

(No Model.)

3 Sheets—Sheet 1.

D. F. MANNING.  
AUTOMATIC CAR FENDER.

No. 554,495.

Patented Feb. 11, 1896.

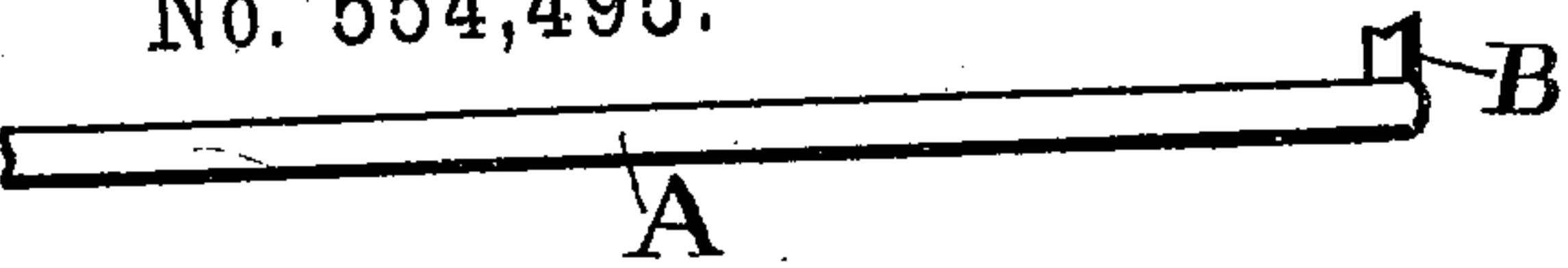


Fig. 1.

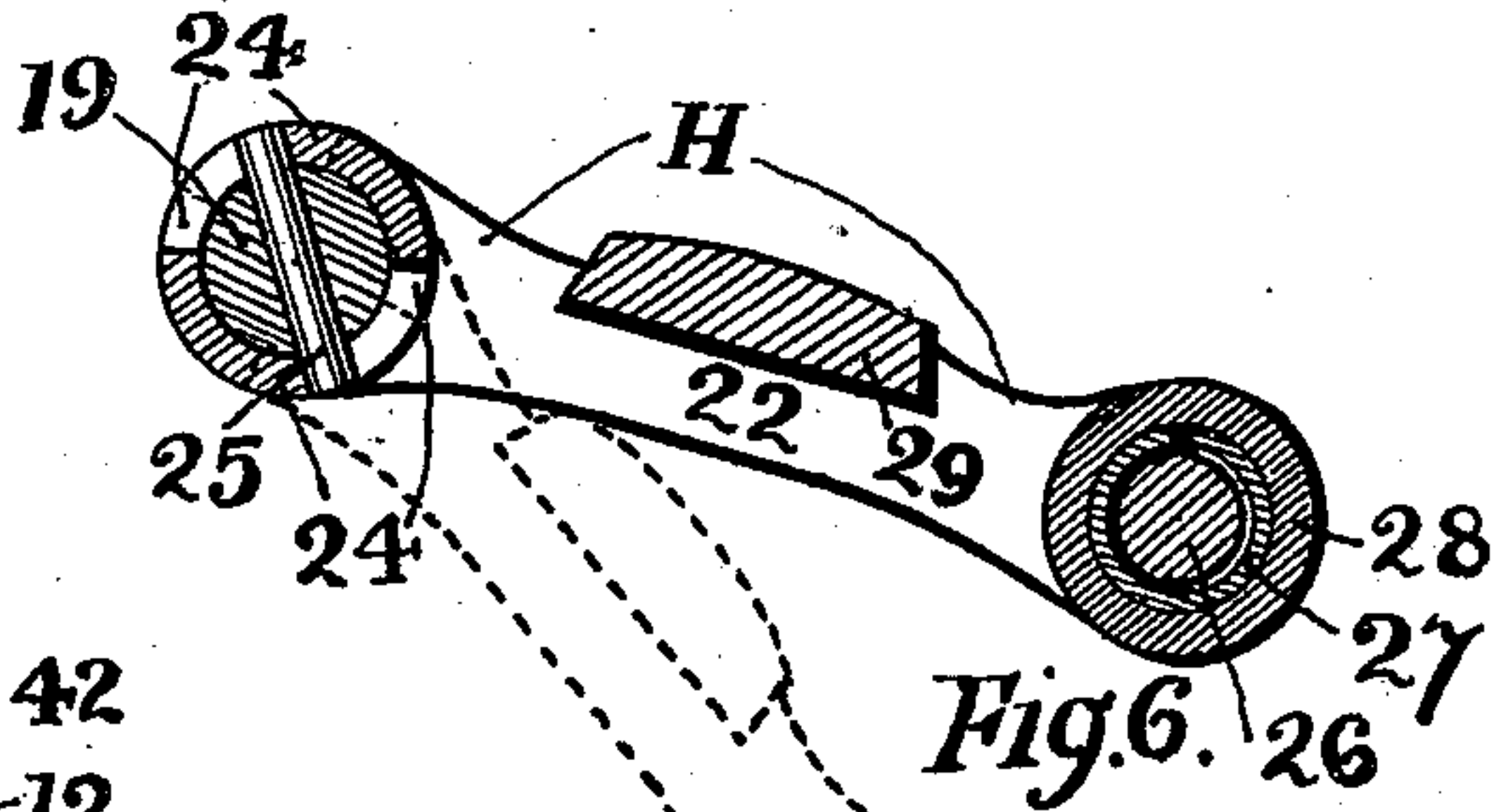


Fig. 6.

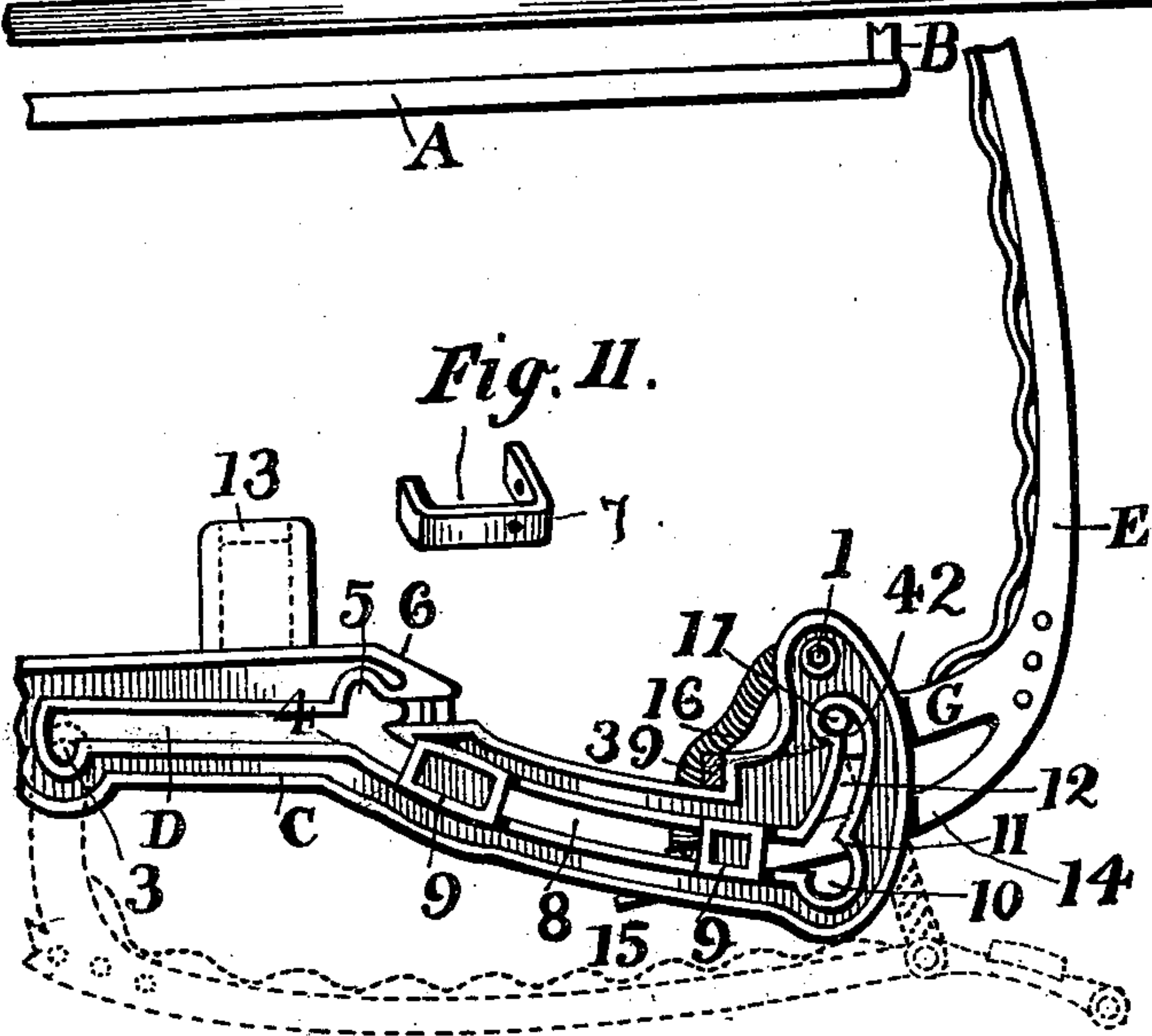


Fig. 2.

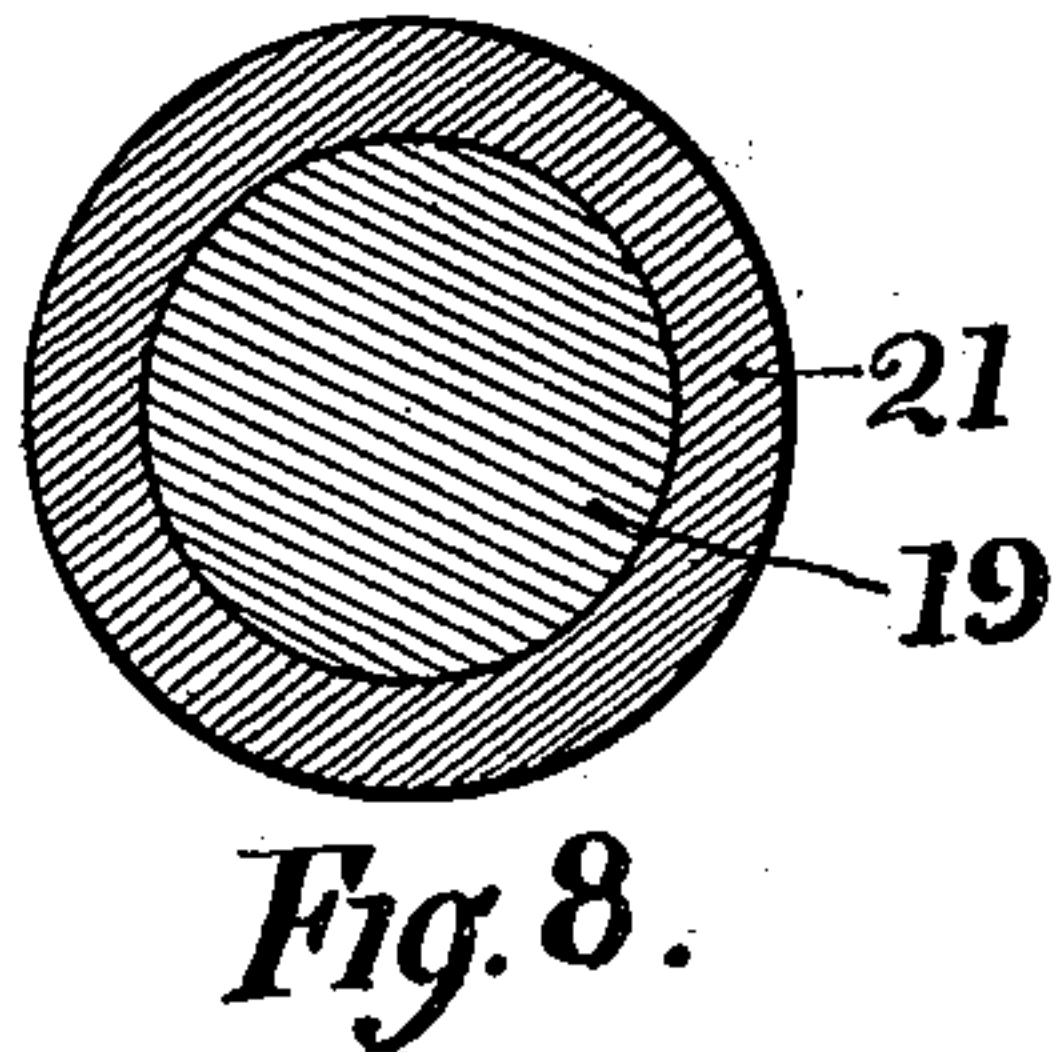


Fig. 8.

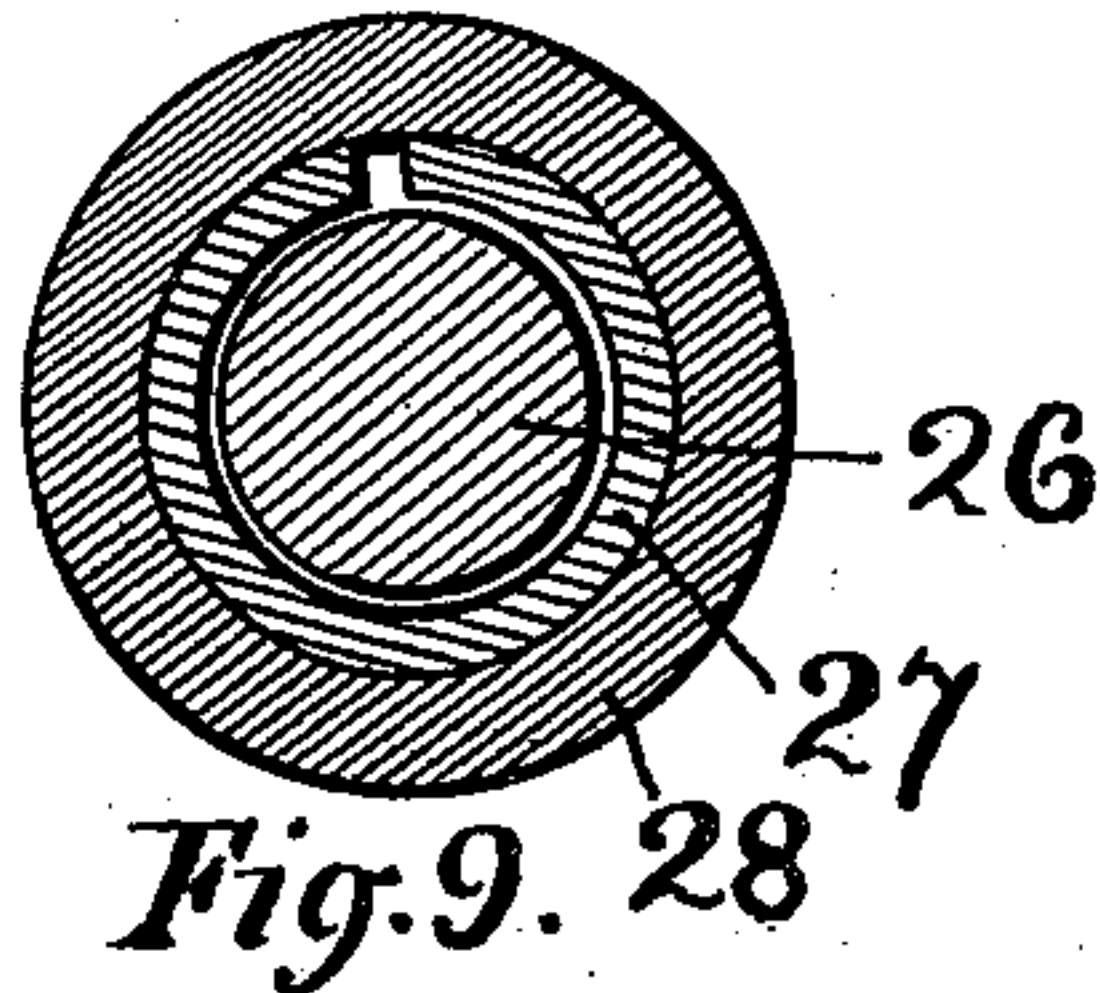


Fig. 9.

Witnesses.

Reinhardt Heller.  
Wm. A. Low.

Inventor:

Daniel F. Manning

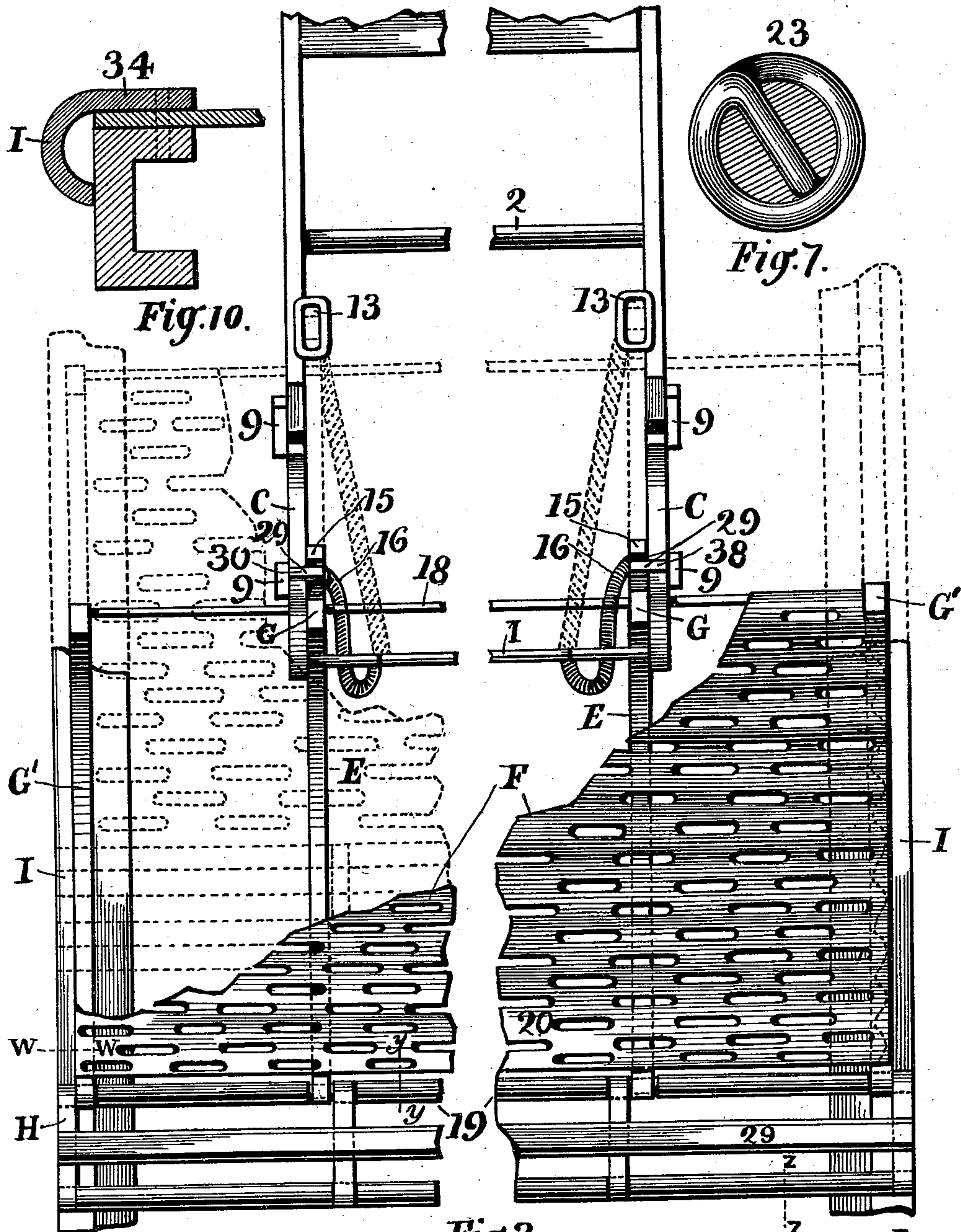
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3 Sheets—Sheet 2.

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Witnesses.

Reinhardt Heller.

Wm. H. Low.

Fig. 3.

Inventor.

Daniel F. Manning



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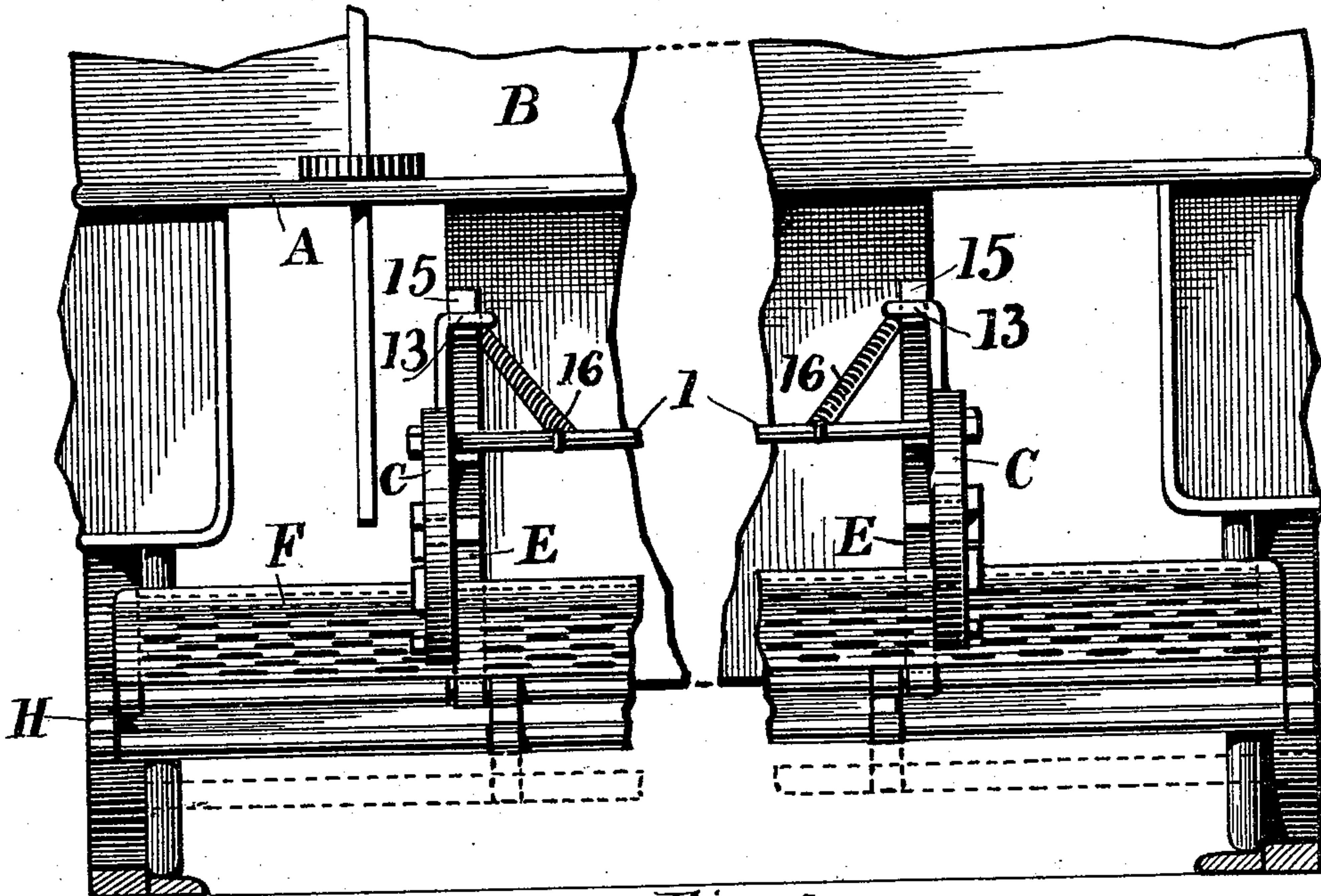


Fig. 4.

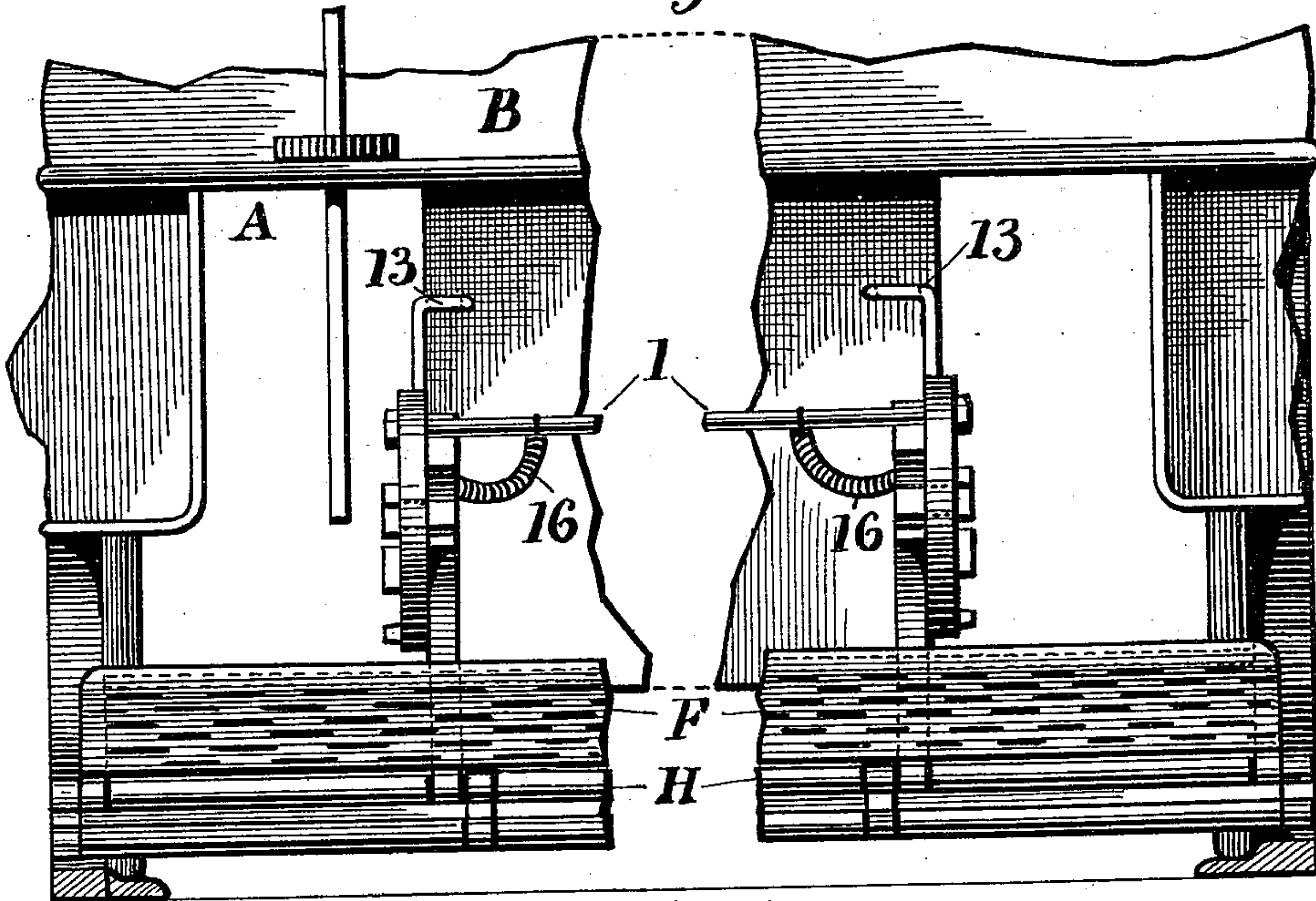


Fig. 5.

Witnesses.

Reinhardt Keller.

Wm. H. Low.

Inventor.

Daniel F. Manning



# UNITED STATES PATENT OFFICE.

DANIEL F. MANNING, OF TROY, ASSIGNOR OF THREE-FIFTHS TO EDWARD MCCREARY, GEORGE H. FITTS, AND ALFRED BLYTH, OF COHOES, NEW YORK.

## AUTOMATIC CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 554,495, dated February 11, 1896.

Application filed January 11, 1895. Serial No. 534,563. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL F. MANNING, of Troy, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Automatic Fenders and Life-Guards on Railways, of which the following is a specification.

My invention relates to improvements in automatic fenders and life-guards for railway-cars; and it consists of the novel construction and arrangement of parts herein set forth and shown in the accompanying drawings, which, being herein referred to, form part of this specification.

15 In said drawings, Figure 1 is a side elevation of my invention as applied to a railway-car, the inner end of the bracket being broken off, with the fender in its projected position shown by full lines, the position of said fender in its partially-retracted position being indicated by dotted lines. Fig. 2 is a like elevation showing the fender in its erect position in full lines and its fully-retracted position, when out of use, indicated by dotted lines; 25 Fig. 3, a plan view of Fig. 2, said figure being broken in two to show the two extremities of the fender; Fig. 4, a front elevation of my invention, showing the fender in the position indicated by dotted lines in Fig. 1; Fig. 5, a front elevation of my invention, showing the fender in its projected position, as shown by full lines of Fig. 1; Fig. 6, a vertical section of the flexible front part of my fender, the normal position of said part being shown in full lines and its deflected position being indicated by dotted lines; Fig. 7, a vertical section of a cross-bar 19, to which the flexible portion of my fender is pivoted, said section being taken near either end of said cross-bar. 35 Fig. 8 is a vertical section of said cross-bar at the line Y Y on Fig. 3. Fig. 9 is a vertical section of sectional rollers, split sleeves, and rigid cross-bar on which said sleeves and rollers are fitted to rotate, arranged at the foremost side of the flexible front part of my fender, said section being taken at the line Z Z on Fig. 3. Fig. 10 is a vertical section at the line W W on Fig. 3 of the side bars of the life-guard, showing the side bar, corrugated plate, and rubber edge bead of said life-guard; 45 and Fig. 11 is a detached perspective view of a filling-piece for the brackets C.

As represented in the drawings, A designates the platform of a car, and B the dashboard of the same, only a small portion of the latter being shown. 55

C designates the brackets which carry the life-guard of my invention. Said brackets are usually made with a posterior arm (not shown in the drawings) by which they can be attached to the car-trucks; but said brackets may be attached directly to the bottom of a car when preferred. A pair of the brackets C are usually placed on each end of a car; but, when preferred, only one end of a car need be equipped with said brackets. The latter are connected together by means of girts 1 and 2, and the latter is preferably made tubular, with a tie-bolt running through it to maintain said brackets at a prescribed distance apart. 60 65 70

The brackets C are each provided with a slotted opening D, having at its inner end a locking-seat 3, followed by a straight portion 4, terminating in an upwardly-opening locking-seat 5, and a forwardly-extended locking-seat 6, the latter being provided with a filling-piece 7 for use under certain conditions. Said filling-piece, which is preferably made in the form of a latch, is shown in detail in Fig. 11, and its purpose is to temporarily close the locking-seat 6 when occasion requires. After the locking-seat 6, a forwardly-extending slot 8 is formed to curve slightly downward, and, for the purpose of strengthening the bracket C at the sides of the slot 8, the two bars of said bracket are tied together by bridges 9, which are raised above the surface of said bars so that they will not interfere with parts sliding through the slot 8. At the forward end of the latter a locking-seat 10 is formed to produce a shoulder 11 at its upper side, and above said shoulder the opening 12 extends upwardly and at its upper end it has a locking-seat 12 for a purpose hereinafter explained. 75 80 85 90 95

On the upper side of the bracket C, near the locking-seat 5, an open loop 13, which is raised above the upper side of the bracket and is offset from the inner face of said bracket, is formed on or secured to the latter. E designates the trip-arms for carrying the life-guard F. Said arms have their posterior portions 14 bent upwardly to form a terminal 15, which is fitted to enter the loop 13 and 100



temporarily retain the trip-arms E in the retracted position indicated by dotted lines in Fig. 1. A spring 16 connects the posterior portion of each trip-arm to the girt 1 in such manner that the power of said springs will force the trip-arms and their attached parts to move into the projected position shown by full lines in Fig. 1. While the terminals 15 are engaged in the loops 13 the trip-arms E will be retained in their retracted positions last referred to.

One end of the springs 16 should be permanently attached to the girt 1 and their opposite end detachably attached to the trip-arms E near the terminals 15, so that the detachable end of the springs can be disconnected from the trip-arms at the point last referred to and re-engaged to the outer end of said trip-arms, as indicated by dotted lines in Fig. 2, when the life-guard is to be moved rearwardly where it will be practically out of service.

Each of the trip-arms E has an upwardly-projecting arm G, which has near the upper end of its outer side a spur 17 fitted to slide in the slotted openings D of the brackets C and to form a pivot on which said trip-arms can be swung when required, and which will engage in either of the locking-seats above referred to and retain the trip-arms in their several corresponding positions.

Near the outer side of each trip-arm E and parallel therewith is an outer arm, G', which conforms to the forward portion of the trip-arm E (omitting the posterior portion 14) and to the arm G, said outer arm being the outer limit of the life-guard F. The arms E and G' are connected together by cross-girts 18 and 19, so that they will move as one piece.

The life-guard F is formed by a plate or plates of sheet metal 20 that is preferably corrugated and perforated as shown in the drawings. The inner end of said sheet metal is attached to the girt 18, and the other portion of said sheet metal is fastened to the arms E and G'. The foremost end of the sheet metal 20 is arranged adjacently to the girt 19, sufficient space being left between the sheet metal and said girt to allow a hand to enter said space when necessary. The girt 19 is preferably covered with a rubber tube 21, which forms a cushion for receiving the body of a person falling on the life-guard. The girt 19 also forms a pivot, to which links 22 are fitted to swing, said links forming part of a flexible fender H which is arranged at the foremost end of the life-guard F. Near each outer end of the girt 19 a torsion-spring 23 is arranged to normally retain the fender H in a slightly-inclined position, as shown by the full lines in Fig. 6, one end of said spring being rigidly attached to the girt 19 and the opposite end bearing against the adjoining link 22 in such manner that said fender will be maintained in the position last referred to until a body or weight depresses it into the position indi-

cated by dotted lines in Fig. 6. The intermediate links are provided with shoulders 24, which take against stop-pins 25 which are fixed in the girt 19 and which limit the movement of the fender H in either direction. The foremost end of the links 22 is attached to a circular cross-bar 26 which passes through each of said links. In the spaces between said links sections of split tubing 27 are interposed, and, surrounding said tubing, sections of rubber tubing 28 are fixed to form elastic rollers at the foremost end of the fender H. Between the elastic rollers and the girt 19 a cross-bar 29 is arranged to fill the space and prevent an accident from occurring by reason of a person's limbs falling through such space and dragging on the ground.

At each edge of the life-guard F a rubber beading I is attached to form an elastic cushion to prevent injury to a person who might come into contact with the edge of the life-guard. Said beading also affords a hand-hold at those points. Said beading is usually formed by splitting rubber hose longitudinally and flattening out one side to form a flange 34, by which said beading is held by rivets or other means to the outer arm, G'.

When the life-guard and fender are pushed rearwardly to the inner end of the slotted opening D, so as to put the same out of use, the spring 16 should be disconnected from the girt 1 and connected to the outer end of the trip-arms E, as indicated by dotted lines in Fig. 2, to support the outer end of the life-guard and fender when run under, or nearly so, the platform A of a car.

When the life-guard and fender are projected outward, as indicated by dotted lines in Fig. 1, the entire fender H and a portion of the life-guard F should project beyond the vertical line of the dashboard B, so as to be in position to operate. Then, in case of a body coming in contact with the fender, the operation of my invention will be as follows: When the fender is deflected, as shown by dotted lines in Fig. 6, which deflection occurs when a weight, as of a person, rests on the fender, the foremost side of said fender will bear upon the road-bed, and the weight will operate to depress the forward end of the life-guard F and to move the latter sufficiently rearward to disengage the spurs 17 from the locking-seats 6, thereby releasing the terminals 15 from the loops 13 and allowing the springs 16 to draw the life-guard F outward into its projected position, as indicated by full lines in Fig. 1, and under such conditions the rollers at the foremost side of the fender will bear upon the road-bed and maintain the life-guard F clear from said road-bed. When the life-guard F is projected forward, as above described, the spurs 17 will lie in the locking-seats 10, where they will operate as fulcrums, and the posterior portions of said trip-arms E will take against elastic buffers 39 secured to lugs 38 on the brackets C, and in this man-



ner the foremost end of the life-guard F will be rigidly held in the position shown by full lines in Fig. 1 to sustain a weight accidentally deposited on said life-guard. After the weight is removed from the life-guard F the latter can be either raised up in front of the dashboard of the car, where the spurs 17 will be held by the locking-seats 42, as shown by full lines in Fig. 2, or it may be pushed back to its normal position under the car, as indicated by dotted lines in Fig. 1, where it will be in condition for a repetition of the operation just described.

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

1. A life-saving attachment for railway-cars, comprising a pair of brackets provided with slotted openings having locking-seats 3, 5, 6, 10, and 42 formed directly in said slotted openings substantially as specified; said brackets being attachable—in parallel positions—to the under side of a car, a life-guard fitted to slide in the slotted openings of said brackets and to be retained by the locking-seats of the latter, and a fender flexibly connected to the forward end of said life-guard; said fender being normally retained in a position to clear the road-bed, but, when deflected to bear upon the road-bed, forming a lever to disengage the life-guard from the de-

taining locking-seats, as and for the purpose specified.

2. In a life-saving attachment for railway-cars, the combination, with brackets, C, provided with slotted openings, D, having a series of locking-seats successively formed therein, of a life-guard, F, provided with spurs or fulcrums, 17, fitted to slide in said slotted openings and to engage in said locking-seats; said life-guard being connected to said brackets by means of springs, 16, fitted to project the life-guard forward when it is released from said locking-seats, as herein specified.

3. In a life-saving attachment for railway-cars, the combination, with slotted brackets, C, provided with locking-seats, 6 and 10, and with loops, 13, as herein set forth, of a life-guard, F, provided with spurs or fulcrums, 17, and having terminals, 15, which are fitted to temporarily engage in said loops, and spring, 16, which connects to the rearmost end of said life-guard and to a stationary part of the housing, and is arranged to impel the life-guard outwardly, as and for the purpose specified.

DANIEL F. MANNING.

Witnesses:

WM. H. LOW,  
JAMES E. MARBLE.