

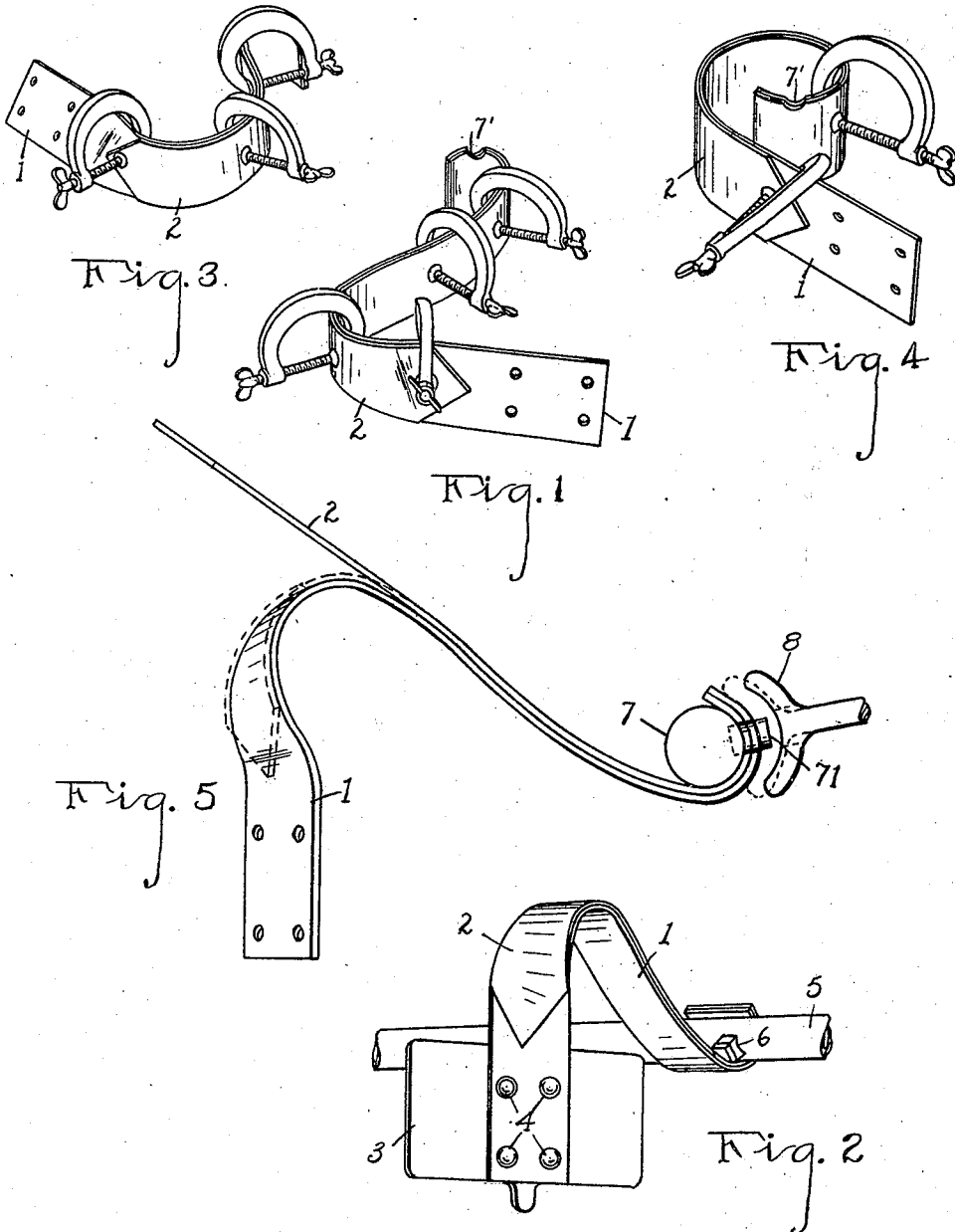
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SPRING AND METHOD OF MANUFACTURING THE SAME

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SPRING AND METHOD OF MANUFACTURING THE SAME.

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The object of the invention is to provide an improved construction of curved leaf springs in which a reinforcing leaf is retained securely in place as a reinforce for the main spring blade.

Objects pertaining to details and economies of my invention will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this application, in which:

Fig. 1 is a perspective of an S curved spring in the process of manufacture, the clamps used in the process being in place;

Fig. 2 is a perspective view of the form of my improved spring as applied to a street car track scraper;

Fig. 3 is a perspective view of a slight modification of the structure appearing in Fig. 1;

Fig. 4 is a modification showing the simplest form of spring as applied to a road scraper; and

Fig. 5 shows the method of wrapping the reinforce blade onto the main spring blade, this being a plan view of the spring arranged in the bending machine ready for forming the outer reinforcing blade into place on the main blade.

In the drawing, 1 is the main spring blade. It is supported and reinforced by the auxiliary blade 2. 3 is the scraper held thereon by bolts 4. 5 is the rock shaft for carrying the spring and 6 is the clamping bolt which clamps the end of the spring to the rock shaft. 7 is the former head, of a suitable bending machine. 8 is the clamp for clamping the pairs of spring blades securely in place against the head during the forming of the outer blade. 71 is a cross pin on head 7 which engages the notches 7' at the end of the spring blades to retain them securely in place. These notches also receive the clamp bolts 6.

The method of manufacture comprises, first, forming the main spring blade 1 and,

after it is cold, heating the reinforce spring blade 2 while hot so that it can be readily bent. The spring blades are then introduced together into the bending machine, as seen in Fig. 5, the upper notched ends being securely clamped by the clamp 8. The blade 2 is then bent while hot into close relation to the cold main blade 1, and clamped securely in place by C clamps. The structure is then allowed to cool. The end of the outer reinforce blade is made pointed and particular pains is taken to force the point into close engagement with the cold inner spring. When the pair of springs is thus secured together, they are quenched in a bath of oil and properly cooled to temper the spring.

Because the blade 2 has been wrapped hot onto the cold blade 1, when the same cools it contracts and grasps the rigid cold spring securely so that bolts are not necessary to keep the outer end of the outer blade in place, particularly where the point has engaged the inner blade. By this means a perfect fit is secured between the parts and they remain securely together without the necessity of clips.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The method of manufacturing a blade spring having a main curved spring blade and an auxiliary reinforcing blade embracing the same consisting in forming the main spring, allowing it to cool, heating the reinforcing blade, bending the same to the form of the main spring blade while hot, clamping it in place, and quenching the hot spring in an oil bath to temper the same and shrink it to place, as specified.

2. The forming of a laminated leaf spring of S-form consisting in conforming the main blade, allowing it to cool, heating the reinforcing blade, conforming the same to the main blade and clamping it in place, and then quenching the same whereby the shrinking of the reinforcing blade clamps it securely in place.

3. An S-shaped blade spring consisting of a main blade and a reinforcing blade suitably pointed at its outer end, and shrunk and clamped on the main blade, as specified.

4. A spring comprising a curved main blade, and a reinforcing blade with pointed end wrapped and shrunk about the curve of the main blade when hot, and a suitable
5 rock shaft and clamp for holding the same in place, as specified. 10
6. A spring comprising a curved main blade, and a reinforcing blade wrapped and shrunk thereon when hot, as specified.
- In witness whereof I have hereunto set
my hand. 15
- EBEN B. UTTER.