

982,099.

Patented Jan. 17, 1911.
2 SHEETS—SHEET 1.

Fig. 1.

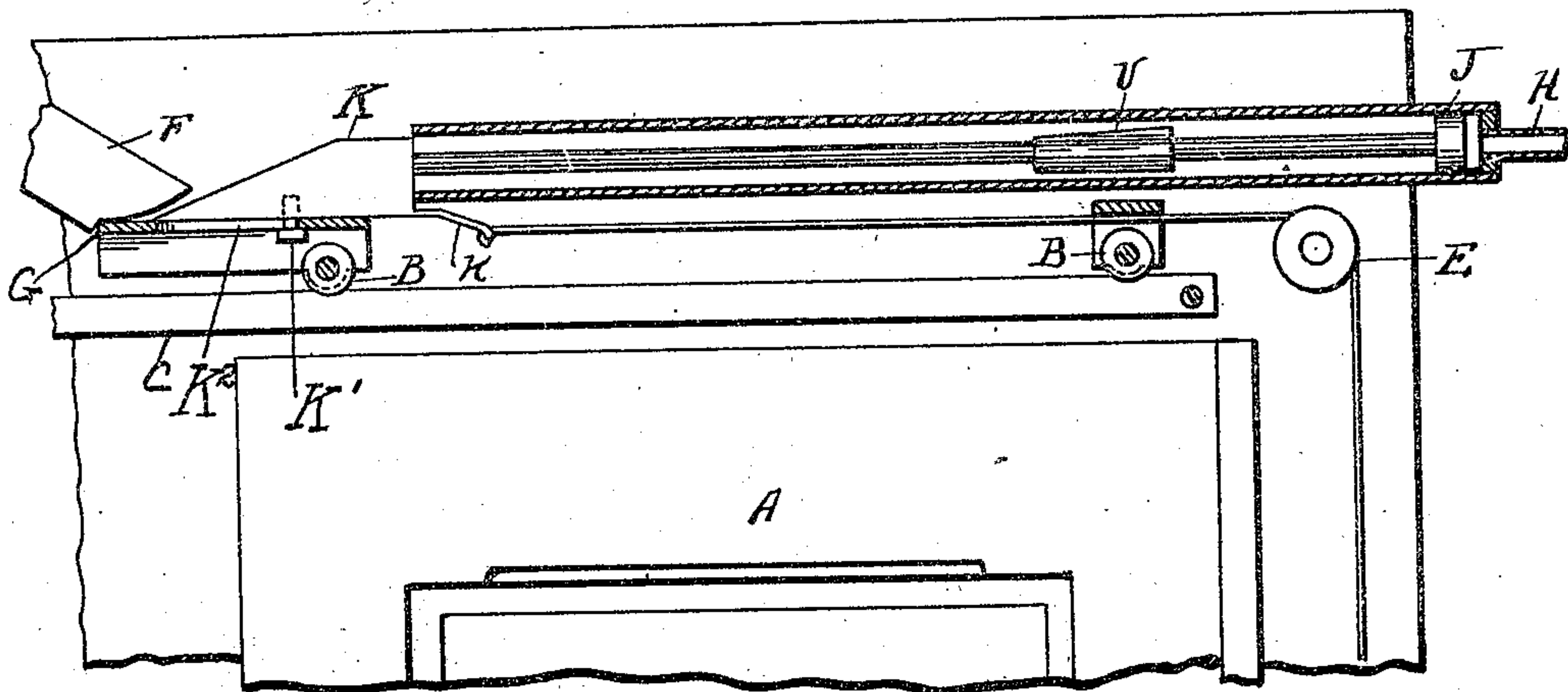
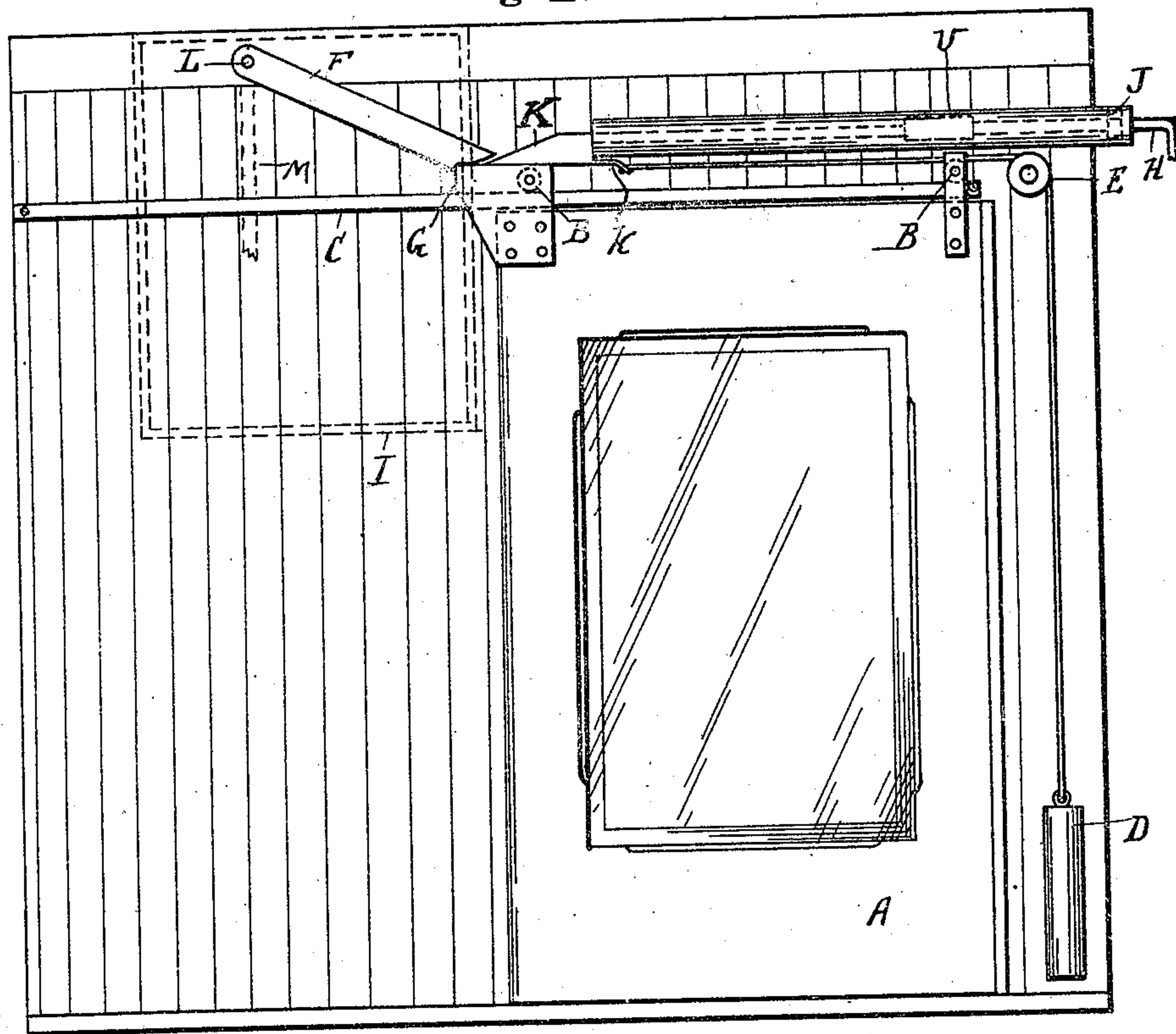


Fig. 2.

WITNESSES.

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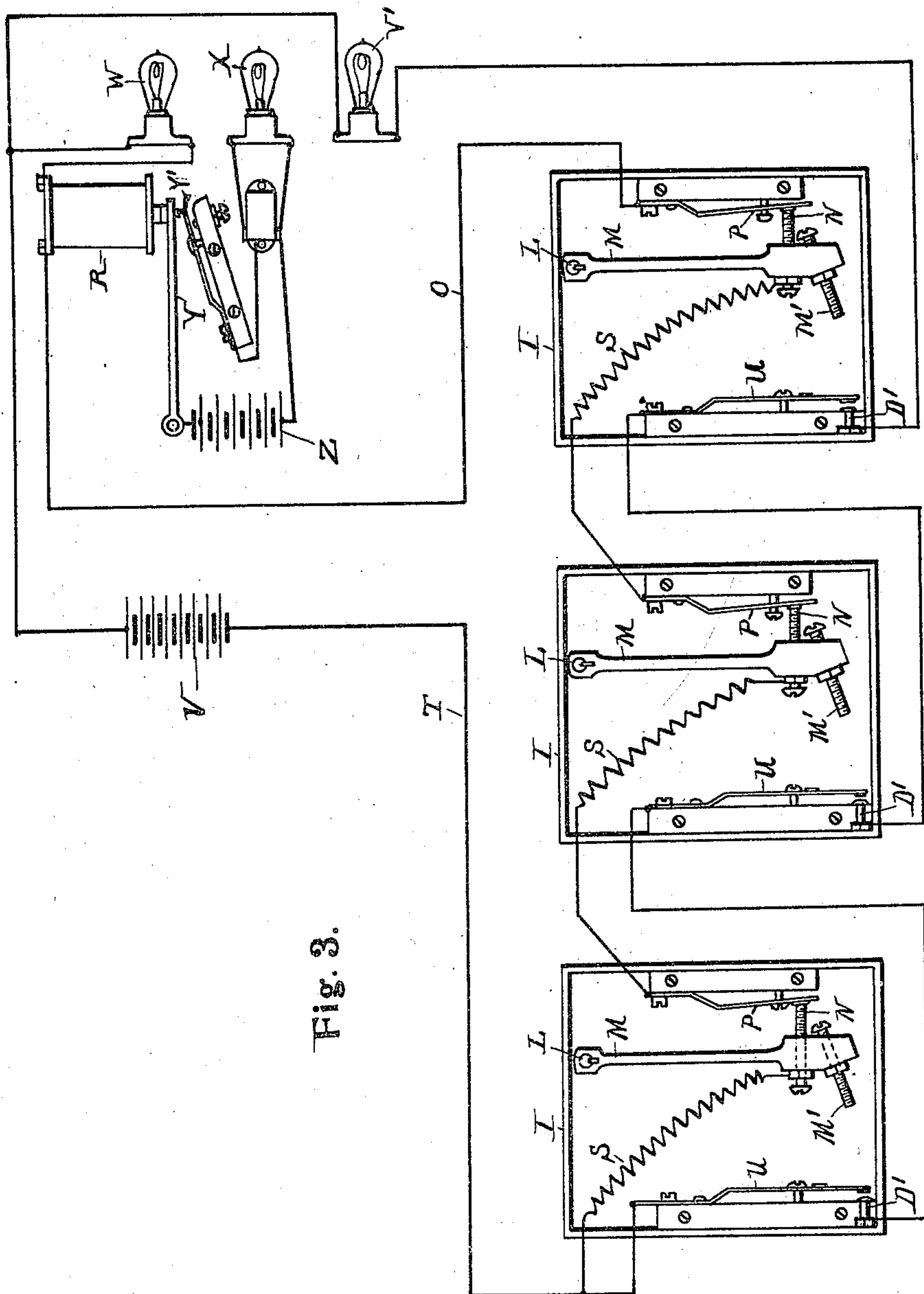


Fig. 3.

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UNITED STATES PATENT OFFICE.

LOUIS A. SHERMAN, OF DETROIT, MICHIGAN.

CAR-DOOR.

982,099.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed May 9, 1910. Serial No. 560,302.

To all whom it may concern:

Be it known that I, LOUIS A. SHERMAN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Car-Doors, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to car doors or gates, and has for its object improved means for causing the opening or closing of a number of gates from a single point of control, the condition of position of each with respect to its casing being similarly indicated at this control point.

In the drawings:—Figure 1, is an elevation of the side of a car and of a door in closed position. Fig. 2, is an elevation partly in section showing the mechanism relied upon for effecting the opening of the door. Fig. 3, shows in diagrammatic series the electrical connection of one door with another and with the central indicating means.

The door A is suspended on rollers B in position to run along a track-way C, which is fixed at the proper distance from the top of the car, and extends above the door opening in the side thereof. The door is held normally closed by a pull of the weight D whose cord passes over the sheave E. In this position it is held locked by the engagement of the latch F against the shoulder G, which projects from the upper corner of the door opposite to that nearest the sheave E. When it is desired to open the door, the operator admits air pressure through the pipe H, which engages against the piston J, and forces the wedge member K under the latch F, so as to free the shoulder G from further holding thereby, and as the movement of the wedge K continues (from right to left in Fig. 1) its depending point $\frac{1}{2}$ catches the metal shoulder member G and pulls the door with it. From the lower face of the wedge member K depends a pin or bolt K' which extends through a slot K² in the finished top of the metal shoulder G, thereby limiting, to the extent desired, the range of possible movement of the wedge K, either forwardly under the actuation of the air pressure on the piston J, or rearwardly

under the pull of the weight D on its cord. As the latch F is swung from its locking position by the engagement of the wedge K thereagainst, the consequent turning of the pivot shaft L on which it is mounted, causes the arm M which is also fixed to the inner end of the shaft L, on the inner face of the car wall to swing away from its normal position of engagement as regards its contact pin N with the spring P which is in suitable contact with the part O of a circuit wire, which leads to the electromagnet R, this breaks the circuit, which otherwise continues through the wire S, and through corresponding parts of the circuit boxes which are appurtenant to other doors, all being electrically connected, and the circuit wire T, which leads to the battery V and thence to the indicating lamp W. Each set of these various parts on the inner side of the car wall, the arm M and its contact terminals, together with the connecting wires, are inclosed within boxes I.

When all of the contact arms in the boxes I on the various car door attachments are in suitable contact, and the circuit is thereby closed, the lamp W is lighted, thus indicating to the operator the closed and locked condition of all of the car doors. If they are not all closed and locked, the circuit being incomplete, no illumination of the lamp W occurs, and no power being in the magnet the lever Y drops onto spring Y' causing the illumination of lamp X, and the operator is advised accordingly. If the circuit that controls the magnet and lamp W is broken by the displacement of any one of the latches F this fact is indicated by the illumination of the lamp X and working of the buzzer, which is brought about by the closure of the circuit due to the dropping of the pivoted lever Y onto the spring Y' when it is no longer held to the magnet R by the passage of a current therethrough, and the consequent position of the lever Y. When, however, the piston J has been forced sufficiently far in projecting the wedge member K, the fin member Y on the stem of the piston J engages under the locking point of the latch member F and forces it still further until a horizontal position is attained. This still further swings the arm member M in the box I away from contact with the spring P, and toward contact, with its pin M', with the leaf spring U which is in contact with circuit wires leading to the corresponding parts

of the other door boxes I. When all of these arms M are thus swung to position to contact between the pin M' and the spring U whose pressure down upon the tip of the contact pin D' completes the circuit, the circuit being completed, the battery V now becomes active and causes illumination of the indicating lamp V', thus advising the operator that all of the doors are in fully opened position as desired.

What I claim is:—

1. In combination, a sliding door, a pivoted latch adapted to lock the same in closed position, means adapted to trip the latch, and by continued movement thereafter to move the door to open position, a normally closed electric circuit, an arm moving with said pivoted latch and in contact, when said latch is in locking position, with the terminals of said circuit, a second circuit, normally open and adapted to be closed by the swing of said arm from its normal position of closure of the first named circuit to contact with the terminals of said second circuit, and indicating members adapted to be rendered active by the closure of that one of the circuits to which either is appurtenant, substantially as described.

2. The combination of a sliding door, a latch member for locking the same when closed, a shaft on one end of which said latch member is fixed, means for tripping said latch to cause its release from locking position and for thereafter pressing against the

door to move it to open position, a pair of electrical circuits, indicator means each adapted to be actuated by the closure of its particular circuit, and a contact arm carried on the same shaft as the latch member, said arm being adapted to close one of said circuits when the door is in fully closed position and the latch member is in locking position accordingly, and to swing to a position of closure with respect to the other circuit when the door is moved to fully open position, substantially as described.

3. In combination with a sliding door, a rotatable shaft member, a latch member for locking the door in closed position, fixed to said shaft member, means for tripping the latch member and for moving the door to open position, a pair of normally open signaling circuits, and a circuit-closing arm carried by said shaft and adapted to move concurrently therewith and with said latch member, whereby one of said circuits is closed to indicate the fully closed position of the door, and whereby the other of said circuits is closed to indicate that the door is in fully opened position, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

LOUIS A. SHERMAN.

Witnesses:

WILLIAM M. SWAN,
C. C. JENNINGS.