No. 699,342. Patented May 6, 1902.

F. NICKERSON, JR.

TAIL BOARD SPRING.

(Application filed Jan. 25, 1902.)

(No Model.)

Fig. 1.

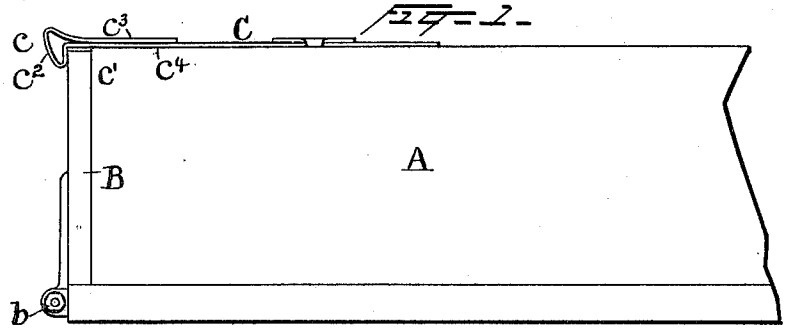


Fig. 3.

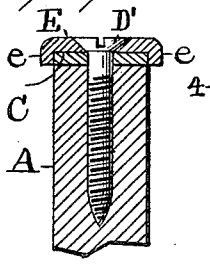


Fig. 2.

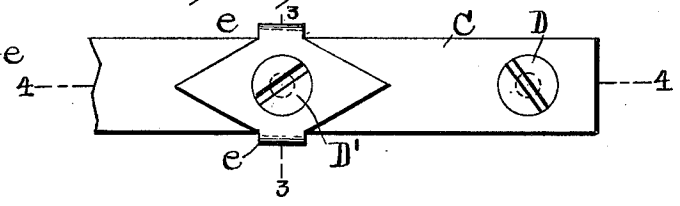


Fig. 4.

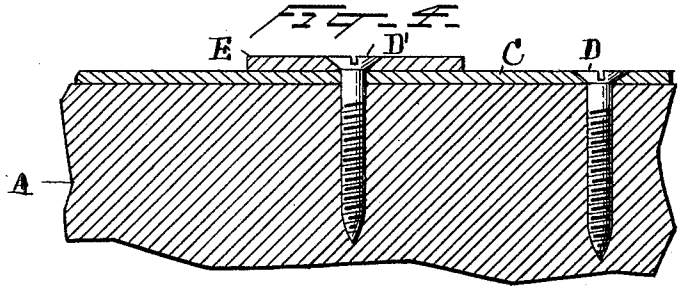


Fig. 5.

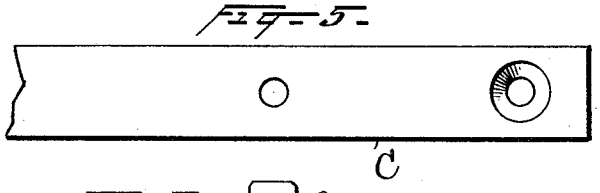
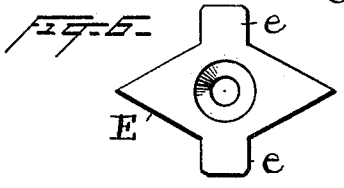


Fig. 6.



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UNITED STATES PATENT OFFICE.

FREEMAN NICKERSON, JR., OF FALL RIVER, MASSACHUSETTS.

TAIL-BOARD SPRING.

SPECIFICATION forming part of Letters Patent No. 699,342, dated May 6, 1902.

Application filed January 25, 1902. Serial No. 91,226. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN NICKERSON, Jr., a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Tail-Board Springs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to spring fastening devices, and especially those used to secure the hinged tail-boards of wagons. Such springs usually consist of a flat strip of spring-steel attached to the upper edge of the side of the wagon-body, with one end projecting beyond the end of the same and carrying at that point a hook to engage with and hold the tail-board when it is closed up. The hook is usually made by bending the end of the strip downward and forward and then upward. This forms a weak structure, liable to be bent out of shape by hard usage. The tail-board is generally shut with a quick slam, striking the hooks a sharp blow and soon damaging or breaking them. If a solid hook is used, it must be welded to the body of the spring or else the body must be drawn down from the block out of which the hook is shaped. This is costly and slow. Another point of weakness in these springs is the hole where the rear fastening-screw goes through. Two screws are generally used, the forward one at the end of the spring and the other one two or three inches in the rear thereof. It is at this point that the spring flexes in use, and the removal of metal in drilling and countersinking the screw-hole weakens the strip to such an extent that it soon gives way and breaks off.

My invention aims to strengthen these springs at the hook and at the rear screw-hole. For the first I form the hook by bending the strip down, then upward and rearward on an incline, and then forward, and finally weld the overlapping end to the body of the spring. This makes a strong, stiff, and durable hook. At the rear screw-hole I apply a reinforce of metal in which the countersink is formed, so that only a small hole for the shank of the screw has to be made through the spring.

In the drawings, Figure 1 is a side elevation of the rear end of a wagon-body equipped with my improved tail-board spring. Fig. 2 is a top plan view of the forward end of the spring and the reinforce on a larger scale. Fig. 3 is a cross-section on the line 3 3, Fig. 2. Fig. 4 is a longitudinal section on the line 4 4, Fig. 2. Fig. 5 is a top plan view of the end of the spring with the reinforce removed. Fig. 6 is a plan of the reinforce before it is applied to the spring.

The wagon-body A has a tail-board B hinged to it at b, as usual. Secured to the upper edge of the body is the spring C, consisting of a flat strip of spring-steel, whose forward end is attached to the body A by screws D D′ and whose rear end is formed into a hook c to engage with and retain the tail-board when closed. The hook is made by bending the strip C downward at c', then rearwardly on an upward incline at c^2, and then forward, the overlapping end c^3 being welded to the body c^4 of the spring. This construction makes a strong and durable hook. Being open, it affords a convenient place for attaching a chain or rope, either for holding it down when bent or for any other purpose. The forward screw D is countersunk into the spring, as shown, but the hole for the rear screw D′ is not countersunk in the spring, a countersink being provided in a small plate of metal E, lying on top of the spring and preferably provided with lateral lugs e, which are bent down on each side of the spring and assist in holding the plate in place. It will be seen that this plate greatly strengthens and reinforces the spring at the point where it is most liable to break. By extending it in the rear of the screw-hole, as shown, the point of flexure of the spring is removed from the proximity of the screw-hole, and this aids in increasing the durability of the spring.

Having thus described my invention, what I claim is—

1. The combination with a tail-board spring consisting of a strip of spring metal having screw-holes near one end, of a reinforcing-plate covering one of said holes, and pro-

vided with lateral lugs bent down on each side of said spring.

2. The combination with a tail-board spring consisting of a strip of spring metal having screw-holes near one end, of a reinforcing-plate covering one of said holes, and extending rearwardly from said hole.

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

FREEMAN NICKERSON, JR.

Witnesses:
ARBA N. LINCOLN,
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