

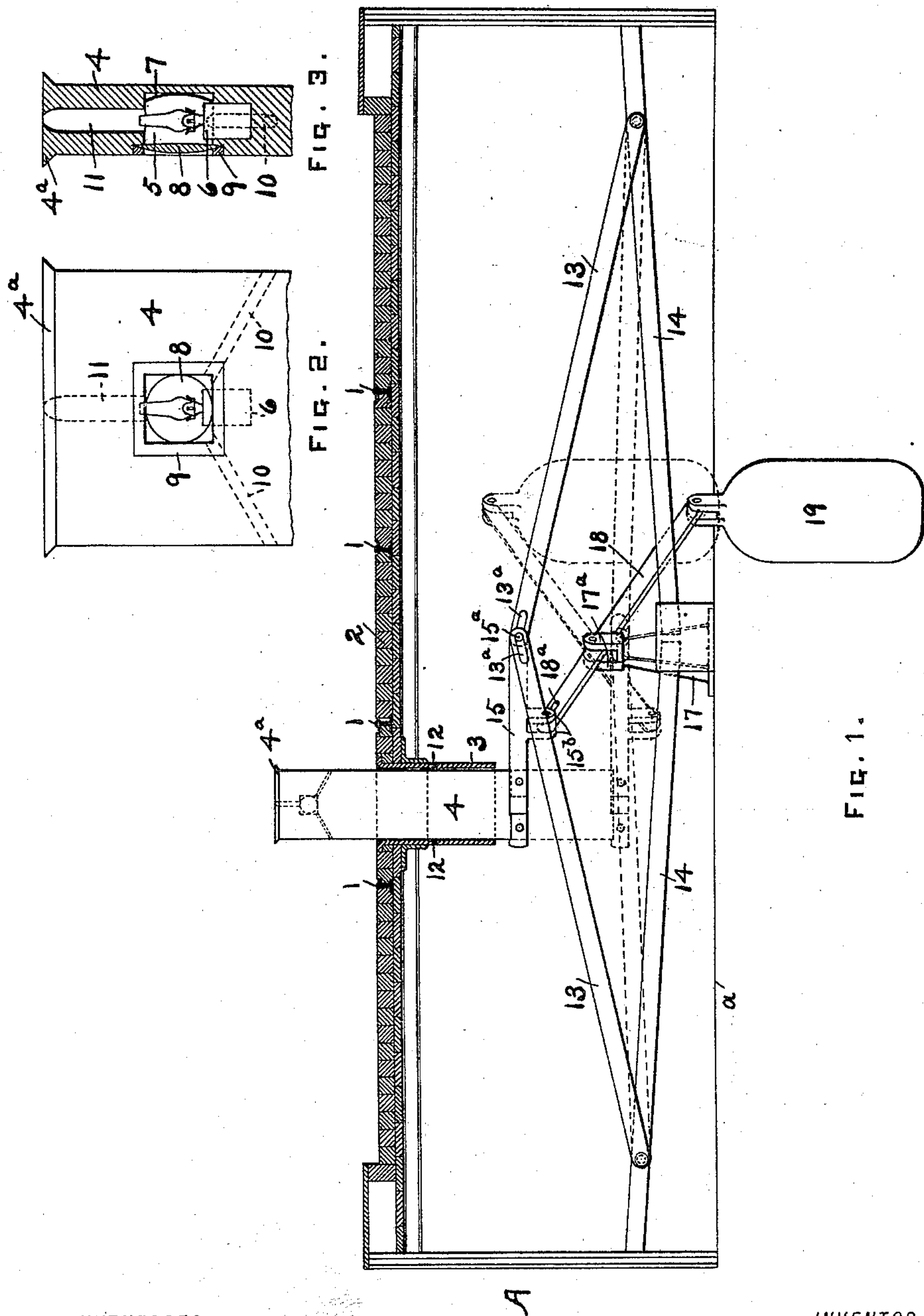
(No Model.)

3 Sheets—Sheet 1.

J. COUP.
DRAWBRIDGE SAFETY APPLIANCE.

No. 561,375.

Patented June 2, 1896.



WITNESSES:

J. C. Little

B. B. Baldwin

INVENTOR

BY J. Coup.

Burridge & Cutter,
ATTORNEYS.

(No Model.)

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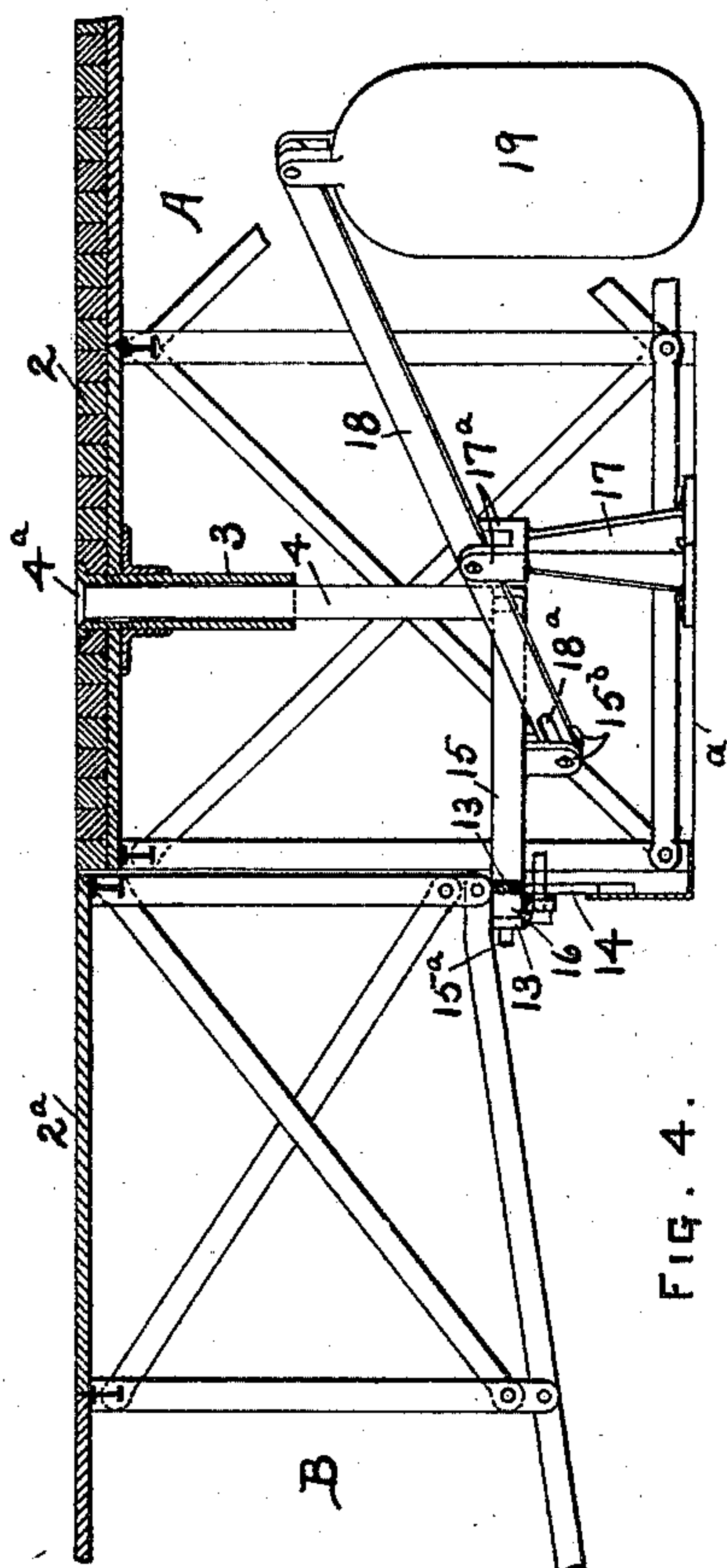


FIG. 4.

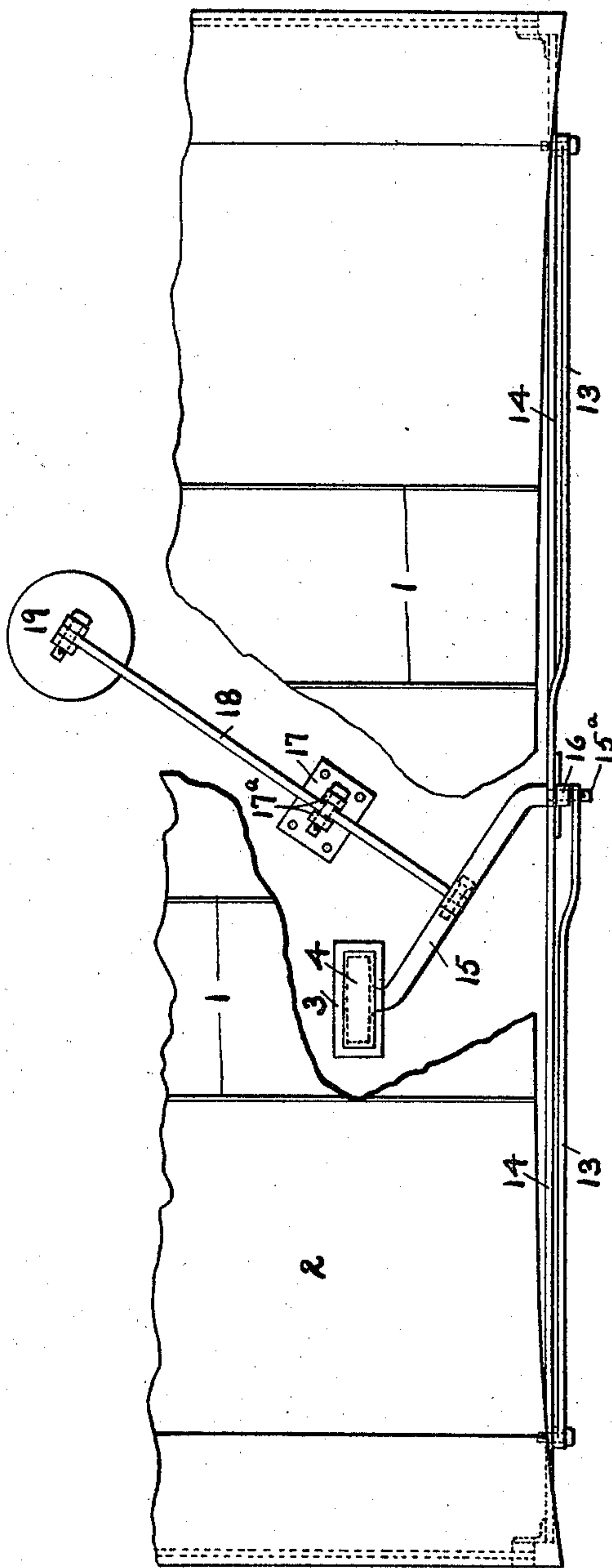


FIG. 5.

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(No Model.)

3 Sheets—Sheet 3.

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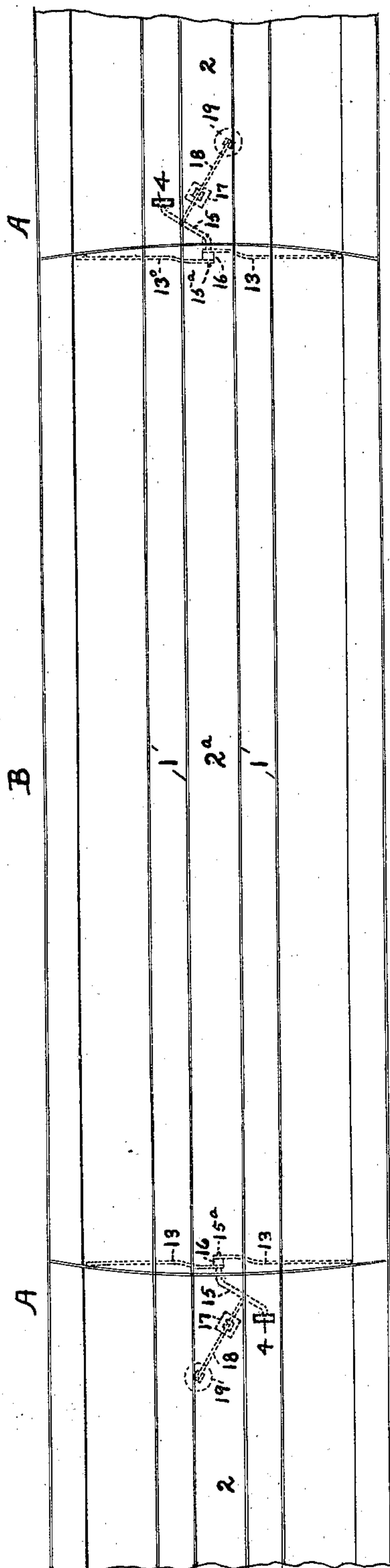


FIG. B.

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UNITED STATES PATENT OFFICE.

JOHN COUP, OF CLEVELAND, OHIO.

DRAWBRIDGE SAFETY APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 561,375, dated June 2, 1896.

Application filed December 23, 1895. Serial No. 573,002. (No model.)

To all whom it may concern:

Be it known that I, JOHN COUP, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Drawbridge Safety Appliances, of which the following is a full, clear, and exact description.

My invention relates to appliances for use on drawbridges as a signal and stop for street-cars when the draw is open; and it consists of the several parts and combinations of parts hereinafter fully described and especially claimed.

The object of my improvement is to provide an appliance of the class designated above which is automatic in action and an absolute stop for cars when the draw is swung, while at the same time serving as a signal to the operator of the car at a distance, whether it be night or day.

My device is simple, inexpensive, and positive in action and may be attached to any bridge.

The operation of my appliance is dependent on the movement of the draw alone. Hence the expense and uncertainty of man-power is obviated.

That my invention may be seen and fully understood by others, reference will be had to the following specification and annexed drawings, forming a part thereof, in which—

Figure 1 is an end view of a bridge, showing my appliance in its normal position, when the draw is swung, in full lines and its position when said draw is closed by dotted lines; Fig. 2, an enlarged front view of the upper portion of the obstruction, showing the lamp therein; Fig. 3, an enlarged central transverse vertical section of the same; Fig. 4, a sectional view of the abutting ends of said bridge and a draw, showing the relative position of said appliance; Fig. 5, a plan view of said appliance, the floor of said bridge being partially broken away to show the same; and Fig. 6, a small plan view of said draw and the abutting ends of said bridge, showing the location of my appliance at the adjacent bridge-terminals as operating between the rails of opposite tracks by dotted lines.

Similar letters and figures of reference des-

ignate like parts in the drawings and specification.

One end or abutment only of the bridge A is represented in Figs. 1, 4, and 5, and the abutting end of the draw B in Fig. 4. In Fig. 6 the entire draw B and both abutting ends of the bridge A are shown, two appliances being located between opposite pairs of rails 1. Parallel street-car tracks are indicated by the rails 1 in the floor 2 and 2^a of the bridge A and the draw B, respectively. In accordance with a well-known custom cars are permitted to pass in one direction only over one track and back over the other. Hence it will be seen that but a single safety appliance is required at each extremity of the bridge A, and a description of this appliance at one extremity is sufficient to cover that at the other.

An opening is made in the bridge-floor 2 a short distance from the end and between the left-hand pair of rails 1 to receive the rectangular sleeve 3, which is bracketed or otherwise secured beneath said floor. The top of the sleeve 3 is flush with the top of the floor 2. The obstruction 4 fits into the sleeve 3 loosely enough to permit it to work up and down therein. The obstruction 4 is provided at the top with the beveled flange 4^a, which rests upon the sleeve 3 when said obstruction is depressed to exclude water from said sleeve, the upper edge of the latter being beveled inside to form a seat for said flange. When the obstruction 4 is in its lowest position, the top thereof is flush with both the top of the floor 2 and the sleeve 3. The chamber 5 is formed in the upper part of the obstruction 4, opening through the front thereof to receive the lamp 6. The lamp 6 is backed by the reflector 7 and has the lens 8 in front. The door or frame 9 holds the lens 8 in place and with said lens closes the opening into the chamber 5. Air is admitted to the chamber 5 through the passages 10 10, extending from said chamber downward and outward through the ends of the obstruction 4. The smoke from the lamp 6 escapes through the upper passage 11, opening from said chamber through the top of the obstruction 4. When the obstruction 4 is depressed, air is supplied to the passages 10 through the holes 12 12 in the sleeve 3.

The arms 13 13 are pivoted at opposite ends to the beams 14 14, which extend across the end of the bridge A, and the adjacent ends of said arms have the slots 13^a 13^a therein.
 5 The lever 15 is rigidly connected to the base of the obstruction 4 and has the stud 15^a on its opposite end to register with the slots 13^a in the arms 13. The sleeve 16 is placed on the stud 15^a between the slotted ends of the
 10 arms 13 to stiffen the connection of the lever 15 at that point.

The line *a* in Figs. 1 and 4 indicates the top of the pier supporting the end of the bridge A, and to which the post 17 is rigidly
 15 secured. The post 17 is provided on top with the lugs 17^a, between which the lever 18 is pivoted. In one end of the lever 18 is the slot 18^a, through which said lever is pivoted to the lugs 15^b, depending from the under side
 20 of the lever 15. On the free terminal of the lever 18 is the counterweight 19.

Since the arms 13 are located on the end of the bridge A, with their outer ends below the level of the under side of the contiguous
 25 end of the draw B, it will be understood that said draw when closed must rest upon said arms, as best shown in Fig. 4; but as the draw B swings clear of the arms 13 the counterweight 19 depresses the free end of the
 30 lever 18, which in turn raises the upper portion of the obstruction 4 above the floor 2 and the adjacent ends of the arms as far as the slots 13^a permit through the medium of the lever 15. The obstruction 4 now consti-
 35 tutes a positive stop in the middle of the track along which a street-car may be approaching to prevent said car from running off of the end of the bridge into the open draw. The obstruction 4 is, of course, visible itself by
 40 daylight, and hence acts as a signal of danger, while a light in the chamber 5 serves the same purpose at night. The parts now stand as indicated by full lines in Fig. 1. When the draw B swings into place from either side, it
 45 rides down, as it were, the arms 13, which operate on the stud end of the lever 15 and depress the same with the obstruction 4, over-

coming the preponderance of the weight 19 by so doing and elevating it. The parts now stand as best illustrated in Fig. 4 and by
 50 dotted lines in Fig. 1. The light in the chamber 5 is not visible when the obstruction 4 is depressed.

The oil-lamp 6 may be replaced by an electric light, if desired, without departing from
 55 the nature of my invention, in which event the air-passages 10 and 11 will be superfluous.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a drawbridge safety
 60 appliance, of a vertical sleeve secured between the rails of a car-track in the bridge-floor, an obstruction fitting loosely in said sleeve, slotted arms pivoted at opposite ends to the end of said bridge and operated by the
 65 draw, a lever secured at one end to said obstruction and having a stud registering with the slots in said arms, a second lever pivoted to a post with a counterweight at one end and the opposite end movably connected to the
 70 first lever, substantially as and for the purpose set forth.

2. The combination in a drawbridge safety
 75 appliance, of a vertical sleeve secured between the rails of a car-track in the bridge-floor, an obstruction fitting loosely in said sleeve, a chamber in said obstruction, a lamp in said chamber backed by a reflector with a lens in front over the chamber-opening, slotted arms pivoted at opposite ends to the
 80 end of said bridge and operated by the draw, a lever secured at one end to said obstruction and having a stud registering with the slots in said arms, a second lever pivoted to a post with a counterweight at one end and the op-
 85 posite end movably connected to the first lever, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN COUP.

Witnesses:

F. A. CUTTER,
 J. C. LITTLE.