



No. 877,472.

PATENTED JAN. 21, 1908.

H. GRAY.  
BUMPING POST.

APPLICATION FILED AUG. 8, 1907.

2 SHEETS—SHEET 2.

Fig. 3.

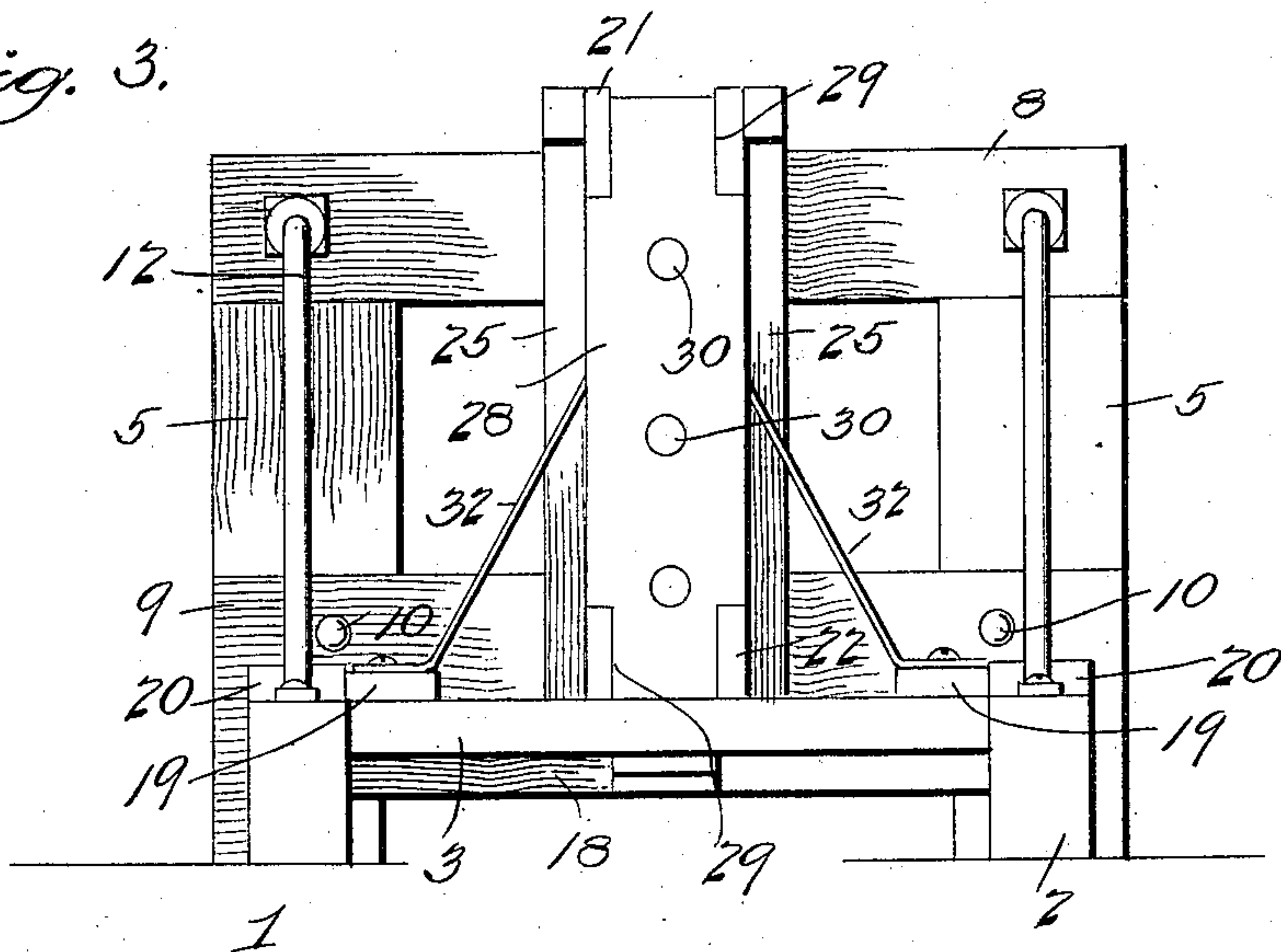
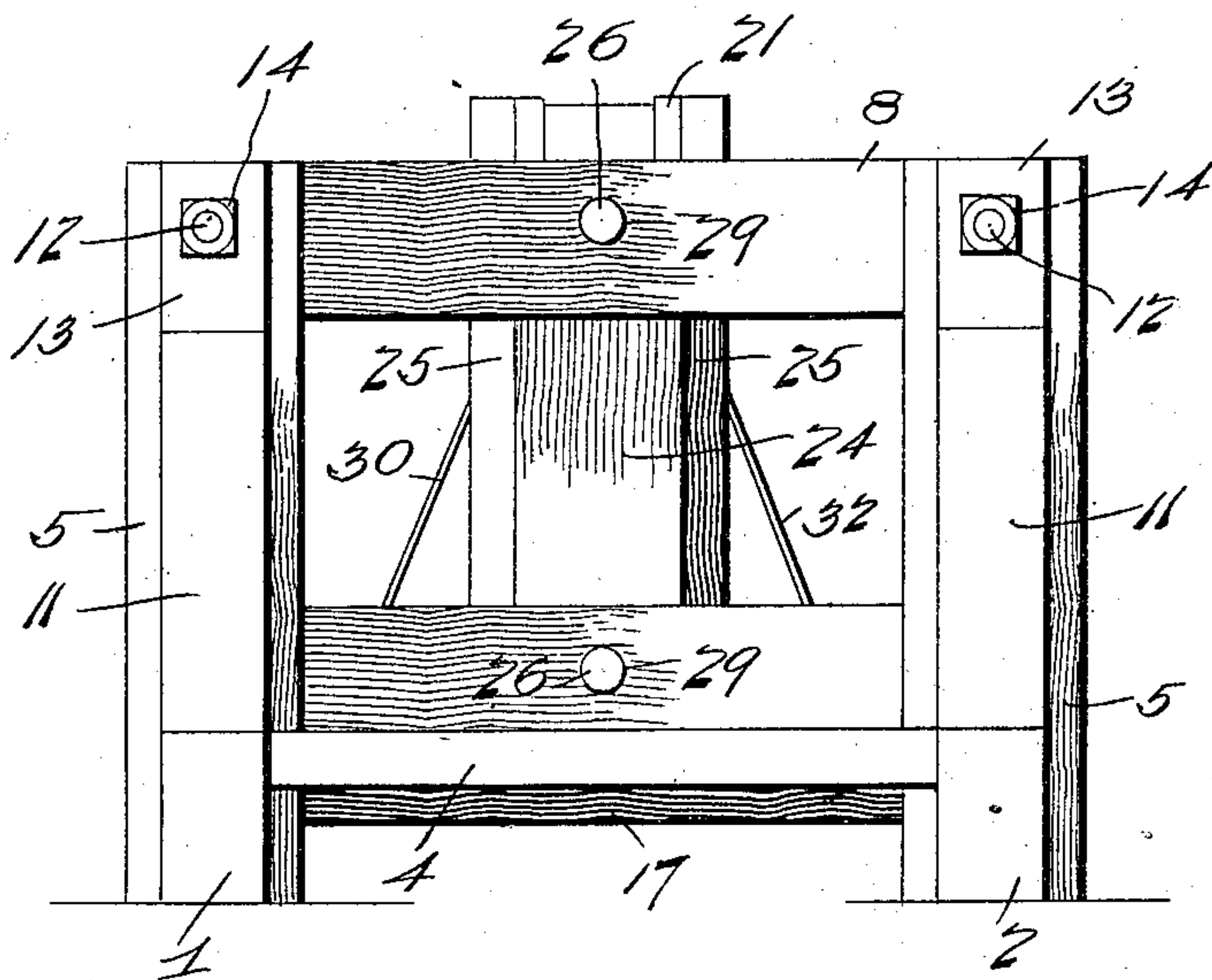


Fig. 4.



Inventor  
Henry Gray

Witnesses

T. L. Mochabee  
E. O. Rucker

 $\mathbb{B}_1$ 

Geo. S. Vashon

Attorney



# UNITED STATES PATENT OFFICE.

HENRY GRAY, OF DICKSON, TENNESSEE, ASSIGNOR OF ONE-THIRD TO M. M. BUTTREY, OF DICKSON, TENNESSEE, ONE-THIRD TO JOE TUCKER, OF BRENTWOOD, TENNESSEE, AND ONE-SIXTH TO JOHN H. CALLENDER, OF NASHVILLE, TENNESSEE.

## BUMPING-POST.

No. 877,472.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed August 8, 1907. Serial No. 387,719.

*To all whom it may concern:*

Be it known that I, HENRY GRAY, a citizen of the United States, residing at Dickson, in the county of Dickson and State of Tennessee, have invented new and useful Improvements in Bumping-Posts, of which the following is a specification.

This invention relates to bumping posts.

The object of the invention is to provide a structure of this character which shall be thoroughly effective in taking up jars due to contact between a stationary and a moving car, whereby the former will be positively shielded against damage as from the crushing force that results from impact between it and the post. Furthermore, to cause the resistance presented by the bumping post to be progressive in character—that is to say to bring into play successively a series of buffing springs, whereby when the resistance of one set of springs is exhausted the next series will receive the shock and so on, so that not only will the jar between the car and the bumping post be neutralized but danger of injury to the structure itself will be prevented.

With the above and further objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a bumping post as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification and in which like characters of reference indicate corresponding parts, Figure 1 is a view in side elevation of a bumping post constructed in accordance with the present invention. Fig. 2 is a top plan view. Fig. 3 is a front elevation and Fig. 4 is a rear elevation.

The base of the apparatus comprises two longitudinal sill beams 1 and 2 that are connected by cross beams 3 and 4 disposed adjacent to the terminals of the sill beams and are rabbeted therein as shown in Fig. 1.

Secured to the sill beams adjacent to the cross beam are two standards or uprights 5, which, as shown in Fig. 4, straddle the sill beams at their lower ends and are secured in position thereon by bolts 6. The standards are connected and rendered rigid by cross plates 8 and 9 that are rabbeted into the standards, the cross plate 9 being assembled with the standards by bolts 10.

The standards are braced against rearward yielding by angular struts 11, the lower ends of which are mortised into the sill beams and the upper ends of which bear against the rearward sides of the standards. The upper ends of the struts are held in position by brace bars 12, the forward ends of which are secured to the sill beams and bridge the cross beam 3 and the rearward ends of which extend through the cross plate 8, upper ends of the struts 11, through blocks 13, nuts 14 turn on the rear ends of the brace bars and bearing against the blocks serving rigidly to clamp the struts in position.

The upper faces of the sill beams are each provided with two recesses or seats 15 and 16 in which are mounted the reduced ends of cross bars 17 and 18, these bars being connected and held properly spaced apart by spacing plates 19. The terminals of the cross bars that engage the recesses 15 and 16 are of less width than the length of the recesses in order to permit the insertion of coiled buffer springs 19<sup>a</sup> that are held in position within the recesses in any preferred manner. The cross bars are held against lifting with relation to the sill beams by guard plates 20 bolted or otherwise suitably secured to the beams.

The cross bars 17 and 18 form supports for a buffer frame which comprises upper and lower beams 21 and 22 of which the latter bears upon the cross bars 17 and 18, the beams being held spaced apart and braced by blocks 23 and 24. The upper beam 21 as herein shown is slightly inclined toward the rear of the apparatus, but this is not essential as it may occupy a horizontal plane without departing from the spirit of the invention. In order to brace the beams 21 and 22, side bars 25 are provided which are bolted or otherwise rigidly secured to each side of the rear portion of the beam 21 and to each side of the front portion of the beam 22.

Projecting rearwardly from the beams 21 and 22 are two slide rods 26 that project through orifices in the cross plates 8 and 9 and carry heavy coiled buffer springs 27 that are interposed between the rear terminals of the beams 21 and 22 and the plates 8 and 9.

Combined with the beams 21 and 22 is a buffer head comprising a buffer plate 28, the upper and lower ends of which are reduced and work in recesses 29 in the outer terminals



of the beams 21 and 22. Projecting rearwardly from the buffer plate 28 are three slide rods 30 that work in orifices provided in the block 23, and that carry heavy coiled springs 31 that are interposed between the block 23 and the buffer plate.

As initial shock will first be received by the buffer plate, it is necessary that this should be braced both against longitudinal and lateral yielding and in order to prevent the latter contingency inclined stays 32 are provided, one in each side, the lower ends of which are secured to the spacing plates 19 and the upper ends to the block 23.

From the foregoing description it will be seen that when a standing car that is disposed adjacent to the bumping post is struck by a moving one that the first impact will be received by the buffer plate 28 and this will cause the springs 31 to yield and thus absorb the initial shock. If the impact be heavy, the buffer head will be bodily moved backward and the buffer springs 19<sup>a</sup> will then exert their resisting action to prevent further movement of the buffer head, but if these be not sufficient for this purpose, the remaining force of the shock will be absorbed by the buffer springs 27 carried by the slide rods 26.

It will be seen from the foregoing description that all of the parts of the structure that will be subjected to the greatest strain in use are thoroughly and effectively braced so that liability of breakage or damage in use will be reduced to a minimum. Furthermore, that

by the arrangement of the three series of buffer springs, shocks and jars will be absorbed in such a gradual manner as to relieve the car from danger of being crushed or distorted when struck unless the blow be one caused by a collision.

What I claim is—

1. A bumping post embodying sill beams having recesses in their upper faces, cross bars mounted in the recesses, springs interposed between the cross bars and the forward walls of the recesses, and a bumper carried by the cross bars.

2. A bumping post comprising braced sill beams provided in their upper faces with recesses, cross bars arranged within the recesses, bumper springs interposed between the cross bars and the rear walls of the recesses, guards carried by the sill beams to retain the cross bars in position, a bumper frame mounted upon the cross bars, a spring-pressed buffer plate connected with the forward portion of the frame, slide rods carried by the rear portion of the frame, cross plates through which the slide rods project, and springs interposed between the cross plates and the frame.

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

HENRY <sup>his</sup> × GRAY.  
mark

Witnesses:

W. R. BOYTE,  
M. M. BUTTREY.