Sept. 4, 1928. 1,682,817

E. H. WALKER

DRAFT GEAR

Filed Jan. 18, 1923

Fig. 1

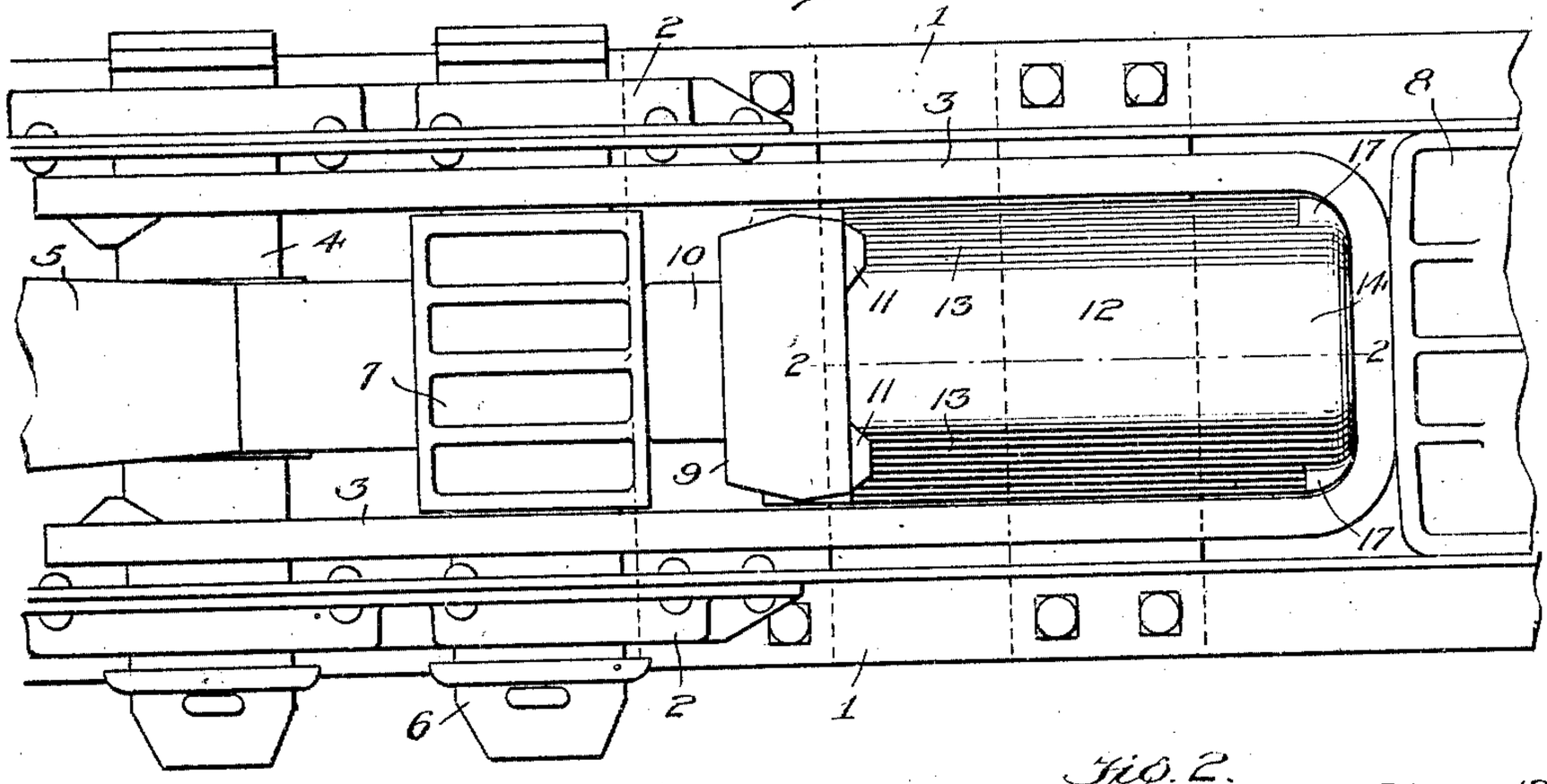


Fig. 2.

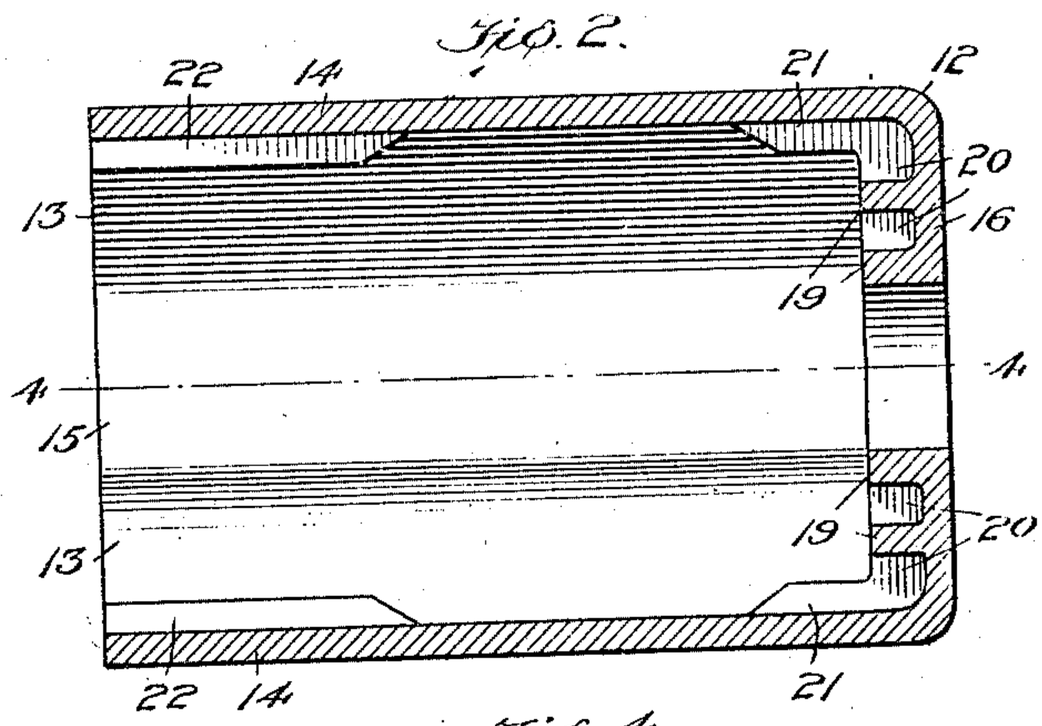


Fig. 3

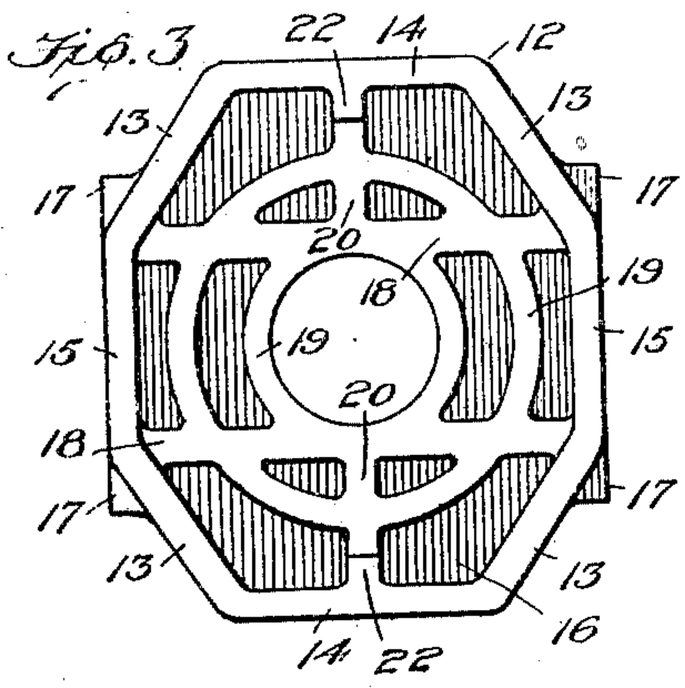


Fig. 4

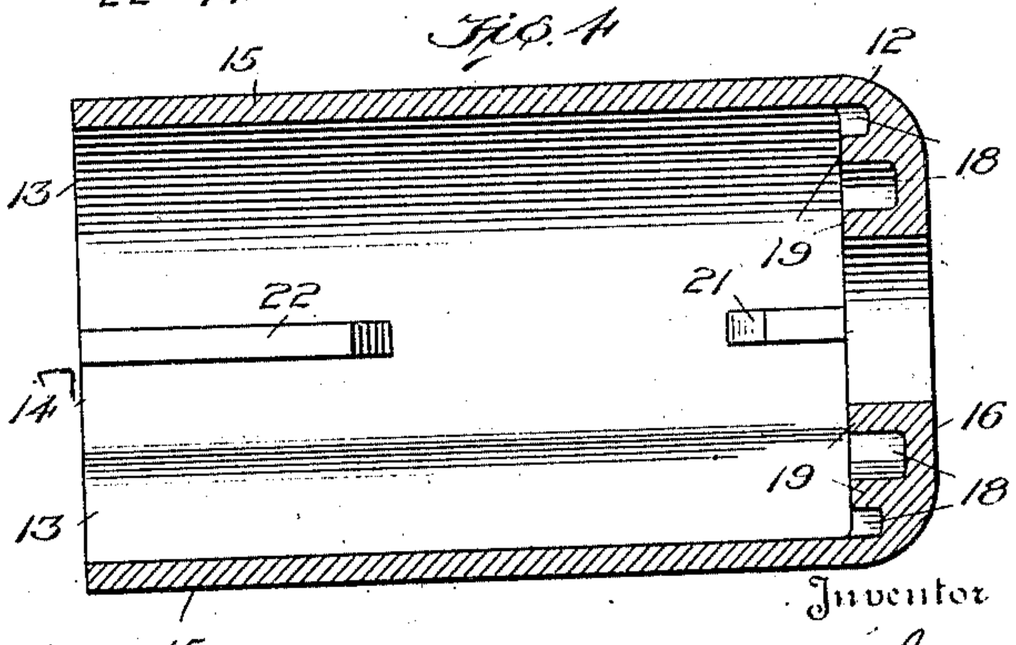
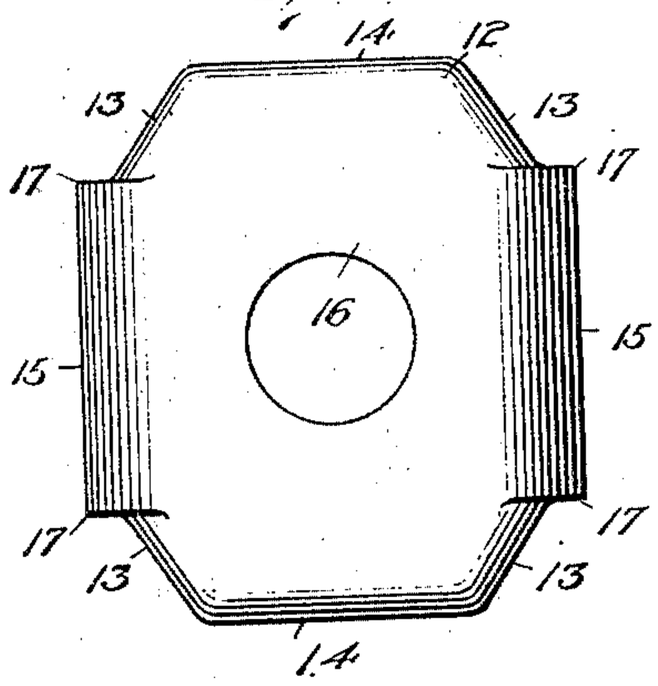


Fig. 5



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UNITED STATES PATENT OFFICE.

EDMUND H. WALKER, OF NEW YORK, N. Y.

DRAFT GEAR.

Application filed January 18, 1923. Serial No. 613,356.

My invention relates to friction draft gear and involves the production of an improved spring barrel for use with attachments of the Farlow type.

An object of the invention is to provide a barrel or casing of novel shape with a greater transverse dimension in one direction than in the other and relatively thickened in parts to afford better support for the well known Sessions friction head or box, said barrel being arranged with its greater dimension disposed beneath the wider portion of the friction head whereby the thickened parts of the barrel serve to effectively resist both transverse and longitudinal strains imparted to the barrel under service conditions.

The invention has for another object the provision of a cast steel barrel for friction draft gear, said barrel being formed with a plurality of side wall portions, some of said portions being increased in thickness and arranged to serve as columns extending from the wider portion of the barrel under the extreme edges of the friction head, and back to the yoke contacting surfaces, said column thicknesses being preferably disposed along the narrower sides of the barrel.

A further object of my invention is to provide a strong, durable and inexpensive spring barrel of comparative light weight, the same being cast octagonal in shape with the diagonally disposed portions of the barrel walls being increased in cross sectional area to provide a pair of columns of great strength value relatively close to each center sill, thereby providing complete contact between and support for, the barrel and friction head.

A still further object of my invention is to provide a closed end barrel with external corner portions arranged to fit the radii of a horizontal yoke and having a series of internal reinforcing ribs arranged in said end, some of said ribs being disposed to form a plurality of transverse strengthening members or webs which extend across the barrel in the direction of the load application upon the yoke, and other of said ribs being annularly arranged to form seats for the usual inner and outer springs.

A still further object of the invention consists in providing guide and reinforcing ribs within the barrel at both the open and closed ends thereof, said ribs acting to guide the spring and front spring follower in the barrel, and being located at points where the barrel is wider than the external diameter of the spring.

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

In the drawings wherein similar reference characters designate corresponding parts in the several views:

Figure 1 is a plan view of the railway draft rigging showing my improved barrel applied to the friction draft gear mechanism forming a part of said draft rigging.

Figure 2 is a vertical longitudinal sectional view through a spring barrel constructed in 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 an elevation of the barrel viewed from the closed end thereof.

Referring to the drawing, I have shown my invention embodied within a draft rigging of the two-key Farlow type. The center sills or draft sills are indicated by the numeral 1 and are each provided with cheek plates 2, said sills and cheek plates being suitably slotted to permit the relative movements of the keys in the usual manner. Positioned between the sills is the horizontal yoke 3, the forward ends of the yoke arms being slotted to receive a key 4 which connects the coupler 5 with said yoke, and also extends into the alined slots in the sills and cheek plates. Another key 6 extends through the second series of slots in the sills and cheek plates, said second named key also passing through slots provided in the yoke arms and the follower block 7 interposed between the butt of the coupler and the friction device. A rear stop member or back stop 8 is provided with which the rear of the yoke contacts.

The friction device shown is of the Sessions type and comprises a friction head or box 9 having contained therein a plurality of friction elements indicated generally by the numeral 10 in Figure 1. The friction head may be of the usual construction and is provided with rearwardly extending pro-

jections 11 adapted to engage the forward end of my improved barrel 12 with which the friction head contacts and in which is contained the cushioning device of the gear.

Referring to Figures 3 to 5, the present construction of spring barrel or casing comprises 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, that is to say, two dimensions arranged at right angles to each other and passing through the longitudinal center of the barrel, are of unequal length. The barrel is arranged with the longer transverse dimension vertical and the shorter transverse dimension horizontal, as clearly shown in Figures 3 and 5. In my present embodiment of multi-sided barrel, I have arranged the several wall portions to form an octagonally shaped shell or casing, the diagonal portions 13 of the wall being arranged to unite the horizontally disposed wall portions 14 and the vertically disposed wall portions 15.

Portions of the side walls of the barrel are increased in cross sectional area, said portions being shown herein as the diagonal or angularly arranged side wall portions 13. These increased or thickened areas of the barrel are preferably spaced apart and located advantageously between the friction head 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. In addition, the location of the increased area near the outer ends of the widest portions of the friction head serves to provide a very strong support for said head at points which receive great stress.

The barrel is open at its forward end and contacts the rear face or edge of the friction head or box, and is formed at its other end with a substantially closed wall 16. The forming of the closed bottom integral with the side wall portions of the barrel provides a simple construction, the standard A. R. A. measurements being followed so that the relative thickness of the closed end wall equals that of the usual follower for which my present construction is substituted. The end wall 16 is united with the side wall portions of the barrel and more particularly the opposite vertically disposed portions 15 thereof, the corners at the junctions of said portions being rounded or curved to engage the curves of the corner bends of the yoke, as shown in Figure 1. The opposite horizontally disposed side wall portions 14 are also united with the closed bottom or end wall of the barrel, the corners at the junctions of said portions being rounded but on different and less radii, as shown in Figure 2. The end wall 16 is preferably formed with extensions 17, said extensions being located at the junctions of the diagonal wall portions 13 with the vertical wall portions 15 and arranged to form a maximum seat area for the yoke.

The interior of the barrel and particularly the closed end wall portion 16 is reinforced with a series of advantageously disposed ribs, said ribs being arranged to provide at least two transversely extending reinforcing members 18 suitably intersected by annularly arranged ribs 19, which latter form seats for the cushioning springs. A vertical reinforcing web 20, which also intersects the annular ribbing, may be provided, as shown in Figure 3. Guide ribs are preferably provided in the wider portion of the barrel to support and maintain the springs centrally thereof for cooperation with the other parts of the gear. The guide ribs shown at 21 are located at the rear of the barrel adjacent the end wall and the guide ribs indicated at 22 are arranged at the forward end of the barrel, said forwardly arranged ribs being of sufficient length to allow for all spring compression and effectively guide the spring at all times.

The opening in the end wall 16 of the barrel serves to lighten the casting without deleteriously reducing its strength value and also aids in supporting the core used in molding the barrel.

In the foregoing description of the present embodiment of my invention, it is to be understood that the terms are to be taken in their descriptive sense and not in their limiting sense.

I claim:

1. In a draft rigging, the combination with the draft sills, of a horizontally disposed yoke slidably connected thereto, means engaging the closed end of said yoke to limit movement thereof in one direction, cushioning mechanism within said yoke including a spring barrel, said barrel having a closed end adapted to conform to and fit within the closed end of said yoke, and means for reinforcing the closed end of said barrel, said means including a plurality of circularly arranged ribs.

2. In a draft rigging, the combination with the draft sills, of a horizontally disposed yoke slidably connected thereto, means connecting the sills and engaging the closed end of said yoke to limit the movement thereof in one direction, cushioning mechanism within said yoke, said mechanism including a friction head and a spring barrel, said barrel having a closed end adapted to conform to and fit within the closed end of the said yoke, and means for reinforcing the closed end of said barrel, said means comprising transversely extending ribs and a plurality of circularly arranged ribs.

3. In a draft rigging, the combination with the draft sills, of a horizontally disposed yoke slidably connected thereto, means engaging the closed end of said yoke to limit the movement thereof in one direction, cushioning mechanism within said yoke, said mechanism comprising a friction head and a spring barrel interposed between said head and the closed end of said yoke, said spring barrel having a pair of side walls arranged substantially parallel to said yoke arms, and a pair of walls at right angles thereto, said last named pair having reinforcing longitudinal ribs on their inner faces adjacent the opposite ends thereof, and means for closing the end of said barrel adjacent the closed end of the yoke, the ribs at the opposite ends having their adjacent ends spaced apart.

4. In a draft rigging, the combination with the draft sills, of a horizontally disposed yoke slidably connected thereto, means engaging the closed end of said yoke to limit movement thereof in one direction, cushioning mechanism within said yoke including a friction head and a spring barrel interposed between the same and the closed end of the yoke, said spring barrel having side walls and a closed end, and reinforcing means for the closed end including a plurality of concentric circular ribs and a plurality of transverse ribs intersecting the circular ribs and connected with the sides of the barrel.

5. A spring barrel for friction draft gear formed with an end wall, side walls and top and bottom walls, the distance between the top and bottom walls being greater than that between the side walls and said top and bottom walls being provided with combined reinforcing and spring guiding ribs adjacent the open end of the barrel and the end wall thereof, said ribs being sufficiently long to allow for spring compression in the barrel and the confronting edges thereof being spaced to correspond with the spacing between the side walls.

6. A spring barrel for friction draft gear formed with top, bottom and side walls and an end wall, the side walls being more closely spaced than the top and bottom walls, and the top and bottom walls being provided with combined reinforcing spring guiding ribs adjacent both ends, said ribs at the closed end merging into said end wall, and the confronting edges of the ribs being spaced to correspond with the spacing between the side walls of the barrel.

7. A spring barrel for friction draft gear formed with an end wall closing the rear portion of said barrel, side walls, top and bottom walls and inclined walls joining said top and bottom walls with said side walls, the outer surface of said end wall being curved at the sides thereof to fit the U-shaped portion of a cooperating yoke and provided with extensions from the side walls thereof beyond the intersections with the inclined walls to increase the bearing area presented to the yoke.

8. A spring barrel for friction draft gear formed with top, bottom and side walls and closed at one end by an end wall, said end wall being formed for cooperation with a horizontal yoke and reinforced by substantially horizontal ribs extending thereacross on the inner surface thereof adjacent the upper and lower edges, respectively, of the bearing surface provided for said yoke.

9. A spring barrel for friction draft gear formed with top, bottom and side walls and closed at one end by an end wall integral with said top, bottom and side walls, said end wall being formed to seat a plurality of coaxially arranged springs on the inner surface thereof, and those portions thereof adapted for engagement with said springs being reinforced by concentric annular ribs.

10. A spring barrel for friction draft gear octagonal in cross section and comprising top, bottom and side walls joined by longitudinally disposed diagonal wall portions, one end of said barrel being closed by an end wall, said end wall being shaped to conform with the inner surface of a cooperating yoke and being increased in depth for the full width of the spring barrel by extensions from the side walls beyond the intersections of the diagonal walls therewith.

11. A spring barrel for draft gear having side walls and top and bottom walls connected by inclined portions, said inclined portions being of greater cross sectional area than the side walls and top and bottom walls to provide additional strength for resisting strains transmitted by a friction head having portions engaging said inclined portions, and an integral end wall for engagement within a yoke.

12. A spring barrel for draft gear having side walls and top and bottom walls, said side walls having inclined extensions therefrom joining with the top and bottom walls, said extensions being increased in cross sectional area, and all of said walls joined integrally with a rear wall for closing the end of said barrel, said end wall being reinforced by vertical ribs extending therealong and continuing along the top and bottom walls, respectively, to form spring guiding means.

In testimony whereof I affix my signature.

EDMUND H. WALKER.