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E. Y. SCOTT

COUPLING FOR TRACTORS

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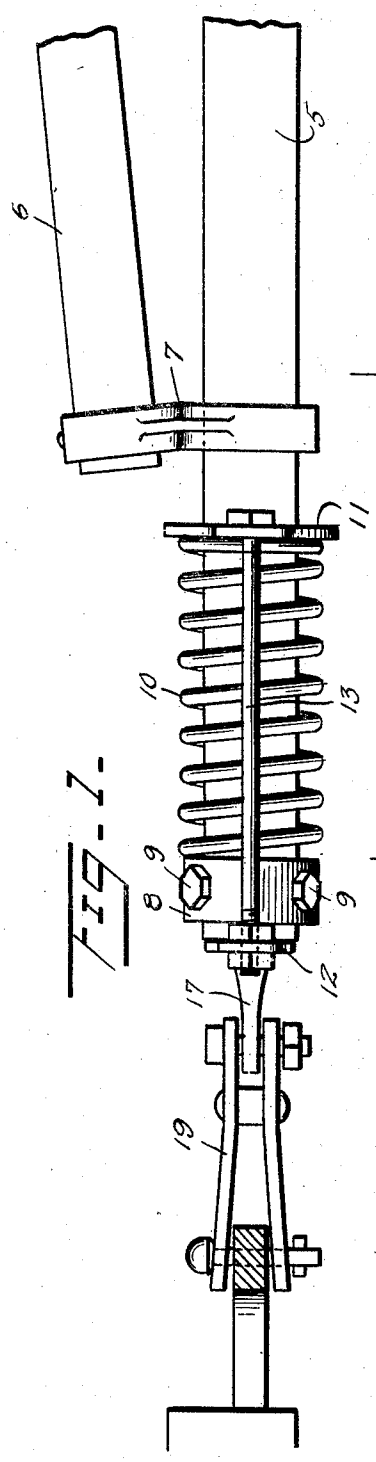

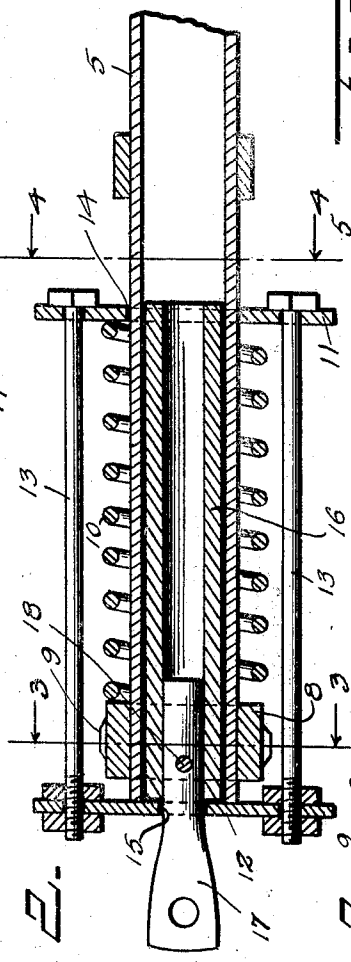

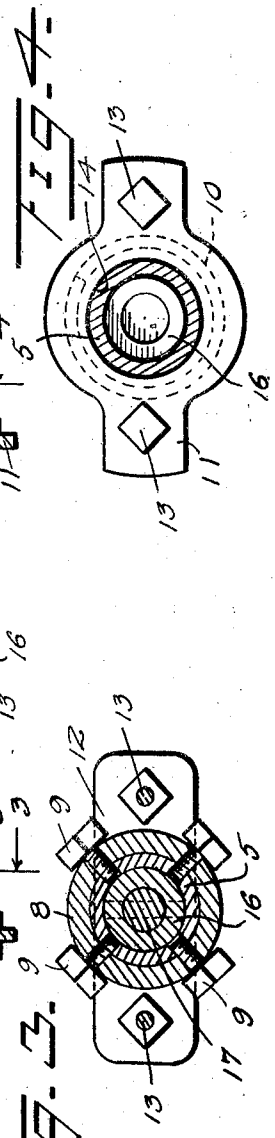

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UNITED STATES PATENT OFFICE.

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COUPLING FOR TRACTORS.

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This invention relates to couplings between a tractor and its load, and it has especial reference to a coupling for use between a tractor and a road grader or the like, where a cushioning action is desired to cause the absorption of strain and shock, due to the movement of the tractor if the movement of the load is interrupted. In using the term "load," applicant desires it to be understood as referring particularly to a road working machine, but it is applicable likewise for use in connection with the operation of plows, where the plows are apt to encounter obstructions such as rocks, stumps or the like.

It is a further object of this invention to produce a device which can be operated in conjunction with tongues of loads now in common use, and, in the present embodiment of the invention, a connection between the steering tongue and the draft tongue of a road working machine is illustrated.

It is a still further object of this invention to produce a coupling which will permit the tongue to partially rotate independently of the movement of the tractor, a condition which is of great utility and advantage, should the road working machine be tilted as it is when the wheels on one side are moving on higher ground than those of the wheels on the other side; and it is furthermore an object of this invention to produce a coupling having a cushioning action which may be regulated within predetermined bounds and which can be made more flexible or more rigid as the necessities of its use may require.

It is a still further object of this invention to produce a coupling of the character indicated which is comparatively inexpensive and which is efficient and satisfactory in use.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this application wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in elevation showing a fragment of a tractor hitch with a coupling embodying the invention applied thereto and associated with a load tongue;

Figure 2 illustrates an enlarged sectional view of the coupling;

Figure 3 illustrates a sectional view of the device on the line 3—3 of Fig. 2; and

Figure 4 illustrates a sectional view of the device on the line 4—4 of Fig. 2.

In these drawings, 5 denotes a member which is preferably tubular and it is adapted to fit on the end of a draft tongue of a load such as a road working machine, and 6 denotes the guiding tongue of a road working machine which is connected to the member 5 by any suitable clip 7. The inventor does not wish to be limited with respect to the means for connecting the tongue 6 and the tubular member 5, as expedients may be resorted to for accomplishing this result.

A collar 8 is secured externally of the tubular member 5 near the outer end thereof, and as the anchorage of this collar 8 to the tubular member should be relatively rigid and strong, they are secured together by a plurality of screws 9 threaded in coinciding apertures of the tubular member and collar.

A spring 10 encircles the tubular member and it has one end bearing against the collar, the said spring extending rearwardly on the tubular member. The length and strength of the spring 10 will be determined by the work required of it, and the dimensions of the spring, as well as the dimensions of parts of the device associated and coacting with it may be changed to suit particular requirements, and the inventor does not wish to be limited with respect to them.

A yoke is operatively associated with the tubular member and the spring, and, in the present embodiment of the invention, it comprises a follower plate 11, a lead plate 12, and connecting rods or bolts 13 secured in apertures of the two plates, as fully shown. The follower plate bears against the rear end of the spring 10 with the spring under such tension as to cause the lead plate to be held normally against the outer end of the tubular member 5. The aperture 14 of the follower plate is of a size to receive the tubular member, and the aperture 15 of the lead plate is of less diameter than that of the tubular member, and when the parts are assembled, the lead plate is held by the spring against the outer end of the tubular member.

A core or bushing 16 is located in the tubular member at the outer end thereof and it

is rotatable therein. The outer end of the core normally bears against the lead plate and a link or draw-bar 17 projects through the aperture of the lead plate into the core or bushing and it is secured to the said core or bushing in any suitable manner, as by a cross pin 18. The draw-bar with the bushing is rotatable in the tubular member and this affords a flexible connection between the draft rigging 19 of a tractor or the like and the tongue of the load, which permits the tongue to rotate or partially rotate independently of the movement of the tractor and it will, of course, permit the tractor to tilt without imparting strain to the tongue.

It will be apparent from an inspection of the drawing that as a pull is exerted on the draft bar, the core or bushing will be drawn into engagement with the plate 12, and through the rods 13 the follower plate will be pulled against the spring 10 and the spring will be compressed. Should the load encounter an obstruction and be temporarily arrested, the spring will yield to cushion the effect of the arrested load, as has been explained.

I claim:

1. In a coupling for tractors, a tubular member adapted to be attached to the tongue of a load, a spring encircling the tubular member near its end, an abutment for the outer end of the spring, a follower plate on the tubular member engaging the rear end of the spring, a lead plate, connections between the follower plate and the lead plate whereby the tension of the spring holds the lead plate in engagement with the outer end of the tubular member, an element within the tubular member bearing against the lead plate, and a draw-bar extending through the lead plate and connected to the last mentioned element.

2. In a coupling for tractors, a tubular member adapted to be attached to the tongue of a load, a spring encircling the tubular member near its end, a collar secured on the tubular member near its outer end and constituting an abutment for the outer end of the spring, a follower plate on the tubular member engaging the rear end of the spring, a lead plate in front of the tubular member, means for connecting the lead plate and the follower plate whereby tension of the spring holds the lead plate against the end of the tubular member, an element within the tubular member bearing against the lead plate, and a draw-bar extending through the lead plate and connected to the last mentioned element.

3. In a coupling for tractors, a tubular member adapted to be attached to the tongue of a load, a spring encircling the tubular member near its end, an abutment for the outer end of the spring, a follower plate on the tubular member engaging the rear end of the spring, a lead plate bearing against the outer end of the tubular member, connection between the follower plate and the lead plate of less length than the spring whereby the lead plate is held in engagement with the end of the tubular member, a core rotatable within the tubular member bearing against the lead plate, and a draw-bar extending through the lead plate and connected to the last mentioned member.

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