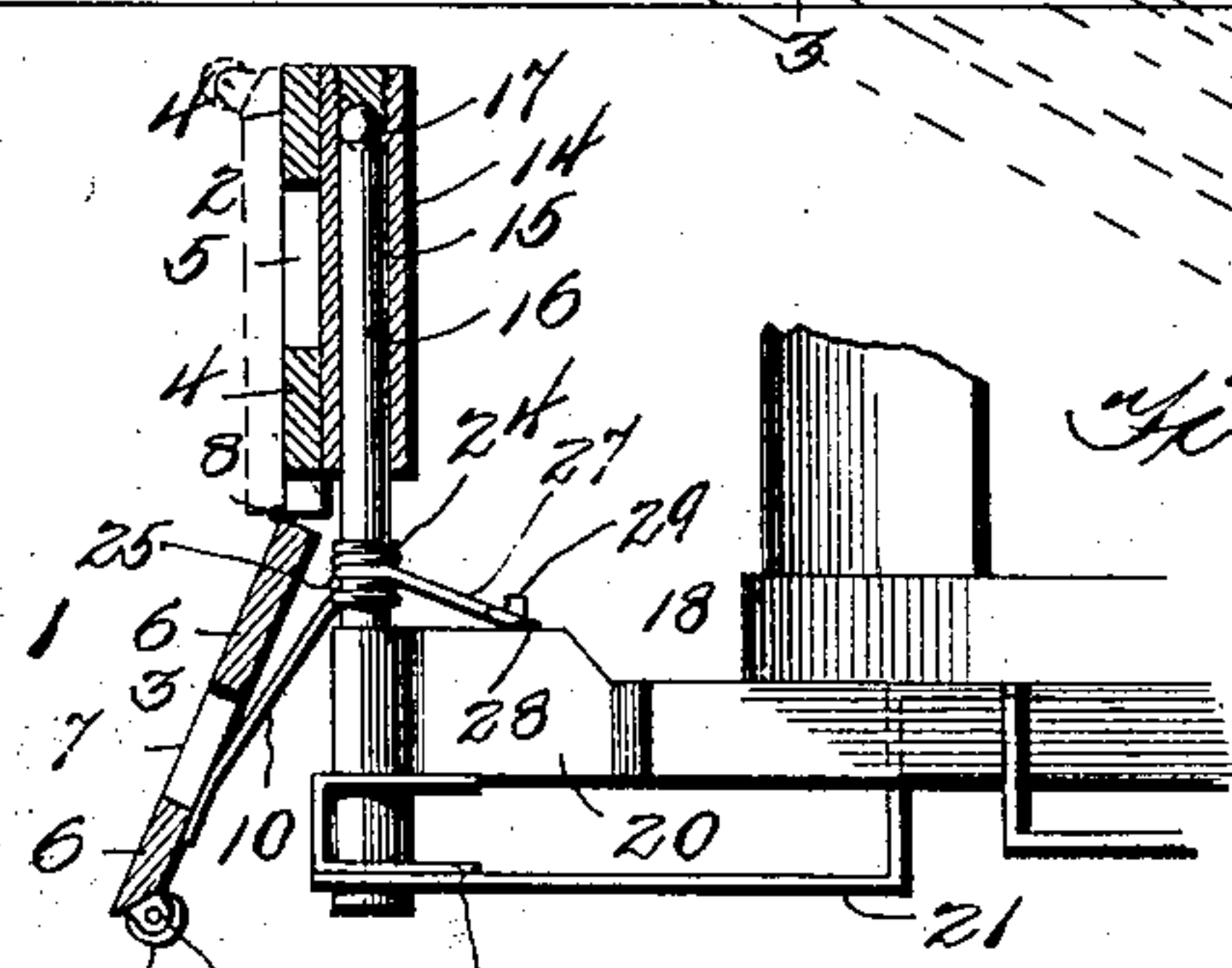
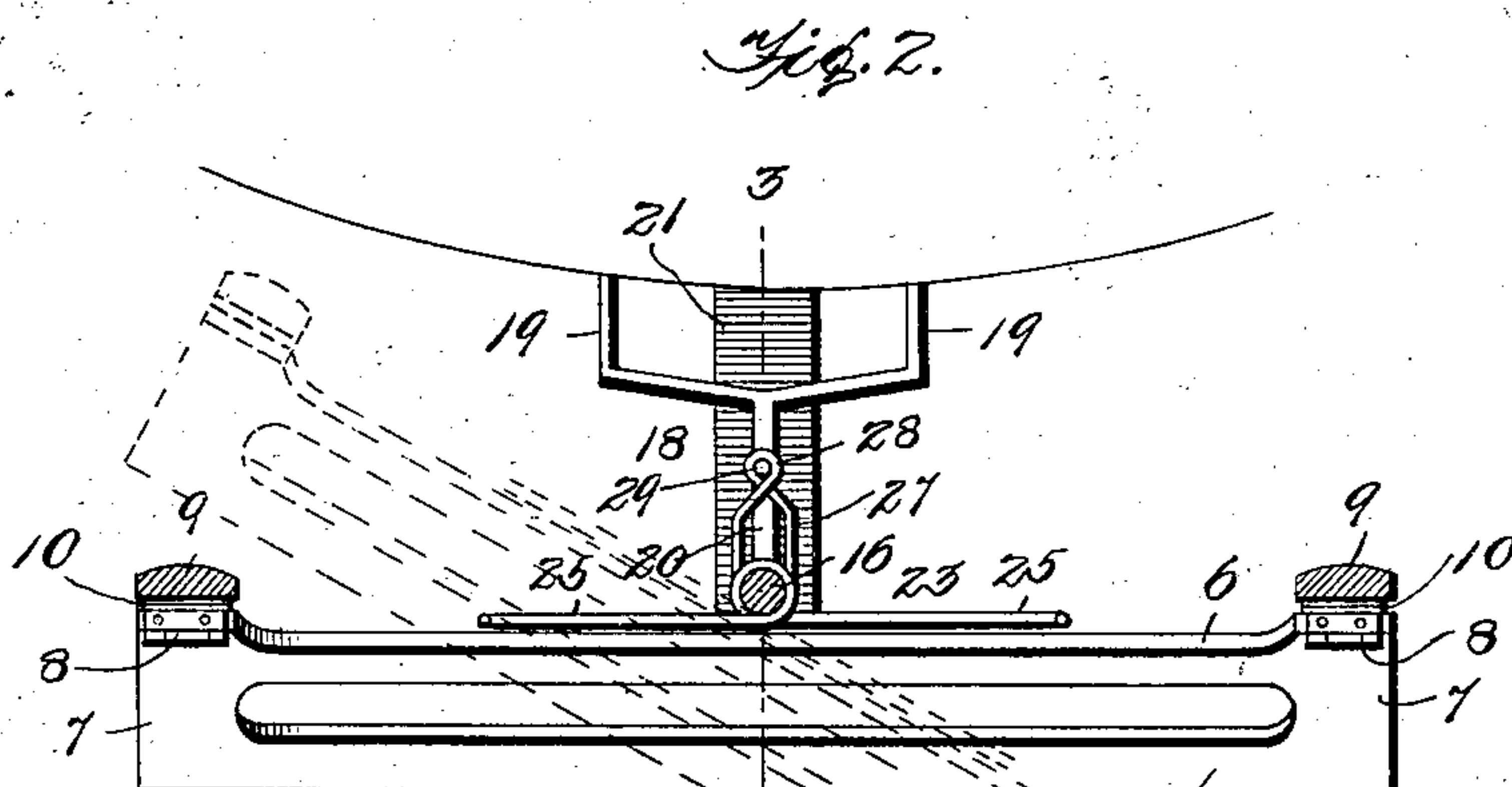
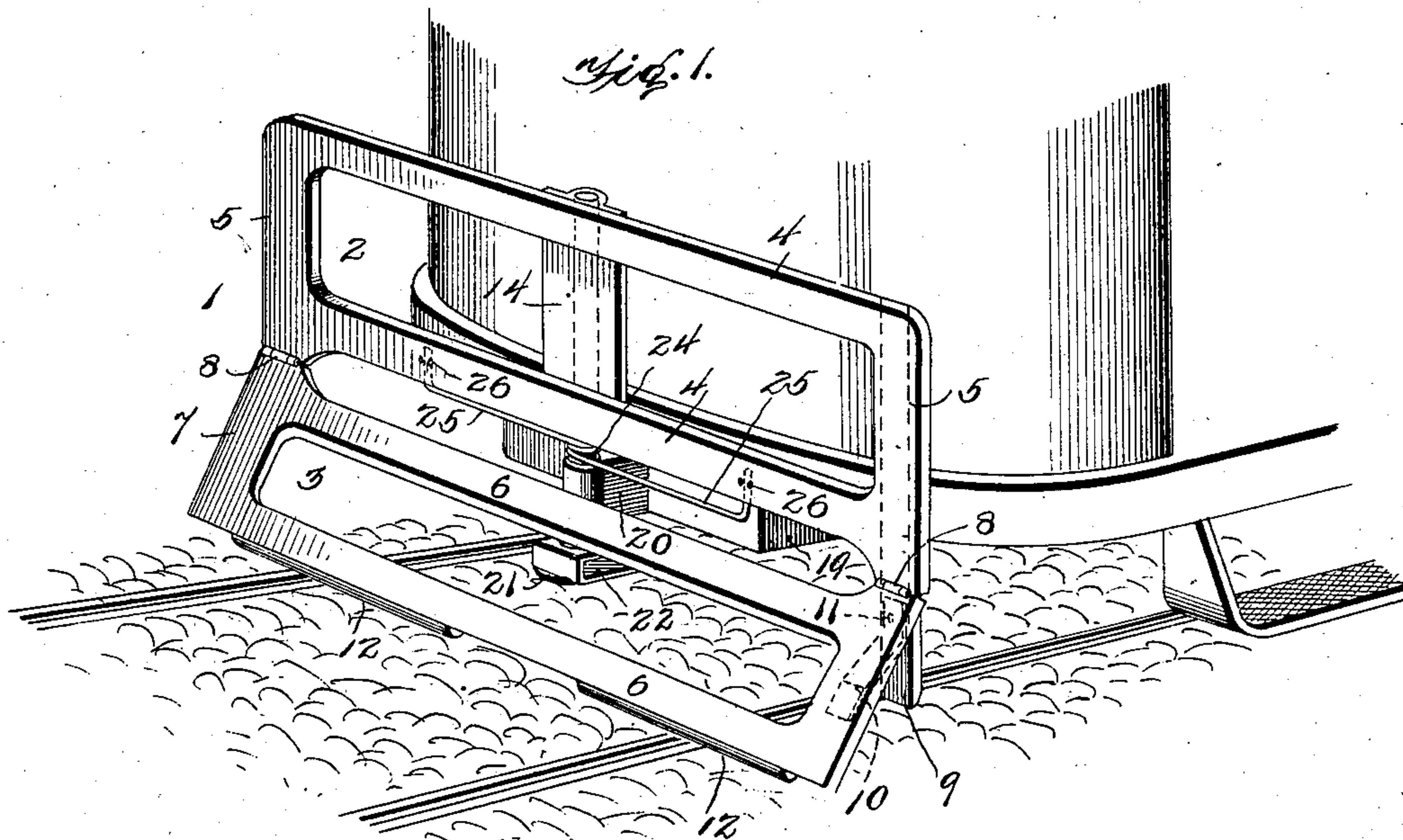


No. 724,937.

PATENTED APR. 7, 1903.

J. RAWLES.
STREET CAR FENDER.
APPLICATION FILED DEC. 5, 1902.

NO MODEL.



Witnesses:

J. H. Knoch

G. S. Ray

Inventor
John Rawles

by *S. J. Walhaug*
Attorney

UNITED STATES PATENT OFFICE.

JOHN RAWLES, OF EAST GALESBURG, ILLINOIS, ASSIGNOR OF TWO-THIRDS
TO WILLIAM D. GODFREY AND SEDGWICK R. HAZEN, OF GALESBURG,
ILLINOIS.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 724,937, dated April 7, 1903.

Application filed December 5, 1902. Serial No. 133,981. (No model.)

To all whom it may concern:

Be it known that I, JOHN RAWLES, a citizen of the United States, residing at East Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Street-Car Fenders, of which the following is a specification.

This invention relates to railway rolling-stock, and particularly to an improvement in railway-car fenders designed as a guard for use at the front end of the car to effectually prevent objects passing beneath the wheels thereof.

To this end the invention primarily has in view a novel construction and mounting of fender possessing special utility in connection with street-railway cars and belonging to that class or type of fenders known in the art as "obstacle-projectors" and comprising positive and reliable means for automatically removing an object from the track and deflecting the same to a position at one side of the track and the car without injury to the object. In carrying out this general object the invention has in view a form of fender-body occupying a minimum amount of space and always maintaining a substantially upright position, so as to cover but a minimum portion of the track, while at the same time being so mounted and arranged as to positively contact with any object, whether a human being or otherwise, that may lie upon the track, said contact with the object at any point on the track providing for automatically adjusting the fender-body to such position as to provide for the projection of the object off to one side of the track, after which the fender-body automatically resumes its normal centered position transversely of the track.

Another object of the invention is to provide an obstacle-projecting form of fender-body so mounted as to not interfere with the ready coupling and uncoupling of adjacent cars without removing the fender.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which will

be hereinafter more fully described, illustrated, and claimed.

The essential features of the invention involved in the novel construction, and particularly in the novel pivotal mounting of the fender-body to provide for the automatic obstacle-projecting action, may be modified to some extent; but a preferred embodiment of the improvements is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of an obstacle-projector fender constructed in accordance with the present invention and shown in its operative applied position at the front end of a street-car. Fig. 2 is a horizontal sectional view of the construction shown in Fig. 1, the line of section being above the hinged connection between the upper and lower sections of the fender-body. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 2.

Like reference-numerals designate corresponding parts throughout the several figures of the drawings.

In carrying out the invention the fender-body may be constructed in various ways and may be covered or uncovered without affecting the essential features thereof; but the preferred construction and arrangement of parts is shown in the drawings, to which particular reference will now be made.

The fender-body as an entirety is designated by the numeral 1 and is illustrated as essentially consisting of the upper pivoted back section 2 and the lower vertically-swinging section 3, constituting the pick-up scoop, which travels directly over the track. Both sections of the fender-body primarily consist of an open skeleton framework, which may be formed of metal or wood.

In the construction shown in the drawings the upper back section 2 is illustrated as consisting of longitudinal horizontal side bars 4, arranged in spaced-parallel relation, and the opposite upright end bars 5, likewise arranged in spaced parallel relation and suitably joined or united to the ends of the side bars 4. The lower vertically-swinging pick-up scoop or section 3 of the fender-body is usually of similar construction, the same being illustrated

as consisting of the longitudinal horizontal side or frame bars 6 and the parallel end bars 7, suitably joined or united to the ends of the bars 6, thus completing an open-frame structure, which while comparatively light is of sufficient strength to resist the impact of an object and provide for the projection thereof to one side of the track.

The lower pick-up or scoop section 3 of the fender-body is mounted so as to be capable of swinging in a vertical direction and also to swing backward and to approximate vertical alinement with the upper back section 2 when struck by an object. This is accomplished, preferably, through the medium of a hinged connection between the two sections of the fender-body, said hinged connection usually consisting of the oppositely-located hinges 8, fitted to the adjacent corners of the separate fender-sections 2 and 3, as may be plainly seen from Figs. 1 and 2 of the drawings.

In conjunction with the hinged connection 8 for the lower pick-up section or scoop 3 of the fender-body the said upper back section 2 is provided at the ends thereof with the rigid stop shoulders or cleats 9, which project below the hinge-joints and form abutment shoulders or stops, against which the lower hinged section 3 bears when forced backward by the impact of an object. Normally the said lower hinged pick-up section 3 is yieldingly thrust or sustained in a forward slightly-inclined position through the medium of the sustaining cushion-springs 10. These sustaining cushion-springs 10 are arranged to bear under the opposite end portions of the lower pick-up section 3. Each of said springs 10 is secured fast at one end, as at 11, to the forward side of one of the rigid stop shoulders or cleats 9, while the lower freed end of the spring, which is preferably of leaf form, is extended forwardly and downwardly from the shoulder 9 and bears under the adjacent end portion of the lower pick-up section 3.

The lower pick-up section 3 of the fender-body is designed to travel in such proximity to the track-rails as to insure its positive impact with any object that might be upon the track, and to prevent the binding or frictional contact of the said section with the track-rails under any condition the same is provided at the under side of its lower edge with the guard-rollers 12. A pair of the guard-rollers 12 is preferably fitted to the lower side bar 6 of the section 3, the rollers being longitudinally alined and mounted in suitable bearings 13, fitted to the said side bar of the fender-section. One of said guard-rollers 12 is located over each rail of the track to insure the result above indicated.

An important feature of the invention resides in the mounting of the fender-body to permit of the lateral oscillation thereof from a central pivotal point to provide for the automatic projection of an object off the track.

This is preferably accomplished by the construction shown in the drawings, which involves the provision of the upper back section 2 of the fender-body with a centrally-arranged vertical socket member 14. The socket member 14 is rigidly fitted to the upper section 2 of the fender-body, so as to constitute a part thereof, and the vertical socket 15 within the member 14 is open at the bottom and is designed to receive therein a vertically-disposed stationary pivot-post 16, which is carried by the car-body and rigidly sustained thereby through the medium of a suitable support. It is preferable to provide an antifriction-bearing between the pivot-post 16 and the socket member 14 of the fender-body, and this antifriction-bearing preferably consists of locating an antifriction bearing-ball 17 within the socket 15 at the upper closed end of the latter, said bearing-ball constituting a thrust-bearing for the fender-body to relieve the pivotal mounting from the weight of said body.

The vertically-disposed stationary pivot-post 16 is illustrated as being rigidly mounted upon or carried at the forward end of a stationary supporting-frame 18, rigidly fitted to the under side of the car-body at the forward end thereof and projecting beyond such end to hold the fender in operative upright position a proper distance beyond the dash of the car. The stationary supporting-frame 18 may be of any suitable construction and in the drawings is illustrated as consisting of an open bracket having the oppositely-arranged side plates 19, united at their front ends, to provide a main carrying-arm 20, to which is rigidly fitted the pivot-post 16 in any suitable manner. Also to make the frame perfectly rigid there is preferably associated therewith a brace-bar 21, secured fast at one end to the car-body and connected at its front end to the lower end of the frame member, to which the pivot-post 16 is fitted, thus providing an intervening space, within which may be loosely mounted an open U-shaped car-coupling link 22. This car-coupling link may be swung back out of the way when the fender is in use or swung forwardly to an operative position for coupling with another car. This is rendered possible by simply lifting up the lower hinged section 3 of the fender-body. It will thus be seen that the fender-body is pivotally hung on a central vertical pivot located midway of the vertical plane of the opposite rails, and consequently when an object comes in contact with the fender-body the same oscillates or tilts laterally upon its vertical axis to either side of the car, thus providing for the projection or deflection of the object entirely off the track to a position of safety.

To maintain the fender-body in its centered operative position at right angles to the track and transversely across the same, there is employed a retracting centering device, designated in its entirety by the reference-num-

ber 23. This retracting centering device is preferably in the form of a coiled spring-body detachably fitted over the pivot-post 16 beneath the socket member 14 and having the oppositely-extending spring adjusting-arms 25, fastened, as at 26, to the upper fender-section 2 at opposite points. Centrally from the coiled spring-body 24 there is projected rearwardly a fulcrum-link 27, which is a part of the spring-body and provided at its terminal with a keeper-eye 28, engaging with the holding stud or pin 29, projected from the carrying-arm 20 of the frame 18. It will thus be seen that when the fender-body is tilted laterally in either direction the spring-arms of the spring-body 24 will serve to automatically restore the fender-body to normal position. At the same time the mounting of the retracting centering-spring is such as to permit of the ready removal of the fender-body as an entirety from its pivot-post.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described fender will be readily apparent, and it will also be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a car-fender, the combination of a vertically-disposed stationary pivotal support, of a laterally-oscillatory fender-body centrally hung upon said pivotal support, and a self-acting retracting centering device carried by the fender-body.

2. In a car-fender, the combination of a stationary vertical pivotal support, a laterally-oscillatory fender-body hung for movement upon said support, and a self-acting retracting centering device carried by the fender-body and interlocked with the pivotal support thereof.

3. In a car-fender, a stationary vertical pivotal support, an upright laterally-oscillatory fender-body centrally hung upon said support, and a retracting centering-spring carried by the fender-body and having a detachable interlocked connection with the said pivotal support, substantially as set forth.

4. In a car-fender, the combination of a stationary vertical pivotal support, an upright laterally-oscillatory fender-body centrally hung upon the pivotal support and having an

antifriction-ball-bearing connection therewith, and a self-acting centering device carried by the fender-body and connected with the pivotal support therefor.

5. In a car-fender, the combination of a stationary pivotal support comprising a rigid supporting-frame and an upright pivot-post, an upright laterally oscillatory or tiltable fender-body having a central socket member hung upon the pivot-post, and a self-acting retracting centering-spring carried by the fender-body and connected with both said pivot-post and supporting-frame.

6. In a car-fender, the combination of a stationary supporting-frame carried by the car-body and sustaining an upright pivot-post, an upright laterally oscillatory or tilting fender-body having a centrally-located upright socket member hung upon the pivot-post, and a retracting centering-spring consisting of a coiled spring-body fitted over the pivot-post and having side arms connected with the fender-body and a centrally-disposed fulcrum-link connected with the stationary supporting-frame.

7. In a car-fender, a stationary supporting-frame projected forwardly from the car-body and provided with an upstanding pivot-post and a holding stud or projection, an upright fender-body provided with a centrally-located upright socket member having a ball-bearing mounted upon the pivot-post, and a retracting centering device consisting of a coiled spring-body mounted upon the pivot-post and provided with arms connected with the fender-body, and also provided with a centrally-arranged fulcrum-link having detachable engagement with said holding stud or projection.

8. In a car-fender, the combination with the support, of the upright fender-body consisting of separate upper and lower sections, the upper section being provided at the ends thereof with pendent rigid stop-shoulders and the lower section being hinged to the upper section in front of the stop-shoulders and provided at its lower edge with guard-rollers, and sustaining cushioning-springs carried by the upper section and having their free ends bearing under the end portions of the lower section, substantially as set forth.

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

JOHN RAWLES.

Witnesses:

B. W. SEARLE,
WM. D. GODFREY.