

F. X. MALOCSAY.

OAR.

APPLICATION FILED DEC. 29, 1909.

988,363.

Patented Apr. 4, 1911.

2 SHEETS—SHEET 1.

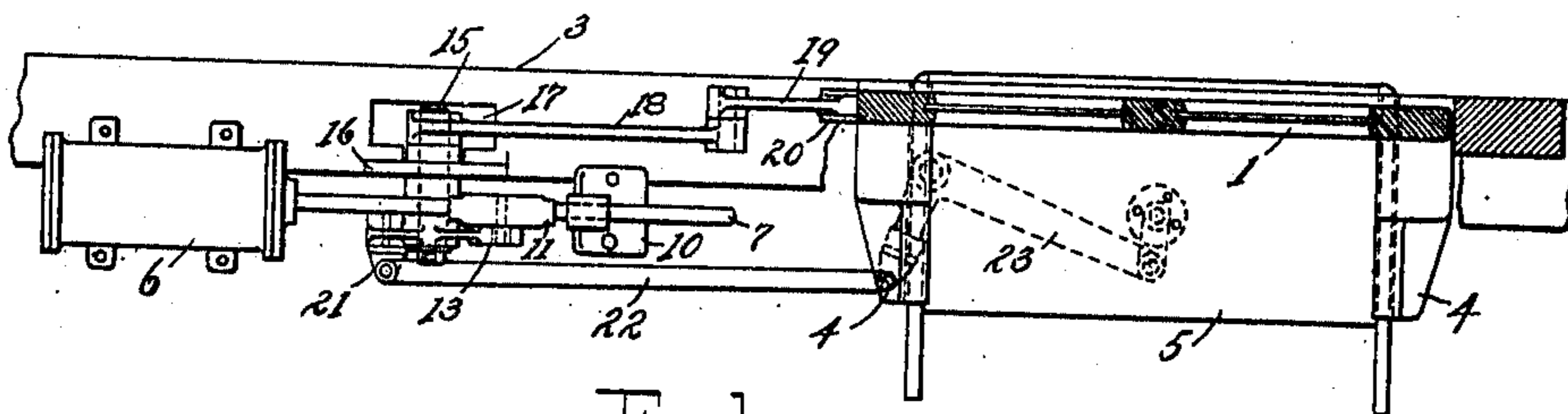


Fig. 1.

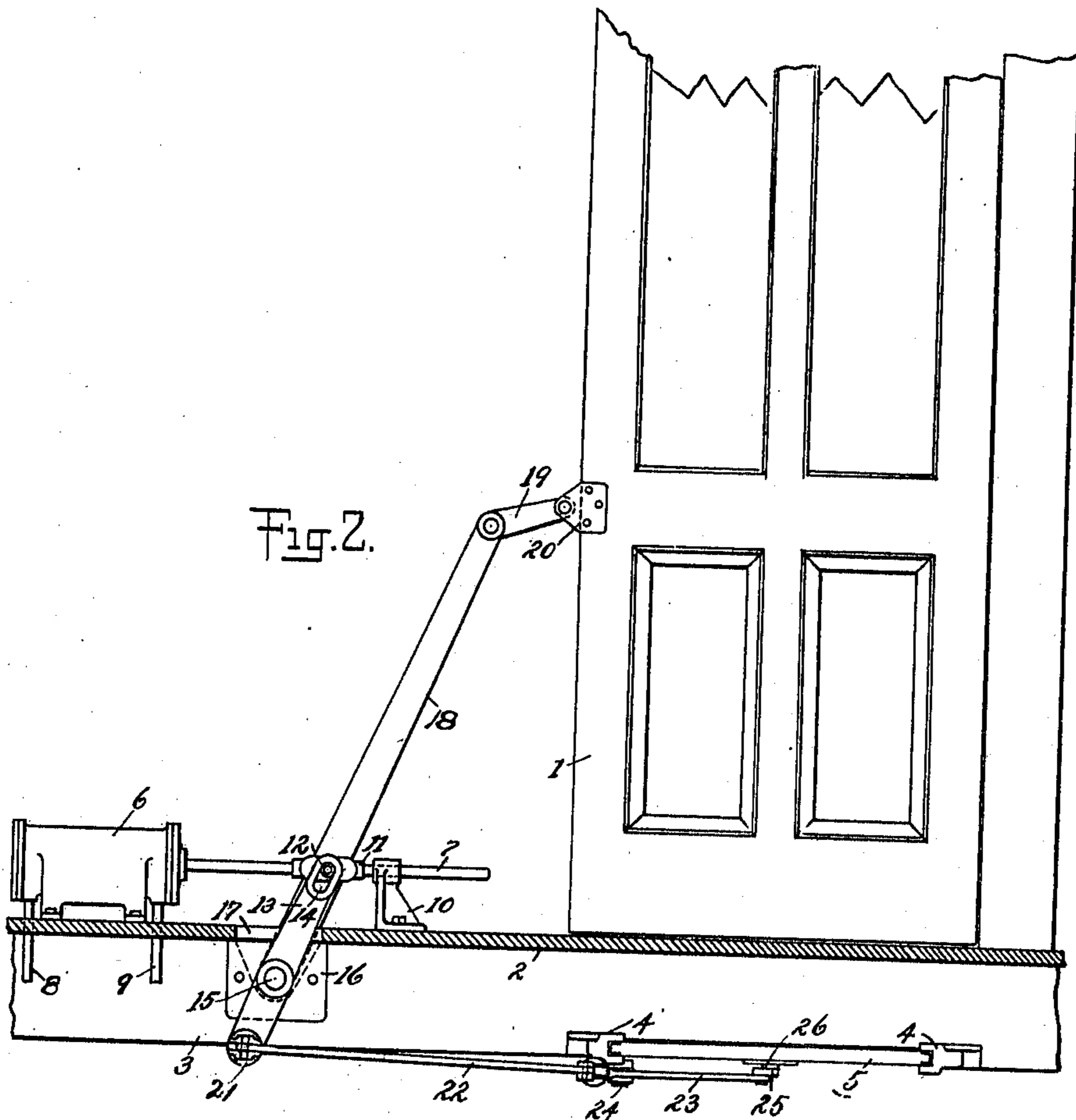


Fig. 2.

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CAR.

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2 SHEETS-SHEET 2.

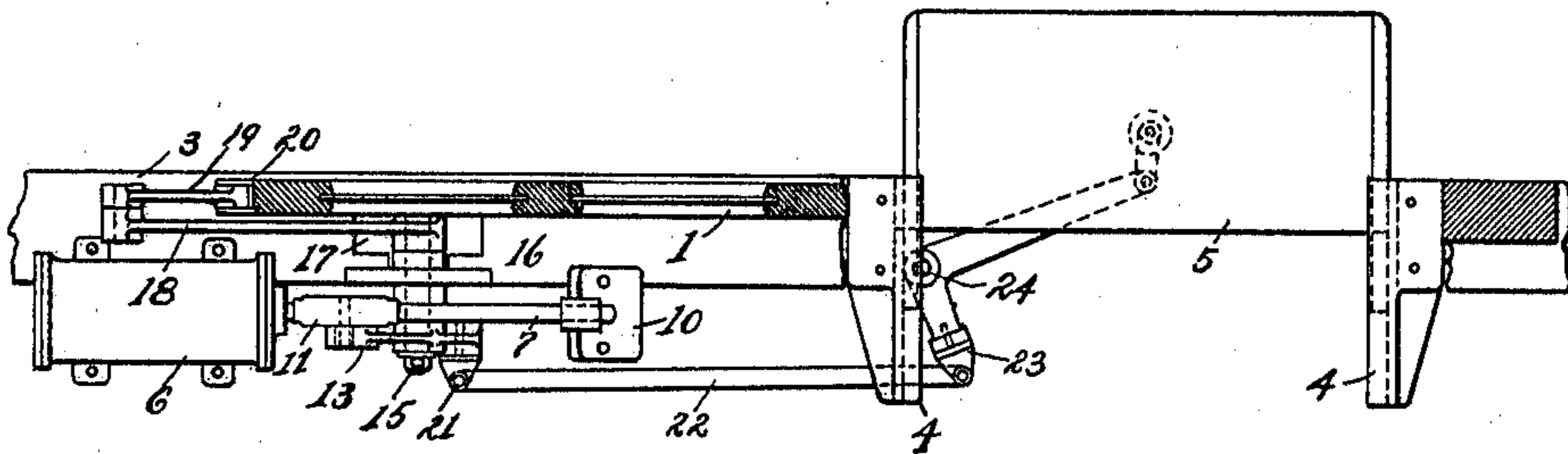


Fig. 3.

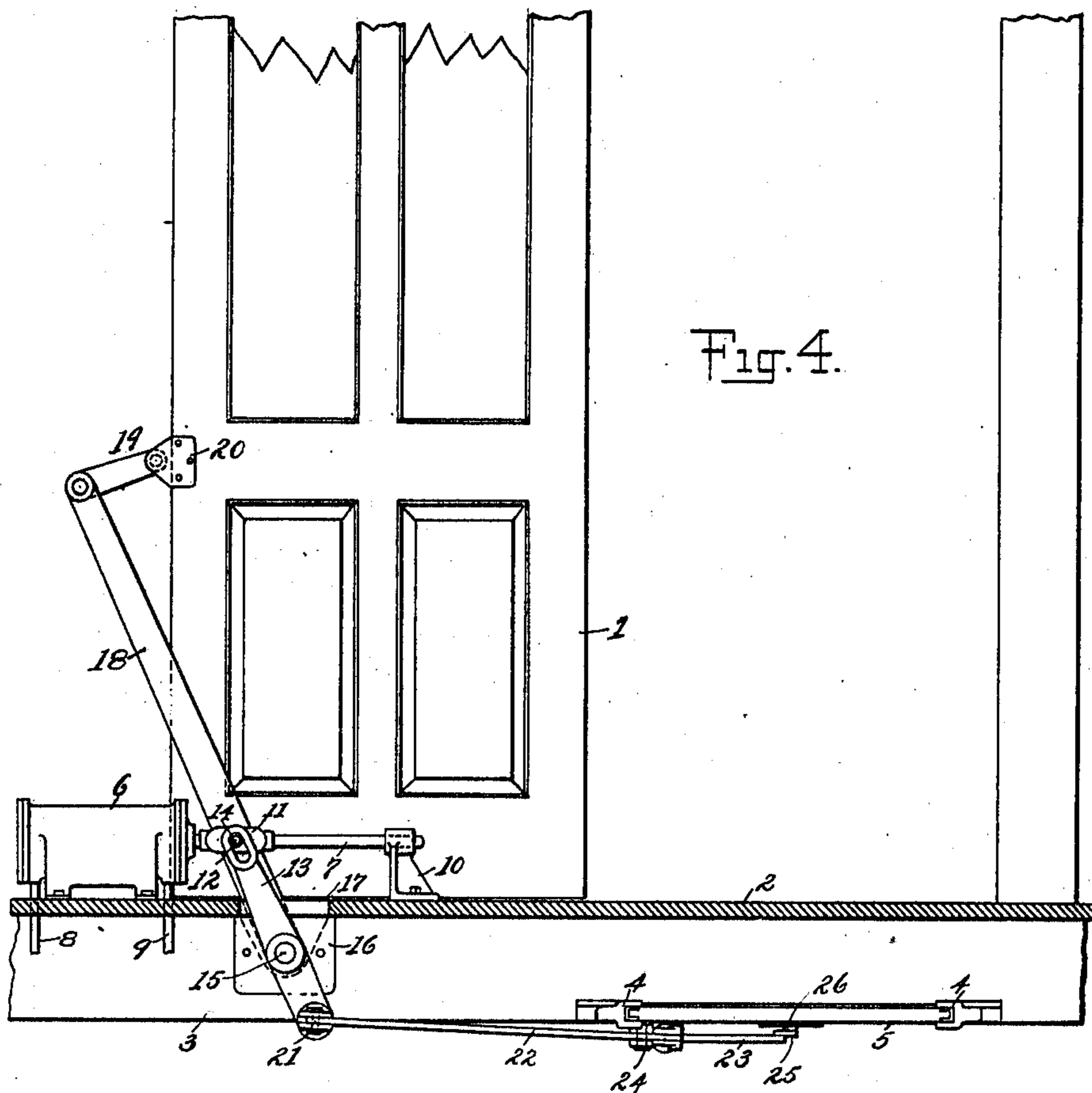


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## CAR.

988,363.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed December 29, 1909. Serial No. 535,413.

*To all whom it may concern:*

Be it known that I, FRANCIS X. MALOCSAY, a citizen of the United States, and a resident of the city of Jersey City, county of Hudson, and State of New Jersey, have invented new and useful Improvements in Cars, of which the following is a specification.

The invention relates to cars and more particularly to the class of pay-as-you-enter cars.

The primary object of the invention is the provision of a car of this character in which the doors and steps thereof will simultaneously act under the control of the conductor or motorman, when standing at their respective ends of the car, so as to bring the doors and steps into a position to permit the ingress and egress of passengers to and from the cars.

Another object of the invention is the provision of a car of this character which is simple in construction, thoroughly reliable and efficient in operation and which may be manufactured at a minimum expense.

In the accompanying drawings forming part of this specification is illustrated the preferred form of embodiment of the invention which to enable those skilled in the art to carry the invention into practice will be set forth at length in the following description, while the novelty of the invention will be brought out in the claims hereunto appended. However it is to be understood that changes, variations and modifications may be resorted to, such as come properly within the scope of the appended claims, without departing from the spirit of the invention or sacrificing any of its advantages.

For a more particular description of my invention, reference is to be had to the accompanying drawings forming part thereof, in which:—

Figure 1 is a sectional view of a portion of a car provided with my improvements. Fig. 2 is a sectional view taken at right angles to the sections shown in Fig. 1, and shows a number of the parts in elevation. Fig. 3 is a sectional view of the construction shown in Fig. 1 showing the door open instead of closed and the step shifted to correspond. Fig. 4 is a sectional view corresponding to Fig. 2, except that the door and step are shown as in Fig. 3.

Similar reference characters indicate cor-

responding parts throughout the several views in the drawings.

Referring to the drawings by numerals, 1 designates a door which is normally in closed position relative to the car, which is of the ordinary well-known construction, the door being mounted to slide longitudinally or transversely, as desired, but preferably longitudinally, in the conventional manner. The door is supported by any suitable means, (not shown). The floor or platform 2 of the car is carried on a sill or platform knee 3 and is provided either on its end or its upper edge with suitable brackets 4 between which slide the steps 5 so as to be under the car or platform 2 which closes the entrance and to protrude from under the floor 2 when the door 1 is not closing the entrance. The mechanism for positively moving the door and step in unison will now be described.

At any convenient point on the floor 2 is located an air cylinder 6 provided with the conventional piston and piston rod 7 together with suitable supply and exhaust pipes 8 and 9 which are controlled by valves (not shown), in the conventional manner. The piston rod 7 is supported near its outer end by a proper support 10 which is secured to the floor 2, and through which the rod 7 slides with the usual movement in the direction of its axis but not otherwise. The rod 7 is provided with an enlargement 11 which carries a trunnion 12 that is adapted to engage with a suitable lever 13 which is slotted at 14 to receive the trunnion 12 and fixed to the shaft 15, on which it is fulcrumed. The shaft 15 is journaled in a suitable bearing 16 fixed to the sill or platform knee 3. The shaft 15 runs transversely of the car and is placed immediately under a suitable opening 17 to receive the lever 13 as well as a second lever 18 which is fixed to the shaft 15 and is connected at its upper end with a link 19 by a pivoted connection, which link 19 also runs to a bracket 20 secured to the door 1 so that the bracket 20 and link 19 are pivotally connected. The link 19 and lever 18 are in the same plane, as shown in Figs. 1 and 2, so that the door 1 may slide by the lever 18 without interference.

The lower end of the lever 18 is pivotally connected to a bracket 21 which can turn freely in the lower end of said lever but has

no other relative movement thereto, and this bracket is pivotally connected to a link 22 that runs to a bell crank lever 23 fulcrumed at 24 and connected at its outer end to a link 25 which is pivotally connected to a point that is near the center of the step 5 as by a suitable bracket 26. The shorter arm of the bell crank lever 23 is connected with the link 22 and the longer arm of the link 25 so that a limited movement of the link 22 will cause a considerable movement of the step 5.

The operation of my improved device is as follows: Assuming the step to be as shown in Figs. 1 and 2, the movable parts are shifted as shown in Figs. 3 and 4 by admitting air through pipe 9 and permitting the pipe 8 to be open to the atmosphere, as can easily be done by means of a valve, as is obvious, the air passing through the pipe 9 acts on the piston and forces the piston rod 7 to move toward the left thereby swinging the levers 13 and 18 to correspond. The lever 18 throws the link 19 at the upper end and shifts the door, as shown. At its lower end the lever 18 acts through the bracket 21 and throws the link 22 toward the right and moves the bell crank lever 23 to correspond, and thereby slides with the step 5 simultaneously with the opening of the door. To close the door, air is admitted through the pipe 8 and exhausted through the pipes 9 and then the piston acts in the reverse direction and both the door and step are moved in the opposite directions from those just described.

This construction just above described is particularly applicable to a sliding door operating with a sliding step.

It is thought from the foregoing description that the construction and operation of the invention will be clearly obvious, without requiring a more extended explanation and therefore the same has been omitted.

What is claimed is:

1. A step and means for mounting the same so that it will slide, a slidingly mounted door, and mechanism rigidly connecting said step and door for simultaneously sliding said step and moving said door.

2. In a device of the class described, a step, means for mounting the same so that it can slide, a slidingly mounted door, links, levers, and other mechanism associated therewith for simultaneously moving said door and sliding said step in fixed planes at an angle to each other.

3. In a device of the class described, a car

door, means for mounting the same so that it may slide, means for sliding said door, a step adapted to slide in a plane at right angles to the plane in which the door slides, and means connected to said door moving means for sliding said step in unison with said door.

4. In a device of the class described, a door, means for mounting the same so that it may slide, a step mounted in a plane at right angles to the plane of the door, and means for sliding said door and step simultaneously so that the step will be exposed when the door is open and concealed when the door is closed.

5. In a device of the class described, a door, means for mounting the same so that it may slide in a vertical plane, a step adapted to slide in a horizontal plane and adjacent said door and under the same, a pneumatic cylinder and a system of levers connected therewith for moving said door and step simultaneously.

6. In a device of the class described, a door, means for supporting the same so that it may slide in a vertical plane, a step, means for supporting the same so that it may slide adjacent to said door and in a horizontal plane, a pneumatic cylinder and a series of levers connected therewith and links for sliding said door and step simultaneously.

7. In a device of the class described, a door mounted to slide in a vertical plane, means for supporting the same, a step mounted to slide in a horizontal plane, means for supporting the same, a pneumatic cylinder and a system of levers and links connected with each other and to the cylinder and connecting said door and step so that said door and step are positively moved in unison.

8. The combination with a sliding door and step, of fluid controlled means having connections with said door and step to move one in a path transversely to the path of movement of the other.

9. The combination with a sliding door and step, of fluid operated mechanism having connections with said door and step to actuate the same in unison so that one will move in a path transversely to the path of movement of the other.

Signed at the city, county and State of New York, this 24th day of December, 1909.

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Witnesses:

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