

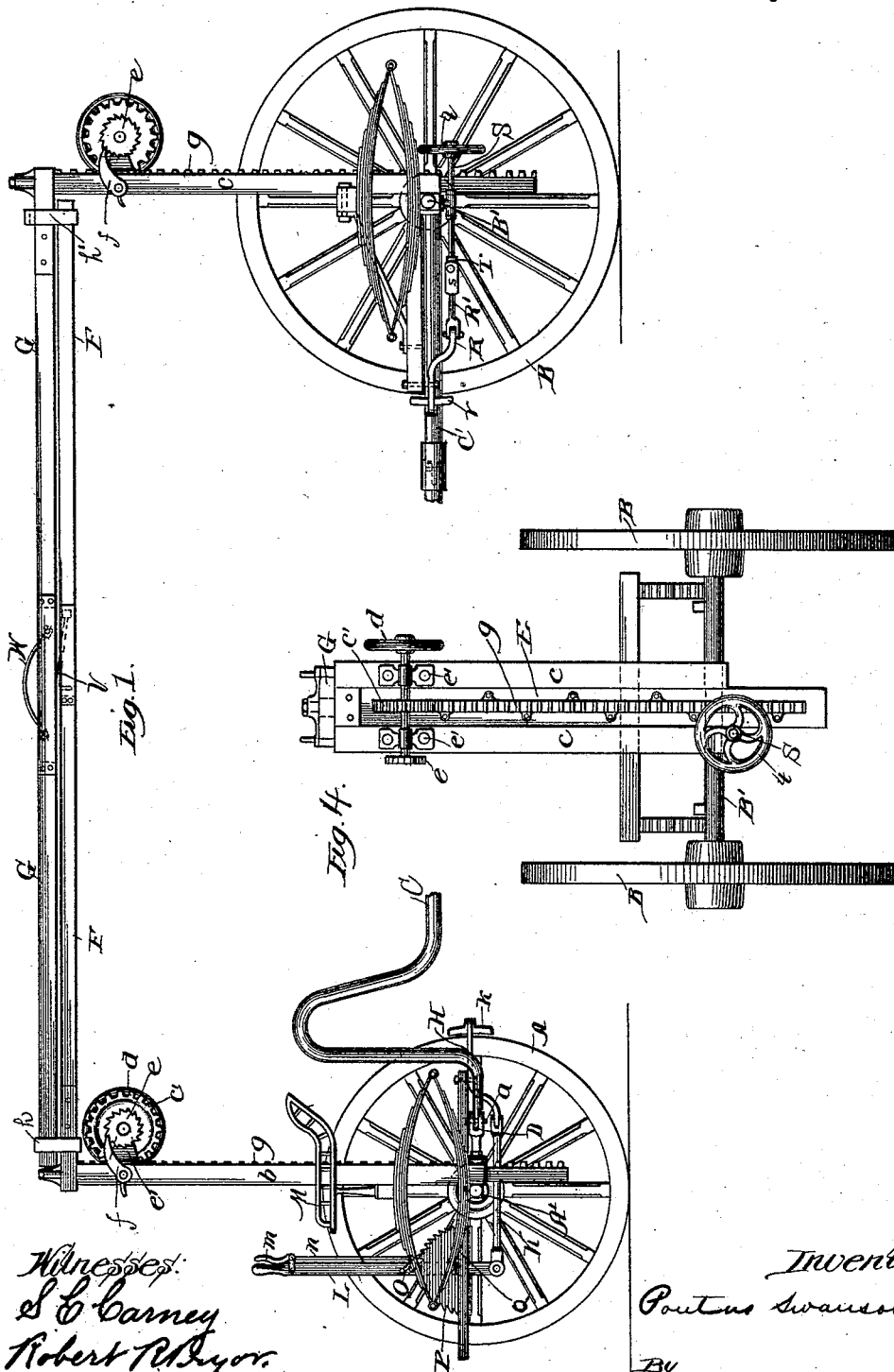
(No Model.)

2 Sheets—Sheet 1.

P. SWANSON.  
PORTABLE HOSE BRIDGE.

No. 455,586.

Patented July 7, 1891.



Witnesses:  
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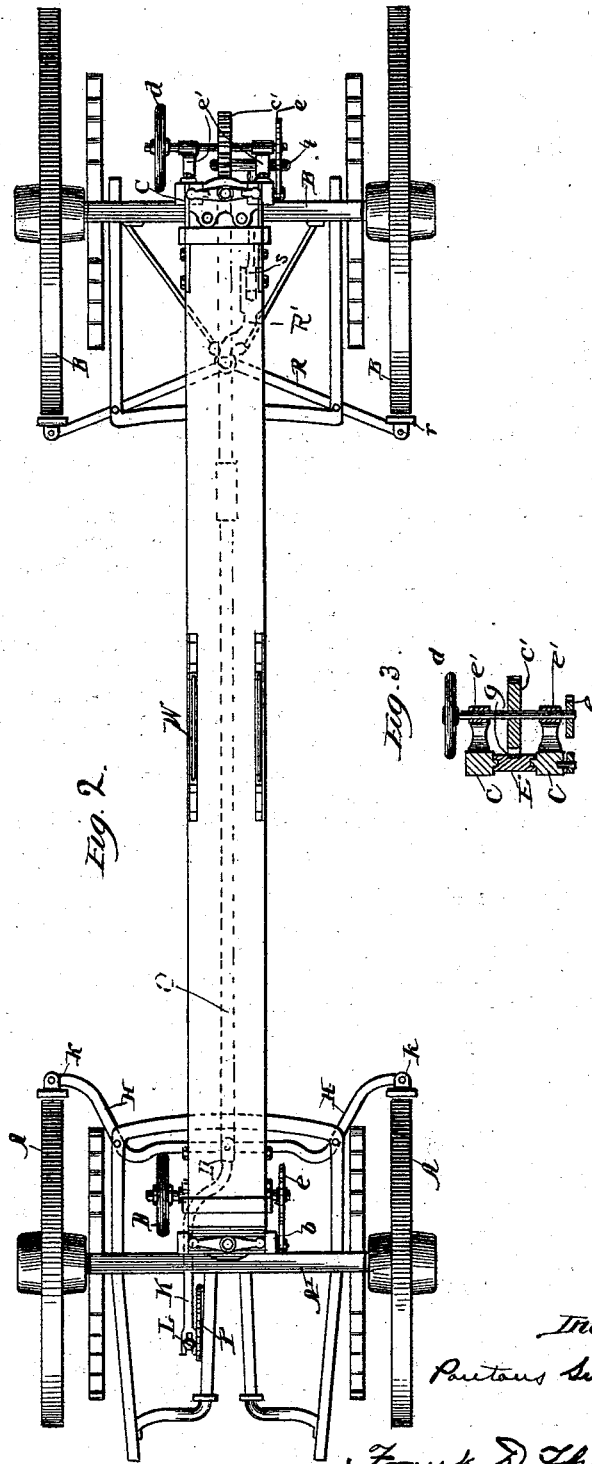
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2 Sheets—Sheet 2.

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PORTABLE HOSE BRIDGE.

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Witnesses:  
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# UNITED STATES PATENT OFFICE.

POUNTUS SWANSON, OF CHICAGO, ILLINOIS.

## PORTABLE HOSE-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 455,586, dated July 7, 1891.

Application filed January 9, 1891. Serial No. 377,280. (No model.)

*To all whom it may concern:*

Be it known that I, POUNTUS SWANSON, a citizen of Sweden, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Portable Hose - Bridges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to apparatus whose introduction would be a great acquisition to fire-department apparatus. Its object is to enable the hose-pipe to be bridged or arched over the street so as to permit of street-car and other traffic under it. In large cities, especially in the business portion thereof, the stoppage of traffic, due to laying the hose-pipe across the streets, particularly during conflagrations, is something at once dangerous to life and property and particularly inconvenient in its consequences otherwise.

My invention is of such construction that it can be easily drawn from place to place and quickly manipulated so as to arch over a street and support the hose-pipe up out of the way without danger of collapse, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a plan view of the same. Fig. 3 is a rear elevation thereof. Fig. 4 shows a hinged cross-section through one of the uprights of my invention.

Referring to the drawings, A and B represent the forward and rear wheels of the vehicle carrying my improved apparatus and which are journaled on the spindles of the axles A' and B', respectively. These axles are connected by a reach C, the rear end of which is permanently secured to about the center of length of the rear axle B' and the forward end of which is connected by means of a suitable pin *a* between the bifurcated ends of a clevis D, secured to and projecting from the center of length of the forward axle A'. The object of thus connecting the forward end of the reach C to the forward axle is to permit the forward and rear wheels to be easily and quickly disconnected, for the purposes hereinafter more fully explained, by the removal of the pin *a*.

Secured to and arising vertically from the axle A' and B' are the parallel uprights *b b* and *c c*, respectively. These uprights are preferably located one on each side of and an equal distance from the center of length of the axles, and they extend to a height the equivalent to about six to ten feet from the axle. The inner surfaces of these uprights are provided with vertical longitudinal tenons, and placed between these uprights, with longitudinal grooves in the edges adjacent to said uprights, into which said tenons enter to direct the course thereof, are the vertical reciprocal standards E. These standards E are provided with vertical racks *g*, preferably on their rear surfaces, which are engaged by a gear *c'*, the shaft on which the latter is mounted being journaled in brackets *e'*, extending, preferably, to the rear from the uprights. The shaft upon which said gear *c'* is mounted has its ends extending through its bearings, and on one end it is provided with a hand-wheel *d*, so as to enable the operator to turn the shaft so as to elevate the standards E, and it is provided at its other end with a ratchet *e*, which is engaged by a pawl *f*, pivotally connected to the outer side of the adjacent upright.

Secured to the upper end of each standard is a horizontal board F and G, respectively. The board F is secured to the upper end of the forward standard E by a suitable bolt passing down through a suitable bridge-nut and said board into said standard, and its length is such that when the forward and rear wheels carrying the apparatus are united by the reach its rear end is within a few inches of the uprights arising from the rear axle. The board G, secured to the upper end of the rear standard, is of the same dimensions, preferably, as the board F, and it extends horizontally forward a corresponding distance from the rear uprights. The board G from the rear standard overlaps the board F of the front standard, or vice versa, and the board F, near its end, is provided with a strap *h* of sufficient strength, which surrounds the board G, and the board G has a similar strap *h'* near its end, which surrounds the board F. These boards thus united form a bridge upon which the hose-pipe is laid and supported, and when the rear wheels are separated and

drawn away from the forward wheels they slide upon each other, and thus can bridge over the increased distance to an extent equal to about twice their length. It will be understood that the rear standard is elevated by substantially the same means as the forward standard, substantially as shown. Thus, supposing it were necessary to bridge over the car-tracks on a street, the standards are raised a sufficient distance after the wheels have been disconnected and placed on either side of said car-track to permit the cars to easily pass under them, and the hose-pipe is then laid across the boards F and G, thus spanning the car-tracks above and out of the reach of danger from the traffic underneath.

When the rear wheels are separated from the forward wheels of my improved apparatus, it is deemed advisable, although not actually necessary, to brake the wheels, so as to insure the structure being stationary when in use. This may be done by any suitable braking device; but I prefer the construction shown. On the front wheels this consists of levers H H, having the brake-shoes *k k* suitably secured on their outer ends, which engage the rear of the said wheels. These levers H are fulcrumed about their centers of length, and their inner ends are pivoted by means of a pivotal pin passing through elongated openings in them to the rear end of a connecting-rod K, which pursues a forward course to and is pivotally secured with the lower end of a lever L. This lever is fulcrumed at a point located a short distance above its lower end, and its length is such that its upper end reaches to within convenient reach of the driver's seat M. When the lever is grasped by the driver and pushed forward from the seat, so as to brake the wheels, it is locked in the position that it is in when the driver removes his hand from it by means of a spring-depressed pawl O. To release the lever so as to remove the brakes from the wheels, an L-shaped pull *m* is grasped by the driver at the same time he grasps the handle of lever L. This pull *m* is pivotally connected to the base of the handle of the said lever at the end of its horizontal arm, and it has a connecting-rod *n* connecting its angle to the pawl O, which latter is pivotally connected to the lever about as shown. As stated, this pawl is spring-depressed, and it engages the serrations of the segmental rack P, which is secured to and arises from suitable supporting-gear Q, connected to the axle of the front wheels.

The rear wheels are braked by means of the brake-shoes *r* bearing against the forward rim of the wheels. These brake-shoes are suitably secured to the outer end of the levers R, which are fulcrumed at about their centers of length to the frame-work or gear connected to and supported by the axle, and their inner ends are connected by a pivotal pin passing through elongated openings therein to the link R'. The rear end of link R' is bifur-

cated and has bearings for the trunnions of a cylindrical nut *s*, which is tapped by the screw-threaded forward end of a bolt S. Bolt S passes longitudinally through a suitably-tapped guide T, depending from and extending back of the rear axle, and it has a hand-wheel *t* secured on its rear end. By turning the bolt S the brake-shoes are brought into engagement with the wheels, so as to lock or release the same, as desired.

The seat M is preferably supported on a transverse bar at one side of the uprights carried by the forward wheels, and the ends of this transverse bar rest upon elliptical or other suitably-shaped springs resting on the axles.

The gear or frame-work secured to the front and rear axles of my invention is such as to give stability to and assist in supporting the devices connected thereto needing support. I do not wish to be confined, however, to any particular kind or description of gear.

In order to assist in keeping the hose on the boards or platforms constituting the bridge of my invention and keep it from falling off laterally therefrom, I have provided the uppermost board G about its center of length on each side with a bow-shaped spring-guard W. The ends of these guards pass through suitable guides secured between the contiguous recessed side edges of said board and a metal plate covering the said recess, which latter is cut into the sides of the said board for the accommodation of these guards. These guards curve upward on either side of the board above the plane of its upper surface, and thus prevent the hose-pipe from falling off sidewise. The lower board F is also provided on each side about its center of length with spring-guards V. They are hook-shaped and have one end spring-seated, so that when it is not held down in the recess in the side of the board by the board above it its free end automatically moves upward beyond the plane of the upper surface of said board, and likewise serves to keep the hose-pipe thereon.

I do not wish to be confined to the gear and rack *g* for elevating the standards, for it is obvious that other devices could be used in the place of such; nor do I wish to be confined to the exact construction of the uprights and standards shown, because it is obvious they could be changed and yet perform the same function, as hereinbefore described.

The operation of my improved apparatus is as follows: The vehicle is swung transversely across either side of the center of the road or street, whereupon the pin *a* is withdrawn from the clevis D, so as to release the reach C, and the forward wheels are braked. The rear wheels are then drawn away from the forward wheels in a straight line until there is sufficient distance between the wheels for the accommodation of traffic between them. The reach is then preferably swung transversely to the line of motion of the vehicles, and the

rear wheels then braked. The standards are then quickly elevated a suitable distance, so as to permit the passage of vehicles under the boards, and locked in their elevated position by means of the pawl *f* engaging the ratchet on the end of the shaft carrying the gear *c'*. The hose-pipe is then drawn across the boards from one side of the street to the other and rests thereon while it is being used.

While heretofore I have referred to my invention as having two boards or platforms *F* and *G*, yet I do not wish to be confined to the use of two, as it is obvious that one board could connect the two standards, and, while not permitting the wheels to be separated farther than as originally constructed, would yet permit vehicles to pass under said board or platform when the reach was removed.

What I claim as new is—

1. The combination, with the forward and rear axles and wheels so united as to be easily disconnected, and uprights arising therefrom, of the vertical reciprocal standards, and a longitudinal board or platform secured to the upper part of each standard, which overlap and when said axles and wheels are disconnected and separated farther apart move longitudinally one against the other.

2. The combination, with the forward and rear axles and wheels so united as to be easily disconnected, of parallel uprights arising

from each axle and a gear *c'*, the shaft on which it is mounted being suitably joined to the standards reciprocating vertically between said uprights, and a vertical rack secured longitudinally to the vertical surface of each standard adjacent to the said gear by which it is engaged.

3. The forward and rear axles and wheels so united as to be easily disconnected, and suitable structure arising vertically from each axle a suitable distance, in combination with suitable longitudinal boards or platforms which are connected to the upper part of such vertical structure, and which when said axles are disconnected move longitudinally past each other as the said axles are separated farther apart.

4. The forward and rear axles and wheels and the reach connecting the said axles, having its forward end coupled to a suitable clevis and joined to a point just in front of the rear wheels, suitable brakes for both front and rear wheels, and parallel uprights arising from each of said axles, in combination with the standards moving vertically between said uprights, and boards or platforms connecting said standards, as set forth.

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