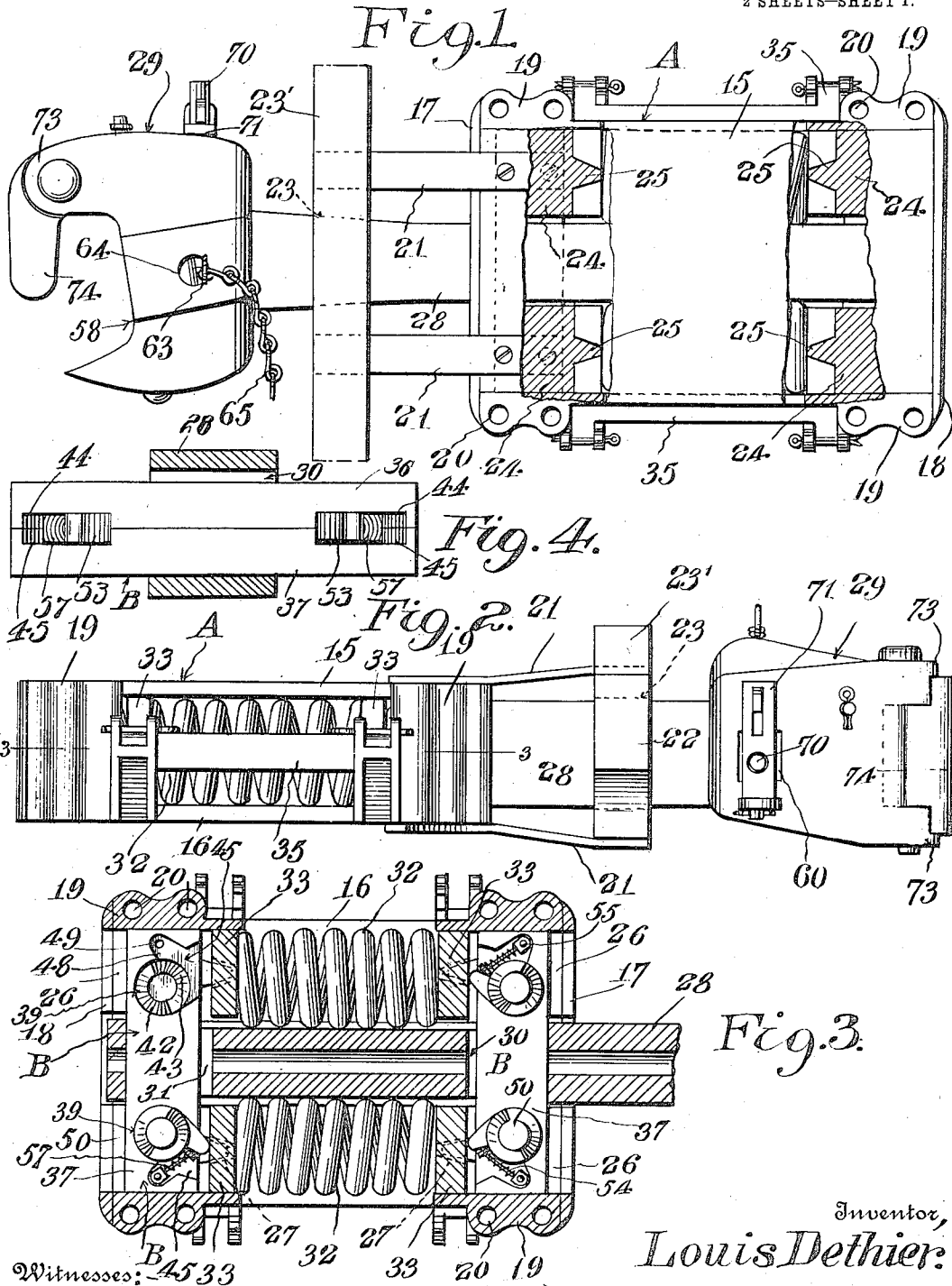


1,060,436.

Patented Apr. 29, 1913.

2 SHEETS—SHEET 1.



Witnesses: 4533

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2 SHEETS—SHEET 2.

Fig. 5.

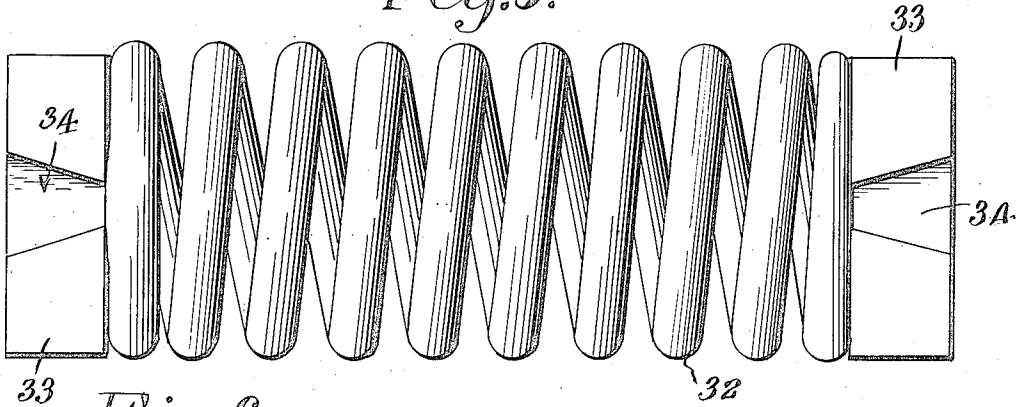


Fig. 6.

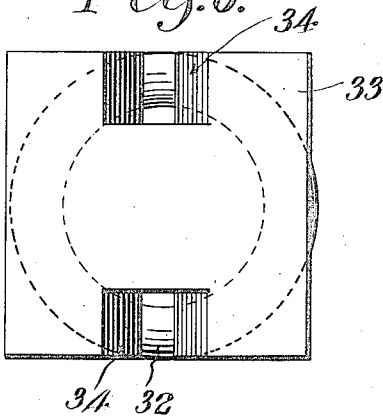


Fig. 8.

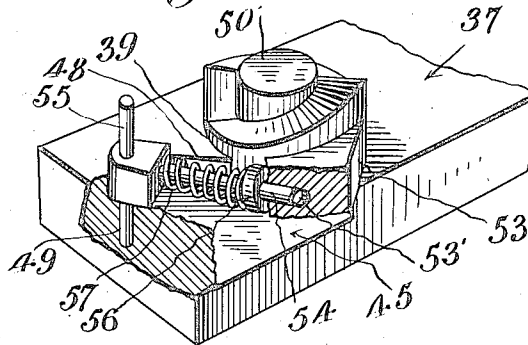


Fig. 7.

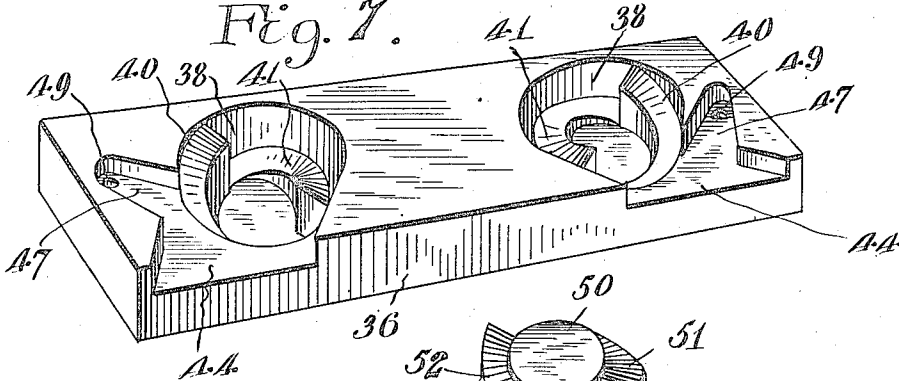
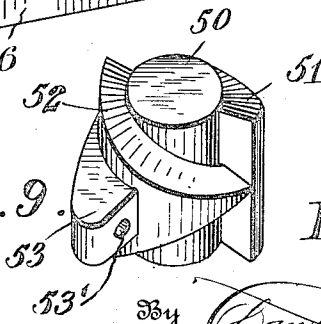


Fig. 9.



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# UNITED STATES PATENT OFFICE.

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## DRAFT-RIGGING.

1,060,436.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed February 12, 1912. Serial No. 676,978.

*To all whom it may concern:*

Be it known that I, LOUIS DETHIER, a citizen of the United States, residing at Mount Vernon, in the county of Knox, State of Ohio; have invented certain new and useful Improvements in Draft-Rigging; and I do hereby 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.

This invention relates to improvements in draft rigging.

The object of the invention resides in the provision of a draft rigging in which the draw head is yieldingly held against outward and inward movement by means of springs, and which includes further an improved construction whereby the springs may be easily disassociated with the coupler when broken and a new spring as easily applied.

A further object of the invention resides in the provision of a draft rigging which includes a pair of friction devices rendered active respectively by the inward and outward movements of the draw bar, and adapted during their activity to friction upon the casing of the coupler and thereby aid said springs in absorbing the jars incident to the use of the draft rigging and at the same time rendering the breakage of the spring less liable.

With the above 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 described and particularly pointed out in the appended claims.

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

Figure 1 is a top view of the draft rigging partly in section, Fig. 2, a side view of the draft rigging, Fig. 3, a section on the line 3—3 of Fig. 2, Fig. 4, a transverse section through the draw bar showing one of the friction devices carried thereby; Fig. 5, a plan view of one of the springs of the draft rigging with the follower blocks which engage the friction devices disposed in operative position at each end of the spring, Fig. 6, an end view of what is shown in Fig. 5, Fig. 7, a detail perspective view

looking at the inner side of the upper section of one of the friction devices, Fig. 8, a fragmental detail perspective view partly in section of the lower section of one of the frictioning devices with a frictioning cam in place, and Fig. 9, a detail perspective view of one of the frictioning cams of a friction device.

Referring to the drawings the draft rigging is shown as comprising a casing A formed of a top plate 15, a bottom plate 16 and front and rear plates 17 and 18 respectively connecting said top and bottom plates together. The top and bottom plates 15 and 16 are further connected together at each end by means of side posts 19 provided with vertical openings 20 which receive bolts by means of which the casing is secured to the car.

Supported from the casing A in spaced relation to the front plate 17 by means of straps 21 is a block 22 having an opening 23 therein in alinement with the longitudinal axis of the casing A. This block 22 is secured to the sill of the car, indicated at 23', and forms a bearing for the draw bar of the coupler to be hereinafter referred to.

Formed on the inner face of the top plate 15 at each corner of the latter respectively are inwardly directed bosses 24 and the inner transverse edges of these bosses 24 are each provided with a tapering extension 25. Likewise formed on the inner face of the bottom plate at each corner is an inwardly directed boss 26 and the inner transverse edges of these bosses 26 are each provided with a tapering extension 27. The inner side edges of the bosses 24 and 26 form guides for a draw bar 28, which draw bar also extends through the opening 23 in the block 22 and terminates at its outer end in a draw head 29. The draw bar 28 is provided at spaced points with transverse openings 30 and 31, the opening 31 being disposed adjacent the inner end of the draw bar while the opening 30 is disposed between the opening 31 and the draw head 29. Disposed in the openings 30 and 31 are corresponding oppositely disposed friction devices B.

Disposed on each side of the draw bar 28 is a coil spring 32 and the ends of each of these coil springs 32 engage follower blocks 33 said blocks being provided in their upper and lower edges with recesses 34 having tapering side walls and receiving re-

spectively the tapering extensions 25 and 27 of corresponding bosses 24 and 26. By reason of the reception of the extensions 25 and 27 by the recesses 34 the follower blocks 5 are held against movement transversely of the casing A but are at the same time capable of a limited movement longitudinally of said casing. The springs 32 are held against lateral disengagement from the casing A by means of keepers 35 which are removably 10 mounted respectively on each side of the casing between the posts 19. The manner of mounting these keepers is specifically described in U. S. Letters Patent 991,835 granted to me May 9, 1911 and will therefore not be referred to in detail herein, it being sufficient to say that when said keepers 35 are secured in place the springs 32 are held against removal laterally of the 15 casing while at the same time the condition of said springs may be at all times observed. On the other hand when the keepers 35 are removed the springs 32 may be withdrawn with facility laterally of the casing A.

By the construction so far described it will be apparent that when the draw bar 29 is drawn outwardly of the casing A against the influence of the springs 32 the friction device B disposed in the opening 31 will 25 press against the follower blocks 33 at the inner end of the casing B and move said follower blocks slightly inward of the casing A, the pressure exerted upon the follower blocks 33 serving to automatically operate said friction device and cause the latter to bind upon the inner faces of the 30 bosses 24 and 26 between which it is disposed. This outward movement of the draw bar will also, as a result of the compression of the springs 32 cause the follower blocks at the forward end of the casing A to move against the inner transverse edge of the bosses 24 and 26 at the forward end of the casing A, said bosses limiting the movement 40 of the follower block under such conditions. It will therefore be obvious that when the follower blocks at the forward end of the casing A abut the inner transverse edges of the bosses 24 and 26 at the outer end of the casing A and the outward movement of the 45 draw bar 28 is continued the friction device B in the opening 30 will move out of engagement with the adjacent follower blocks. When the draw bar 28 is moved inwardly of the casing A the conditions just described are reversed; the friction device mounted in the opening 30 being rendered active, while the friction device mounted in the opening 50 31 becomes inactive.

Each of the friction devices B is shown as comprising corresponding upper and lower sections 36 and 37 respectively and the adjacent faces of these sections on each side of the draw bar 28 are provided with mating 60 recesses 38 and 39 respectively. Formed

within each of the recesses 38 are concentrically disposed cams 40 and 41, while corresponding cams 42 and 43 are formed in the recesses 39. Each of the recesses 38 have laterally directed mouths 44 opening 70 through the inner transverse edge of the section 36, while each of the recesses 39 have laterally directed mouths 45 opening through the inner transverse edge of the section 37 and mating with the mouths 44 respectively 75 of the recesses 38. The outer wall of each of these mouths 44 is provided at its inner end with a recess 47. Likewise the outer wall of each mouth 45 is interrupted by a recess 48 disposed in the upper face of the section 37 and mating with respective recesses 47. The recesses 47 and 48 also have their rear walls provided respectively with vertically alined recesses 49. 80

Disposed in each of the mating recesses 38 and 39 is a stud 50 which has formed therewith cams 51 and 52 each of which latter includes active upper and lower faces. The upper and lower faces of the cam 51 co-operate respectively with the cams 40 and 42, while the upper and lower faces of the cam 52 co-operate respectively with the cams 41 and 43. 85 90

Projecting laterally from each stud 50 is a finger 53 disposed in the mating mouths 44 and 45, and having the side thereof adjacent mating recesses 47 and 48 provided with an opening 53' which receives one end of a rod 54 disposed in the mating recesses 47 and 48 and having its inner end secured to the sections 36 and 37 by means of a pin 55 disposed in the vertically alined recesses 49 and passing through one end of the rod 54. 95 100

Slidably mounted upon the rod 54 is a collar 56 and encircling said rod between said collar and the inner end of the rod is a spring 57 which operates to normally hold the finger 53 against the inner walls of the mating mouths 44 and 45. These fingers 53 normally project beyond the inner transverse edges of the sections 36 and 37 and are adapted to be engaged by respective follower blocks 33 under conditions heretofore mentioned to effect the rotation of the studs 50 against the influence of the springs 57. The rotation of these studs will cause the cams of the stud and the cams carried by the sections to co-operate so as to move said sections away from each other and cause 105 110 115 120 same to bind and friction against the top and bottom faces of respective bosses 24 and 26. This frictioning of the sections 36 and 37 will serve to absorb shock and jar incident to the use of the coupler and thereby relieve the springs 32 of undue strain and as a result increase the life of the latter and enhance the efficiency of the draft rigging.

What is claimed is:

1. In a draft rigging, a casing, a draw 130

bar mounted for reciprocation in said casing, a friction device mounted to move directly into engagement with the casing to effect a frictional connection between the  
5 draw bar and casing, a rotatable member cooperating with the friction device to move the latter into engagement with the casing, and means for rotating said member during the reciprocation of the draw bar.

10 2. In a draft rigging, a casing, a draw bar mounted for reciprocation in said casing and yieldingly held against movement, a pair of normally inactive friction devices carried by said draw bar and adapted to  
15 effect respectively a frictional connection be-

tween the draw bar and casing, each of said frictional devices comprising a pair of superimposed sections, rotatable means carried by said sections adapted to move the  
latter away from each other and into en- 20 gagement with the casing, and means for effecting the operation of the rotatable means of one of said friction devices during each movement of the draw bar.

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

LOUIS DETHIER.

Witnesses:

Mrs. JACK NASH,  
WM. WELSH.