E. FOERSTER.

SPRING SUPPORT FOR WAGON TONGUES.

APPLICATION FILED OCT. 23, 1908.

963,704.

Patented July 5, 1910.

2 SHEETS—SHEET 1.

Fig. 1

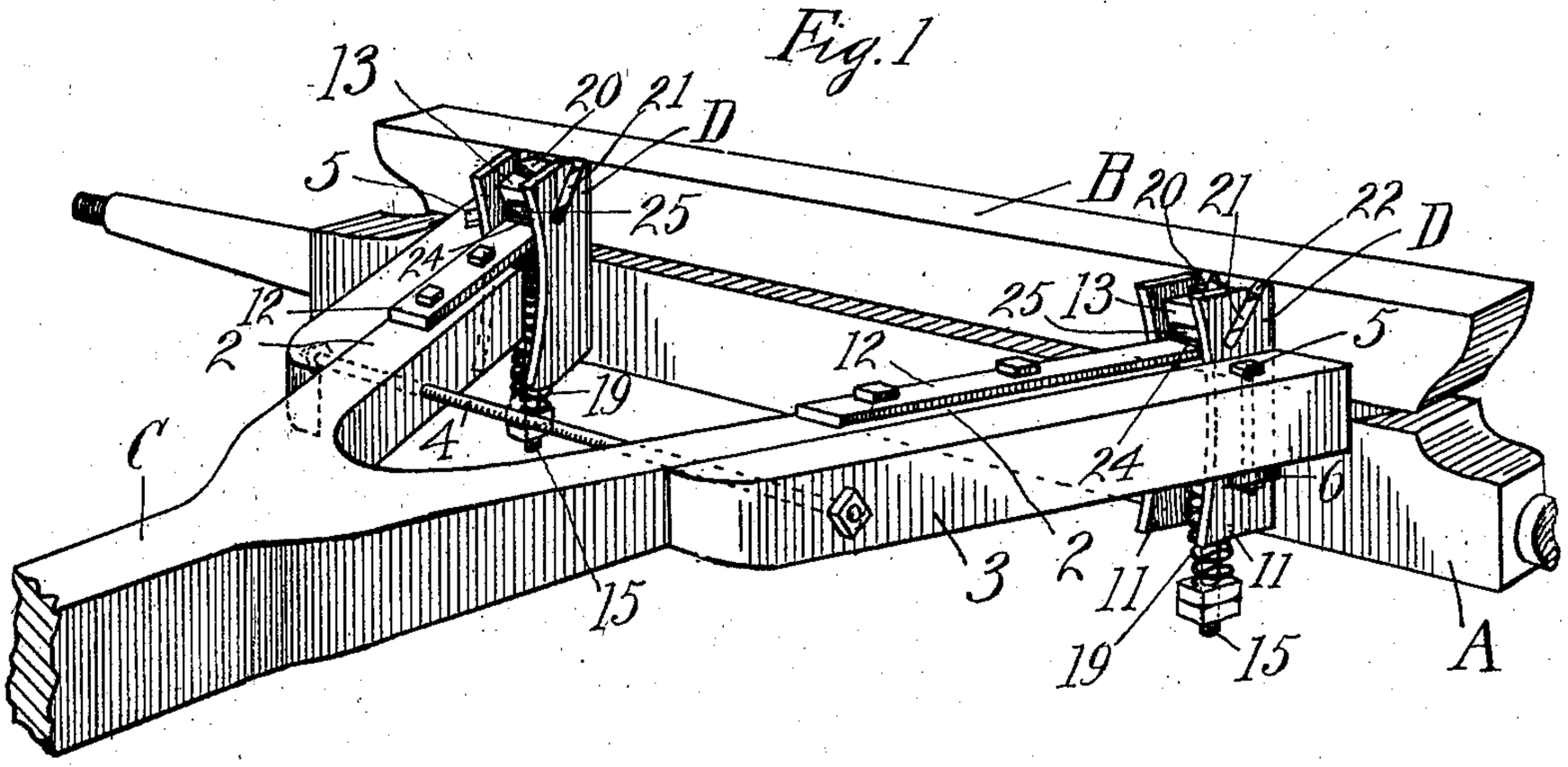

Fig. 2

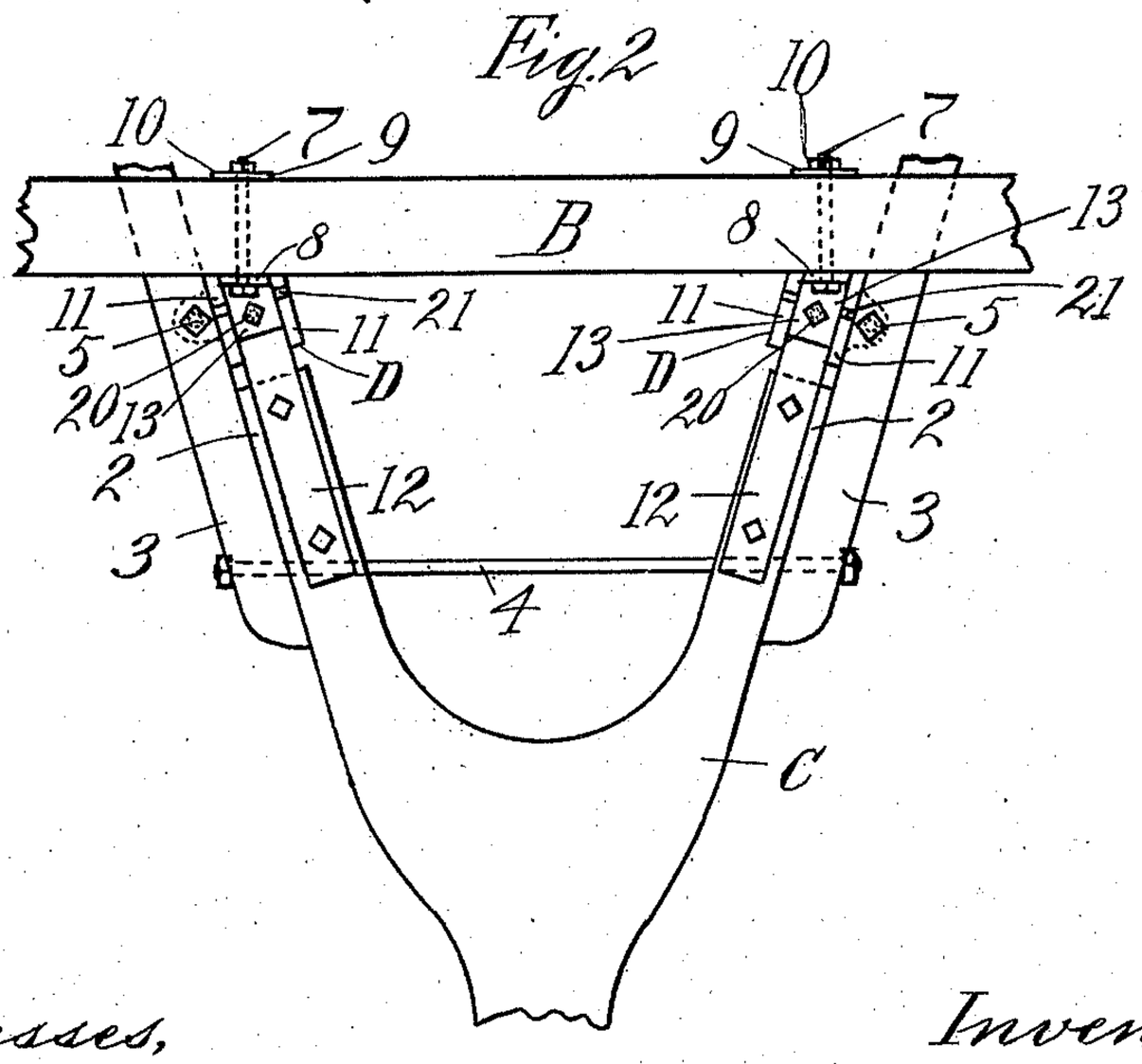

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Fig. 3

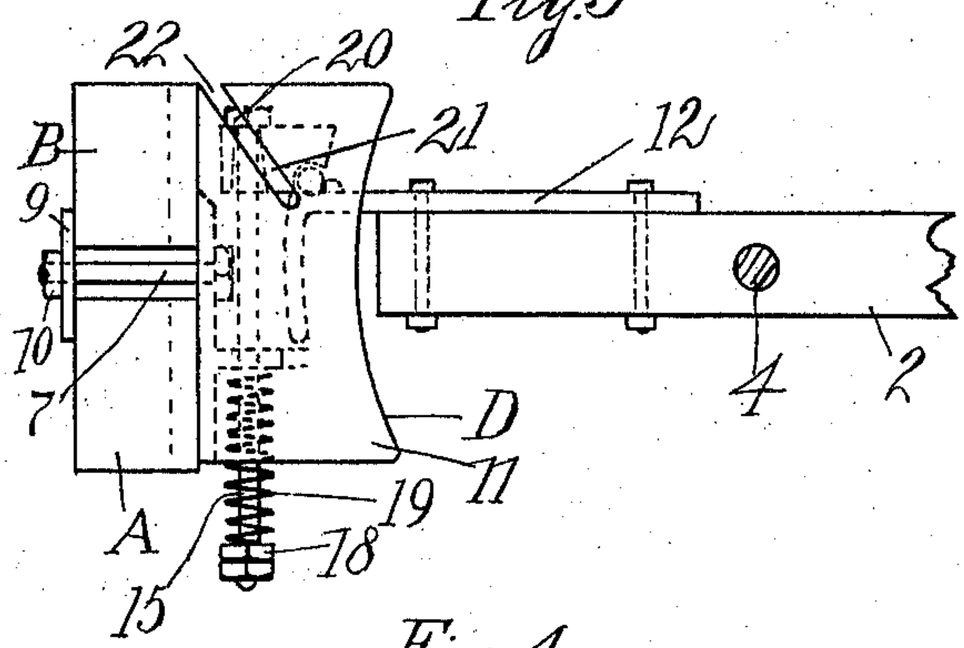


Fig. 6

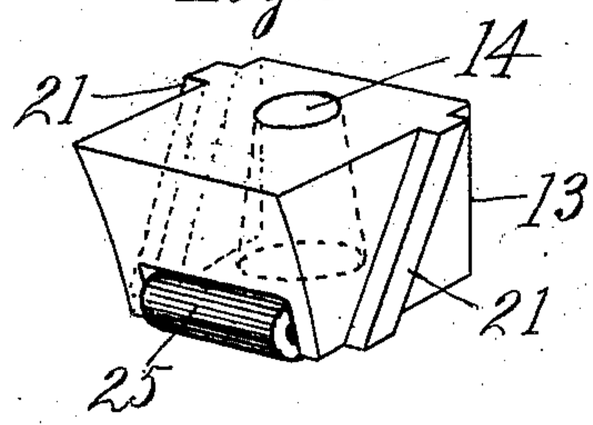


Fig. 4

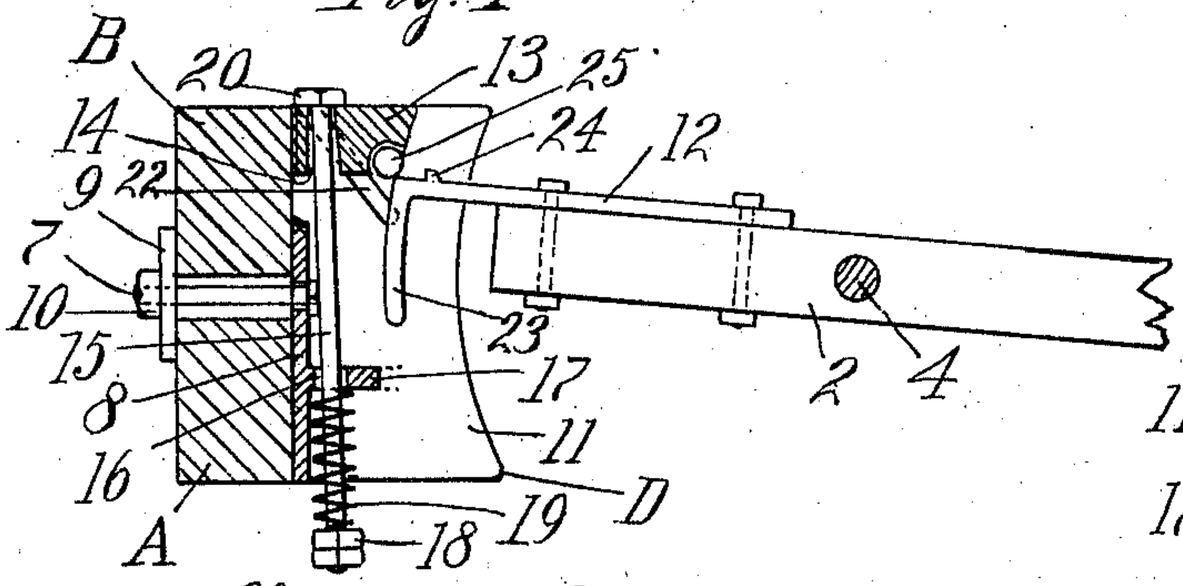


Fig. 7

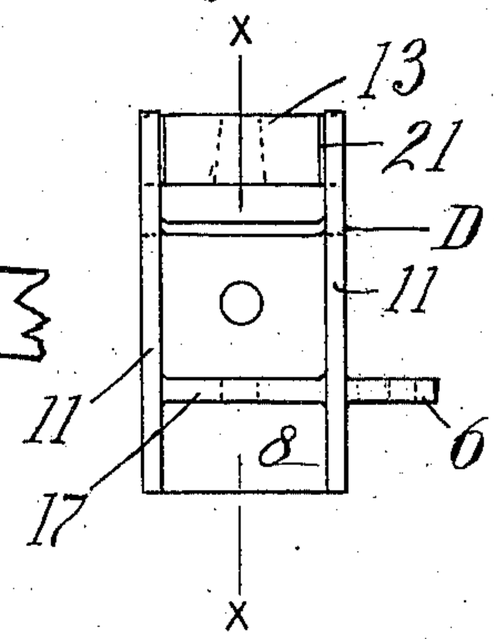


Fig. 5

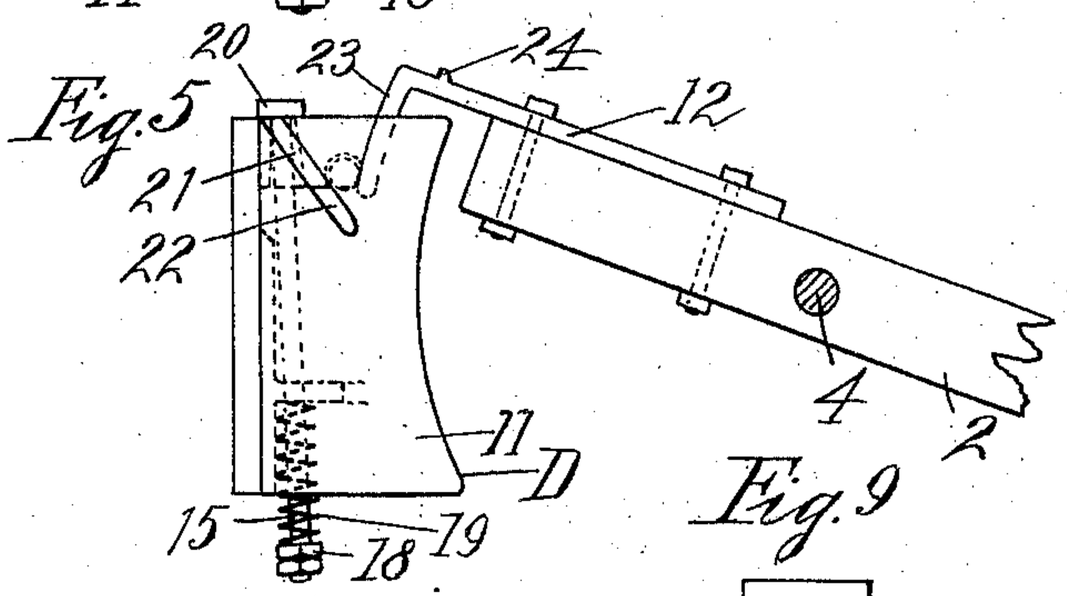


Fig. 8

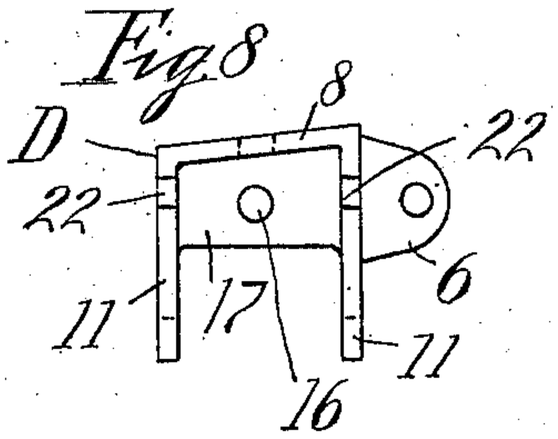
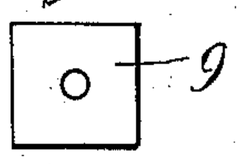


Fig. 9



Witnesses,
George Voelker
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UNITED STATES PATENT OFFICE.

EMANUEL FOERSTER, OF ST. PAUL, MINNESOTA.

SPRING-SUPPORT FOR WAGON-TONGUES.

963,704. Specification of Letters Patent. **Patented July 5, 1910.**

Application filed October 23, 1908. Serial No. 459,243.

To all whom it may concern:

Be it known that I, EMANUEL FOERSTER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Spring-Supports for Wagon-Tongues, of which the following is a specification.

My invention relates to improvements in spring supports for wagon tongues, its object being to provide improved means for elastically supporting the tongue against downward movement relatively to the running gear of the wagon. It is common to use a spring for this purpose, but as it is usually arranged the spring becomes so stretched or compressed by wide movements of the running gear and tongue relatively to each other as to lose its resilience. The present invention is designed to relieve the spring from such excessive stretching or compression.

More particularly the invention consists in the construction, combination and arrangement of parts hereinafter described and claimed.

In the accompanying drawings showing a practical embodiment of the invention, Figure 1 is a perspective view of a wagon bolster and axle, with the rear fragment of the tongue, showing the invention applied thereto; Fig. 2 is a plan view of the same, showing the tongue and bolster partly broken away; Fig. 3 is a side view of the same with the fore hounds removed, and the tongue in normal horizontal position; Fig. 4 is a vertical section through the spring supporting device taken on line *x*—*x* of Fig. 7, showing the tongue tilted and the holding block thrust up and back; Fig. 5 is a side view of the supporting device and rear fragment of the tongue showing the end of the tongue tilted and passing the holding block; Fig. 6 is a perspective view of the holding block alone; Fig. 7 is a front view of the frame or casing for the spring and holding block; Fig. 8 is a plan view of the casing alone, and Fig. 9 is a front view of the washer or plate for the casing bolt.

In the drawings A represents the forward axle of a wagon, B the bolster supported upon the axle in the usual manner, and C the tongue, of which only the rear end is shown. Carried by the rear end of the tongue, and here shown integral therewith, are a pair of rearwardly extending and outwardly spreading tongue hounds 2 which extend alongside the wagon hounds 3, to which they are pivotally secured by means of a pin or bolt 4 passing through both wagon and tongue hounds. The wagon hounds are secured between the bolster and axle in any suitable way and extend forwardly and inwardly therefrom to support the tongue hounds. This construction permits the tongue to tilt freely up and down upon its supporting pivot 4.

To hold the tongue elastically against the uptilting movement of its rear end, a pair of frames or casings D are secured upon the forward side of the bolster and axle against the inner sides of the wagon hounds. In this position they are in alinement with the tongue hounds. In the drawings each casing is shown secured to the adjacent wagon hound by means of a bolt 5 which passes down through the hound and through a lateral flange 6 upon the side of the casing, and to the axle and bolster by means of a bolt 7 which passes through the back wall 8 of the casing. This bolt passes back between the axle and bolster and has upon its rear end a washer or bearing plate 9, which bears against the axle and bolster, and a nut 10. By tightening the nut the casing will be held firmly against the axle and bolster.

Each casing is channel like in shape, being open at the front and having only a back wall 8 and forwardly extending side walls 11. The side walls are spaced apart a sufficient distance to permit the tail piece 12 of the alining tongue hound to work freely up and down between them. In the upper part of the casing is a sliding holding block 13 having a conical shaped opening 14 extending through it from top to bottom and adapted to receive loosely the rod or bolt 15. This bolt also passes loosely through a hole 16 in a transverse plate or web 17 in the lower part of the casing. Upon the lower end of the rod is an adjusting nut 18, between which and the web 17 is a coil spring 19 which keeps the rod normally held down and offers elastic resistance to the upward movement thereof. Upon the upper end of the rod is a nut 20 which bears against the top of the holding block, so that the block will be held down by the spring, and the spring will be compressed when the block is forced up.

The holding block has sliding support within the casing by means of downwardly

and forwardly inclined tongues and grooves upon the sides of the block and the side walls of the casing. It is immaterial, so far as the operation of the device is concerned, whether the tongues are formed upon the holding block and the grooves in the sides of the casing, or vice versa, but I prefer to form the ribs or tongues upon the block and the grooves in the casing wall, as shown in the drawings. As there shown, the holding block is formed on each side with a forwardly and downwardly inclined rib or tongue 21. These ribs aline with each other and fit slidingly within the correspondingly inclined grooves or slots 22 in the side walls of the casing. By reason of this inclined tongue and groove connection, the block will be guided upwardly and backwardly when it is thrust up from below, as illustrated in Fig. 4. Likewise, when relieved from upward pressure it will be drawn downwardly and forwardly by the spring into the position shown in Fig. 3. The rear wall of the casing is cut away at the top so as to allow the block a greater backward movement.

At its rear end the tail piece 12 of each tongue hound is formed with a downwardly curved flange or lip 23. The tail piece is bolted or otherwise secured to the tongue hound so that when the tongue is in normal horizontal position, as shown in Fig. 3, the tail piece will extend a short distance under the holding block. As a guide to prevent it from being set too far forward or too far back upon the tongue hound, the tail piece is formed upon its upper side with a small lug 24, which, when the tail piece is in proper position, will abut against the front face of the holding block 13. It is necessary that the tail piece shall not extend under the holding block so far that it cannot pass the block when it is tilted up, as shown in Figs. 4 and 5. To prevent friction between the tail piece and the forward face of the holding block, a roller 25 may be journaled in the holding block in position to be engaged by the flange or lip 23.

In use the tongue will stand normally in horizontal position as shown in Fig. 3, with the holding block drawn down by the spring to the lower end of the grooves 22. In this position the tail pieces 12 of the tongue hounds will extend under the blocks 13 and rest against the bottoms thereof. When the wagon axle is raised or the tongue depressed, the tongue will swing upon its pivot 4, and the tail piece 12 will be thrust up against the bottom of the holding block, forcing the block upwardly and backwardly against the resistance of the spring 19 until it reaches the position shown in Fig. 4. In this position the holding block will have moved so far back out of the path of the tail piece as to relieve the tail piece from further opposition to its upward movement, and also to relieve the spring from further compression. If the movement of the tongue is greater than enough to carry the holding block into this position, the tail piece will swing up past the front face of the block, as shown in Fig. 5, but will no longer exert any force upon the spring. When the outer end of the tongue is again lifted or the axle depressed, the tongue will move down to its former position under the holding block. Thus, by the use of the structure here shown, the holding block will be moved out of operative position, and the spring released from excessive strain, either stretching or compression, before the movement of the tongue and wagon body relatively to each other is great enough to impair the resilience of the spring.

It is obvious that modifications may be made in the details of the structure without departing from the principle of the invention, the scope of which is defined in the claims.

I claim as my invention:

1. The combination, with the running gear of a wagon, of a tongue pivotally supported thereon, and a spring controlled holding block carried by the running gear in position to bear down upon the rear end of the tongue, said holding block having sliding support in downwardly and forwardly inclined guideways.

2. The combination, with the running gear of a wagon, of a tongue pivotally supported upon the running gear at a point between its ends, and a spring controlled holding block movably supported in position to overlap the rear end of the tongue and adapted to be thrust by the tongue upwardly and rearwardly out of the path thereof when the same is tilted beyond a predetermined point.

3. The combination, with the running gear of a wagon and its hounds, of a tongue having rearwardly extending tongue hounds pivotally supported upon the wagon hounds, and a pair of spring controlled holding blocks movably supported by said running gear in position to overlap the rear ends of the tongue hounds and adapted to be thrust by the tongue hounds upwardly and rearwardly out of the path thereof when the same have moved up beyond a predetermined point.

4. The combination, with the running gear of a wagon and its hounds, of a tongue pivotally supported upon the wagon hounds and having rearwardly extending tongue hounds, and a pair of spring controlled holding blocks carried by said running gear in position to overlap the rear ends of the tongue hounds, said holding blocks having sliding support in forwardly and downwardly inclined guideways.

5. The combination, with the running

gear of a wagon and its hounds, of a tongue having rearwardly extending tongue hounds pivotally supported upon the wagon hounds at a point between their ends, a pair of frames supported upon said running gear in line with the tongue hounds, and a pair of holding blocks having sliding support in the frames in position normally to overlap the rear ends of the tongue hounds, said sliding support consisting of downwardly and forwardly inclined tongue and groove connections between the holding blocks and the sides of the frame.

6. The combination, with the running gear of a wagon and its hounds, of a tongue having rearwardly extending tongue hounds pivotally supported upon the wagon hounds, and a pair of spring controlled holding blocks carried by said running gear in position to overlap the rear ends of the tongue hounds and so supported as to be capable of being thrust by the tongue hounds out of the path thereof when the same have moved up beyond a predetermined point, the tongue hounds being formed at their rear ends with downwardly extending flanges adapted to engage the face of the holding block and hold it against the force of its spring when the wagon tongue is tilted.

7. The combination, with the running gear of a wagon and its hounds, of a tongue having rearwardly extending tongue hounds pivotally supported upon the wagon hounds, a pair of frames carried by said running gear in line with the tongue hounds, a holding block having sliding tongue and groove support in the sides of each frame, said tongues and grooves extending downwardly and forwardly for the purpose set forth, and the tongue hounds having tail pieces extending rearwardly under the holding blocks, a rod extending up loosely through the holding block and having sliding support upon the frame, a retaining nut upon the upper end of the rod, and spring means for holding the rod and block normally in down-drawn position.

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

EMANUEL FOERSTER.

Witnesses:
ARTHUR P. LOTHROP,
HATTIE SMITH.