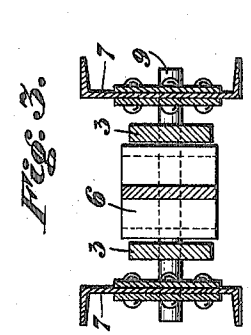
J. F. COURSON.

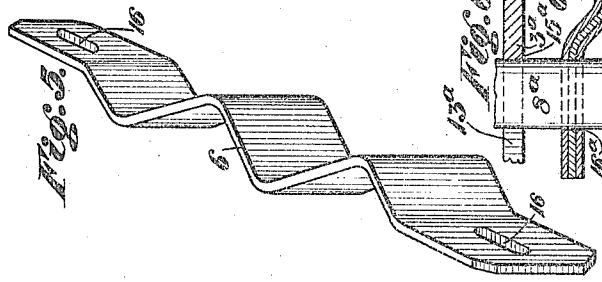
DRAFT GEAR.

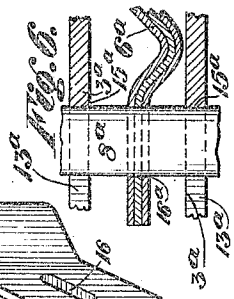
APPLICATION FILED JAN. 22, 1917.

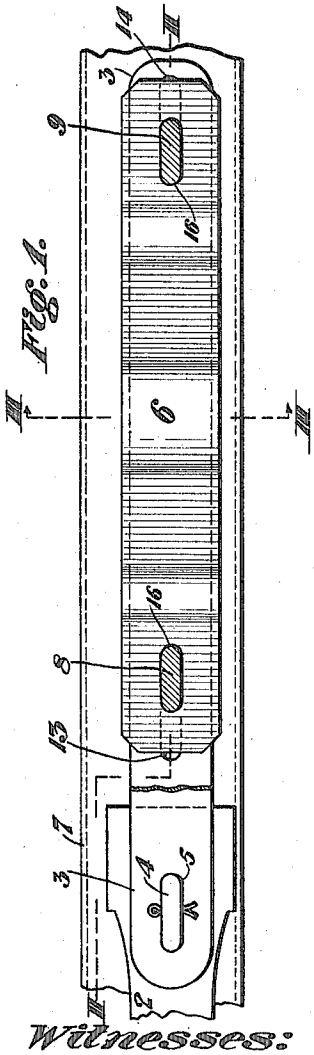
1,237,758.

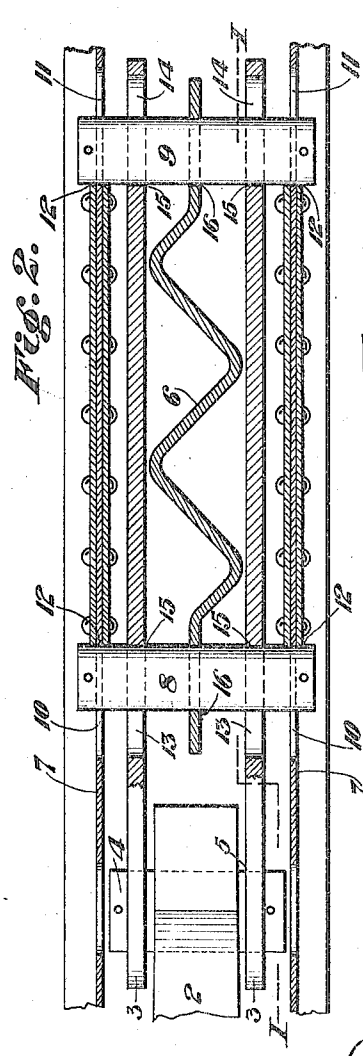
Patented Aug. 21, 1917.

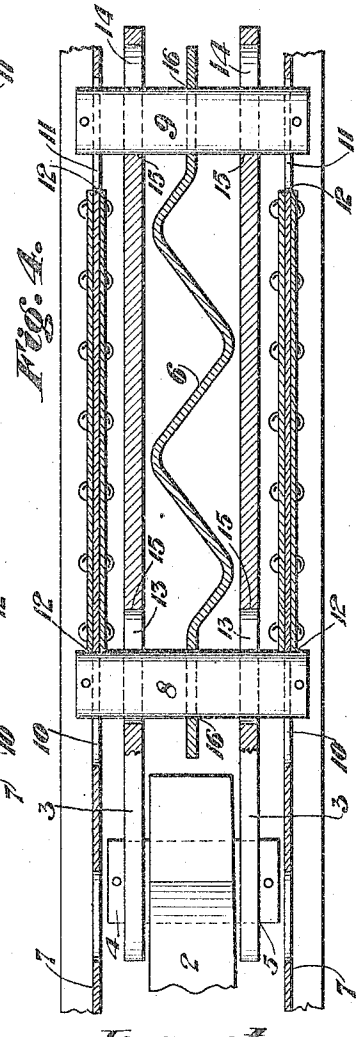












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UNITED STATES PATENT OFFICE.

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DRAFT-GEAR.

1,237,758. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed January 22, 1917. Serial No. 143,549.

To all whom it may concern:

Be it known that I, JOHN F. COURSON, a citizen of the United States, residing at Pitcairn, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Draft-Gears, of which the following is a specification.

My invention is an improvement in draft gears and is designed to provide for absorption of the shocks of buffing and pulling strains by means of an extensible spring. Such spring is so mounted within a suitable framework as to be elongated in one direction or the other of two opposite directions, whereby its single member sinuous or bent form may be changed in a longitudinal direction by stretching, with the accompanying resistance due to the tendency of the spring to assume its original shape. This effect is secured with a steadily increasing resistance proportioned to the strain, effecting a resulting reaction and desirable resistance.

One preferred form of the invention is shown in the accompanying drawing, in which—

Figure 1 is a longitudinal vertical sectional view through a complete gear as assembled, in normal position, indicated by the line I, I, of Fig. 2.

Fig. 2 is a longitudinal horizontal section, indicated by the line II, II, of Fig. 1.

Fig. 3 is a cross-section indicated by the line III, III, of Fig. 1.

Fig. 4 is a horizontal section similar to Fig. 2, but showing the spring extended, as in buffing.

Fig. 5 is a detail perspective view of the spring detached.

Fig. 6 is a detail sectional view showing the use of a plural leaf spring.

In the drawings, 2 represents the draw-bar of a coupler connected with the front end portions of side members or bars 3, 3, by a transverse bolt or key 4, engaging holes 5 thereof.

Side bars 3 are mounted between the center sills 7, 7, upon transverse keys or bolts 8, 9, which in turn extend by their ends through slots 10, 10, and 11, 11, of the center sill 7.

Slots 10, 11, extend forwardly and backwardly beyond intervening reinforcing bearing portions 12 of the center sills, against which keys 8 and 9 bear, and which resists key 8 in buffing and key 9 in pulling, under the strain of the spring 6 in one direction or the other. Side bars 3 are likewise provided with slots 13, 13, and 14, 14, which extend forwardly and backwardly beyond intervening bearing terminals 15 at the rear portion of each slot.

Said slots 13, 14, by their inner terminals, also engage keys 8 and 9, bars 3 pulling key 8 forwardly in draw-bar pulling strains and pushing key 9 rearwardly in buffing.

As will be seen, slots 10, 11, 13, and 14 are of ample length to provide clearance for full movement of the keys.

The active shock-absorbing element of the gear is the spring 6, of one or more continuous bands of suitable resilient metal, as steel, and which is formed between its connecting terminals into an alternating, zigzag, sinuous, or other preferred form.

Under certain conditions even an ordinary spiral spring might be utilized, having terminal loops for engagement with the keys 8 and 9.

In the construction shown, the spring is made of a continuous piece of band steel having alternating diagonally disposed portions and so bent as to effect a high degree of resistance when the spring is stretched. The end portions of the spring are provided with key holes or sockets 16, 16, through which extend keys 8 and 9, respectively as shown, and which operate to exert a lengthening tension on the spring in opposite directions, under either pulling or draft strains.

Thus, in action, side members 3 are thrust backwardly by the draw-bar in buffing, carrying key 9 rearwardly away from engagement with the center sills, while key 8 continues to bear against the center sills, restraining the other end of spring 6 while key 9 carries it rearwardly.

In pulling, key 9 is resisted by the center sills and side members 3 carry key 8 forwardly, stretching the spring in the same way. Upon release of pressure in either direction the spring and the other members will at once return to normal position, it being understood that the spring is under a certain degree of tension when placed in position in the gear.

In Fig. 6, I illustrate the use of a plural leaf spring 6^a, composed of three or any desired number of leaves laid side by side and each engaging by its hole 16^a the forward key 8^a or the rear key in the same manner.

In such construction, the strength and resulting resistance of the spring member may be increased to any desired practicable degree.

The construction and operation of the gear will be readily understood from the foregoing description and it will be found to provide a simple, economic and highly efficient means for exerting great resistance to the usual shocks. It is very compact, easily constructed or repaired, and not liable to get out of order.

What I claim is:

1. In a gear, in combination with car framing, a pair of keys in slotted abutting engagement with the framing, a tension spring connecting said keys, and a drawbar having a pair of side bars in slotted engagement with said keys adapted to engage the inner portion of either of said keys to move it away from the other and from abutting engagement with the framing.

2. In a gear, in combination with car framing, a pair of keys in slotted engagement with the framing, a tension spring connecting said keys, and a pair of longitudinally slotted bars embracing said keys and operable to move either away from the other.

3. In a gear, in combination with car framing, a pair of keys in slotted engagement with the framing, a tension spring connecting said keys, a pair of longitudinally slotted bars embracing said keys and operable to move either away from the other, a draw-bar, and a transverse key connecting said bars therewith.

4. In a gear, in combination with car framing, a pair of keys in slotted engagement with the framing, a tension spring having its middle portion formed into a series of alternately bent diagonally disposed portions and connected to said keys by its terminals, a pair of longitudinally slotted bars embracing said keys, and a draw-bar connected to said bars.

5. In a gear, in combination with car framing having longitudinal perforating slots beyond intervening fixed abutments, a longitudinally movable frame provided with bearing portions between clearance openings, a pair of transverse keys extending at each side of said bearing portions through said openings extending through said slots and adapted to engage said abutments, and a continuously alternating spring having terminals connected with each of said keys.

6. In a gear, in combination with slotted sills, a pair of transverse keys extending therethrough, a tension spring connecting said keys by its terminals, a pair of side bars having slotted clearance engagement with said keys, and a draw-bar connected to said bars.

In testimony whereof I hereunto affix my signature.

JOHN F. COURSON.