

No. 611,145.

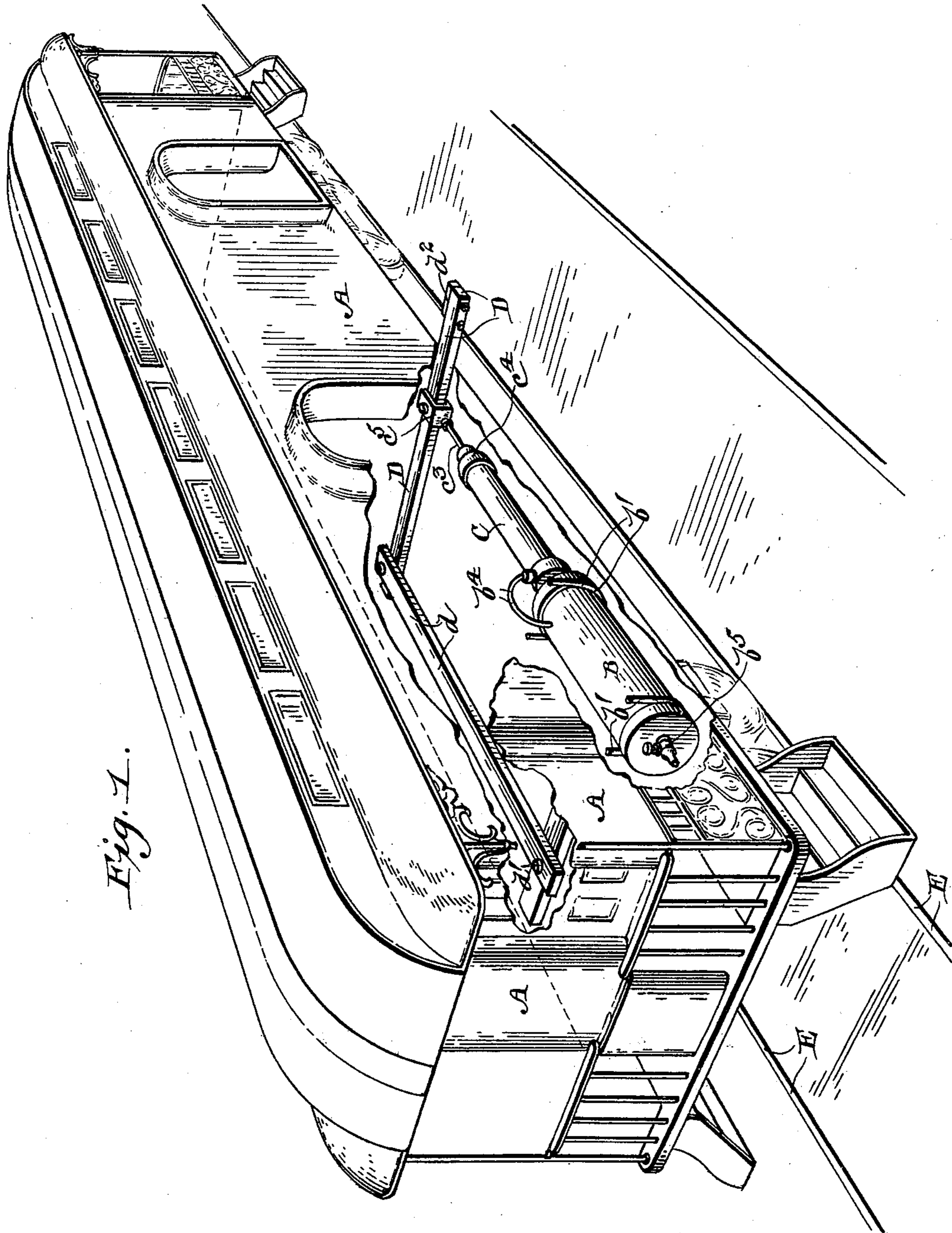
Patented Sept. 20, 1898.

T. H. POLLOCK.
PORTABLE AUTOMATIC WAY STATION.

(Application filed Oct. 14, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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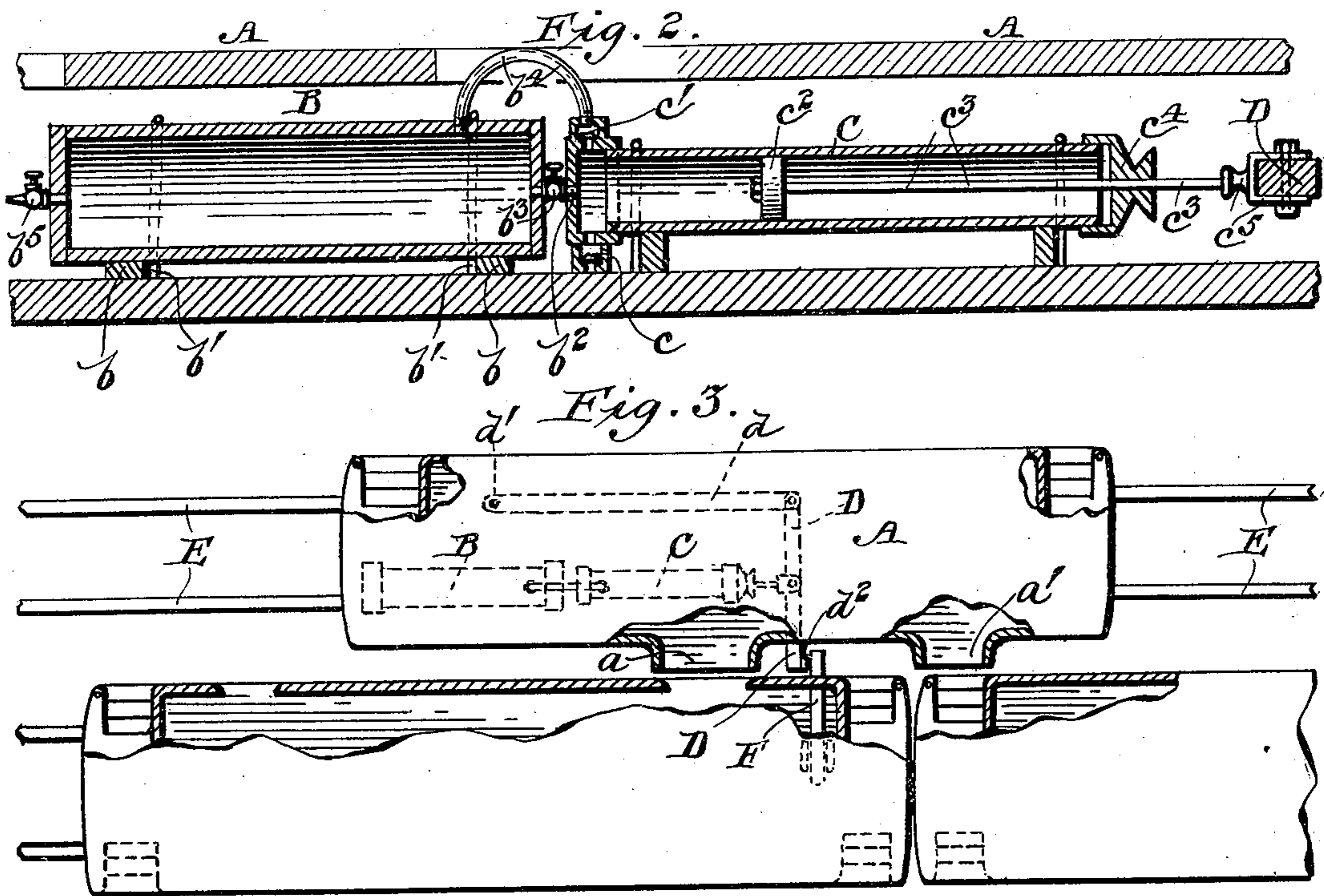
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WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS H. POLLOCK, OF NELIGH, NEBRASKA.

PORTABLE AUTOMATIC WAY-STATION.

SPECIFICATION forming part of Letters Patent No. 611,145, dated September 20, 1898.

Application filed October 14, 1897. Serial No. 655,233. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. POLLOCK, a citizen of the United States, residing at Neligh, in the county of Antelope, State of Nebraska, have invented Improvements in Portable Automatic Way-Stations, of which the following is a specification.

My invention relates to improvements in automatic way-stations for use in all kinds of railway-service; and the object of this invention is to provide a portable way-station which can be attached to a moving car or train for transferring passengers, freight, baggage, fuel, &c., without stopping the movement of the car or train or retarding its progress in any manner.

It consists in providing a station, preferably of car form, with pneumatic means for preventing any jar or shock when the said portable station is attached to a moving train.

It also consists in providing a portable station with air-cylinders and a piston adapted to be operated when the train or moving object strikes the station mechanism and means for controlling the operation of the air-cylinders, so as to vary the speed of the station and gradually cause it to equal the speed of the moving object.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of my improved portable way-station, showing the pneumatic cylinders for regulating the attachment of the same to a moving train. Fig. 2 represents a vertical central section through the said pneumatic cylinders. Fig. 3 represents a top plan view illustrating the way-station as attached to a moving train.

A in the drawings represents a portable way-station; B, an air-cylinder mounted thereon; C, a second air-cylinder connected therewith, and D a bumper or bar adapted to engage a moving body, as a train.

In constructing a way-station which shall be suitable for engaging moving trains, and especially trains which move at a high rate of speed, it is very needful that as perfect and well-regulated means for engaging the mov-

ing train as possible shall be employed in order to prevent any jar or excessive concussion and to allow of the station being brought to the speed of the train even without any unpleasant sensation to the occupants of the said station. By the use of air to cushion the movements of the engaging parts I am enabled to produce such a station and to attach it without difficulty or inconvenience to rapidly-moving trains—as, for instance, trains moving at the rate of forty miles per hour.

In carrying out my invention I mount the cylinder B upon the way-station, securing it firmly in place thereon by any suitable means—as, for instance, by resting it upon bearing-blocks, as *b*, and strapping it firmly into place by means of rods or bent bolts, as *b' b'*. The cylinder C is also mounted in a like manner upon the said station and is connected with the cylinder B by means of a pipe, as *b²*, which is provided with a valve, as *b³*. This valve may be adapted to be operated by hand, or automatic means may be devised for operating it when the piston in the cylinder C reaches a certain point. The cylinders B and C are also connected by means of a pipe, as *b⁴*. The head of the cylinder C nearest the cylinder B is provided with an inlet-passage controlled by a valve, as *c*, so constructed as to permit air to be drawn into the cylinder C, but to prevent its escape therefrom. A second valve, as at *c'*, is also provided, which is adapted to control the passage of air from the cylinder C into the pipe *b⁴* on its way to the cylinder B. These valves may be of any ordinary type suitable for such purposes. A release or outlet cock, as *b⁵*, is preferably mounted in one head of the cylinder B, whereby the pressure in the cylinder B may be released or reduced, if desired.

Interiorly of the cylinder C is arranged a piston, as *c²*, carried by a piston-rod, as *c³*. The piston-rod *c³* passes out through the end of the cylinder, any suitable packing-box or gland, as *c⁴*, being placed around the same. The outer end of the piston-rod *c³* is provided with a suitable clip or shoe *c⁵*, which is adapted to be pivotally secured to the lever or bumper D. The bumper D is pivotally secured at one end to a bar or link, as *d*, the

said link being pivotally secured at its other end to the framework of the portable station, as at d' . The outer free end of the bumper D may be provided with a contact piece or plate, as d^3 , which is adapted to receive the impact of the projection on the train for engaging the same.

As shown in Fig. 2 of the drawings, the cylinders B and C and the mechanism connected therewith are preferably housed or incased either beneath the floor or between two floors, so as to form no obstruction to the handling of freight or passengers upon the said station.

As shown in Fig. 3 of the drawings, in using a portable way-station of this character I contemplate having a track, as E, arranged parallel with the path of the train or other moving object, the said track E being made of indefinite length, it only being necessary to provide one of sufficient length to allow plenty of time for the transfer of passengers or freight to and from the train. As shown in Fig. 3 also, the portable station A is preferably made of sufficient length to permit of one of its doorways, as a , being held opposite to a doorway of a baggage-car, while a second doorway, as a' , will be at the same time held opposite one end of a passenger-coach. These doorways or openings a a' are preferably provided with vestibules similar to those used between cars, so that there will be no chance for a passenger or an article of freight or baggage to tumble or fall from the moving train and station.

Any kind of projection or engaging means may be mounted upon the train to engage the outer free end of the bumper D. As shown in Fig. 3 of the drawings, I may mount a bumper or bar F similar to the bumper D upon one of the cars, which may be fixed to the car or may be movable, so that it may be drawn in to release the way-station, if desired. When the engaging projection upon the train is made fixed, other means of disengaging it from the bumper D may be used.

Although I have described the above-mentioned means for disconnecting the way-station from the train, it will be apparent that other means may be employed without departing from the spirit of my invention. It will also be apparent that I may employ any well-known power or means for returning the way-station to any desired point upon its track.

In operating a station constructed in accordance with my invention the piston c^2 is reciprocated in the cylinder C by means of the bar or bumper D. When the piston is drawn toward the packing c^4 , air will be drawn into the cylinder C through the valve c . Upon returning the piston to the other end of the cylinder the air will be forced through the valve c' and the pipe b^4 into the cylinder B. By repeating this operation the air in the cylinder B can be compressed to a

sufficient degree to cause it to exert a pressure about equivalent to the weight of the portable station. A greater or less pressure of course can be created and maintained, as experiment may show to be needful. In compressing the air in the cylinder B by means of the reciprocation of the piston the valve b^3 is closed, so as to retain the pressure in the cylinder B, the construction of the valve c' as above described being such as to prevent the return of the air into the cylinder C through the pipe b^4 . After the air has been sufficiently compressed within the cylinder B the piston-rod c^3 is pulled out of the cylinder C as far as the piston c^2 will permit. The station is then placed at a suitable point upon its track to await the coming of the train. When the train approaches and the projection thereon engages the outer free end of the bumper or lever D, the piston c^2 will of course be forced toward the opposite end of the cylinder C, compressing the air already therein. When the piston has traveled about two-thirds of the length of the cylinder C, the valve b^3 is opened either by hand or automatically, so as to permit the air compressed in the cylinder D to escape into the cylinder C and oppose the movement of the piston c^2 . This will cause the station to automatically and gradually assume a speed equal with that of the train. After experimenting with a device constructed in accordance with my invention I have ascertained that when the mechanism is operated in this manner the station can be attached to a swiftly-moving train without jar or unpleasant sensation and can be made to attain the speed of the train in a very short distance—as, for example, by engaging a train moving at the rate of forty miles an hour the station can be caused to attain that speed in from a hundred and fifty to six hundred feet, as may be desired. When the station has attained the speed of the train, the vestibules or doors will be opposite the exit-points of the train and the passengers may pass safely from one to the other in the same manner as they would pass from one coach to another, while at the same time the baggage, mail, and express or other freight can be readily and easily transferred.

By the use of my portable automatic way-station trains need not stop at stations at all nor even retard their speed. Hence its use will effect a great saving of time and fuel and shorten the running time of trains. It will also facilitate the rapid transportation of live stock and perishable goods to the market and proportionably reduce the expenses of operating the road.

My device is also valuable on account of its absolute safety from accidents through the very common habit of persons mounting and dismounting moving cars, as it would be impossible to mount or dismount until the portable station is firmly held in its place and

the passage-ways opened to permit persons to pass with entire safety to and from the moving train.

It will be apparent that any suitable guards or gates may be employed to close the exit-passages of the station until the proper speed has been attained.

It will be apparent also that a station constructed in accordance with my invention will possess great simplicity of construction and operation and yet will be efficient and safe.

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

1. In a moving way-station, the combination with a suitable car or platform, of a bumper mounted thereon, air-cylinders for cushioning the movement of the said bumper, and means for controlling the pressure in the said cylinders, the construction being such that the movable station may be attached to a moving object or train without jar or unpleasant sensation, substantially as described.

2. In a moving way-station, the combination with a suitable platform or car, of a pivoted bumper mounted thereon and projecting into the path of a moving object or train, a pivoted bar for securing the said bumper to the said station, pneumatic cylinders also mounted upon the said station, a piston mounted in one of the said cylinders and connected to the said bumper, and means for controlling the movement of the piston so as to cushion, by pneumatic pressure, the movement of the bumper whereby the moving station may be attached to a train in motion without jar or inconvenience, substantially as described.

3. In a moving way-station, the combination with a suitable platform or car, of a bumper mounted thereon and adapted to project at one end into the path of a moving train, a cylinder mounted upon the said station, a piston mounted in the said cylinder and connected with the said bumper, a sec-

ond cylinder also mounted upon the said station and connected with the first cylinder, means for compressing air in the second cylinder, and means for permitting of the escape of the compressed air into the first cylinder for cushioning the stroke of the piston whereby the moving station may be attached to a moving train without concussion, substantially as described.

4. In a moving way-station, the combination with a platform or car adapted to run upon a track parallel with a moving train, of a bumper pivotally mounted upon the said station, a piston connected to the said bumper and moving in a cylinder, valves for controlling the admission and escape of air to one end of the said cylinder, means for connecting the said cylinder with a compression-cylinder, whereby the piston is adapted to compress air within the said compression-cylinder, and means for permitting the compressed air in the compression-cylinder to escape into the piston-cylinder whereby the movement of the bumper is adapted to be cushioned and the movement of the way-station is caused to equal that of the train without jar or inconvenience to the passengers, substantially as described.

5. An apparatus for transferring passengers or freight to and from a moving train, comprising a moving station, a bumper mounted thereon, pneumatic cylinders mounted upon the said station, a piston operating in one of said cylinders and connected to the said bumper, means for controlling the pneumatic pressure in the said cylinders for cushioning the movement of the piston, and means for disengaging the moving station from the moving train at any desired point, whereby sufficient time is given for the transfer of passengers and freight from the moving train, substantially as described.

THOMAS H. POLLOCK.

Witnesses:

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JAMES R. CARY.