

No. 768,371.

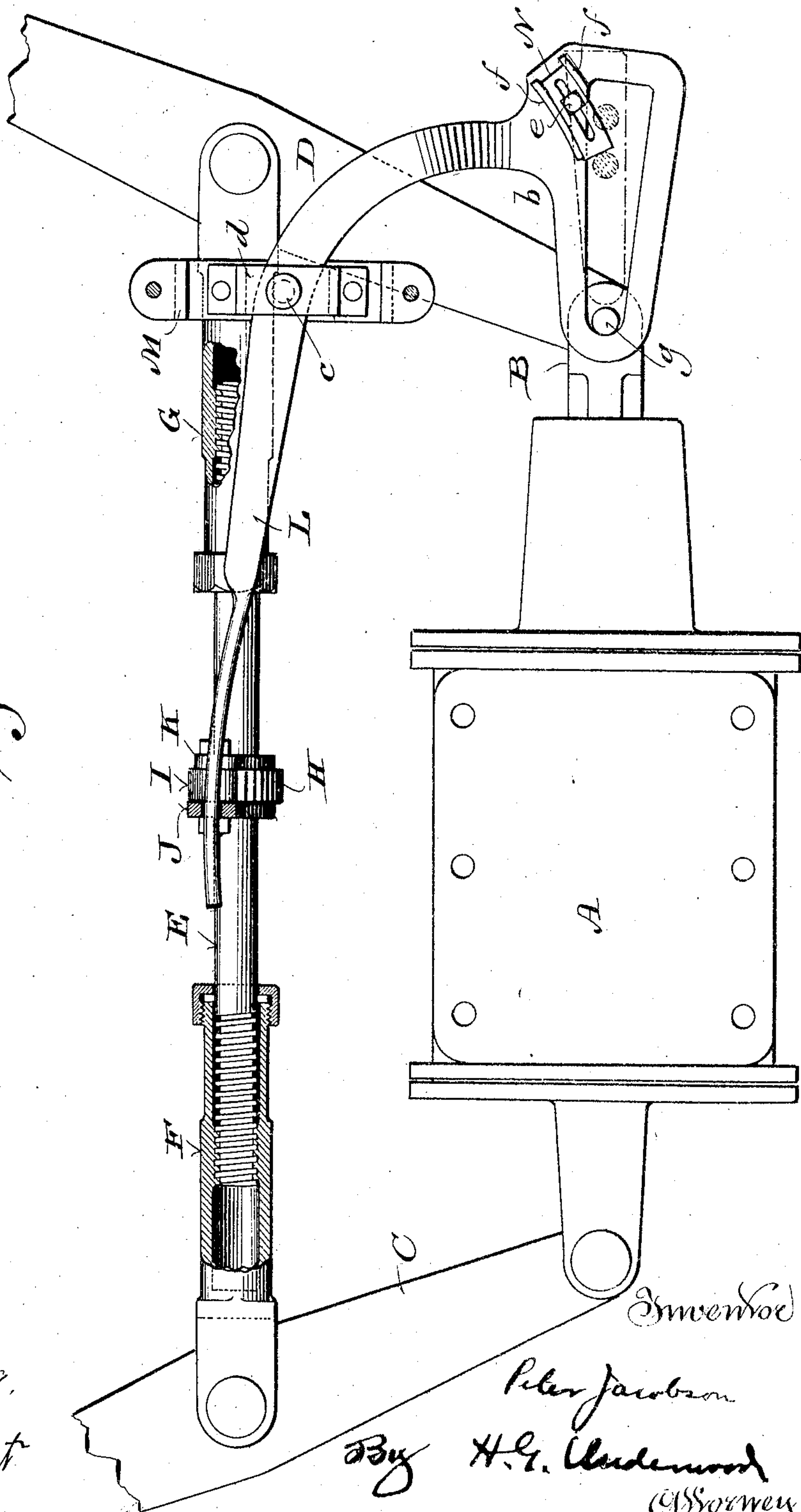
PATENTED AUG. 23, 1904.

P. JACOBSON.
RAILWAY AIR BRAKE.
APPLICATION FILED JAN. 16, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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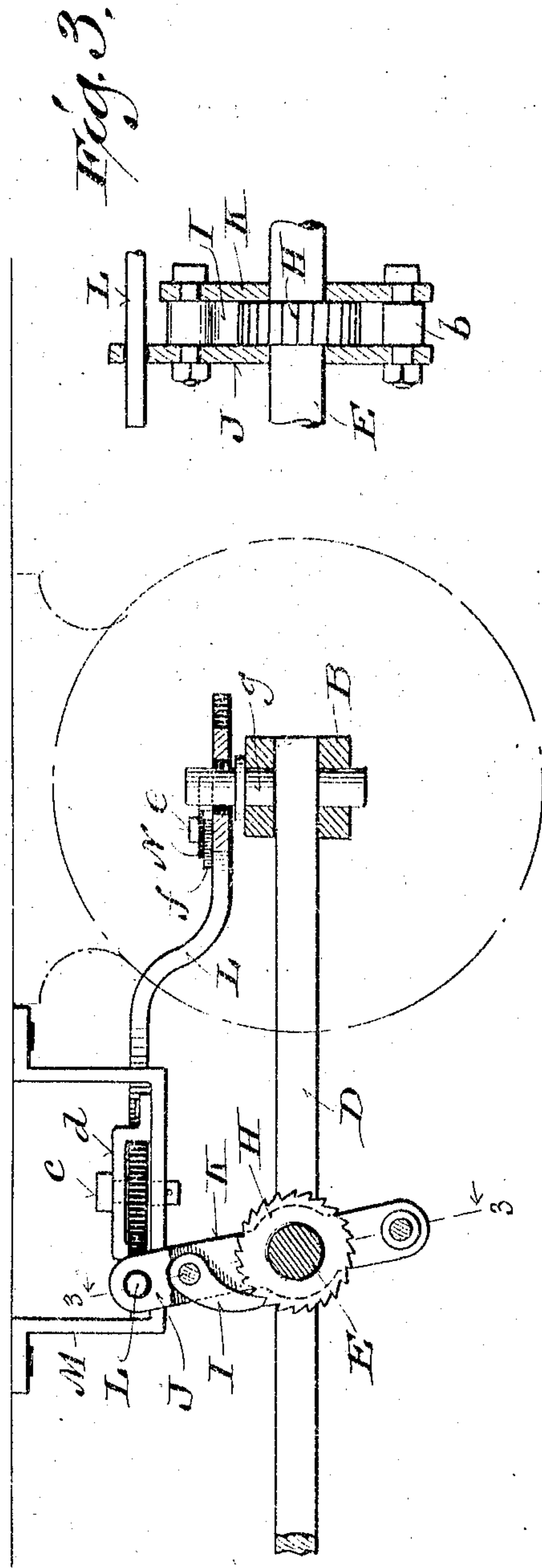
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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

PETER JACOBSON, OF MILWAUKEE, WISCONSIN.

RAILWAY AIR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 768,371, dated August 23, 1904.

Application filed January 16, 1904. Serial No. 189,310. (No model.)

To all whom it may concern:

Be it known that I, PETER JACOBSON, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Railway Air-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed, the object of said invention being to improve the mechanism disclosed in my Patent No. 735,981, of August 11, 1903, and to provide simple, economical, and efficient automatic slack-adjusters for air-brakes of railway-cars.

Figure 1 of the drawings represents a plan view of railway-car air-brake mechanism, partly in horizontal section and organized in accordance with my invention for automatic slack adjustment; Fig. 2, a view of a portion of the mechanism, partly broken away and in transverse section; and Fig. 3, a partly-sectional view of a detail of said mechanism, this view being indicated by line 3 3 in the second figure.

Referring by letter to the drawings, A indicates a railway-car air-brake cylinder, B the cross-head of the piston that plays in the cylinder, and C D the connected brake-rod levers that are respectively in pivotal connection with said cylinder and cross-head.

Substituted for the ordinary tie-rod connection between the levers C D is a turnbuckle comprising a rod E, the ends of which are screw-threaded one to the right and the other to the left. These screw-threaded ends of the rod engage screw-thread inside of hollow stems F G, that have jaw ends in pivotal connection with the aforesaid levers, and to exclude moisture and dirt from said stems their inner ends are associated with packing and caps to form stuffing-boxes around said rod.

Rigid with the rod E between the stems F G is a ratchet-wheel H, engaged by a pawl I in pivotal suspension in a rocker comprising a pair of plates J K, loose on said rod and

connected by upper and lower bolts. The upper bolt is the pawl-pivot, and a spacer *b* is arranged on the lower bolt between the plates. The rod E takes the place of a sleeve set forth in the patent above noted, and the stems F G are necessarily hollow and interiorly screw-threaded to form an adjustable connection with said rod, the new construction being more economical and preferable in other respects than that in the patent aforesaid.

Like in my previous patent the upper extension of the rocker-plate J is provided with an eye engaged by the curved and rounded end of a lever L on a pivot *c* between a suspended bracket M and an angular strap *d*, this strap being made fast at its ends to said bracket. The other end of the lever is now made in the form of an elongated loop provided with an inner projection, herein shown as being a longitudinally-slotted segmental plate N, held by a set-screw *e* on the loop end of the lever between ears *f* of the same; but said lever may be made integral with a lug projecting into its loop. An extension of the pivot-pin *g*, connecting the piston cross-head B and brake-rod lever D, constitutes a striker that has play in the loop end of the lever L, and the projection N is in the outward path of the striker, its adjustment being in proportion to the desired initial play of the piston in the cylinder.

In practice the predetermined brake-setting stroke of the piston in the cylinder A is equal to the distance between the striker *g* and projection N in the loop of lever L when the brake is off, the length of said stroke being increased in proportion to wear of the brake-shoes due to running application of said brake, and eventually said lever has sufficient pivotal play to effect a movement on the part of the rocker aforesaid that results in a slipping back of the pawl I into another notch of the ratchet-wheel H, rigid with the rod E of the turnbuckle connection between the brake-rod levers. Due to swing of the lever L its loop is shifted to the position shown by dotted lines in Fig. 1, the increased travel of the striker *g* being likewise indicated in the same figure, and on back stroke of the brake-piston there is draft of said striker in the lever-loop,

the result being a rotary movement on the part of the turnbuckle-rod E to shorten the connection between the brake-rod levers, and thus compensate for slack that results from wear of the brake-shoes. This automatic compensation for brake-shoe wear takes place from time to time in proportion to the frequency of running application of the brake mechanism, and the predetermined piston play in the brake-cylinder is always approximately the same, the variations at any time being too slight to effect the efficiency of said brake mechanism.

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

1. A railway-car air-brake mechanism comprising hollow stems in pivotal connection with brake-rod levers and having inner end stuffing-boxes, a rod having its ends in right and left screw connection with the stems, a ratchet-wheel rigid on the rod, a rocker loose on said rod, a pawl carried by the rocker in engagement with the ratchet-wheel, and a rocker-actuating lever coöperative with the piston cross-head of said mechanism.

2. A railway-car air-brake mechanism comprising a turnbuckle-coupling between brake-rod levers, a ratchet-wheel rigid with the rotary element of the turnbuckle, a rocker loose on said rotary element of said turnbuckle, a wheel-engaging pawl carried by the rocker, and a rocker-actuating lever having a yoke end provided with an inner projection in the outward path of a striker that has travel with the piston cross-head of said mechanism.

3. A railway-car air-brake mechanism comprising a turnbuckle-coupling between brake-rod levers, a ratchet-wheel rigid with the rotary element of the turnbuckle, a rocker loose

on said rotary element of said turnbuckle, a wheel-engaging pawl carried by the rocker, and a rocker-actuating lever having a loop end provided with an adjustable inner projection in the outward path of a striker that has travel with the piston cross-head of said mechanism.

4. A railway-car air-brake mechanism comprising a turnbuckle-coupling between brake-rod levers, a ratchet-wheel rigid with the rotary element of the turnbuckle, a rocker loose on said rotary element of said turnbuckle, a wheel-engaging pawl carried by the rocker, a rocker-actuating lever having a loop end provided with an inner projection, and the piston cross-head pivot-pin of said mechanism extended to constitute a striker having travel in the loop end of the rocker-actuating lever to operate against the projection in the same.

5. A railway-car air-brake mechanism comprising a turnbuckle-coupling between brake-rod levers, a ratchet-wheel rigid with the rotary element of the turnbuckle, a rocker loose on said rotary element of said turnbuckle, a wheel-engaging pawl carried by the rocker and a lever having a curved end loose in an eye of the rocker, its other end being in the form of a loop provided with an inner projection in the outward path of a striker that has travel with the piston cross-head of said mechanism.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

P. JACOBSON.

Witnesses:

N. E. OLIPHANT,
HUGO FAILL.