T. McGUIRE.

SAFETY APPLIANCE FOR RAILROADS.

APPLICATION FILED SEPT. 5, 1908.

912,017. Patented Feb. 9, 1909.

Fig. 1.

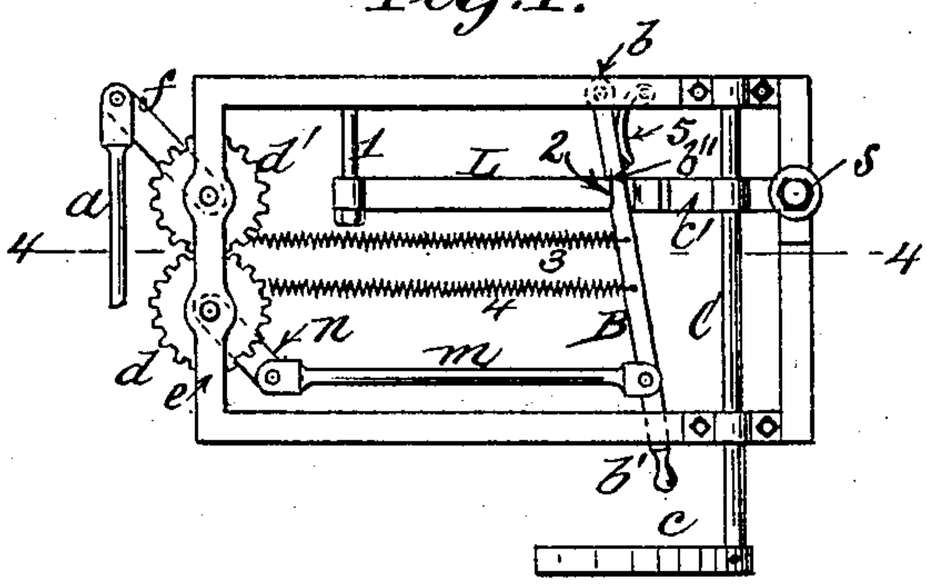


Fig. 3

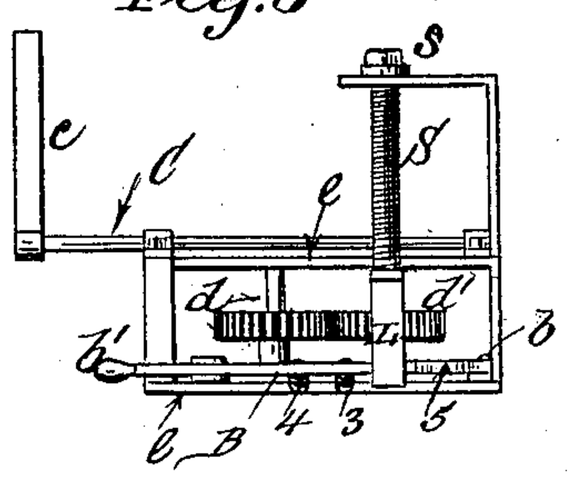


Fig. 2.

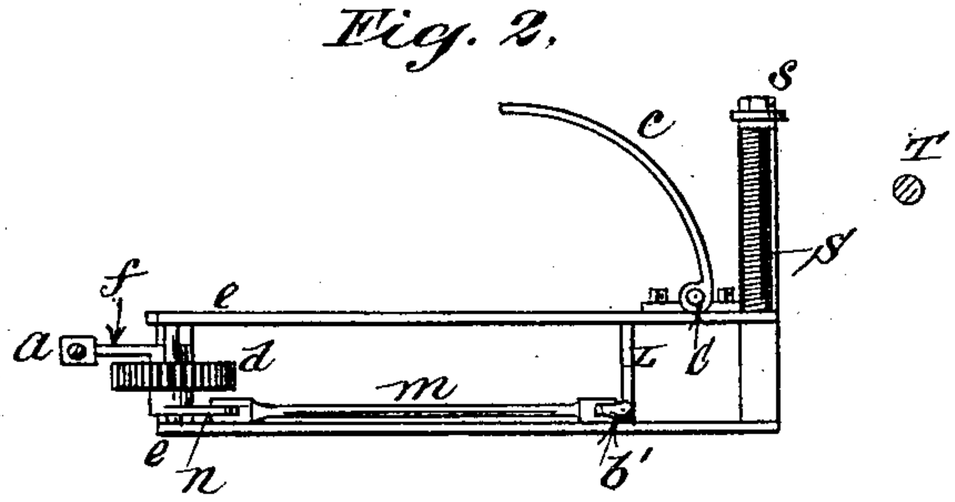


Fig. 5.

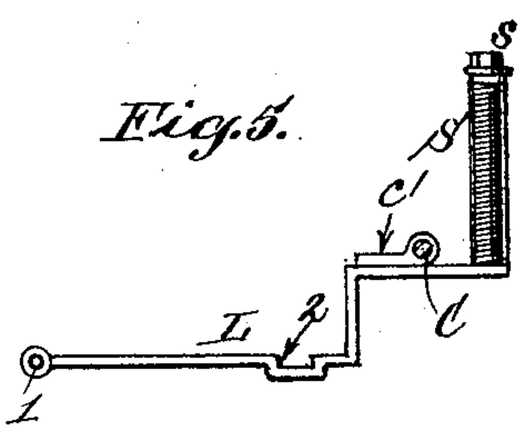


Fig. 4.

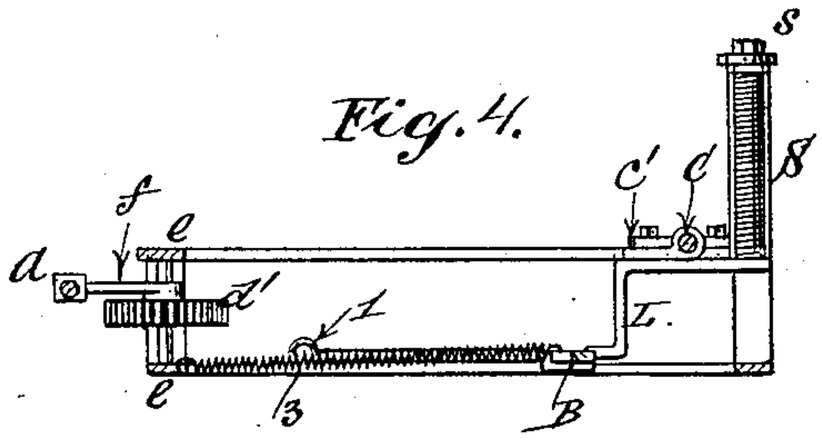
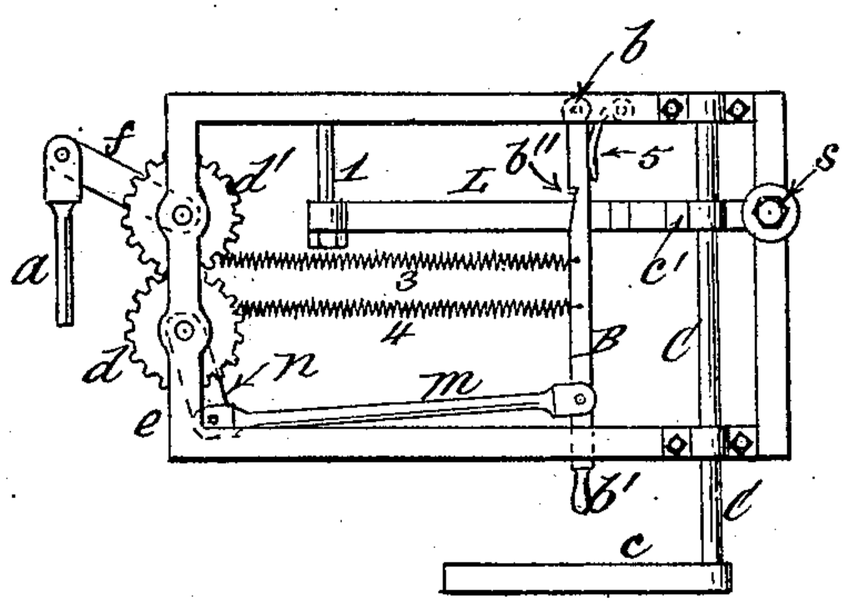


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS McGUIRE, OF NEW YORK, N. Y.

SAFETY APPLIANCE FOR RAILROADS.

No. 912,017. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed September 5, 1908. Serial No. 451,787.

To all whom it may concern:

Be it known that I, THOMAS McGUIRE, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Safety Appliances for Railroads, of which the following is a specification.

My invention relates to mechanism for automatically applying the air brakes to a train entering a block when the signal is set against it, and consists in the specific construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1, is a plan of my improved automatic brake-setting mechanism in the locked position and ready for action; Fig. 2, a side elevation thereof; Fig. 3, an end elevation; Fig. 4, a sectional elevation upon plane of line 4—4— Fig. 1; Fig. 5, a detail of the lock lever; Fig. 6, a view similar to Fig. 1, showing the parts released by the trip.

My automatic brake-setting mechanism is mounted on a locomotive, motor, or car in any position that may be found most expedient; and is connected with the usual air brake valve by a rod *a*, or any other suitable mechanical expedient. It is actuated to set the air brakes by an extraneous trip T, of any kind controlled by a semaphore or other signal device governing a block of road. This trip T, if the signal is set against, or to protect the block, causes the depression of the contact arm *c*, as it passes, thereby rocking the shaft C, to which the contact arm *c*, is rigidly attached. As a result of this tripping action, an arm or projection *c'*, on the rock shaft C depresses or forces back a lock lever L, which is pivotally supported on the stationary fulcrum 1, and which tends constantly to contact with the rock lever arm *c'*, by reason of a retractile spring S, attached to the lock lever L, and to a stationary part as *s*, in the drawings. In this connection it is obvious that the spring S may be arranged to push instead of pull the lock lever L, with like result. The depression of the lock lever L, releases the bolt lever B, (fulcrumed at *b*) from the retaining notch or shoulder 2 on the said lock lever L. The bolt lever B thus released, under the action of springs 3, 4 and 5, causes its connecting rod *m*, to swing the crank arm *n*, in the arc of a circle, thereby partially rotating the gear *d*, to the journal of which the crank arm *n*, is rigidly attached. The gear *d*, and that *d'*, with which it meshes are mounted in stationary bearings *e*, *e;* and rigidly attached to the journal of the latter gear d^s, is the crank arm *f*, to which the air brake valve rod *a*, is pivotally attached, so that the motion imparted to the gear *d'*, will set the brakes.

The bolt lever B is preferably provided with a handle *b'*, to facilitate the operation of retracting the parts to their normal positions, to close the air brake valve. It is also preferably shouldered as at *b''*, where it engages with the shoulder 2 on the lock lever L, for the purpose of counteracting any tendency to lateral play on the part of said lock lever L.

When the bolt lever B is sufficiently retracted against the resistance of the springs 3, 4 and 5, the lock lever L, under the influence of the spring S, returns to its normal position with its shoulder 2 in engagement with the bolt lever B, as in all the figures of the drawings, except the last, Fig. 6, in which latter the parts are shown as released by the trip T.

My automatic brake setting mechanism is simple and substantial in construction, and positive and instantaneous in action, and affords an effectual guard against danger that might otherwise arise from inattention or disregard of signals.

What I claim as my invention and desire to secure by Letters Patent is,

1. In mechanism of the character designated, the combination with an extraneous trip, of a rock shaft having a contact arm arranged for engagement with said extraneous trip, a depressing arm on said rock shaft, a lock lever actuated by said depressing arm and formed with a locking shoulder, a resilient device arranged to thrust said lock lever toward said depressing arm, a bolt lever engaging a locking shoulder on the lock lever, springs arranged to effect the thrust of the bolt lever when released from the lock lever, a rod pivotally connected with said bolt lever and with a crank arm, a gear connected with said crank arm, a second gear meshing with said first named gear, a crank arm connecting with said second gear, and means for communicating the thrust of said latter crank arm to an air brake valve, for the purpose described.

2. In mechanism of the character desig-

nated, the combination of gears connected with means for actuating an air brake valve, a crank arm attached to one of the gears, a connecting rod pivotally connected with said crank arm and with a bolt lever, said bolt lever, springs arranged to effect the thrust of said bolt lever when released from a lock lever, said lock lever formed to engage said bolt lever, spring means which tend to hold said lock lever in engagement with the bolt lever and a rock lever provided with an arm arranged to depress the said lock lever, said rock lever being also provided with a contact arm arranged to rock said shaft upon engagement with an extraneous trip, for the purpose described.

3. In mechanism of the character designated, the combination of means for actuating an air brake valve, a bolt lever connected with said means, resilient means for effecting the thrust of said bolt lever when released from a lock lever, said lever being provided with means for holding said bolt lever in its retracted position, resilient means for holding said lock lever in contact with said bolt lever, and a rock shaft having an arm arranged to depress the lock lever to release the bolt lever, a contact arm arranged to rock said shaft by engagement with an extraneous trip, for the purpose described.

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