Aug. 16, 1938. D. R. M. YATES 2,127,077

LEAF SPRING

Filed Jan. 30, 1937

Fig. 1.

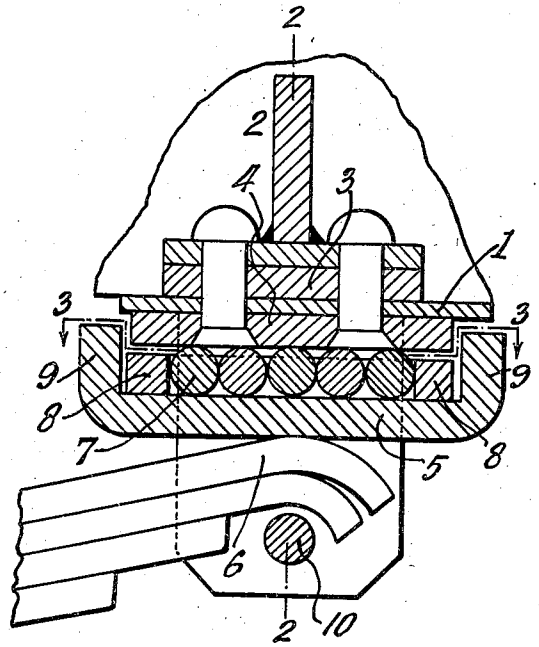


Fig. 2.

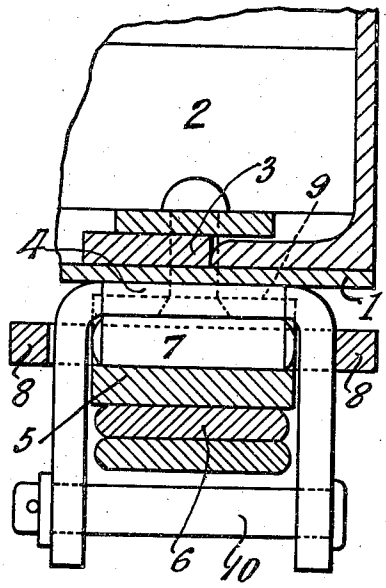
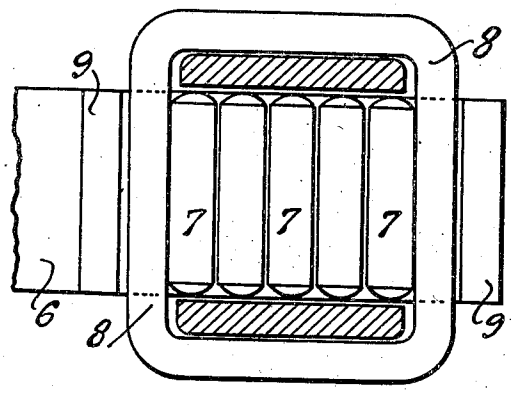


Fig. 3.



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LEAF SPRING

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Application January 30, 1937, Serial No. 123,310
In Great Britain February 3, 1936

3 Claims. (Cl. 267—56)

This invention relates to leaf springs such as are commonly employed in locomotives, railway, road and like vehicles and/or wagons, the invention having for its object an improved connection between the spring and the sole bar or its equivalent.

Heretofore it has generally been the practice to allow the ends of the top leaf to pass round a pin or projection on the top of a joint pivoted to a bracket secured to the sole bar. In some cases, however, the ends of the top spring have been held against a bar or the like secured to the sole bar or its equivalent. In both of these cases it has been found that due to continual movement of the leaves wear occurs so that the free movement of the top leaf is hindered.

According to the present invention the sole bar or its equivalent carries means against which the top leaf of the spring is adapted to bear, said means being adapted on flexing of the spring to move relatively to the sole bar.

Preferably said means comprise roller races, the upper race being secured to the sole bar or its equivalent, the lower race constituting the surface against which the top leaf of the spring bears.

Preferably the rollers are positioned in a cage so that when load is applied to the top leaf, the cage slides with the rollers within the lower race, which for this purpose is provided with a flange at its ends, but if desired the flanges may be provided on the upper race or shoe in which case the cage with the rollers slides within the upper race.

The invention is illustrated in the accompanying drawing in which:

Figure 1 is a sectional elevation,

Figure 2 a section on the line 2—2 of Figure 1, and

Figure 3 a section on the line 3—3 of Figure 1.

Referring to the drawing, 1 represents the sole bar of the vehicle frame 2, the sole bar having secured thereto through rivets and packing 3, the upper race 4 of a roller bearing, the lower race 5 of which bears against the top leaf of the spring 6. The rollers 7 are enclosed in a cage 8 which maintains the rollers in correct position and which when load is applied slides with the rollers within and on the lower race 5, which for this purpose is provided with an upturned flange 9 at each end. 10 represents the shoe pin provided to prevent dislocation of the spring in the event of shock or derailment.

It will be appreciated that on flexing of the spring and consequent longitudinal movement of the individual leaves the cages of the roller races will slide relatively to the sole bar or its equivalent, there being no relative movement between the top leaf and the lower race, whereby friction between the ends of the top leaf of the spring and the lower race against which it bears is considerably reduced, thereby enhancing the resilience and life of the spring.

What I claim is:—

1. In combination, an upper race having depending walls, a lower race, a leaf spring upon which said lower race bears, bearing members between said races retained against displacement in one direction by said walls, a cage surrounding the depending walls and confining the bearing members against displacement in a direction at a right angle to the first mentioned direction, said cage being slidably mounted on the lower race so as to move with the bearing members when load is applied to the spring.

2. In combination, an upper race having depending walls, a lower race, a leaf spring upon which said lower race bears, roller bearing members between said races retained against endwise movement by said walls, a cage surrounding the said depending walls and confining the roller bearing members against longitudinal displacement, an abutment adjacent each end of the lower race, said cage being slidably mounted on the lower race between said abutments so as to move with the roller bearing members to the extent permitted by said abutment members.

3. In combination, an upper race having depending walls, a lower race having an upstanding abutment adjacent each end, a leaf spring extending between said walls and upon which said lower race rests, roller bearing members between said races retained against endwise movement by said walls, an endless cage surrounding the said depending walls and confining the roller bearing members against longitudinal displacement, said cage being slidably mounted on the lower race between said abutments so as to move with the roller bearing members to the extent permitted by said abutment members, said abutment members extending above the base of the upper race.

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