

W. R. McCOLLUM.
 DERAILING SYSTEM FOR RAILROADS.
 APPLICATION FILED FEB. 24, 1908.

903,303.

Patented Nov. 10, 1908.

2 SHEETS—SHEET 1.

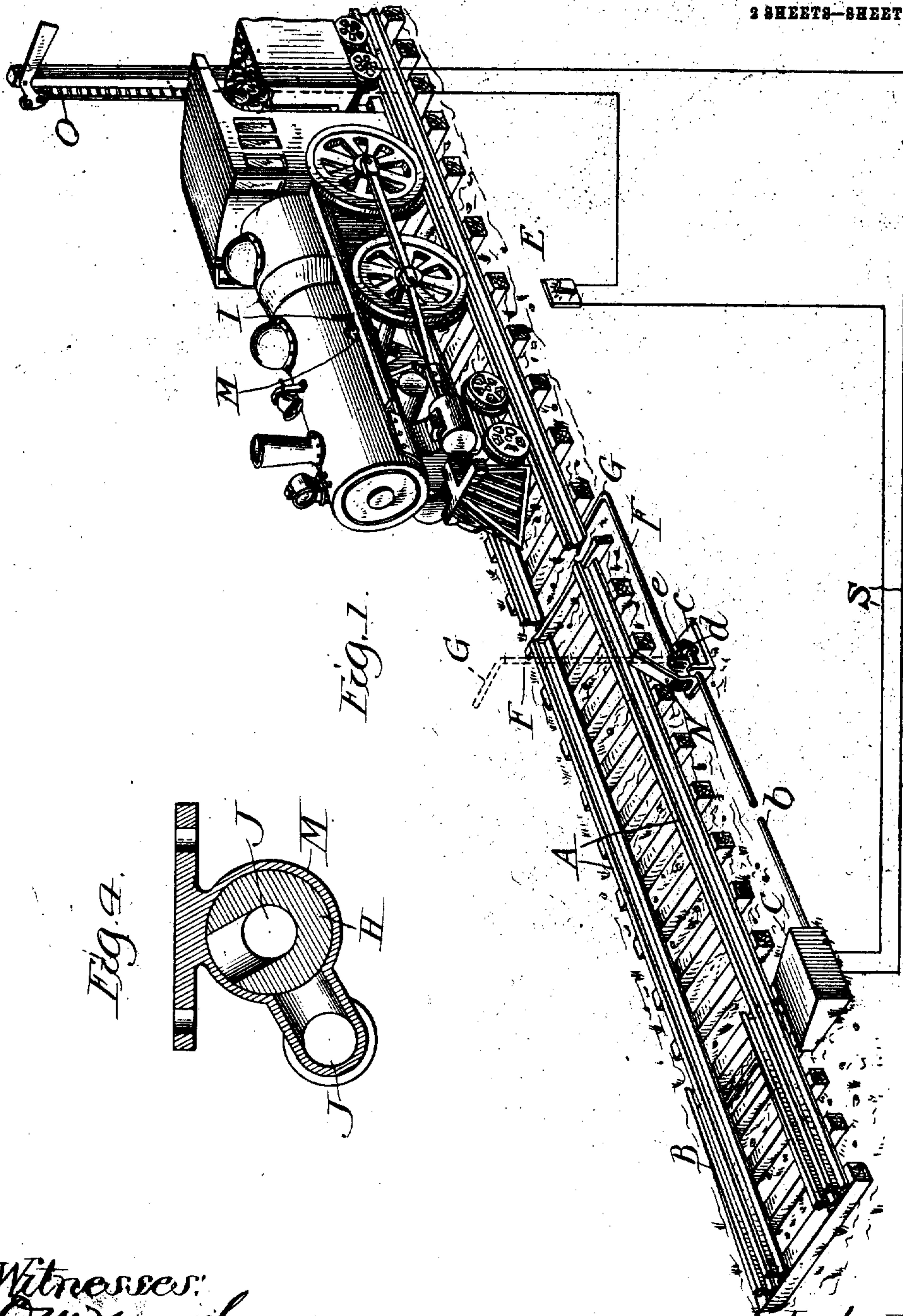


Fig. 4.

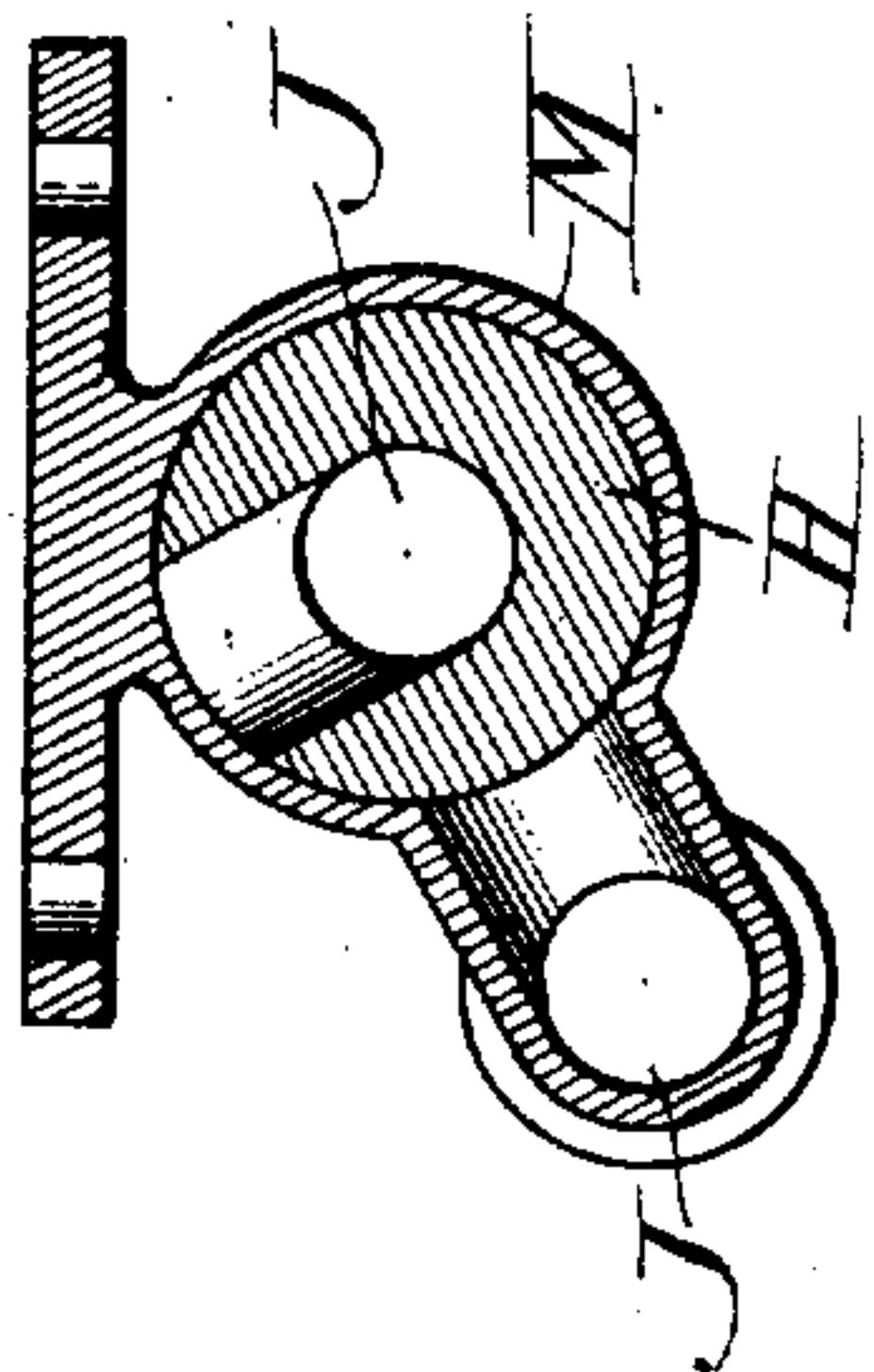


Fig. 1.

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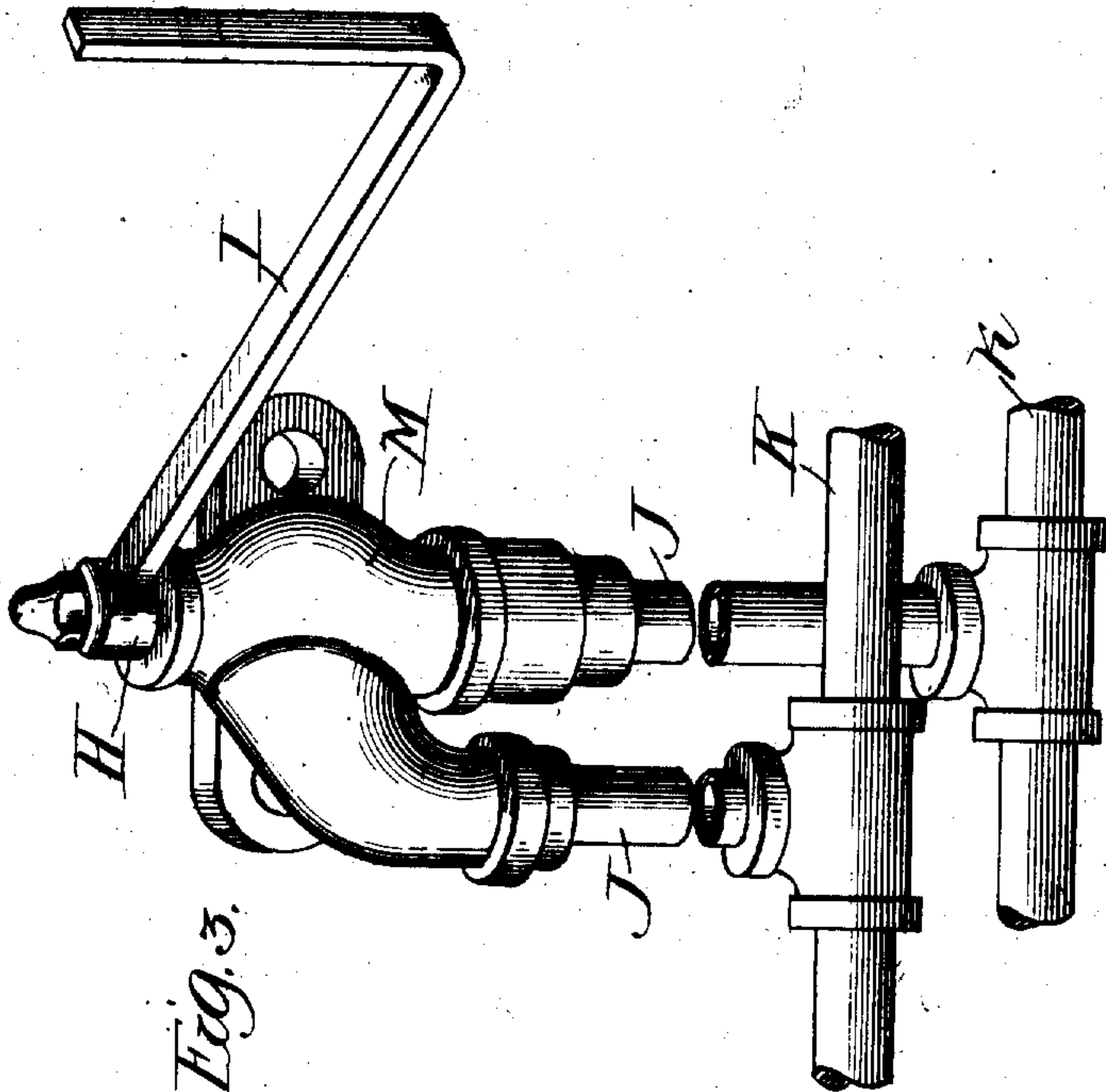


Fig. 3.

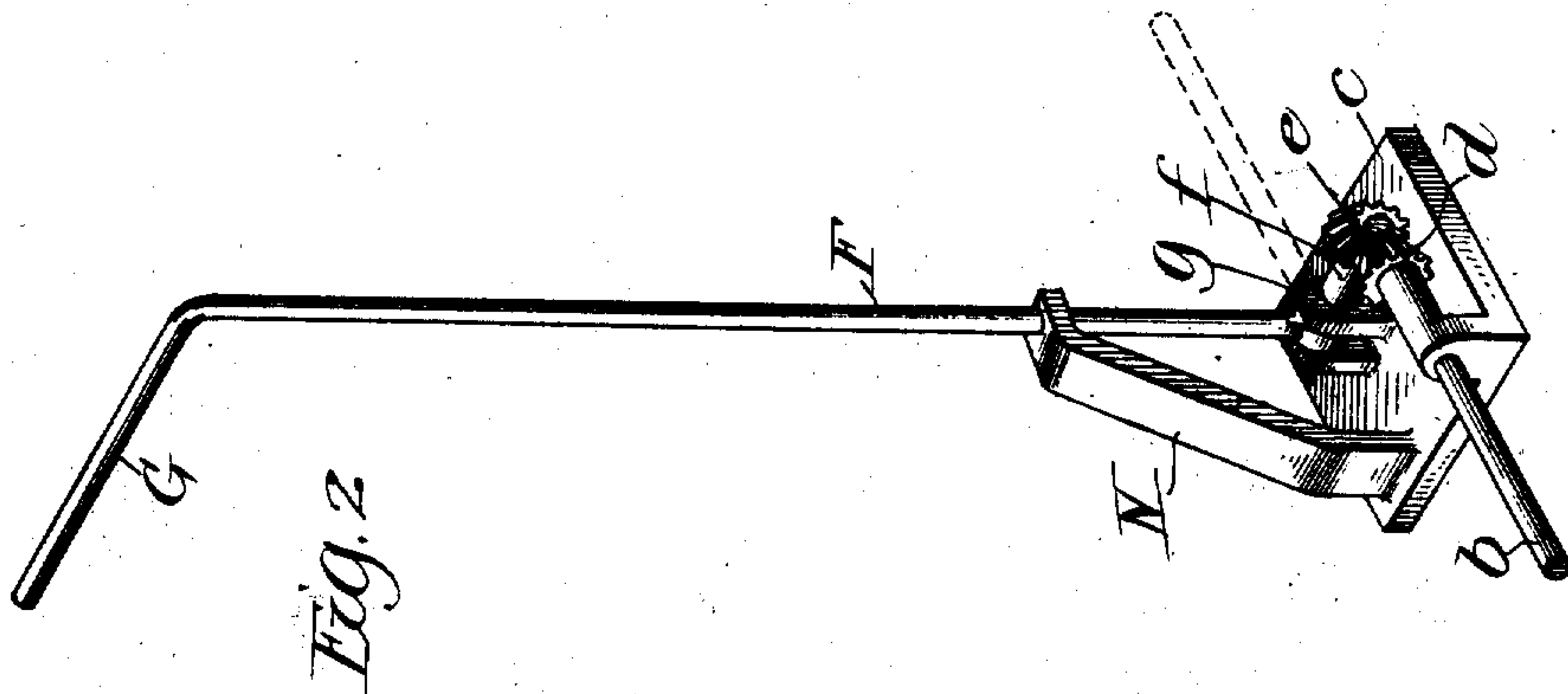


Fig. 2

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UNITED STATES PATENT OFFICE.

WILLIAM R. McCOLLOM, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOE LE PENSKE,
OF CHICAGO, ILLINOIS.

DERAILING SYSTEM FOR RAILROADS.

No. 903,303.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed February 24, 1908. Serial No. 417,445.

To all whom it may concern:

Be it known that I, WILLIAM R. McCOLLOM, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Derailing Systems for Railroads, of which the following is a clear, full, and exact description.

My invention relates to railroad contrivances that are used in connection with semaphores or other railroad signal systems, for the purpose of stopping a train of cars before it reaches a railroad crossing, which is either in use, or not ready for the passage of the cars over the same.

The object of my invention is to stop a train, no matter how rapidly it is moving and absolutely prevent its reaching the crossing, in the event of the engineer's neglecting to observe the usual semaphore or other signals to stop the train, either in the daytime or night-time, or in the event of the atmospheric conditions being such as to make it impossible to see said signals. This I accomplish by simple means that are placed alongside of the track, and automatically engage and operate the valve in the pipes of the air-brake system on the locomotive, and cause the instant setting of the brakes throughout the train, substantially as hereinafter fully described, and as more particularly pointed out in the claims.

In the drawings:—Figure 1 is a perspective view of a portion of a railroad adjacent to a derailing switch and an approaching locomotive, embodying my invention. Fig. 2 is a detail view showing in perspective, the operating sweep of my invention, drawn to a larger scale. Fig. 3 is a perspective view of another fragment of my invention, drawn to a larger scale and showing the valve, used by me in the pipes of the air-brake system, that are carried by the locomotive adjacent to the running board of the same. Fig. 4 is a horizontal section of the air-brake valve removed from the engine and drawn to a larger scale.

In the drawings, A represents the main railroad track adjacent to the derailing switch B, the mechanism for operating which is contained in a housing C alongside said tracks. This mechanism comprises a motor (not shown) which is actuated by means of an electric circuit S, controlled from a watch tower E, which latter is lo-

cated at some, more or less, remote point from the derailing switch. The armature shaft *b* of the motor referred to extends out through suitable bearings in said housing, preferably, parallel to the rails A, and has its outer extremity journaled in suitable bearings arising from a base-plate *c*. Slightly beyond the said bearings this shaft is provided with a beveled gear *d* that engages a bevel gear, *e*, on the end of shaft *f*. Shaft *f* is arranged substantially at right angles to shaft *b* and to the tracks A, and is journaled in lugs *g* extending up from the base-plate *c*, and between said lugs it has an arm F extending therefrom which consists of a bar of metal, say five or six feet long, the upper end of which is bent horizontally, and substantially parallel to its axis, toward track A a suitable distance.

Normally the bar F is adapted to lie flat upon the ground, but when the derailing switch is operated this arm is moved to a vertical position, substantially as shown in dotted lines in Fig. 1, and when in this position its bent end, or sweep G, will be in the way of and will be engaged by the upright portion of an L-shaped arm I, whose other end is secured to the projecting extremity of the spindle of an ordinary valve H, and cause said valve to open up a pipe J, connecting the pipes K, *k*, of the air-brake system carried by the engine, which are generally located just under or just above the running board thereof. The shape of the housing M of this valve is immaterial, but it is placed and secured to the side of the locomotive, preferably, as shown in Fig. 1, just above the running board, and when in this position the arm I will stand out from the side of the locomotive, where it will be met and engaged by the sweep G of arm F.

When arm F is moved to a vertical position its lower portion will come in contact with a brace N, secured to and arising from base-plate *c* on the side thereof opposite the approach of the train, and after the sweep G, has engaged the arm I of the valve and turned the same, the wider portion of the engine cab will strike against the sweep of said arm and break the same adjacent to where it comes in contact with the brace N; where, if desired, it may be made weaker, in any suitable manner, than at any other point along its length. The object of having this arm break in the manner just described is to

remove the sweep so that it will not interfere or come in contact with the sides of the car composing the train, and it will also be evidence to the division superintendent of the railroad that the engineer had run contrary to orders and moved his train past the semaphore in case said train was derailed.

In practice I prefer to place a semaphore O back about a thousand feet or more from the derailing switch, alongside of the track, so that the engineer of an approaching train may have ample time to apply the brakes, when signaled to stop, and thereby stop the train before it reaches the derailing switch, which latter is opened by electrical means at the same time the semaphore arm is set. If the engineer should not so set the brakes of his train, the emergency air-brake system of the train will be automatically operated just before the derailing switch is reached by the engagement of the sweep G, with the arm I of the valve N, and the train automatically stopped, regardless of the oversight or carelessness of the engineer.

I do not desire to be confined to the exact arrangement and construction of my improvement as hereinbefore described and shown, as it is obvious that the sweep G could be forced up into position by other mechanism than that referred to and the shape of said arm be changed or other parts of my invention changed to meet the conditions involved in the application of my improved system. As shown the semaphore and derailing switch of my invention are simultaneously operated by the electrical means shown, although it will be understood this is not absolutely necessary.

What I claim as new is:—

1. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, of means placed alongside the track on which said engine is running and adapted to engage and operate said valve and then be broken by contact with a portion of the engine.

2. In a railroad system of the kind described the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, of a breakable arm placed alongside the track on which said engine is running and adapted to engage said valve and set said brakes.

3. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, of a breakable arm having its upper end bent horizontally towards and placed alongside the track on which said engine is running and adapted to engage said valve and set said brakes.

4. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, of a breakable arm movable in an arc struck from its lower end and placed alongside the track on which said engine is running and adapted to engage said valve and set said brakes.

5. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, of a breakable arm movable in an arc struck from its lower end, and having its opposite end bent horizontally towards and placed alongside the track on which said engine is running and adapted to engage said valve and set said brakes.

6. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, an arm projecting horizontally outwards from the spindle of said valve, of means placed alongside the track on which said engine is running and adapted to engage said arm and set said brakes, and then be broken by contact with a portion of the engine.

7. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, an arm projecting horizontally outwards from the spindle of said valve, of a breakable arm placed alongside the track on which said engine is running and adapted to engage said first mentioned arm and set said brakes.

8. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, an arm projecting horizontally outwards from the spindle of said valve, of a breakable arm having its upper end bent horizontally towards and placed alongside the track on which said engine is running and adapted to engage said first mentioned arm and set said brakes.

9. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, an arm projecting horizontally outwards from the spindle of said valve, of a breakable arm movable in an arc struck from its lower end and placed alongside the track on which said engine is running and adapted to engage said valve-arm and set said brakes.

10. In a railroad system of the kind described, in combination with a railway engine having the pipes of an air-brake system connected therewith, and a valve in said pipes, an arm projecting horizontally out-

wards from the spindle of said valve, of a breakable arm movable in an arc struck from its lower end, and having its opposite end bent horizontally towards and placed alongside the track on which said engine is running and adapted to engage said valve-arm and set said brakes.

11. In a railroad system of the kind described, the combination with a railway engine having the pipes of an air-brake system connected therewith and a valve in said pipes, of a derailing switch electrically actuated mechanism for operating said switch, and a breakable arm simultaneously moved by said mechanism into position to engage said valve on the approaching engine to set the brakes thereof.

12. In a railroad system of the kind de-

scribed, the combination with a railway engine having the pipes of an air-brake system 20 connected therewith, and a valve in said pipes, of a derailing switch, a semaphore, an electric circuit for actuating said switch and semaphore, and means placed alongside the track adjacent to said switch and actuated 25 simultaneously with said switch and semaphore to engage said valve on the approaching engine and set the brakes thereof.

In testimony whereof I have hereunto set my hand and seal this 4th day of February, 30 A. D., 1908.

WILLIAM R. McCOLLOM. [L. S.]

Witnesses:

FRANK D. THOMASON,
E. K. LUNDY.