

(No Model.)

J. S. HARKINS.
SPRING DOUBLETREE.

No. 387,298.

Patented Aug. 7, 1888.

Fig. 1.

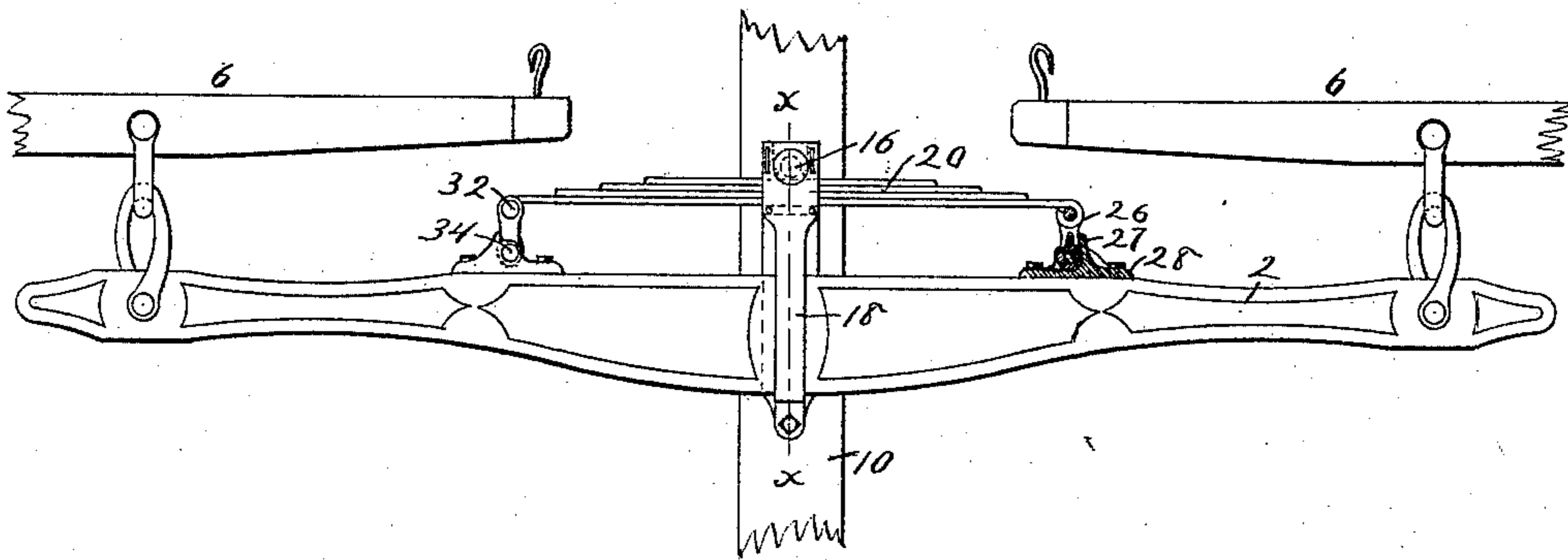


Fig. 2.

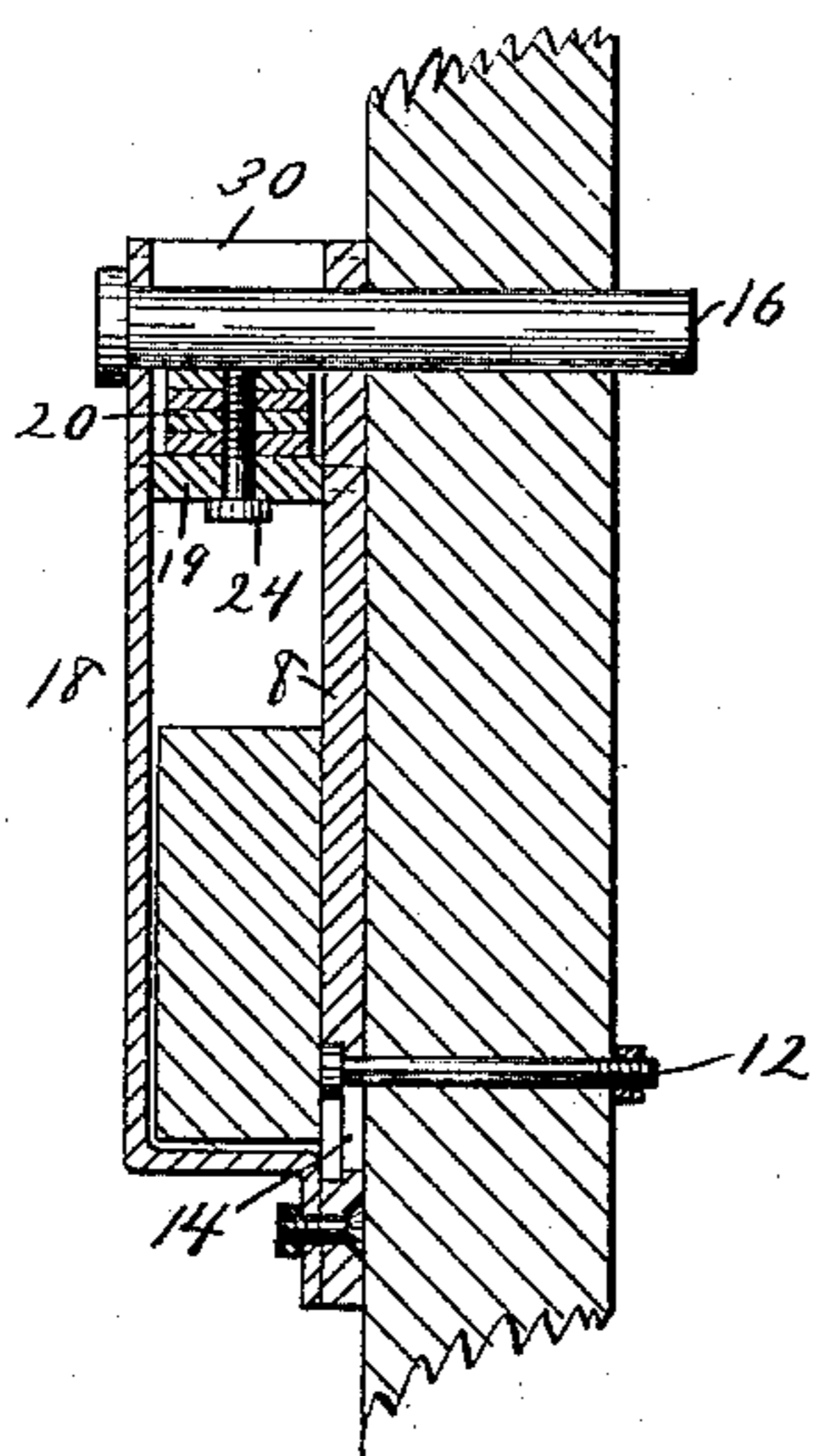
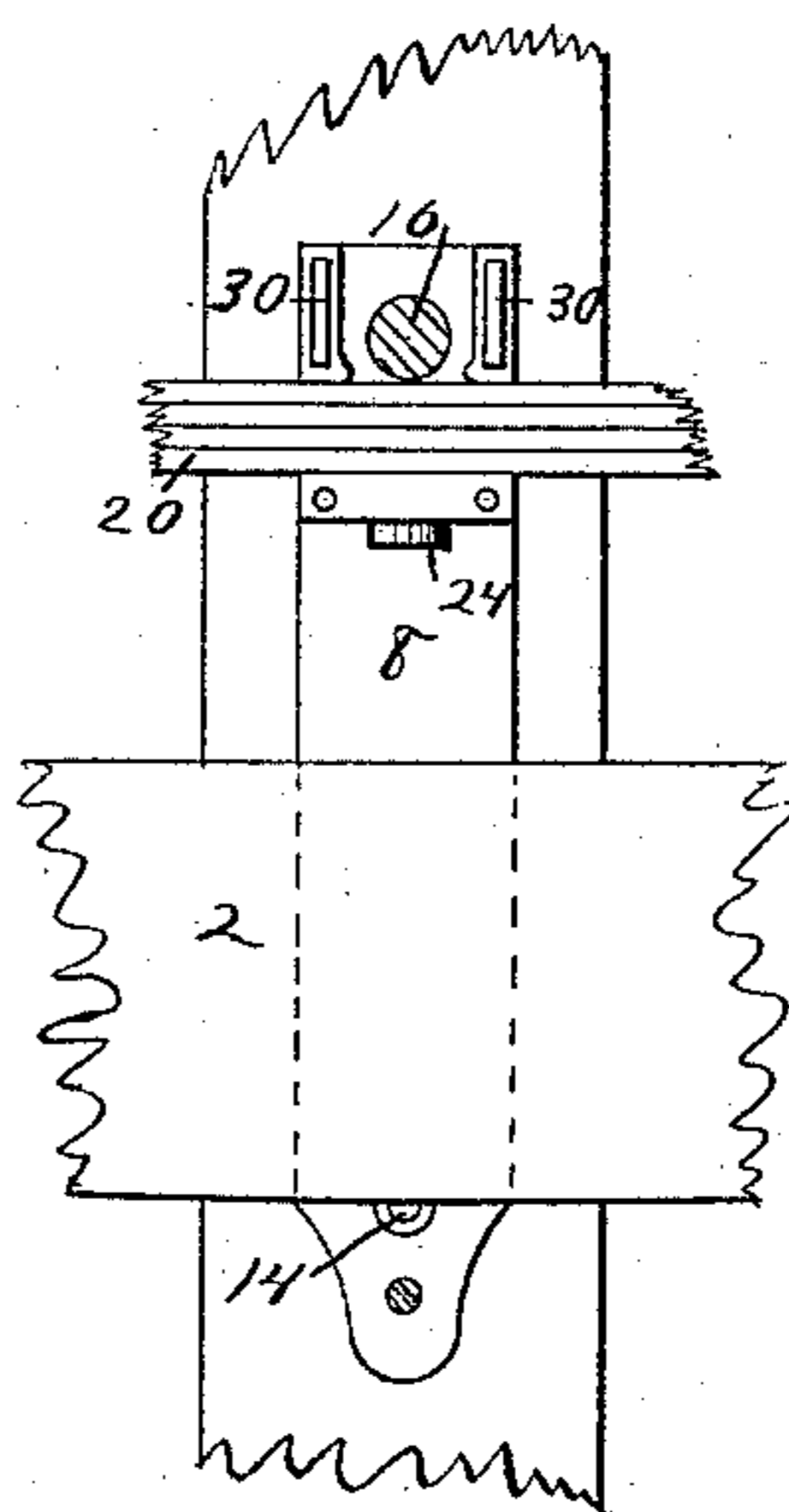


Fig. 3.



Witnesses.
S. J. Biardslee.
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Inventor.

James S. Harkins.

By *A. C. Paul* Atty

UNITED STATES PATENT OFFICE.

JAMES S. HARKINS, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO JACOB MERRITT, OF SAME PLACE.

SPRING-DOUBLETREE.

SPECIFICATION forming part of Letters Patent No. 387,298, dated August 7, 1888.

Application filed October 29, 1887. Serial No. 253,729. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. HARKINS, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Spring-Doubletrees, of which the following is a specification.

The object of this invention is to provide a spring-doubletree which will be easily and readily attached in the place of an ordinary doubletree without the necessity of making any alterations to the tongue or other attachments, and to cause the resistance of the spring to act by compression against the tree.

My invention consists, generally, in the construction and arrangement hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of my improved doubletree. Fig. 2 is a section on line *xx*, showing the manner of attaching the device to the tongue or pole. Fig. 3 is a plan view of the center portion with the upper plate removed.

In the drawings, 2 represents the doubletree or evener having clevises at its outer ends, to which are secured the whiffletrees 6.

A metal plate, 8, is preferably located between the doubletree and the pole 10, and is secured to the said pole by means of the bolt 12, which passes through a slot, 14, in the said plate and through the hole ordinarily used for the hammer-strap bolt. The slot in the plate is for the purpose of accommodating the said plate for the difference in the location of the bolt 12 in the pole, and may be made of any convenient length to suit this variation. The front portion of this plate is bored to suit the draw-pin 16, which passes through the plate and through the pole, and which sustains the thrust or draft which may be brought upon the plate. A strap, 18, is secured to the back of the plate, and is preferably bent upward and over the top of the doubletree and extends forward and is bored to receive the draft-pin 16. A partition or abutment, 19, is securely fastened between the plate 8 and strap 18, and to this abutment the spring 20 is secured by means of the bolt or pin 24. The spring 20 may be formed of any convenient number of plates or leaves, and extends on either side of

the point of fastening and is suspended at each end upon the links 26, which are pivoted to the shoes 28 on the doubletree.

Filling-pieces 30 may be placed between the plate 8 and strap 18 in front of the spring 20, and the said spring may be arranged to bear against these filling-pieces and also against the pin 16 in order to take the strain from the bolt 24, which is chiefly for the purpose of retaining the leaves of the spring in position.

The shoes 28, which form a bearing for the suspension-links at the outer ends of the spring, are preferably formed as shown in section in Fig. 1. The end of the link preferably rests in a recess in the said shoe, and a projection, 27, upon the outer side of the shoe extends upward and forms a stop to limit the movement of the links and hold the doubletree in its proper lateral position. Suitable pins, 32 and 34, secure the link to the spring and to the shoe.

It will be seen that as power is applied to the whiffletrees 6 the strain is transmitted to the doubletree, and this doubletree being free to slide in the space between the plate and strap, the said doubletree will be drawn forward and the strain will be carried through the links 26 to the spring 20, the leaves of which will be bent forward and the resistance of the plate brought to bear against the forward motion of the said doubletree and gradually transmit the strain to the draft-pin and the pole. The spring thus acts under compression, and by placing the said spring at the front of the tree it does not interfere with the position of the whiffletrees, which can be placed in substantially the same relative position with the pole and axle as is the case with the ordinary doubletree, so that in changing from one to the other no change will be required in the harness or attachment.

I claim as my invention—

1. The combination, with the pole 10 and the plate 8, secured to the pole and having the slot 14 to receive the hammer-strap bolt, of the strap 18, secured at the back end to the plate, the draft-pin 16, passing through the forward ends of said plate 8 and strap 18, the abutment 19, secured between the plate 8 and the strap 18, and the spring 20, attached to said

abutment and to said doubletree in the manner and for the purpose substantially as described.

2. In a spring-doubletree, the combination,
5 with the spring 20, secured to the pole, of the shoes 28, connected to the ends of the said spring by links 26, of the projection or stops 27 on the shoes 28, arranged to bear against the outer side of the links and limit the lateral

movement of the doubletree, substantially as is described.

In testimony whereof I have hereunto set my hand this 24th day of October, 1887.

JAMES S. HARKINS.

In presence of—

R. H. SANFORD,
JACOB MERRITT.