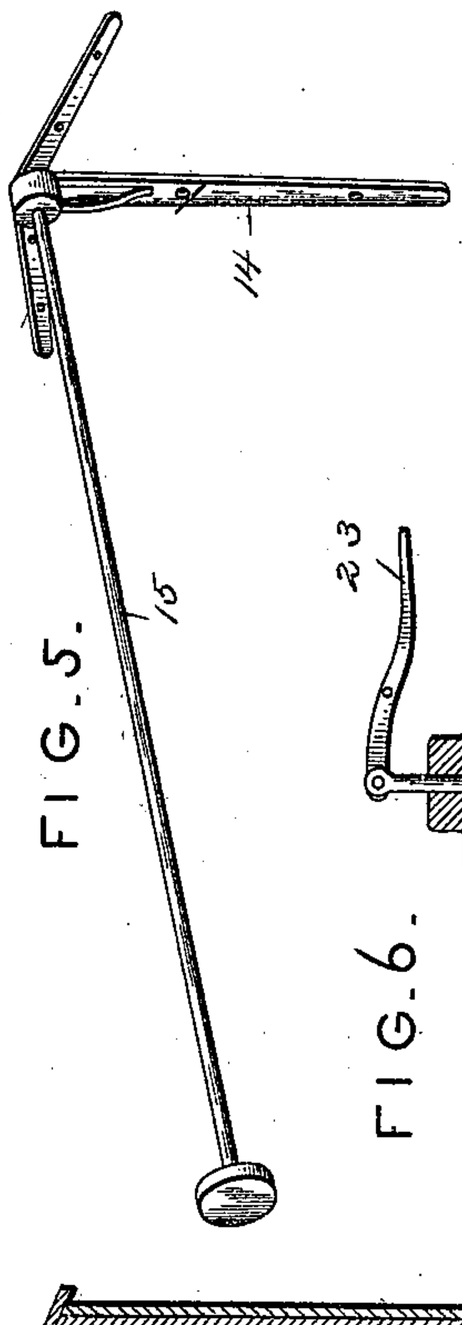

FIG. 5.

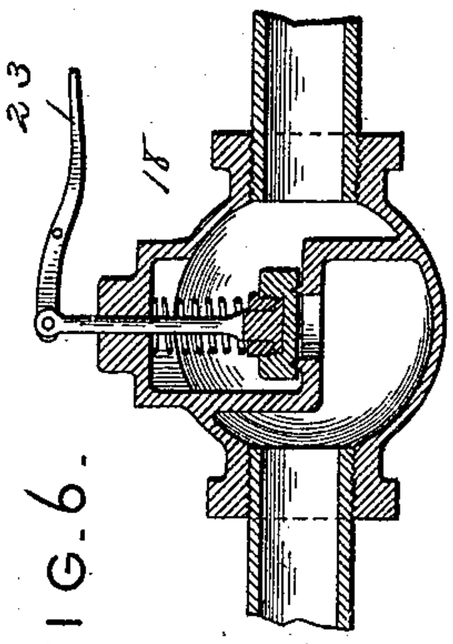

FIG. 6.

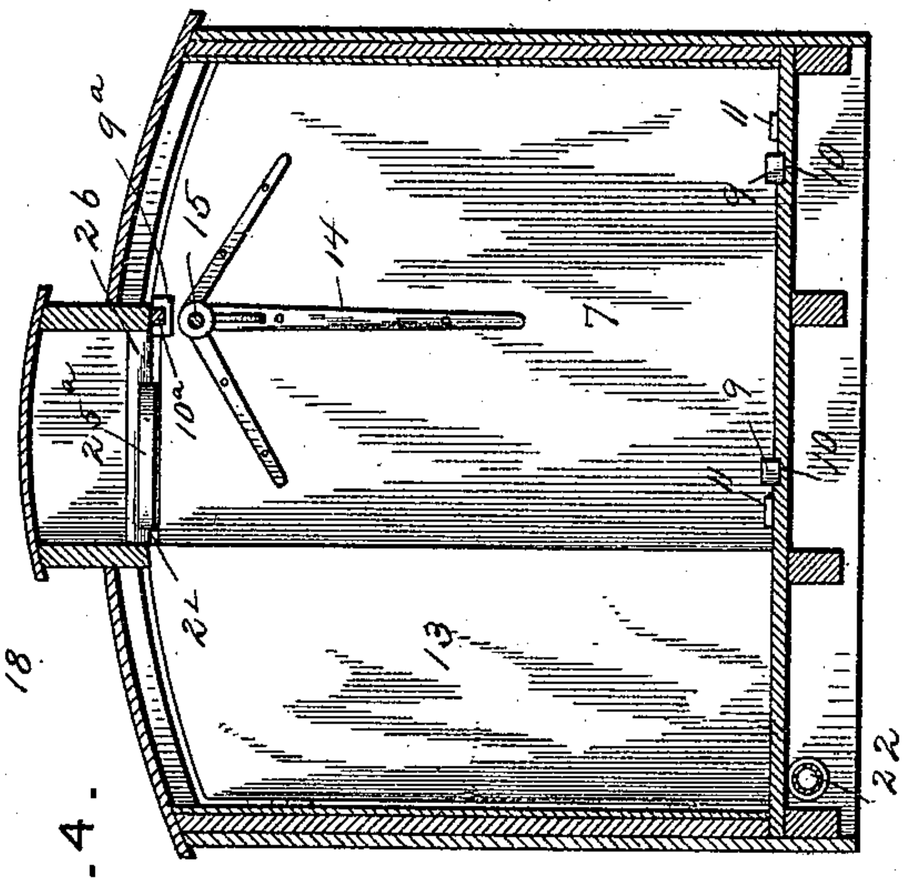

FIG. 4.

Witnesses
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T. F. J. Piley

Inventor
Henry W. Wait.

By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HENRY W. WAIT, OF IOWA, LOUISIANA, ASSIGNOR OF ONE-THIRD TO EUELLO S. WILLETT, OF SAME PLACE.

SAFETY EXPRESS-CAR.

SPECIFICATION forming part of Letters Patent No. 544,702, dated August 20, 1895.

Application filed May 8, 1895. Serial No. 548,587. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. WAIT, a citizen of the United States, residing at Iowa, in the parish of Calcasieu and State of Louisiana, have invented a new and useful Safety Express-Car, of which the following is a specification.

The invention relates to improvements in safety express-cars.

The object of the present invention is to improve the construction of express-cars for carrying money and other valuables and to provide simple and effective means adapted to be readily applied to any ordinary construction of express-car and capable of enabling any persons attempting to rob the car to be readily captured and safely confined.

The invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a horizontal sectional view of a portion of a car provided with my improvements. Fig. 2 is a vertical longitudinal sectional view of the same on line *x x* of Fig. 1. Fig. 3 is a similar view on line *y y* of Fig. 1. Fig. 4 is a transverse sectional view. Fig. 5 is a detail perspective view of the piston. Fig. 6 is a detail sectional view of the valve.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a car of any desirable construction provided at one end with a lining 2 of heavy sheet metal or similar material, and provided with a short longitudinally-disposed partition for dividing the end of the car off into a cell 4 and a compartment 5, adapted to contain the safe 6 of the car. The cell 4 is closed by a sliding door 7, adapted to be moved up against stops 8, which are secured to the bottom of the car and are arranged longitudinally thereof in the cell 4, along the partition 3 and one side of the car 1. The stops 8 terminate short of the vertical front edge of the partition 3 in order that the movable door 7 may fit snugly between the partition 3 and the adjacent side of the car.

The door is mounted on slides 9 and 9^a, which are arranged in longitudinal grooves 10 of the bottom and ribs 10^a of the top of the car, and a pair of spring-catches 11 are secured to the bottom of the car and are adapted to engage automatically the door 7 and lock the same when the latter is closed by the means hereinafter described. The catches 11 may be of any desired construction, but are preferably composed of resilient plates each secured at its front or outer end to the bottom of the car, and having its other end free and elevated above the bottom of the car and adapted to engage the door 7. The door is adapted, in closing, to pass readily over and depress the stops 11, and as soon as these stops or catches 11 are released they spring upward and engage the bottom of the door 7.

The car is provided at the safe-compartment 5 with a longitudinally-disposed sliding door 12 and a transversely-disposed hinged door 13. The sliding door 12 is normally arranged against the partition 3, as illustrated in Fig. 1 of the accompanying drawings, and the space between the adjacent edges of the doors 12 and 13 forms an entrance to the safe-compartment. The door 13 is hinged for the purpose of folding it back out of the way against the side of the car when desired.

When a messenger or other person having charge of the safe 6 enters the compartment 5, he may, if desired, close the door 12 by sliding it outward against the door 13, and suitable fastening devices are provided for locking these doors when closed.

The door 7 is connected by a spider-plate 14 with a piston-rod 15, having a piston-head 16 and arranged in a steam-pipe 17 and adapted, when the steam is turned on by means of a valve 18, to force the door 7 to its closed position. The steam-pipe is provided with a guide-trip or boxing 19, and has an exhaust-pipe 20, and after the door is closed by the action of the steam through the medium of the piston the steam escapes by way of the pipe 20 and exhausts the steam-pipe or cylinder 17, which is disposed longitudinally of the car and is supported by suitable hangers and communicates with a supply-pipe 22, extending across and down one side of the car and under the bottom thereof, and is designed to communicate with the locomotive of a train.

Any persons attempting to rob the car and gaining access to the same would, in all probability, compel the person or messenger having charge of the safe to enter the safe-compartment for the purpose of opening the safe, The safe-compartment being only large enough to accommodate one person, the robbers would be compelled to stand outside in the space between the door 7 and the end of the car. The valve 18 is normally closed, and is maintained in that position by a spring, and it is provided with a foot-lever 23, located in the safe-compartment and connected with a valve-stem and adapted to be depressed by the foot of a messenger, whereby the valve is opened and steam is admitted to the supply-pipe. The steam will thus be caused to operate the piston, and the door 7 may be caused to close suddenly and will sweep any persons in its path into the cell 4, where they will be confined.

Simultaneously with the closing of the door 7 the space at the entrance of the safe-compartment is closed by a supplemental door 24, hinged to the sliding door 7 and having its upper edge 25 projecting above the upper edge of the door and adapted to come in contact with a horizontally-disposed wedge-shaped extension 25 of the top or ceiling 26 of the cell. This wedge-shaped extension automatically closes the supplemental door 24, which may be quickly locked by the messenger, if desired, thereby shutting himself securely in the safe-compartment. Any suitable fastening device may be employed for locking the supplemental door.

Should the persons confined in the cell 4 offer resistance and attempt to escape they may be quickly subdued by injecting steam into the cell, a branch pipe 27 being provided for that purpose and extending from the supply-pipe to the cell. A suitable cock or valve 28 is provided to enable steam to be discharged into the cell or cut off, as desired. A port-hole 29 is provided at the end of the car to enable the messenger or other person in the safe-compartment to ascertain the condition of affairs on the exterior of the car and to communicate with the engineer.

At the rear end of the cylinder 17 is located a chamber 30, having a removable plug 31 and adapted to contain suitable chemicals for combining with water to form a gas for actuating the piston. This construction may be employed instead of steam should it be found desirable or necessary.

It will be seen that the means for protecting express cars are simple in construction and positive and reliable in operation, and that persons attempting to rob a car may be readily captured, securely confined, and quickly subdued.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. The combination of a car, provided with a longitudinal partition forming a cell, and providing a safe compartment, the transverse front wall 13 of the safe compartment separated from the partition to form a side entrance to the safe compartment, and a sliding door located beyond the front wall of the safe compartment and adapted to fit between the partition and the side of the car to close the cell, and means for closing the sliding door, substantially as described.

2. The combination of a car, provided with a cell, and having a safe compartment located adjacent to the cell, and extended beyond the same, and provided with a side entrance, a transverse door located beyond the safe compartment and disposed opposite the cell and adapted to close the same, a cylinder, a piston arranged in the cylinder and connected with the door, and means for operating the cylinder to close the door, substantially as described.

3. The combination of a car, having a cell and provided at one side thereof with a safe compartment extended beyond the cell and provided with a side entrance, the wedge-shaped extension arranged at the top of the cell, the sliding door located opposite the cell and adapted to close the same, the supplemental door hinged to the sliding door and projecting above the same, and arranged to be engaged by the wedge-shaped extension, whereby the supplemental door is swung laterally to close the entrance of the safe compartment, and means for operating the sliding door, substantially as described.

4. The combination of a car, having a cell and provided with a safe compartment, and provided at its top and bottom with longitudinal ways extending outward from the cell, stops mounted in the cell, the door 7 provided with slides mounted on said ways, and adapted to close the cell, automatic catches arranged to engage and lock the door when the latter is closed, means for sliding the door 7 substantially as described.

5. The combination of a car, provided with a cell and having a safe compartment at one side of the cell, a sliding door arranged to close the cell, a cylinder having a piston connected with the sliding door, a supply-pipe communicating with the piston and provided with a valve, an operating lever located in the safe compartment and secured to the valve and adapted to operate the same, and a branch pipe extending from the supply pipe to the cell and provided with a cock, substantially as described.

6. The combination of a car, provided with a cell and having a safe compartment, a sliding door arranged to close the cell, a cylinder having a piston connected with the sliding

door, a chamber arranged at one end of the cylinder, and a supply pipe communicating with the cylinder, substantially as described.

7. The combination of a car, provided at one end with a cell, and having the longitudinal and transverse doors 12 and 13 forming a safe compartment, the sliding door 7 arranged to close the cell, the supplemental door hinged to and carried by the sliding door, and means for operating the sliding and supplemental doors, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY W. WAIT.

Witnesses:
JOHN H. SIGGERS,
G. C. SHOEMAKER.