

No. 676,630.

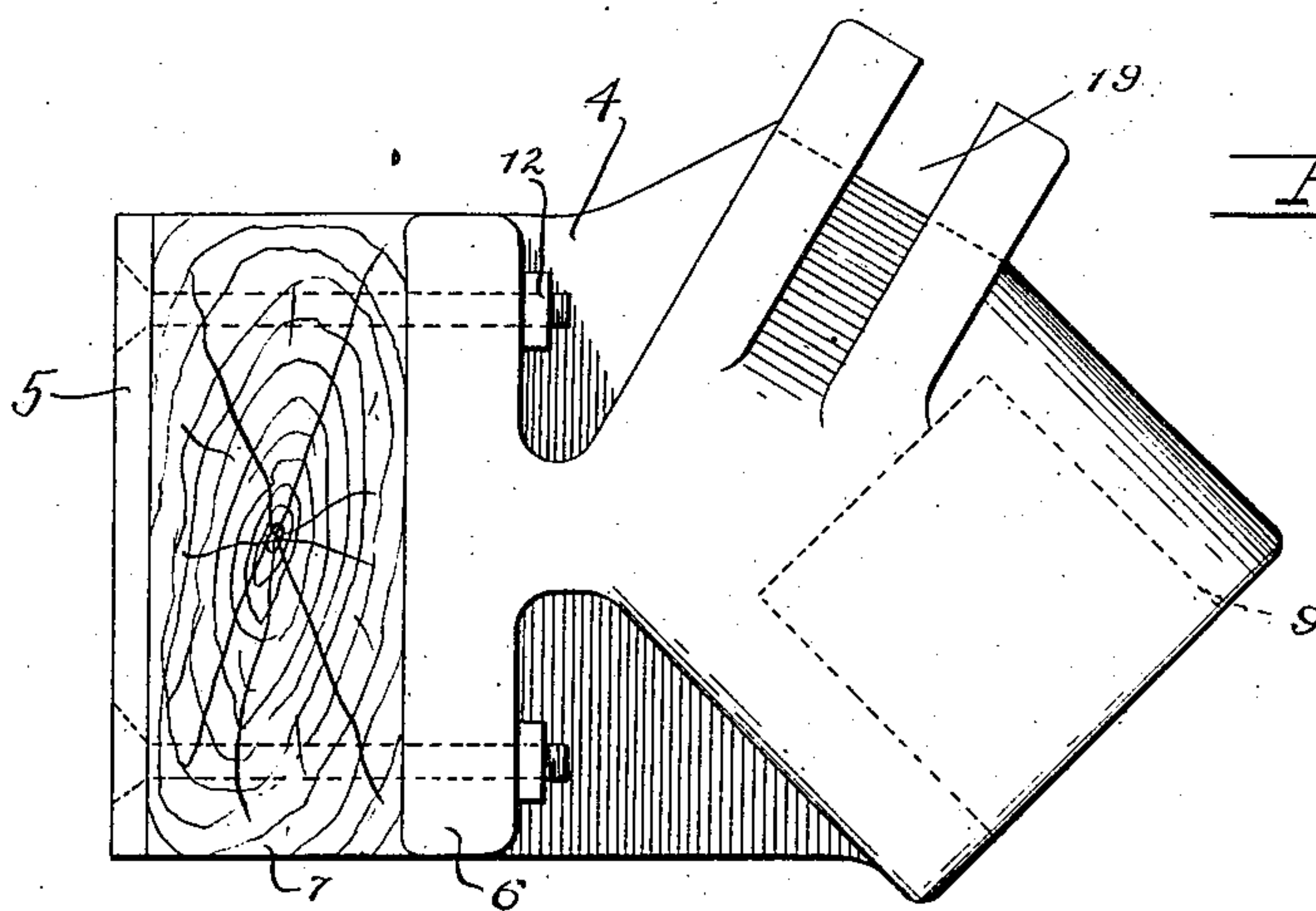
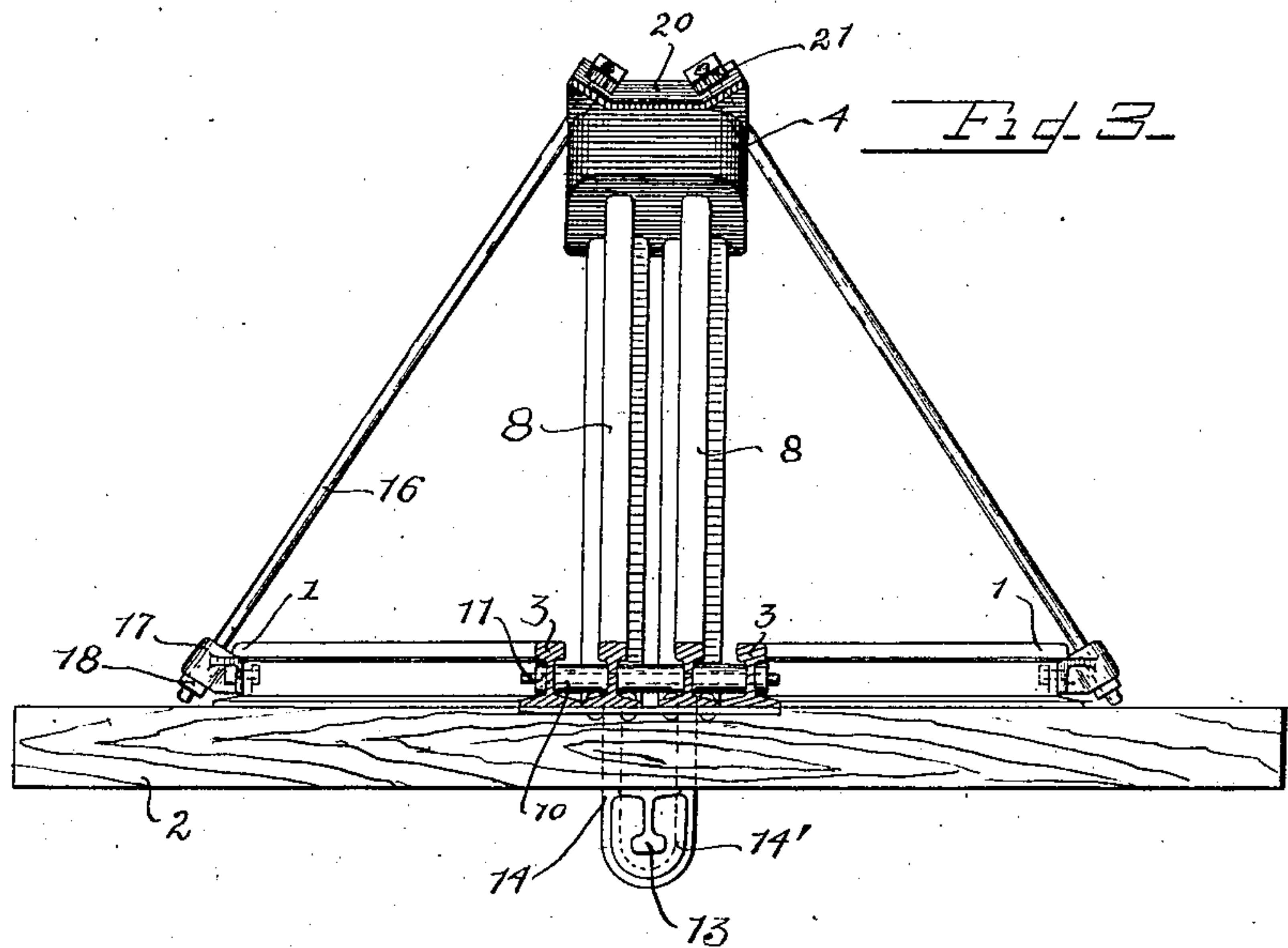
Patented June 18, 1901.

A. C. McCORD.
RAILWAY BUMPER.

(Application filed May 28, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALVIN C. McCORD, OF CHICAGO, ILLINOIS.

RAILWAY-BUMPER.

SPECIFICATION forming part of Letters Patent No. 676,630, dated June 18, 1901.

Application filed May 28, 1900. Serial No. 18,284. (No model.)

To all whom it may concern:

Be it known that I, ALVIN C. McCORD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railway-Bumpers, (Case No. 6,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of apparatus which is usually placed at the end of railroad-tracks and which is adapted to arrest the progress of a train moving toward the end of the said railroad-track.

More particularly, my invention relates to railroad bumping-posts, and has for an object the provision of a bumping-post of this class which shall be simple and durable and which may be easily constructed and put in place. Heretofore it has generally been necessary in erecting railroad bumping-posts upon the end of railroad-tracks to provide therefor separate and independent foundations.

It is also an object of my present invention so to construct a railroad bumping-post that the same may be placed at the end of a line of track without providing therefor an extra foundation.

A further feature of my invention consists in the provision of a railroad bumping-post in which the stress caused thereon by the moving train shall be equalized and distributed in an efficient manner without causing an undue depreciation of the railroad bumping-post.

In the preferred embodiment of my invention I preferably employ two rails of the railroad-track to serve as stops, as well as to divert the stress transmitted thereto from the bumping-post, the said rails being converged at the ends thereof and suitably fastened to supporting rods or standards which slant upwardly and are in engagement preferably with the bumping-post. I preferably employ in the preferred embodiment of my invention a suitable stiffening-rod, preferably extending lengthwise of the track, which rod or standard is adapted to receive thrust occasioned by the bumper-post and distribute the same along the track. I provide suitable means for holding the said stiffening-rail in position along the track, so that the same will not become disarranged.

Further objects of my invention will be apparent from the construction which I will now describe, in connection with the accompanying drawings, illustrating one embodiment thereof, in which—

Figure 1 is a side elevation of a bumping-post constructed in accordance with my invention. Fig. 2 is a top view thereof. Fig. 3 is a rear elevation of the same. Fig. 4 is an enlarged view of the bumper which I preferably employ.

Like parts are indicated by like characters of reference throughout the different views.

Referring now to the drawings, I have shown a pair of rails 1 1 of a railroad-track, suitably supported upon ties 2 2. I preferably bend the rails 1 1 at the end of the track, so that they converge some distance toward the center thereof, from which point they again preferably extend in sections 3 3, parallel to the center of the track, the rail-centers, however, being close together. In order to arrest the movement of the train, I employ a bumper 4, consisting, preferably, of a steel plate 5, suitably fastened to the main support 6, an intermediate piece of wood 7 being preferably employed to deaden the shock created by the impact of the moving train. The bumper is suitably fastened to the sections 3 3 of the main track, preferably through the agency of rails 8 8, the said rails entering recesses 9 9, provided in the bumper 4. The rails 8 8 are fastened to the parallel sections 3 3 of the main rails 1 1 by means of washers 10 10, placed between the same, and bolts 11 11, passing therethrough. The rails 8 8 are preferably horizontal for a short distance in order to register with the parallel sections 3 3 of the main track 1, the said rails 8 8 then preferably extending upward slantingly toward the bumper 4. The steel plate 5 is preferably held in place through the agency of bolts 12 12. In order to distribute the shock along the road-bed when a moving train strikes the bumper 4, I employ a stiffening-rod 13, consisting, preferably, of a rail and extending, preferably, below ties 2 2 in a line substantially parallel to the direction of the track. This stiffening rod or lever engages the main-track rails in this instance through the agency of intervening cross-ties, so that force may be exerted upwardly upon the track. The said stiffening-rail 13 is united to the bumper 4 preferably through the agency of a

tension rod or member 14, extending about the said rail and engaging a slotted guide portion 14'. The ends of the said tension-rod may be secured at the top of the bumper 4 through the agency of nuts 15 15. I preferably construct the stiffening-rail 13 of a length calculated to provide a sufficient leverage to overcome all stress caused by the impact of a moving train, the said rod extending, preferably, from the ends of the rail-sections 3 3 to a point forward of the tension-rods 14, which is best suited to the size and weight of the rail or bar employed as a stiffening-bar. In one aspect of the case it may be considered that the standard is comprised of the inclined rails 8 8 and the tension member 14, connecting the rails 8 8 with the stiffening-bar 13.

In order to prevent a sidewise motion of the bumper 4 in either direction, I employ guy-rods 16 16, which are preferably fastened in suitable supports 17 17, the said supports being fastened to the rail-section 1 through the agency of bolts 18 18. The guy-rods 16 16 preferably extend through slots 19 19, provided in the bumper 4, the said guy-rods passing through a plate 20, placed upon the top of the said bumper, the nuts 21 21 serving to hold the guy-rods in position with respect to the said bumper. Any suitable means may be employed, however, for preventing sideward movement of the bumper. The guy-rods 16 preferably have no other function.

Referring now particularly to Fig. 1, I have shown the direction of the force applied to the bumper 4 by a moving train, as indicated by the arrow *a*. This force *a* will be transmitted toward the road-bed of the track by the rails 8 8. As the rails 8 8 are, however, fastened to the parallel sections 3 3 of the main track 1, no longitudinal movement lengthwise of the track takes place and the thrust occasioned by the moving train is converted into a downward thrust, as indicated by the arrow *b*. This downward thrust is counteracted by the stiffening-rail 13, acting as a lever, the said rail exerting an upward thrust against the railroad-track, as shown by the arrows *c c*. The said rail 13 being pivoted or secured in place by means of the tension-rod 14, a sufficient leverage is obtained, providing a rail of suitable size is used to counteract the thrust occasioned by the train without bending the said rail or causing its disfiguration. The lever 13 is preferably elongated sufficiently to extend a sufficient distance beneath the car to secure the further resistance of the weight thereof to further counteract the upward thrust, the free forward end of the lever being thus most effective as the weight of the car or locomotive co-operates therewith to secure the desired resistance. I am thus enabled to dispense with expensive foundations, as the weight of the vehicle on the ties will thoroughly and effectively coöperate with the lever to secure the desired opposition.

It will be observed that the bar 13 is subjected principally to a transverse strain or bending movement, thus constituting a true lever.

Various modifications in the manner of constructing bumper-posts in accordance with my invention may readily be made, and I therefore do not limit myself to the precise construction and arrangement as herein shown and particularly described; but,

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

1. In a railway bumping-post, the combination with the rails, of a bumping-block, a standard for supporting the said bumping-block, a base comprising the said rails to which the standard is secured, and a stiffening-lever adapted to receive thrust occasioned in the rails due to the said bumping-post and to distribute the same along the rails, substantially as described.

2. In a railway bumping-post, the combination with the rails, of a bumping-block, a standard for supporting the said bumping-block, a base comprising the said rails to which the standard is secured, a stiffening-lever adapted to receive thrust occasioned in the rails due to the said bumping-post and to distribute the same along the rails, and a tension member for uniting the said bumping-block to the said stiffening-lever, substantially as described.

3. In a railway bumping-post, the combination with the rails, of a bumping-block, a standard for supporting the said bumping-block, a base comprising the said rails to which the standard is secured, a stiffening-lever adapted to receive thrust occasioned in the rails due to the said bumping-post and to distribute the same along the rails, a tension member for uniting the said bumping-block to the said stiffening-lever, and guy-rods 16 for preventing a sidewise displacement of said bumping-block, substantially as described.

4. In a railway system, a railway-bumper comprising a bumping-block 4, rails 8, 8, secured to the said bumping-block rails 1, 1 provided with converged sections 3, 3, to which the said rails 8, 8 are fixedly secured along the sections 3, 3, and a stiffening-rail 13 secured to the said bumping-block 4 by means of tension members 14, said stiffening-bar being adapted to receive thrust occasioned in the rails 3, 3, and distribute the same along the road-bed, substantially as described.

5. In a railway system, a railway-bumper comprising a bumping-block 4, rails 8, 8 secured to the said bumping-block, rails 1, 1 provided with converged sections 3, 3 to which the said rails 8, 8 are fixedly secured along the sections 3, 3, a stiffening-rail 13 secured to the said bumping-block 4 by means of tension members 14, said stiffening-bar being adapted to receive thrust occasioned in the rails 3, 3, and distribute the same along the road-bed, and guy-rods 16, 16 adapted to

prevent sidewise displacement of the said bumping-block, substantially as described.

6. In a railway system, a railway-bumper comprising a bumping-block 4, a suitable strip of material 7 for deadening the shock occasioned against the said bumper, rails 8, 8 secured to the said bumping-block, rails 1, 1 provided with converged sections 3, 3, to which the said rails 8, 8 are fixedly secured along the sections 3, 3, a stiffening-rail 13 secured to the said bumping-block 4 by means of tension members 14, said stiffening-bar being adapted to receive thrust occasioned in the rails 3, 3 and distribute the same along the road-bed, and guy-rods 16, 16 adapted to prevent sidewise displacement of the said bumping-block, substantially as described.

7. In a railway system, a railway-bumper comprising a bumping-block 4, a suitable block of material 7 for deadening the shock occasioned against the said bumper, rails 8, 8, secured to the said bumping-blocks, rails 1, 1 provided with converged sections 3, 3, to which the said rails 8, 8 are fixedly secured along the sections 3, 3, a stiffening-rail 13 secured to the said bumping-block 4 by means of tension members 14, said stiffening-bar being adapted to receive thrust occasioned in the rails 3, 3, and distribute the same along the road-bed, guy-rods 16, 16 adapted to prevent the sidewise displacement of the said bumping-block, and a plate 5, substantially as described.

8. In a railway system, a bumping-post comprising a bumping-block adapted to receive the impact caused by a moving car or train, means for transmitting said impact occasioned against the post toward the rails of the said system, and a stiffening-lever provided in the road-bed of the said system for counteracting thrust occasioned against the rails, substantially as described.

9. In a railway system, a bumping-post comprising a bumping-block adapted to receive the impact caused by a moving car or train, means for transmitting said impact occasioned against the post toward the rails of the said system, and a stiffening-lever provided in the road-bed of the said system for counteracting thrust occasioned by the said means, and distributing the same along the road-bed of the said system, substantially as described.

10. In a railway system, a bumping-post comprising a bumping-block adapted to receive the impact caused by a moving car or train, means for transmitting said impact occasioned against the post toward the rails of the said system, a stiffening-lever provided in the road-bed of the said system for counteracting thrust occasioned by the said means and distributing the same along the road-bed of the said system, and a tension member for securing the said stiffening-lever to the bumping-block, substantially as described.

11. In a railway system, a bumping-post

comprising a bumping-block adapted to receive the impact caused by a moving car or train, means for transmitting said impact occasioned against the post toward the rails of the said system, a stiffening-lever provided in the road-bed of the said system for counteracting thrust occasioned by the said means and distributing the same along the road-bed of the said system, a tension member for securing the said stiffening-lever to the bumping-block, and guy-rods 16, 16, for preventing a sidewise displacement of the said bumping-post, substantially as described.

12. In a railway system, the combination with the rails of a track, of supporting means for said rails, as cross-ties, a bumping-post, and a lever secured to the lower end of the bumping-post and projecting beneath the said rail-supporting means, substantially as described.

13. In a railway system, the combination with the rails of a track, of a bumping-post, and a lever projecting forwardly from the bumping-post and engaging the track, whereby the upward movement of the lever is resisted by the weight of the vehicle engaging the bumping-post, substantially as described.

14. In a railway system, the combination with a lever engaging the track, of a bumping-post, a member 14 uniting the lever at an intermediate portion thereof with the bumping-post, the bumping-post being adapted for engagement with the rear end of the lever; while the forward end is adapted to be subject to the weight of the vehicle upon the track, substantially as described.

15. In a railway system, the combination with a lever disposed beneath the track, of a bumping-post disposed between the ends of the lever and arranged to engage the rear end thereof, substantially as described.

16. In a railway system, the combination with a lever engaging the track, of a bumping-post acting upon the lever to cause the same to exert an upward tendency upon the track, the weight of the vehicle upon the track serving to oppose the upward tendency exerted by the lever, substantially as described.

17. In a railway system, the combination with a bumper, of a forwardly-projecting lever member or bar 13, serving to engage the track at its forward end and thereby be subject to the weight of the vehicle upon the track and means for engaging the bumper with the other end of the bar and uniting the said bumper and bar, the bar and the said means constituting a lever mechanism, substantially as described.

In witness whereof I hereunto subscribe my name this 15th day of May, A D. 1900.

ALVIN C. McCORD.

Witnesses:

MAX W. ZABEL,
GEORGE L. CRAGG.