

Sept. 4, 1928.

1,682,818

E. H. WALKER

DRAFT GEAR

Filed Jan. 18, 1923

Fig. 1.

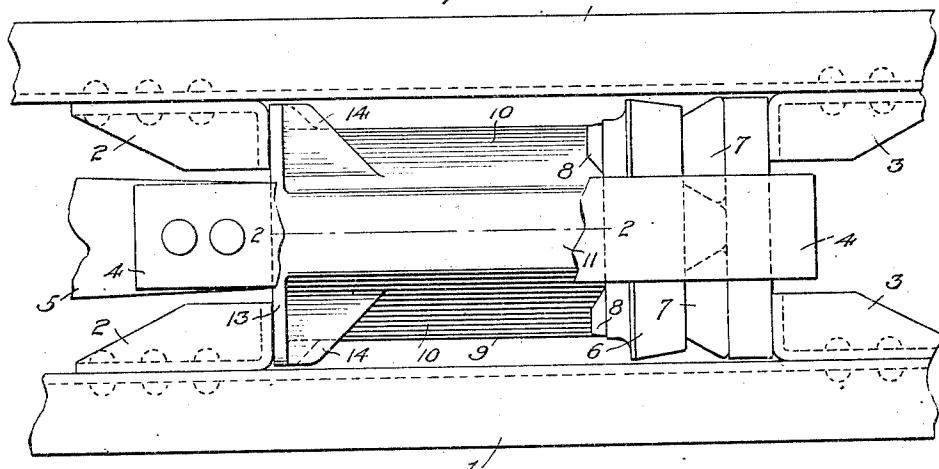


Fig. 2

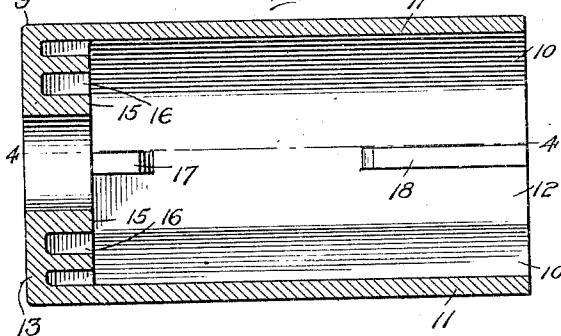
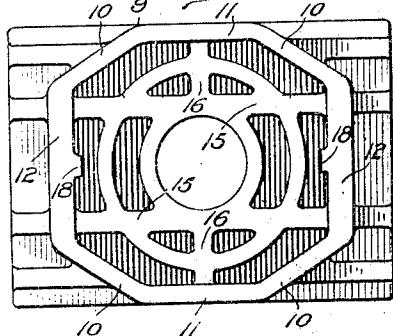


Fig. 3



13 14

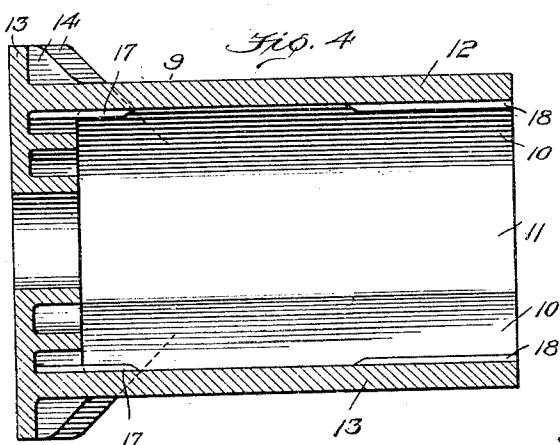
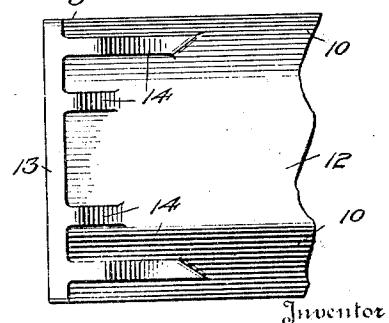


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DRAFT GEAR.

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My invention relates to friction draft gear and more especially to an improved construction of spring barrel and follower block whereby the loads imparted to the friction 5 head or box are transmitted through the barrel directly to the draft lugs.

One of the principal features of the invention is to provide a cast steel spring barrel formed at its closed end with an integral 10 follower block, said barrel preferably having a greater transverse dimension in one direction than in the other and thickened in parts to afford better support for the well known Sessions friction head or box.

15 A further object of my invention resides in the provision of a strong, durable and inexpensive barrel or casing of comparatively light weight, the same being preferably cast octagonal in shape with portions of the barrel wall adjacent the center sills increased in cross sectional area to provide columns of greater strength value capable of effectively transmitting loads directly to the draft lugs, said columns being located in the wider portion 20 of the barrel and disposed beneath the wider portion of the friction head whereby strains incident to the operation of the friction device under service conditions are effectively resisted.

30 A still further object of the invention is to provide a spring barrel in which the follower block portion is reinforced by ribs or webs which are arranged to provide a beam action between the lugs carried by the draft sills, said ribbing also forming a spring seat portion in the body of the barrel.

Another feature of the invention is to provide bracing means for the follower block on the exterior of the barrel, and guide means 40 within the barrel at the wider portions thereof adapted to guide the spring and spring follower in the barrel.

The invention further consists in the combination, arrangement and construction of the several parts hereinafter described and 45 pointed out in the claims.

In the drawings:

Figure 1 is a plan view illustrating an embodiment of my invention associated with 50 the friction shock absorbing devices included within the railway draft rigging shown.

Figure 2 is a vertical longitudinal sectional view through a barrel constructed in 55 accordance with my present invention.

Figure 3 is a view looking from the open end of the barrel into the interior thereof.

Figure 4 is a horizontal longitudinal sectional view of the barrel on the line 4—4 of Figure 2.

Figure 5 is a detail side view of the follower end of the barrel illustrating the ribs bracing or reinforcing the follower block portions.

Referring to the drawings wherein similar reference characters designate corresponding parts in the several views, there is shown a railway draft rigging including center sills or draft sills 1, each of said sills being provided with forward stop members or draft 65 lugs 2 and rear stop members or lugs 3 between which is arranged the friction draft gear. A yoke 4 of the vertical type is arranged between the center sills, the coupler 70 5 being connected to the forward end of the 75 yoke in any desired manner.

The friction shock absorbing device illustrated is of the Sessions type and comprises a friction head or box 6 having contained therein a plurality of friction elements, indicated generally by the numeral 7 in Figure 1. The friction head may be of the usual construction and is provided with rearwardly extending projections 8 adapted to engage one end of my improved barrel 9 80 with which the friction head contacts and in which is contained the cushioning device of 85 the gear.

The present construction of spring barrel includes in addition to the follower block 90 portion to be presently described, a plurality of side wall portions extending longitudinally of the barrel, said side wall portions being arranged to form a multi-sided shell member having a greater transverse dimension in one direction than in the other. The barrel is arranged with the longer transverse dimension horizontal, and the shorter transverse dimension vertical, as clearly shown in Figure 3. In the present embodiment of the barrel, the several wall portions are arranged to form an octagonally shaped casing, the diagonal portions 10 of the wall being arranged to unite the horizontally disposed wall portions 11 and the vertically arranged wall portions 12.

100 Portions of the side walls of the barrel are increased in cross sectional area, said portions being preferably located in the widest part of the barrel and relatively 105 110

closely spaced from the center sills. The thickened portions preferably comprise the vertically disposed side wall portions 12, said thickened portions extending the full 5 length of the barrel between the friction head or box and the contacting portions of the yoke, thereby providing greater column strength for resisting the strains to which the barrel is subjected under service conditions. The thickened portions of the barrel are also adapted to overlie the front or draft lugs 2 and the rear stop members or lugs 3, this arrangement of the increased 10 cross sectional areas provided in the barrel 15 acting to materially reduce the shear strains of the associated parts included within the draft rigging. In addition, the location of the increased cross sectional area of metal at the widest portion of the friction head 20 serves to provide a very strong support for said head at points which receive great stress. The thickened portions of the barrel wall are, in my present construction, disposed substantially on the horizontal axis 25 of the barrel, substantial portions of the thickened parts extending above and below said horizontal axis.

The barrel is provided at its forward end with an integral follower block 13, and at its 30 opposite end is open for purposes of engaging the adjacent face or edge of the friction head or box 6. The follower block 13 forms the base or closed end wall of the barrel, said follower being constructed of standard A. R. 35 A. measurements so that the relative thickness of the end wall substantially equals that of the usual follower for which my present combined construction is substituted. In practice the overall dimension of the combined spring barrel and follower equals that 40 of the standard length barrel and independent follower block now used in railway draft rigging of the type herein disclosed.

The follower block is cast integral with 45 the side wall portions of the barrel, as clearly shown in Figure 4, portions of said block extending beyond the wider and thickened side wall portions of the barrel to provide projections adapted to engage the draft lugs 2, as best shown in Figure 4. The projecting portions of the follower block are preferably braced or reinforced by means of a plurality of webs 14 which unite the 50 side walls of the barrel with the follower, 55 said webs 14 extending rearwardly of the follower and having portions paralleling the side walls of the barrel. Some of the webs are also preferably arranged to extend upon both sides of the vertical plane passing 60 through the thickened column portions of the barrel, and all of said reinforcing webs are adapted to overlie the draft lugs, thereby greatly adding to the strength of the follower at these points.

65 The interior of the barrel and particularly

the closed or follower end thereof is reinforced with a series of advantageously disposed ribs, said ribs being arranged to provide reinforcing members 15 which act in the nature of a beam between the draft lugs 70 on the sills. Circular ribbing may also be provided, said ribbing intersecting the reinforcing members 15 and forming seats for the cushioning springs. A vertically disposed reinforcing rib 16 may be provided, 75 said rib intersecting the annular ribbing forming the spring seat.

Guide ribs are preferably provided in the wider portion of the barrel to support and maintain the springs centrally thereof for 80 cooperation with the other parts of the gear. The guide ribs 17 are arranged at the follower end of the barrel and the guide ribs indicated by the numeral 18 are arranged at the open end of the barrel, said last named 85 ribs being of sufficient length to allow for all spring compression and effectively guide the spring under all conditions.

An opening is provided in the follower end of the barrel, said opening serving to 90 lighten the weight of the casting without deleteriously reducing its strength value and also acting to support the core used in molding the combined spring barrel and follower.

A casting constructed in accordance with 95 my present invention acts to effectively resist strains and stresses incident to service conditions, it being observed that the heavy loads imparted to the gear are transmitted from the friction box or head through the 100 barrel and particularly the thickened portions thereof adjacent the center sills, so that the thrusts are directly imparted to the draft lugs. It is to be understood from the foregoing description that the terms used are 105 to be taken in their descriptive sense and not in their limiting sense.

I claim:

1. In a draft rigging, the combination with a separable friction head, of a spring 110 barrel for cooperating with said head, said barrel comprising an octagonal casting having a pair of side walls engaging said head beyond said friction faces, said side walls being of greater thickness than the adjacent 115 walls of said casting, and means integral with said walls for closing one end of said barrel.

2. In a draft rigging, the combination with a separable friction head, of a combined 120 cast steel barrel and follower block, portions of the side walls of said barrel being thickened to provide columns of increased cross-sectional area arranged for engaging within and supporting said head, and webs 125 for integrally connecting the exterior faces of said side wall portions to said follower block.

3. In a draft rigging, the combination with a separable friction head having an 130

opening at one end substantially rectangular in outline and an opening at the opposite end substantially octagonal in outline, the side walls of the rectangular end of said head being adapted to form converging friction faces, and a spring barrel for co-operating with said head, said barrel being substantially octagonal in cross-section, the side walls thereof positioned in rear of said friction faces being of greater thickness than the walls adjacent thereto to provide columns of increased cross-sectional area to support said friction faces, a follower block disposed at the opposite end of said barrel, and means integral with said walls for connecting said follower block and barrel.

4. In a draft rigging, the combination with center sills, of a coupler and yoke, stop members connected to said sills and extending inwardly therefrom, a shock absorbing mechanism involving a separable friction head having a pair of converging friction faces, said head having its greatest dimension arranged parallel to the planes of said yoke arms and said friction faces at right angles to the planes of said arms, a spring barrel cooperating with said head, said barrel having a pair of opposed side walls positioned in rear of said friction faces and adapted respectively to overlie the inwardly projecting portions of said stops, a follower interposed between a pair of said stops and the adjacent ends of said side walls, and means comprising ribs projecting from the opposite faces of said side walls for reinforcing the latter, some of said ribs serving to integrally connect said side walls and follower.

5. In a draft rigging, the combination with a separable friction head, the side walls of which form friction faces, of a spring barrel cooperating with said head, said barrel being octagonal in cross section, the opposite walls thereof positioned adjacent said friction faces being of greater thickness than the walls joining therewith to provide columns of increased cross sectional area supporting said friction faces, a follower block formed integral with the opposite end of said barrel, and integral ribs bracing said follower with respect to said barrel.

6. In a draft rigging, the combination with center sills, of a coupler and yoke, stop members connected to said sills and extend-

ing inwardly therefrom, a cushioning mechanism comprising a separable friction head having a pair of friction faces, a spring barrel cooperating with said head, said barrel having a pair of side walls positioned adjacent said friction faces and adapted, respectively, to overlie the inwardly projecting portions of said stops, a follower interposed between said stops and the adjacent ends of said side walls, and ribs projecting from the opposite faces of said side walls for reinforcing the latter, certain of said ribs serving to strengthen the connection between the side walls and follower.

7. A spring barrel for draft gear octagonal in cross section and formed with opposite side walls made thicker than the walls adjacent thereto to provide columns of increased cross sectional area for supporting a cooperating friction head, a follower block formed integral with the opposite end of said barrel, and means for strengthening the connection between said barrel and block.

8. A spring barrel for railway draft gear octagonal in cross section and having one end open and its other end closed, the barrel being of uniform dimensions along every line of transverse section, the closed end being provided interiorly of the barrel with a plurality of reinforcing webs and being formed exteriorly of the barrel with lateral projections having parallel edges and defining a follower, and reinforcing webs at the juncture of the lateral extensions with the barrel, said last named webs merging into the walls of the barrel, certain of the last named webs merging into the side walls opposite the first named webs whereby said side walls will have the maximum reinforcement.

9. A spring barrel for draft gear having opposite side walls made thicker than the walls adjacent thereto to provide columns of increased cross sectional area for supporting a cooperating friction head, one end of the barrel being closed by an end wall provided at its inner face with reinforcing webs merging into said side walls to reinforce the latter, said side walls being additionally provided with interiorly arranged ribs serving as guide means for a cushioning device and further serving to reinforce said side walls.

In testimony whereof I affix my signature.

EDMUND H. WALKER.