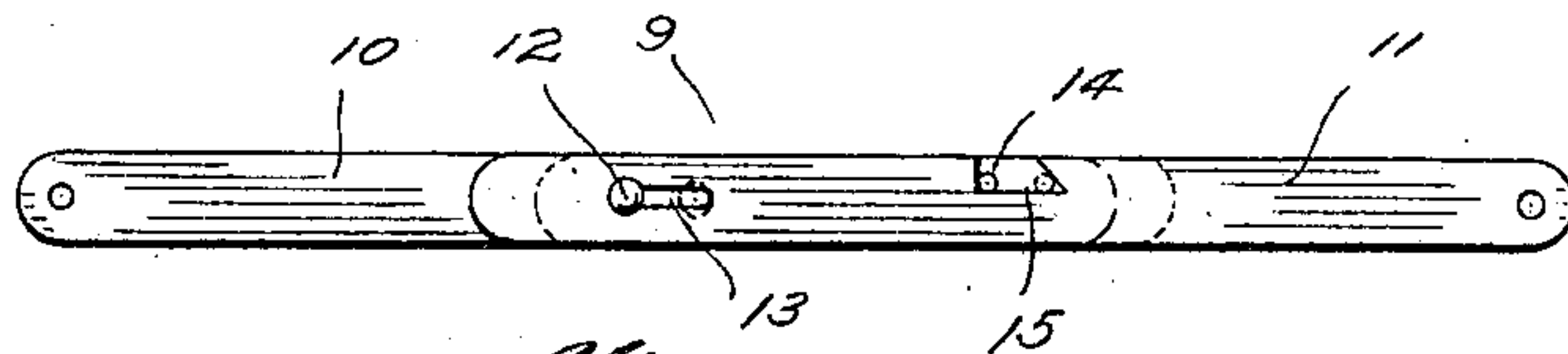
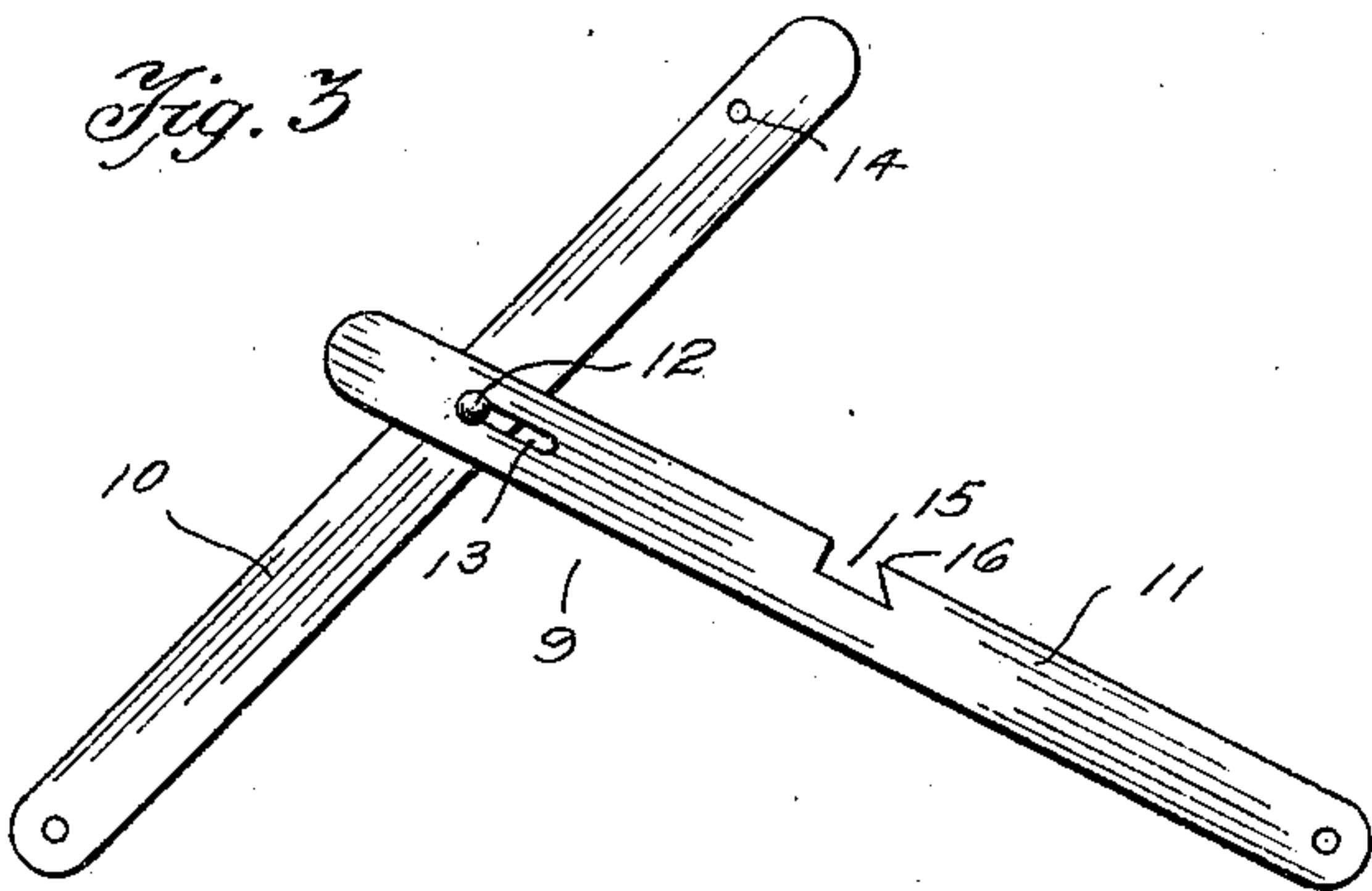
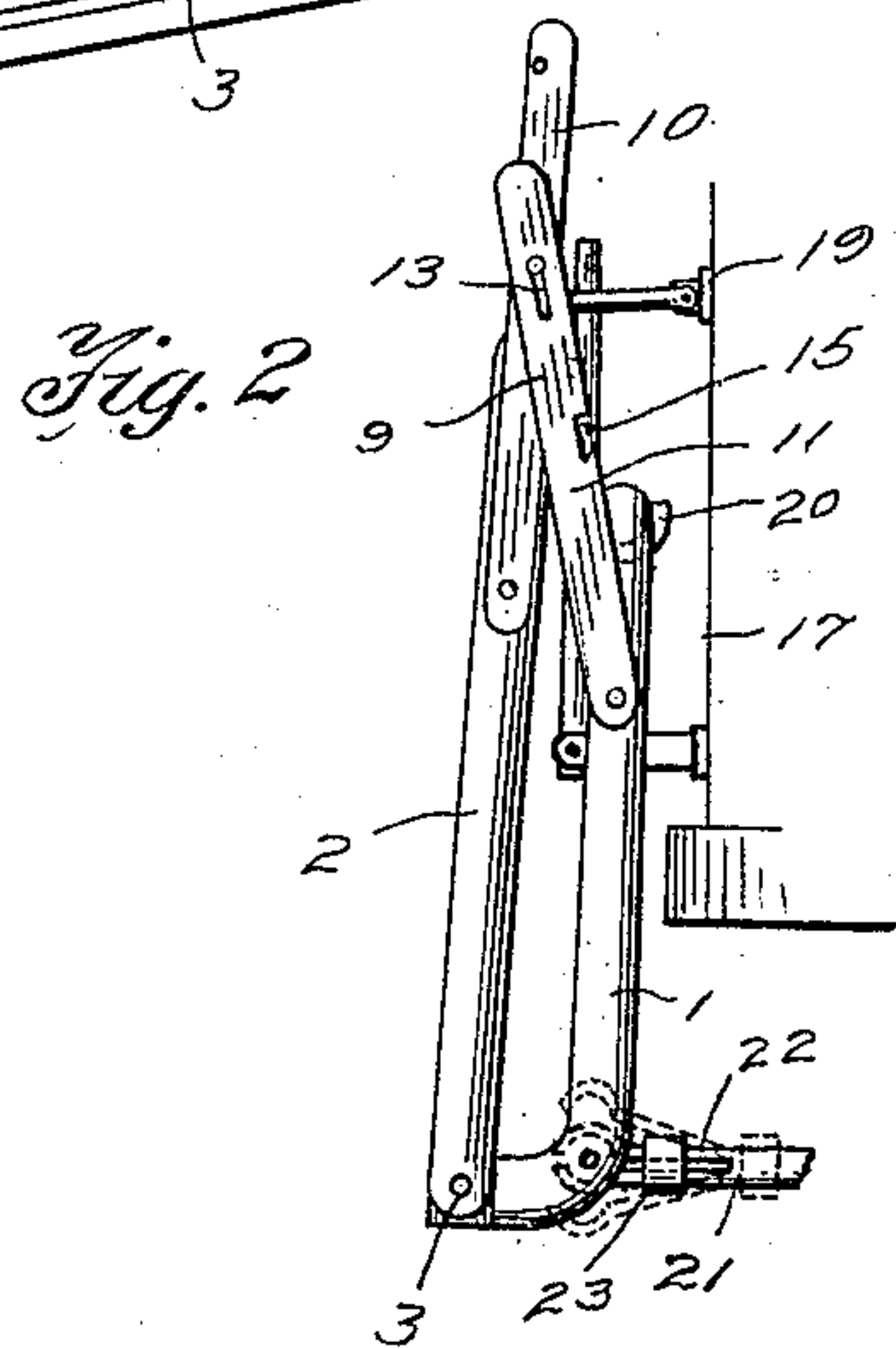
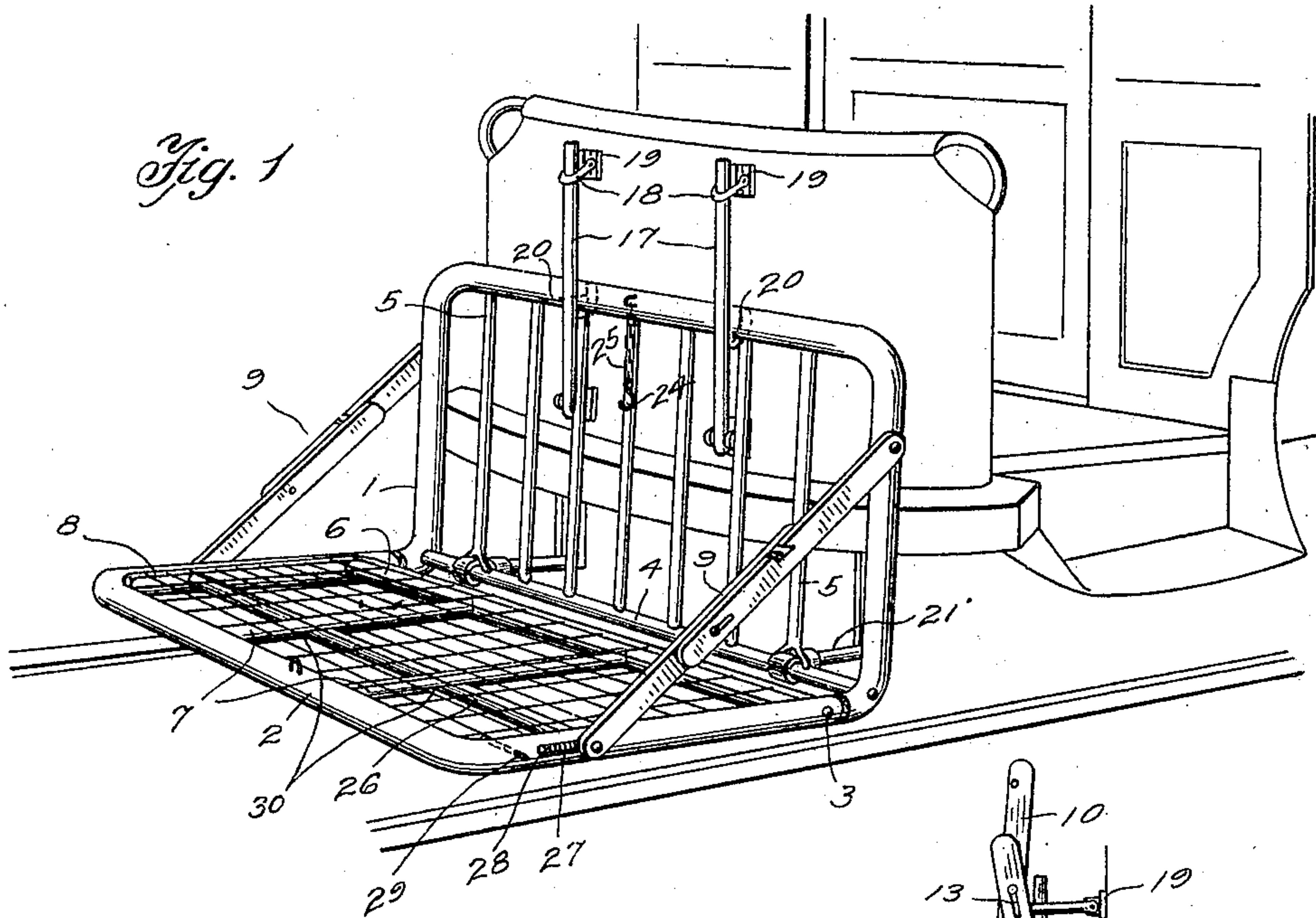


I. B. CRANE.  
CAR FENDER.

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922,092.

Patented May 18, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

ISAAC B. CRANE, OF BROOKLYN, NEW YORK.

## CAR-FENDER.

No. 922,092.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed November 10, 1908. Serial No. 461,935.

*To all whom it may concern:*

Be it known that I, ISAAC B. CRANE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Car-Fenders; and I do hereby 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.

My invention relates to car fenders for use particularly on street railway cars.

It has for its object to provide a folding fender of simple construction and inexpensive to manufacture which is automatically locked against folding when the horizontal part or member thereof strikes an obstruction.

The invention consists of the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawing, illustrating the preferred embodiment of my invention: Figure 1 is a perspective view of the fender showing it attached to the front end of a car. Fig. 2 is a side view of the fender folded, and Figs. 3 and 4 are enlarged detailed views of one of the side braces in its opened and closed positions.

Referring more particularly to the drawings, the fender comprises two parts or members, a vertical member 1 and a horizontal member 2 hinged at 3 to the part 1 and adapted to be folded up upon it, as usual, when the fender is not in use. The vertical or upper member is provided with a horizontal strengthening bar 4 and vertical bars 5 while the horizontal or lower member has corresponding bars 6 and 7. Said lower member may be covered with any suitable kind of netting, but I prefer to secure said netting to a separate frame 8 which is detachably fastened to said lower member.

The side braces 9, which support the lower member in proper position relative to the upper member, are constructed in two pieces 10 and 11 so that they are capable of breaking upward to permit the fender to be folded. The piece 10 of each brace carries a pivot pin 12 about midway thereof which is engaged with an elongated slot 13 formed in the piece 11 near its end. Said piece 10

also has a laterally projecting pin 14 located near its free end and adapted to engage a notch 15 in the upper edge of the piece 11. Said notch is also elongated and has an overhanging portion 16 at its end farthest from the pivotal connection with the piece 10. The inner edge of this overhanging portion is preferably arranged at an angle of about 45 degrees with the bottom edge of the notch, as shown. This inclined or receding edge serves to clamp the pin 14 the more firmly below said overhanging portion, the more longitudinal pressure there is exerted upon the piece 10 against the piece 11, as when the front edge of the lower member of the fender strikes an obstruction on the track. It will be observed that when said pin is thus lodged below the overhanging portion 16, the brace will be secured against being folded and the fender will be locked in its open or lowered position. It will also be noted that the sliding connection between the pin 12 and elongated slot 13 permits the pin 14 to be normally held down against the straight end of the notch 15, where it is not beneath the overhanging portion 16, by the weight of the lower member of the fender. When in this normal position, the brace can be easily broken upward for folding the fender. Pressure upon said lower member tending to fold the fender before the braces are broken will, however, as explained, result in automatically locking said braces and prevent them from being folded.

The fender is preferably secured to the car by one or more uprights 17 (two being shown) which are rigidly secured at their lower ends and retained against outward movement at their upper ends by links or rings 18 pivoted on brackets 19 and adapted to be turned down over said uprights. The latter are provided with hook-shaped rests projecting inwardly therefrom to support the top bar of the vertical part of the fender. The fender is also supported near its bottom by clamps 21 secured to the car and having spring arms 22 which are normally held in position to forcibly grip the reinforcing bar 4 of the vertical member by a sleeve or collar 23. By slipping said sleeve or collar back, the resiliency of the arms 22 causes them to spread, as illustrated in dotted lines in Fig. 2, permitting the bar



4 to be removed. After thus releasing the bar 4, the top bar of the fender can be readily removed from the rests 20 over the ends of the uprights 17 when the rings 18 have been turned back. The horizontal member may be secured in its folded position by any suitable means such as the hook 24 suspended from the chain 25 fastened to the top bar of the vertical member.

10 The main frames of both members of the fender are preferably made of metal tubing as shown. The lower ends of the side braces 9 are preferably attached to the horizontal member by being fastened to opposite ends of a cross bar 26 which passes through slots 27 in the lateral portions of the frame of said member. Coiled springs 28 are mounted within the tube and extend into the slots, abutting against the cross bar 26 and serving to hold it normally in the rear end of the slots 27. The other ends of said springs abut against pins 29 inserted through the tube as illustrated in dotted lines in Fig. 1. Said springs are designed to resist four hundred pounds pressure, but when the fender strikes an obstruction exerting greater resistance than that, the springs will yield allowing the horizontal member to rise a few inches and permit the stone or other obstacle between three and six inches in height to pass under it. It will be noted that the strengthening bars 7 are formed with notches or ways 30 to accommodate the movement of the cross bar 26. The provision of the springs also relieves the connections between the two parts of each brace and between said parts and the two members from strain of sudden and heavy jars when the fender strikes an obstruction.

While I have shown and described the springs and cross bar as applied to the horizontal member and lower ends of the braces, they may be placed at the upper ends of said braces and on the vertical member and accomplish the same result.

I claim:

1. The combination, with vertical and horizontal members of a car fender pivotally connected, of rule-jointed braces to support said members in operative position and to permit said horizontal member to be folded up upon said vertical member, and means to automatically lock said braces against folding when said horizontal member comes in contact with an obstruction.

2. The combination, with vertical and horizontal members of a car fender pivotally connected, of rule-jointed braces to support said members in operative position and to permit said horizontal member to be folded up upon said vertical member, the pieces of each brace being pivotally connected by a pin on one engaging an elongated slot in

the other, one of said pieces also having a pin adapted to engage an elongated notch in the other when the brace is extended, said notch having an overhanging portion at one end for the purpose specified.

3. The combination, with vertical and horizontal members of a car fender pivotally connected, of rule-jointed braces to support said members in operative position and to permit said horizontal member to be folded up upon said vertical member, the pieces of each brace being pivotally connected by a pin on one engaging an elongated slot in the other, one of said pieces also having a pin adapted to engage an elongated notch in the other when the brace is extended, said notch having an inwardly receding overhanging portion at one end for the purpose specified.

4. The combination, with vertical and horizontal members of a car fender pivotally connected, of rule-jointed braces to support said members in operative position and to permit said horizontal member to be folded up upon said vertical member, the pieces of each brace being pivotally connected by a pin on one engaging an elongated slot in the other, the piece carrying the pivot also having another pin adapted to engage an elongated notch in the other piece, when the brace is extended, said notch having an overhanging portion at one end for the purpose specified.

5. The combination, with a car fender, of means for securing it to a car comprising uprights fastened to the car at their lower ends, and having inwardly extending hook-shaped rests for the top bar of the fender, rings pivotally connected to brackets also fastened to the car, said rings adapted to be turned down over the upper ends of said uprights, and braces from the lower part of the fender to the car.

6. The combination, with a car fender, and means to removably secure the upper part thereof to a car, of clamps, for securing the lower part of said fender to the car, having resilient arms adapted to grip a bar of the fender, and a sleeve adapted to slip over said arms for retaining them in forcible contact with said bar.

7. The combination, with vertical and horizontal members of a car fender pivotally connected, of side braces fastened to a cross bar of one of said members, and springs engaging said bar for the purpose specified.

8. The combination, with vertical and horizontal members of a car fender pivotally connected, of side braces fastened to a cross bar passed through slots in the frame of one of said members, and springs mounted in said slots to engage said bar for the purpose specified.

9. The combination, with vertical and



horizontal members of a car fender pivotally connected, of side braces fastened to a cross bar of one of said members, the main frame of said member being tubular and having slots through which said cross bar is passed, and springs arranged in said tube to engage said bar for the purpose specified.

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

ISAAC B. CRANE.

Witnesses:

WM. GARDNER,  
HARRY M. SMITH.