

(No Model.)

R. MUIR.
ATTACHMENT FOR CAR FENDERS.

No. 554,525.

Patented Feb. 11, 1896.

Fig: 1.

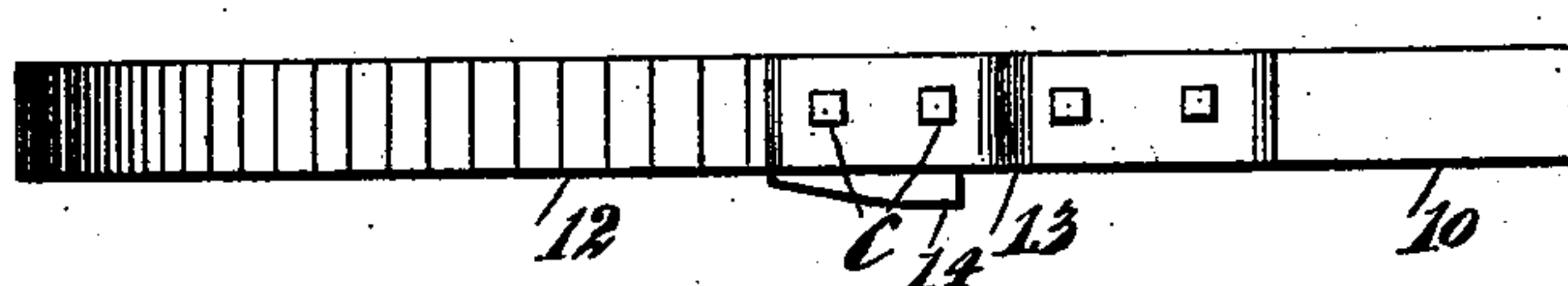


Fig: 2.

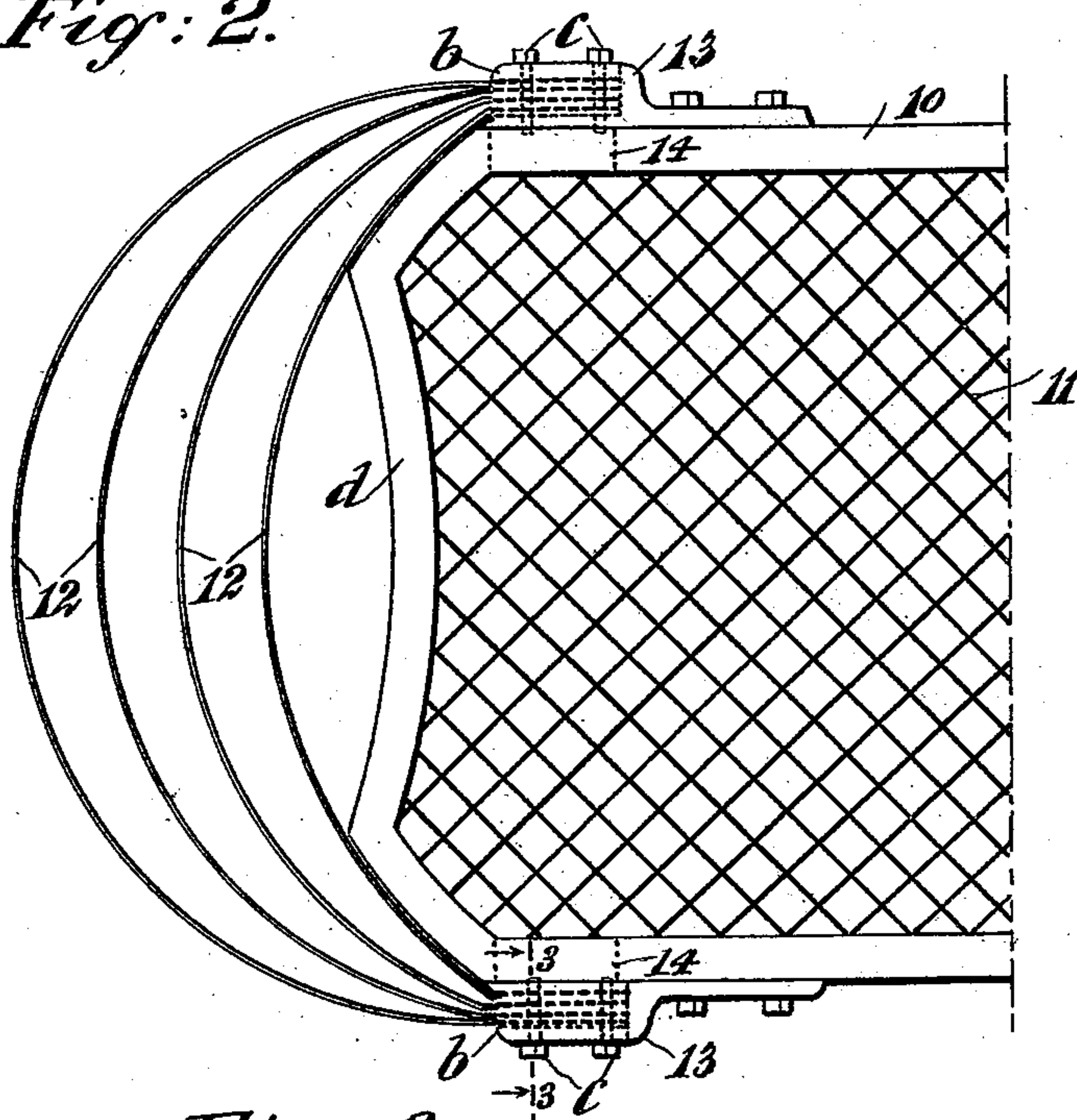
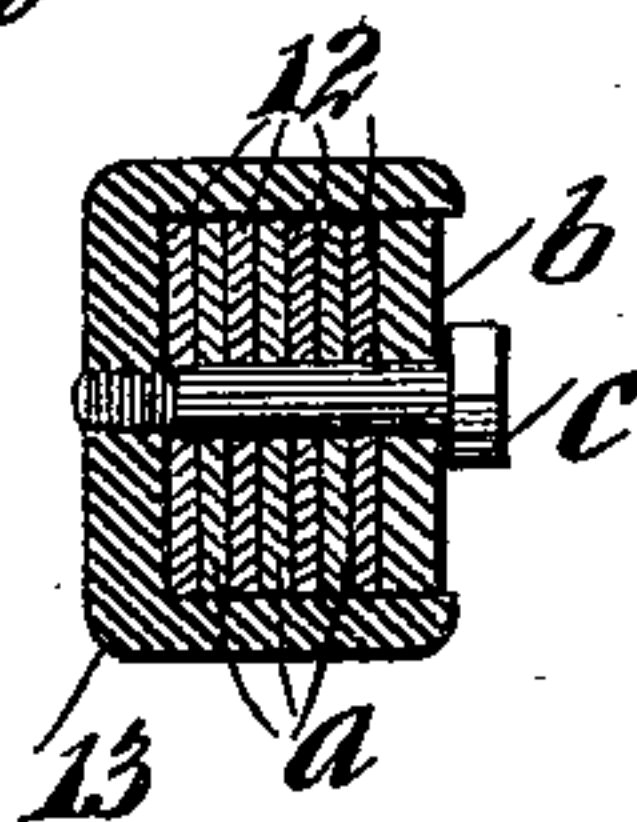


Fig: 3.



WITNESSES:

Wm. P. Patton

Herbert A. Thorpe

INVENTOR

R. Muir

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT MUIR, OF BROOKLYN, NEW YORK.

ATTACHMENT FOR CAR-FENDERS.

SPECIFICATION forming part of Letters Patent No. 554,525, dated February 11, 1896.

Application filed December 13, 1895. Serial No. 572,076. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MUIR, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Attachment for Car-Fenders, of which the following is a full, clear, and exact description.

This invention relates to a novel attachment for the front end of a car-fender; and has for its object to provide a plurality of very elastic buffer-springs for the fender which will be adapted to neutralize the shock of impact if the buffer strikes a person, and thus avoid any injury to the person so struck.

The invention consists in the peculiar construction and combination of parts, as is hereinafter described and designated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of a fender in part having the improvement attached thereto. Fig. 2 is a plan view of the fender, and Fig. 3 is an enlarged transverse sectional view showing preferred means for connecting the buffer-springs with the fender-frame, the line of section being indicated at 3 3 in Fig. 2.

The fender-frame 10 may be of any suitable material and have any preferred means for connecting it with a car, and on said frame the wire-netting 11 may be secured to afford an elastic bed whereon the person struck by the fender may fall and be carried without material injury. Any other available material may be substituted for the wire-netting, as the latter is not a feature of the improvement.

The invention comprises a plurality of very elastic thin plate-springs 12, which are arched in front of the frame 10 and lie in the same plane therewith.

As shown in Fig. 2, the springs 12 differ in curvature and have their ends secured in clamping-boxes at each side of the fender-frame, which will space the springs apart and allow each spring to preserve its resilience.

The clamping-boxes 13 are alike, and each consists of a metal shoe that has one end adapted for a bolted attachment to the side of the fender-frame, the recessed portion of said shoe being so proportioned in depth and

area that the ends of the springs 12 will neatly fit therein.

A plate *a* is interposed between each pair of spring ends, which plates serve to space apart the springs and prevent any cramping of the latter which might distort their curvature.

On the outer springs 12 a binding-plate *b* is imposed, one in each box 13, and the said plates, together with the spring ends and spacing-plates, are perforated in alignment for the reception of clamping-bolts *c*, which have their threaded ends screwed into tapped holes in the inner walls of the shoes, so that a proper adjustment of the bolts *c* will clamp the ends of the springs 12 firmly within said shoes, and by the latter the springs will be secured to the sides of the fender-frame.

The front cross-bar, *d*, of the fender-frame 10 is rendered concave for a portion of its length at each side of a median line, this rearward arching of the cross-bar being essential to afford clearance from the spring 12 nearest to the frame, so that this spring may yield rearwardly at its center if pressed upon by the spring next to it and in front of the same.

On each side member of the frame 10 a block of wood or metal 14 is secured thereto on the lower sides of the said parts, these blocks serving to prevent the springs 12 from being brought into contact with the road-bed, if the fender-frame is depressed while in motion.

In use it will be evident that if a car having the improved attachment on its fender accidentally strikes a person on the railway-track in front of said car the foremost spring 12, which first has contact with the person, will yield at its point of impinge on the body struck and press on the next spring behind it. If the shock of impact is violent, the series of springs will each be successively pressed rearward by an impinge of the spring next in front, so that the person hit by the fender will not be injured thereby, but will probably be thrown over upon the netted fabric 11, which will safely maintain the prostrated person until the car is stopped.

If while the car having the improvement is in motion and the springs 12 of the fender accidentally strike a prostrate body or movable obstruction that lies on the road-bed,

the said springs will yield until all are compressed, and then will act to gently push the body from the track, and thus remove the person from off the road-bed and in a manner that
5 will not be liable to inflict injury to the person so removed.

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

10 1. The combination with a fender-frame, of a plurality of spaced and bowed springs, secured at their ends to said frame and projected forwardly therefrom, the free or central portion of the said springs being all located in the same plane, so that they will
15 come in contact with each other when striking an obstruction, substantially as described.

2. The combination with a fender-frame, of a plurality of bowed plate-springs having different degrees of curvature, all of said springs
20 having their respective ends secured to the fender-frame at the same points, and projecting forwardly therefrom, the free or central portions of the springs being located in the
25 same plane, substantially as described.

3. The combination with a fender-frame having a yielding cover, of a plurality of spaced and bowed plate-springs clamped at their ends in shoes on the sides of the fender-frame, said springs having different degrees
30 of curvature to permit of their non-contacting projection successively at the front of the fender-frame, substantially as described.

4. The combination with a fender-frame, having its front cross-bar concaved, of plate-springs having different degrees of curvature
35 and secured to project forwardly on the fender-frame, substantially as described.

5. The combination with a fender-frame, and sloped guard-blocks thereon, affixed to
40 the under side of the frame, of a plurality of plate-springs having different degrees of curvature, said springs being secured to and projecting forwardly from the fender-frame, substantially as described.

ROBERT MUIR.

Witnesses:

JNO. M. RITTER,
F. W. HANAFORD.