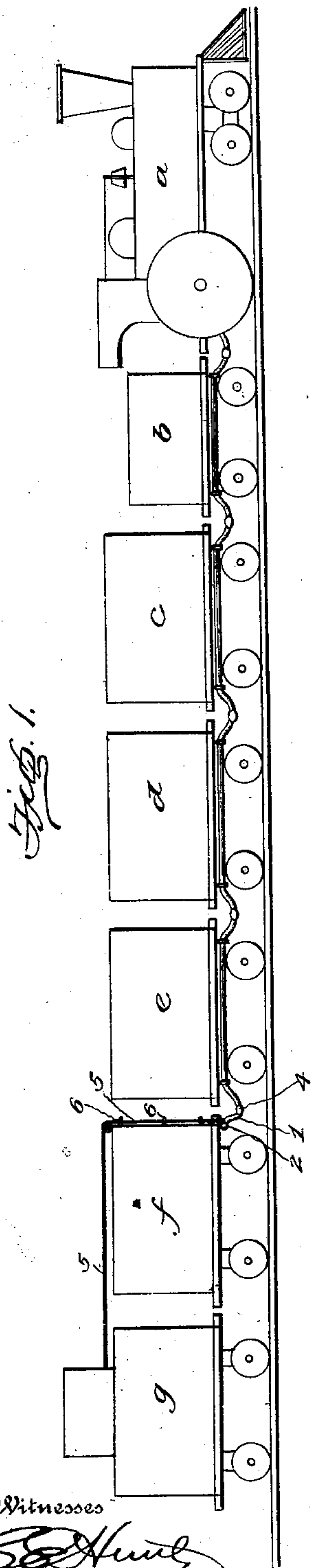


No. 701,796.

Patented June 3, 1902.

W. L. CLARK.  
AIR BRAKE APPARATUS.  
(Application filed Dec. 30, 1901.)

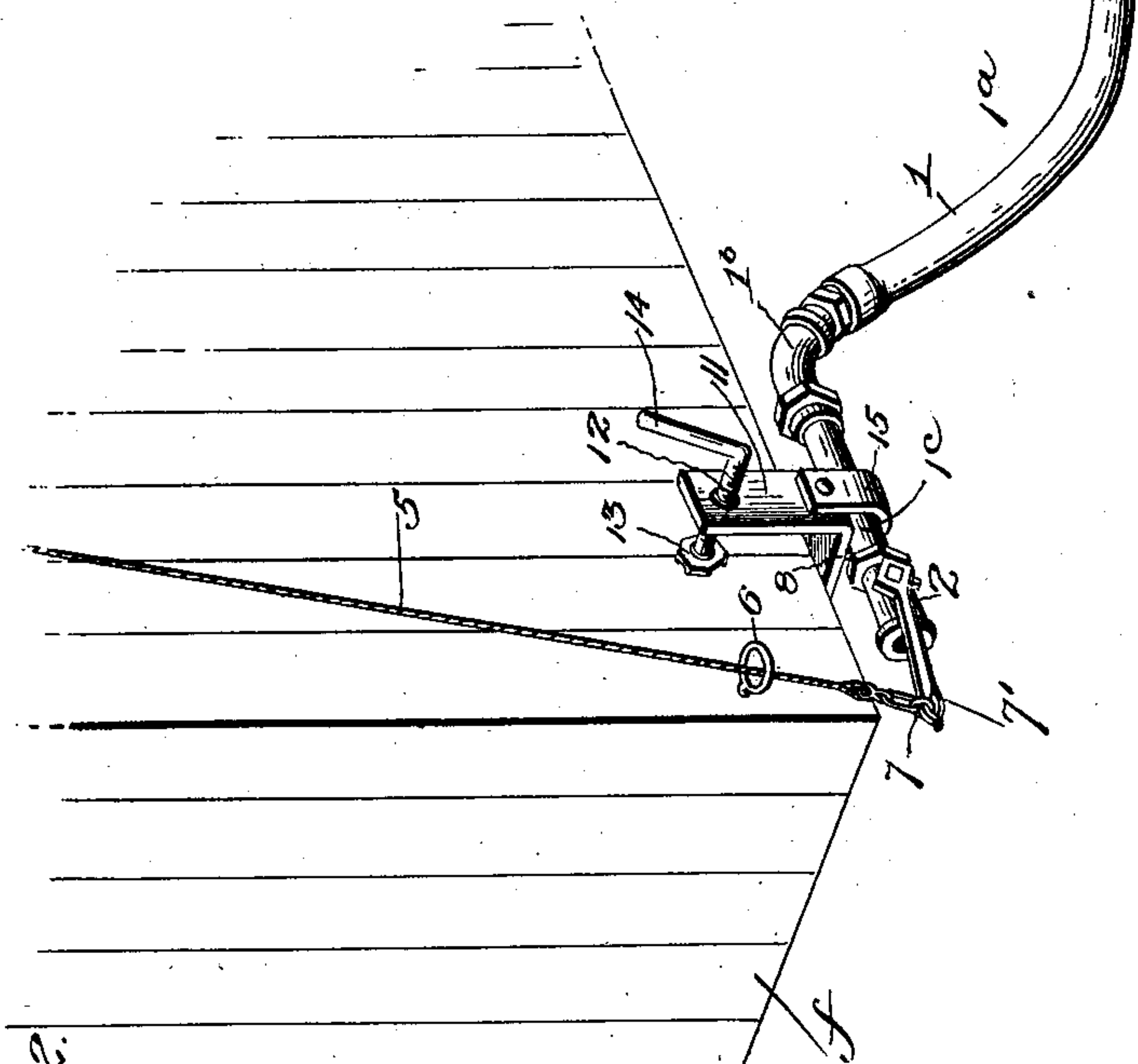
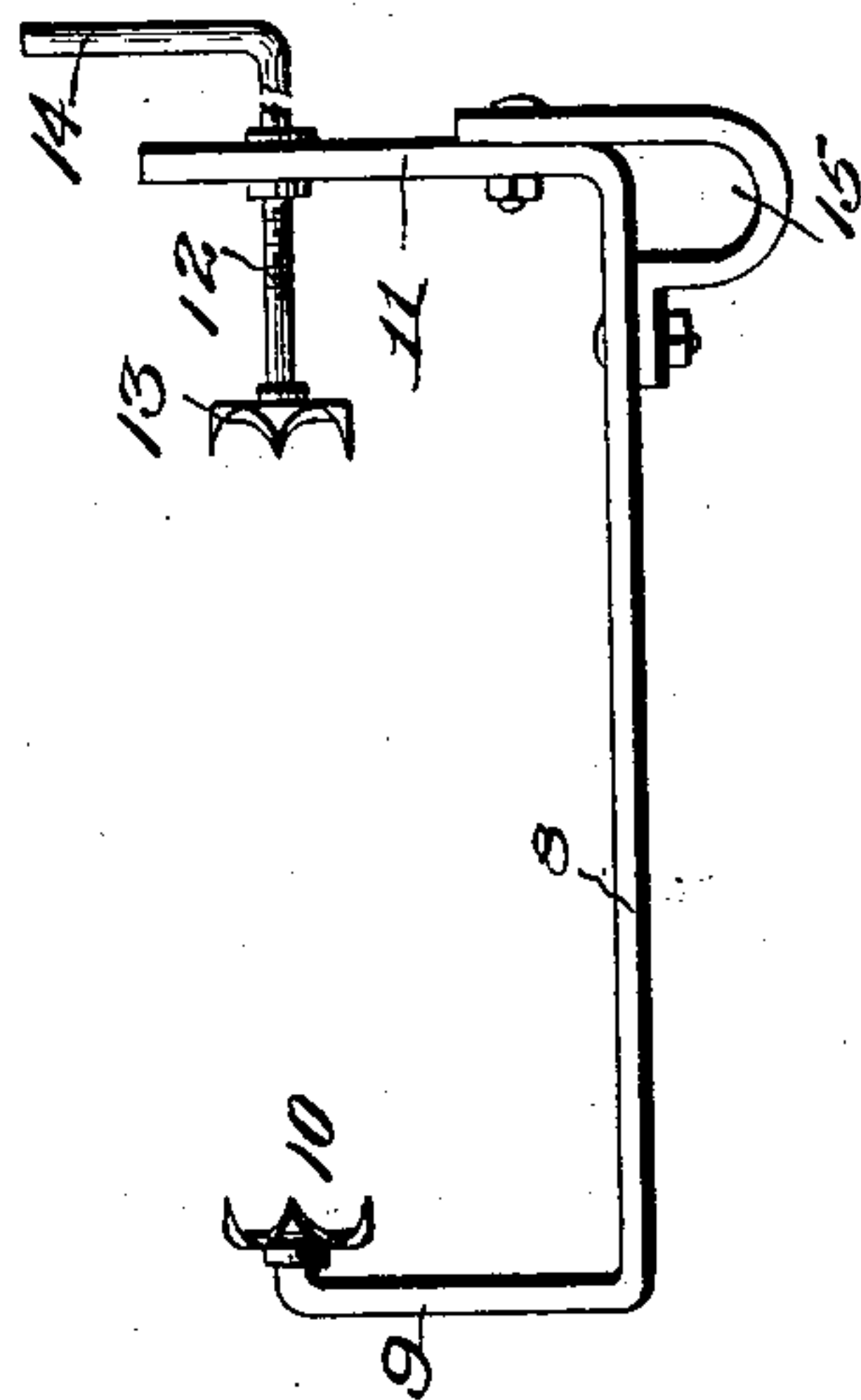
(No Model.)



Witnesses

*C. Hunt*  
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*Fig. 3.*



Inventor

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By

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Attorneys

# UNITED STATES PATENT OFFICE.

WILLIAM L. CLARK, OF OELWEIN, IOWA.

## AIR-BRAKE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 701,796, dated June 3, 1902.

Application filed December 30, 1901. Serial No. 87,743. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. CLARK, a citizen of the United States, residing at Oelwein, in the county of Fayette and State of Iowa, have invented certain new and useful Improvements in Air-Brake Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates, broadly, to air-brake apparatus.

In a combination-train—that is, a train composed of a series of cars carrying air-brake apparatus and a series of rear cars not equipped with air-brake apparatus—serious accidents have oftentimes resulted, due to the failure of the engineer to observe signals made by the trainmen or conductors on those cars at the end of the train which are not provided with air-brakes, and this is particularly true in foggy weather. Accidents have also resulted by the breaking or pulling apart of the train at that point in its length where the cars thereof are not provided with air-brakes.

It is the object of the present invention to provide a simple, durable, inexpensive, portable device adapted to be attached to the head end of the forward car of that section of cars not employing air-brakes and to be coupled with the train-pipe at the rear end of the last car of that section of the train employing air-brakes, whereby upon the separation of the train at a point at the rear of the car employing air-brakes the air-brakes will be applied and the engineer thus be given notice that something unusual has occurred, or if an accident has happened to the cars not equipped with air-brakes the conductors or trainmen of said cars may by pulling upon a rope apply the brakes to those cars equipped with the air-brakes, and thus give notice to the engineer, and thus stop the train.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is

a side view showing on a small scale and in conventional form a train of cars illustrating the application of the invention. Fig. 2 is an enlarged detail perspective view of the head end of a car not provided with an air-brake and illustrating the application of the invention thereto, and Fig. 3 is a side elevation of the clamp for attaching the device to the car.

Referring to the drawings, *a* denotes the locomotive; *b*, its tender; *c*, *d*, and *e*, cars provided with the usual air-brakes, and *f* and *g* cars having the usual hand-brakes.

To the forward end or head end of the car *f* is removably connected a hose 1, having at one end an air-cock 2 and at its opposite end a coupling-head 3. The coupling-head 3 is adapted to be secured to the coupling-head 4 on the air-line, as shown in Fig. 1. A rope or cord 5 is connected to the handle of the air-cock, extends up and through suitable guide-eyes 6, secured to the front end of the car *f*, over said car and over the car *g* to within convenient reach of the conductor or trainman, who usually occupies the rear car, which is generally in the form of a caboose. The end of the rope is attached to this rear car. It is evident that should the conductor or trainman desire to apply the brakes to the forward section of the train or that section supplied with air-brakes all that he has to do is to draw upon the cord, which will open the valve and allow the escape of air from the air-brake system, or should any of those cars not equipped with the air-brakes separate the cord or rope will be tightened and will pull open the valve, thus notifying the engineer by the application of the air-brakes of the accident, and thus giving him an opportunity to prevent serious damage.

The air-brake hose 1 is made up of a flexible tube 1<sup>a</sup>, a metal elbow 1<sup>b</sup>, and a metal nipple 1<sup>c</sup>, which supports the air-cock 2. The lower end of the rope is provided with a ring 7, which is connected to the handle of the air-cock. Any suitable means may be employed for removably connecting this device to a car; but that shown is preferred, and consists of a clamp comprising a bar 8, having formed at one end a jaw 9, provided with a roughened face 10 and having formed at its opposite end



an angular extension 11, with which is engaged a screw-threaded shaft 12, having swiveled at one end a pronged head 13 and provided at its other end with a crank or handle 14. The bar at the forward end is provided with a subclamp 15, which is bolted to said bar and which supports the nipple 1<sup>c</sup>. When it is desired to remove the clamp from the end sill of the car for the purpose of attaching it to some other car, the handle of crank 14 is operated to throw its swiveled pronged head from engagement with the end of the car, thus permitting the clamp to be bodily removed with its hose thereto attached and to be quickly fastened to another car with which it is desired to use the device.

Any suitable means may be employed for connecting the ring 7 on rope 5 with the handle of the air-cock that will allow the ring to slip off the handle at the proper time. The means herein shown consists of providing the end of the handle with a slight declivity in which the ring seats itself when slipped on the handle. A spring 7' has one end connected to the handle by the same screw which connects said handle to the valve-stem of the cock and has its free end bearing against the free end of the handle, as shown, thereby preventing accidental displacement of the ring 7. By providing this construction it will be seen that should the train separate between the cars *f* and *g* the pull on the rope caused by said separation would first open the air-cock and then allow the ring 7 to slip off the handle of the cock and prevent breaking of the rope. Furthermore, the conductor or brakeman in the rear car desiring to make a service or emergency stop pulls the rope 5 until he feels the ring slip off the handle, by which he may know he has the air-cock all the way open.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without requiring an extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without depart-

ing from the spirit or sacrificing any of the advantages thereof.

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

1. In a device of the character described, the combination with a section of hose provided at one end with a coupling-head adapted to be attached to a train air-pipe and provided at its other end with a cock, and means connected to said cock for opening the same and automatically releasable from said cock after it has been opened, substantially as set forth.

2. In a device of the character described, the combination with a section of hose provided at one end with a coupling-head adapted to be attached to a train air-pipe and provided at its other end with a cock, and means connected to said cock for opening the same and automatically releasable from said cock after it has been opened, said means comprising a cord having a ring at one end which engages the handle of the cock, and a spring for holding said ring in place when the cock is in closed position and for permitting the withdrawal of the ring from the handle of the cock after the cock has been opened, substantially as set forth.

3. In a device of the character described, the combination with a section of hose provided at one end with a coupling-head adapted to be attached to a train air-pipe provided at its other end with a cock, means for opening said cock, and a clamp for removably connecting the hose to the end of a car, said clamp comprising a bar having at its rear end a jaw and at its forward end an upwardly-bent portion, a screw engaging said upwardly-bent portion, a pronged head swiveled to the inner end of said screw, and a subclamp for embracing and holding said hose, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM L. CLARK.

Witnesses:

A. M. ODELL,  
L. M. WHITNEY.