

J. E. RYAN.  
SELF LOCKING FIRE HOSE BRIDGE.

(Application filed Apr. 9, 1900.)

(No Model.)

2 Sheets--Sheet 1.

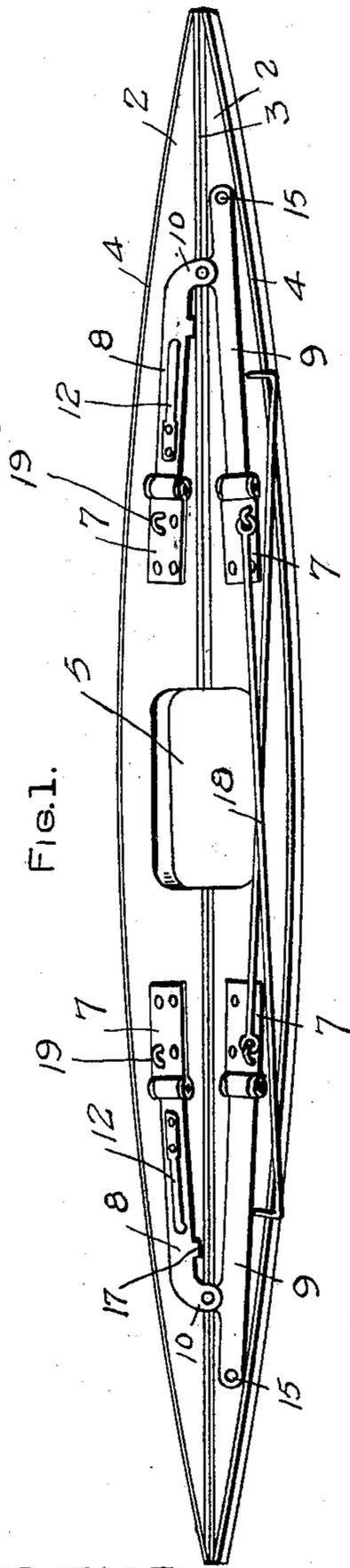


FIG. 1.

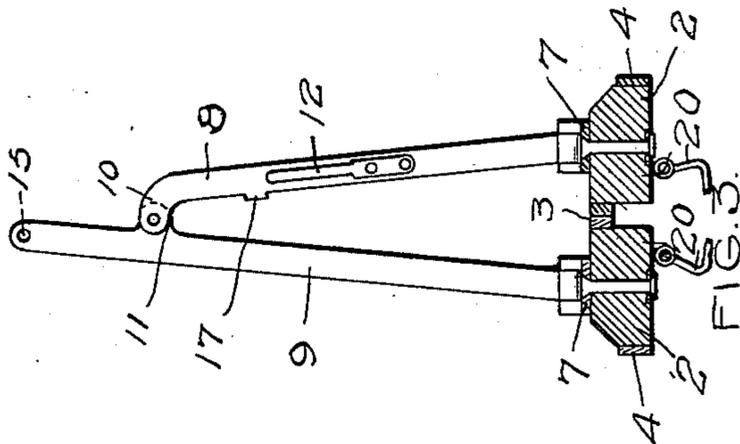


FIG. 3.

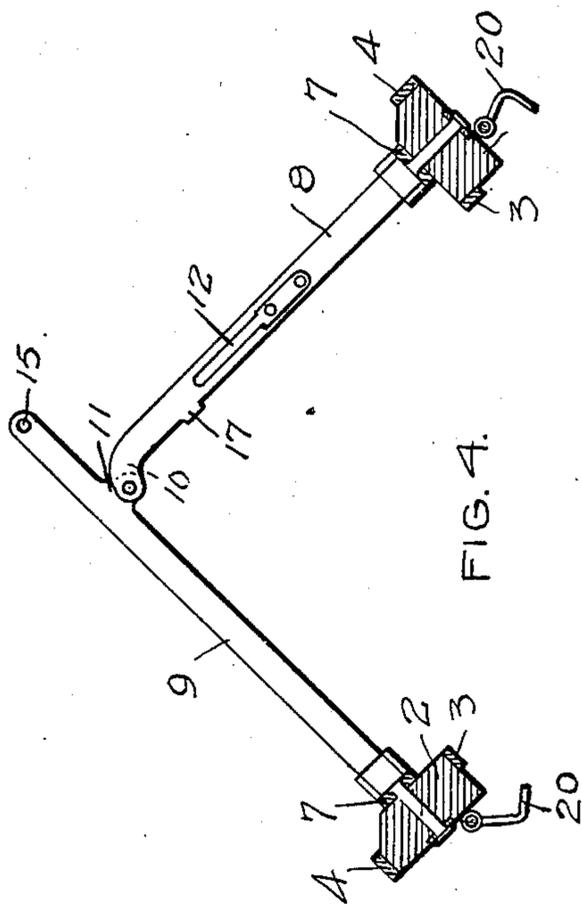


FIG. 4.

WITNESSES.

*E. J. Staudt*  
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INVENTOR  
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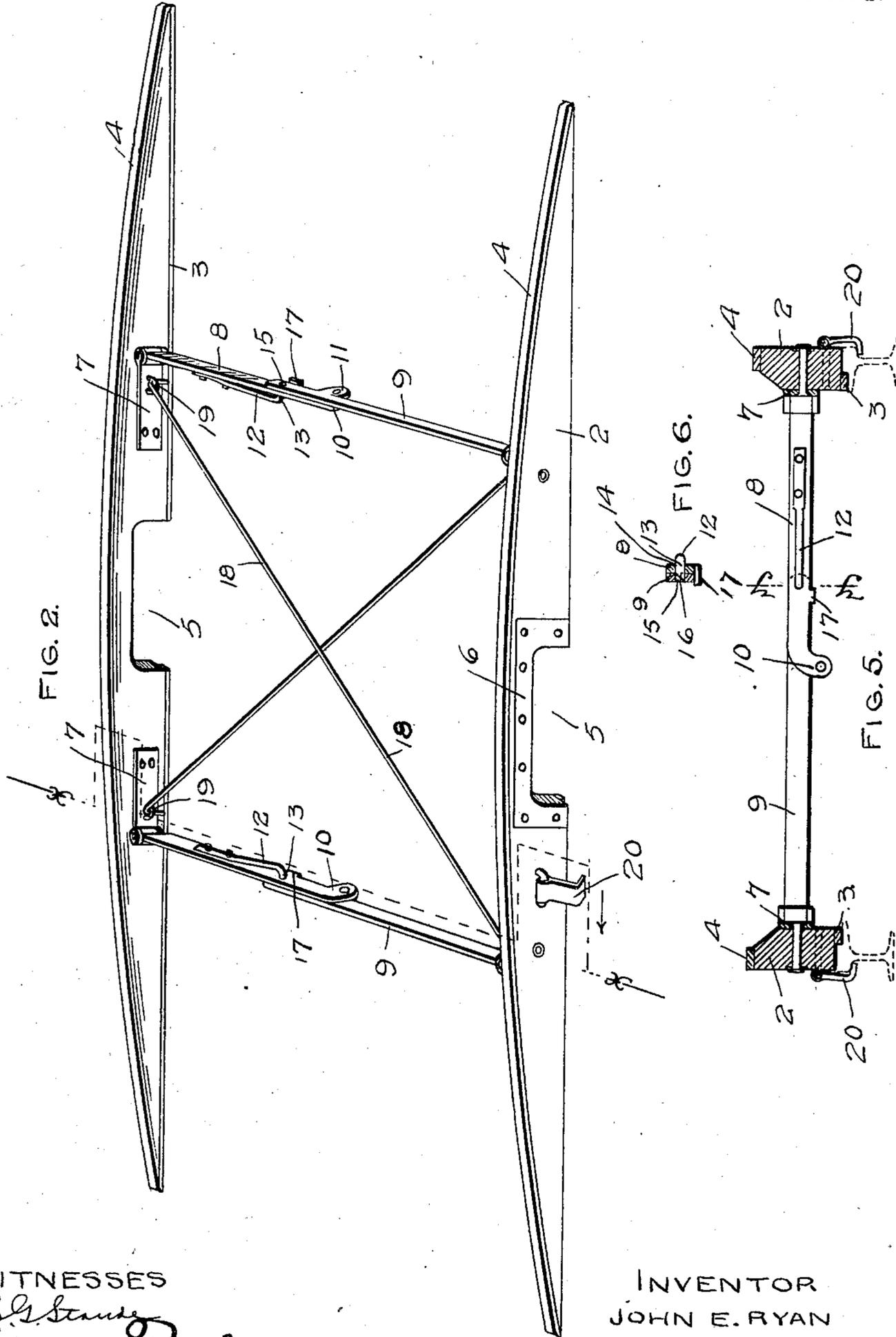
BY *Paul & Hawley*  
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2 Sheets—Sheet 2.



WITNESSES  
*E. S. Stoney*  
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INVENTOR  
 JOHN E. RYAN  
 BY *Paul Hawley*  
 HIS ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN E. RYAN, OF MINNEAPOLIS, MINNESOTA.

## SELF-LOCKING FIRE-HOSE BRIDGE.

SPECIFICATION forming part of Letters Patent No. 671,777, dated April 9, 1901.

Application filed April 9, 1900. Serial No. 12,066. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. RYAN, of the city of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful  
5 Improvements in Self-Locking Fire-Hose Bridges, of which the following is a specification.

The invention relates to devices for bridging the lines of fire-hose to permit street-cars  
10 to run without interruption during a fire; and one object of the invention is to provide a device that can be quickly and easily adjusted on the track-rails by one man and when not in use can be as readily folded into  
15 a compact bundle and carried on a ladder-truck or hose-cart.

A further object is to provide a fire-hose bridge which when opened or unfolded will be automatically locked and prevented from  
20 shutting up or collapsing when in use.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

25 In the accompanying drawings, forming part of this specification, Figure 1 is a perspective of a fire-hose bridge embodying my invention, showing the position of the parts when the device is folded. Fig. 2 is a similar  
30 view showing the bridge unfolded ready to use. Fig. 3 is a transverse section showing the folding hinges in position to be opened. Fig. 4 is a similar view showing the device partially unfolded. Fig. 5 is a sectional view  
35 on the line *xx* of Fig. 2. Fig. 6 is a detail of the locking mechanism of one of the hinges on the line *yy* of Fig. 5.

In the drawings, 2 represents the sides or shoes of the bridge having straight lower  
40 edges to rest upon the track-rails and provided with narrow flanges 3, that are adapted to fit inside the rails and hold the bridge in position thereon. The upper edges of the rails or members 2 are curved, as shown, and  
45 provided with straps 4, upon which the wheels roll as the car passes over the bridge, and the ends of said straps are preferably bent in under the ends of the rails 2 and make contact with the track-rails, so that the electric current of a trolley-car will not be broken as the  
50 car passes over the bridge.

To receive the lines of hose that may be

stretched across the car-track during a fire, I provide large recesses 5 in the lower edges of the bridge-rails, and these recesses are  
55 preferably of sufficient size to accommodate four or five lines of hose, which in most cases would be the greatest number stretched across the tracks at any one point. To strengthen and brace the bridge-rails at the point where  
60 the recesses are provided therein, I prefer to provide plates 6, securely bolted to the rails 2 over said recesses and extending down at each end of said recesses to the lower edges  
65 of the rails 2.

To permit rapid handling and facilitate placing the bridge on the track-rails, I prefer to provide hinge connections between the rails of the bridge, said connections being adapted to be folded to permit the device to  
70 be put in compact shape and carried on the ladder-truck or hose-cart. The hinges upon the bridge-rails comprise, preferably, short straps 7, securely bolted to the inner side of the rails, and the long straps 8 and 9. The  
75 straps 8 preferably have downwardly-turned inner ends 10, that are pivotally connected to lugs 11 on the lower edges of the straps 9 and permit the straps 8 and 9 to be easily folded  
80 down upon the sides of the bridge, as shown in Fig. 1.

When it is desired to unfold the bridge, the straps 8 and 9 are swung up to a vertical position, as shown in Fig. 3, and the rails are then swung apart on the pivots connecting  
85 said straps until the straps are in line with each other and the sides of the bridge are a sufficient distance apart to rest upon the track-rails. When the straps are in this position, it is desirable to provide some means  
90 for locking them to prevent the accidental folding or collapsing of the bridge. I therefore provide springs 12, secured to the straps 8 and having hooked or bent ends 13, projecting through holes 14 in said straps and adapted  
95 to enter corresponding holes 15 in the ends of the straps 9. I prefer to provide beveled tips 16 on the ends 13 of the springs to permit the ends of the straps 9 to slip easily over them until the holes 15 are reached, when the  
100 springs will snap therein and lock the straps together and prevent upward movement of the ends thereof until the ends of the springs are disengaged from the holes 15. To limit

the downward movement of the ends of the straps and prevent their passing too far over the ends of the springs, I may provide stops 17 on the inner ends of the straps 8.

5 To prevent any racking or twisting of the bridge during the passage of the car over the same, I prefer to provide brace-rods 18, pivotally connected to one of the bridge-rails between the straps 9 and having hooks at their  
10 opposite ends to enter staples or screw-eyes 19, provided in the sides of the opposite rail. I may also provide hooks 20 on the outside of the bridge-rails to engage the tops of the track-rails and prevent the bridge from being  
15 pushed along the track during the passage of a car.

The device when not in use is carried upon the ladder-truck or hose-cart folded in a compact form, (shown in Fig. 1,) and when needed  
20 at a fire the hinge-straps are turned up to the vertical position, as shown in Fig. 3, and the operator grasping the side rails of the bridge can easily spread the device until the springs snap into their sockets and the ends of the  
25 hinge-straps are locked together. The brace-rods are then put in position and the bridge placed upon the track-rails over the lines of hose. The operator may then with a single blow wedge the retaining-hooks under the  
30 tops of the rails and prevent the car from pushing the bridge out of position during the passage of the car over the same. One man can easily unfold the device and place it in position on the track, an operation which usually  
35 requires the services of two men when the ordinary form of fire-hose bridge is employed. When it is desired to fold the device, the operator, having unhooked the brace-rods, grasps the knobs of the springs, disengaging them from their sockets and permit-  
40 ting the hinge-straps to swing vertically until the lower edges of the bridge-rails are brought together.

I have shown and described my improved  
45 fire-hose bridge as adapted for use on a street-railway track; but it is equally applicable to the rails of a track where the cars are operated by steam-power, it being necessary  
50 simply to employ heavier side rails or members to enable them to support the greater weight of a locomotive and a railway-car.

The details of the construction that I have herein shown and described may be modified  
55 by any one skilled in the art without departing from my invention.

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

1. A fire-hose bridge comprising side rails  
60 adapted to be placed over lines of fire-hose stretched across the track, jointed bars connecting said side rails and adapted to hold them parallel on the track-rails, and said bars being also adapted to fold down length-  
65 wise upon said side rails when the device is not in use, substantially as described.

2. A fire-hose bridge, comprising side mem-

bers or rails adapted to rest upon the track-rails and having recesses to receive a line of  
70 hose stretched over the track, the straps or bars hinged to one of said rail members, similar straps or bars hinged to the other rail member opposite said first-named straps, the  
75 opposite straps of said members being pivotally connected at intermediate points and adapted when the device is folded to be turned down to a horizontal position thereon, substantially as described.

3. A fire-hose bridge, comprising side rails  
80 or members having recesses to receive lines of fire-hose stretched across the track, straps hinged to one of said members, similar straps hinged to the other member opposite said first-named straps, the opposite pairs of straps  
85 being pivotally connected at intermediate points and adapted to be folded vertically and horizontally, and means for locking the pivotally-connected ends of said straps to prevent the accidental folding or collapsing  
90 of the bridge, substantially as described.

4. A fire-hose bridge, comprising side rails  
95 or members adapted to rest upon the track-rails and having recesses to receive lines of fire-hose stretched across the track, bars or straps hinged to said members and pivotally  
100 connected in pairs at intermediate points and adapted to be folded vertically and horizontally, means for locking the pivotally-connected ends of said straps to prevent vertical folding of the same, and brace-rods connect-  
105 ing said members, for the purpose specified.

5. In a fire-hose bridge, the combination,  
110 with the side rails or members having recesses or holes to receive lines of fire-hose stretched across the track, of straps or bars hinged to said bridge members and pivotally connected at their inner ends and adapted to be swung vertically to permit the lower edges  
115 of the bridge-rails to be brought together, and said straps or bars being also adapted to be folded over to a horizontal position on said members to permit compact folding of the  
120 bridge, substantially as described.

6. In a fire-hose bridge, the combination,  
125 with the side rails or members having recesses or holes to receive lines of fire-hose stretched across the track, of the straps 8 hinged to one of said rails or members and having downwardly-turned inner ends 10,  
130 the straps 9 hinged to the opposite rail or member and having lugs 10 pivotally connected to said ends 9, and springs provided on said straps 8 and adapted to enter holes or sockets in said straps 9, substantially as described.

7. A fire-hose bridge, comprising the side  
135 rails or members 2 having recesses to receive lines of fire-hose stretched across the track, of the straps 8 hinged to one of said rails or members, the straps 9 hinged to the other rail or member and pivotally connected to said straps 8, the springs provided on said straps 8 and adapted to snap into sockets in said straps 9 whereby said straps will be locked in an open

or unfolded position, substantially as described.

8. A fire-hose bridge, comprising side rails adapted to be placed over lines of hose stretched across the track, jointed bars connected with said side rails and adapted to hold them parallel on the track-rails, said bars being also adapted to fold down lengthwise on said rails when the device is not in use, and hooks provided on said rails and adapted to engage the tops of the track-rails to lock the bridge thereon, substantially as described.

9. In a fire-hose bridge, the combination, with the straps 8 hinged to one rail or member of the bridge, of similar straps 9 hinged to the opposite member or rail, the inner ends of said straps 8 and 9 being pivotally connected and adapted to be swung upward to permit the lower edges of the rail members to be brought together, the springs 12 provided on the straps 8 and having beveled tips to enter holes or sockets in the straps 9 to prevent the folding of said straps and the collapsing of the bridge when in use, substantially as described.

10. A fire-hose bridge, comprising side rails or members adapted to rest upon the track-rails and having openings or recesses to receive lines of hose stretched across the track, suitable connecting devices hinged together and to said side members, the axes of the hinges between said connecting devices being substantially at right angles to the axes of the hinges between said devices and said mem-

bers to permit said devices to be folded vertically and horizontally, whereby said side members may be folded flatwise into the same horizontal plane and said connecting devices turned down horizontally upon them, substantially as described.

11. A fire-hose bridge, comprising side rails adapted to be placed over lines of hose stretched across the track, jointed bars connecting said side rails and adapted to hold them parallel on the track-rails, said bars being also adapted to fold down lengthwise upon said side rails when the device is not in use, and brace-rods provided between said side rails to prevent racking or swaying of the same when in use, substantially as described.

12. A fire-hose bridge, comprising side rails adapted to be placed over lines of fire-hose stretched across the track, jointed bars connecting said side rails and adapted to hold them parallel on the track-rails said bars being also adapted to fold down lengthwise on said side rails when the device is not in use, and suitable stops for limiting the depression of the connected ends of said bars and locking them to prevent their collapse when in use, substantially as described.

In witness whereof I have hereunto set my hand this 5th day of April, 1900.

JOHN E. RYAN.

In presence of—

RICHARD PAUL,  
M. C. NOONAN.