No. 862,910. PATENTED AUG. 13, 1907.

J. J. HENNESSEY & P. N. MOORE.

FRICTION SPRING DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED APR. 25, 1907.

2 SHEETS—SHEET 1.

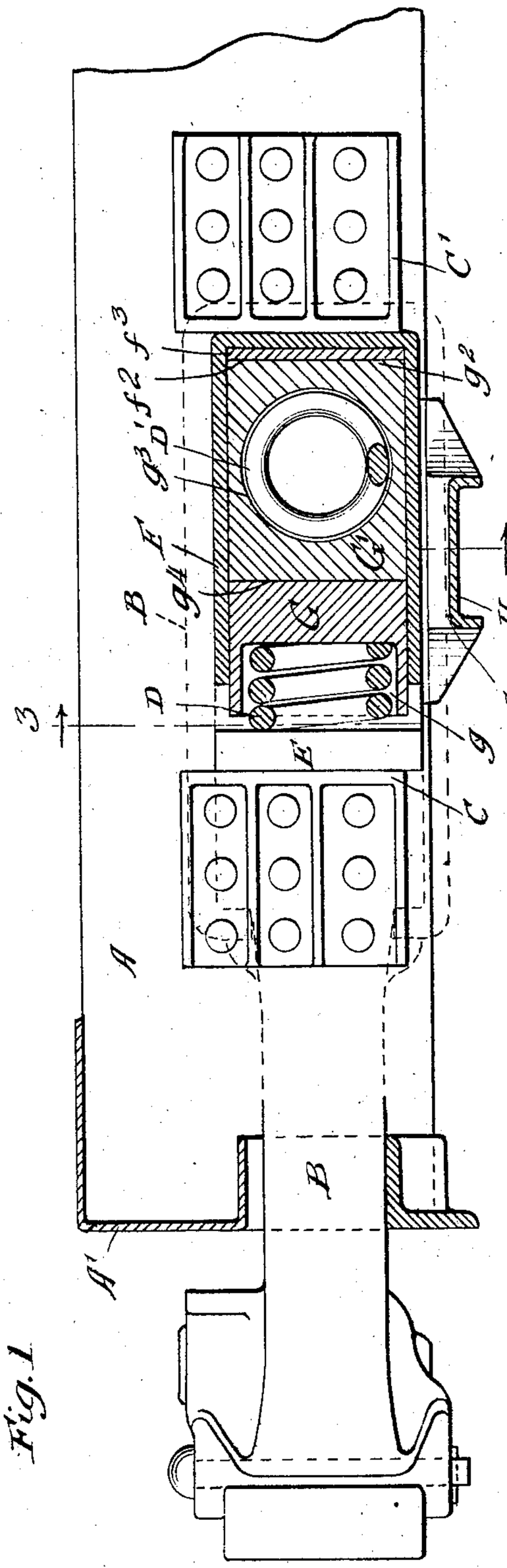

Fig. 1

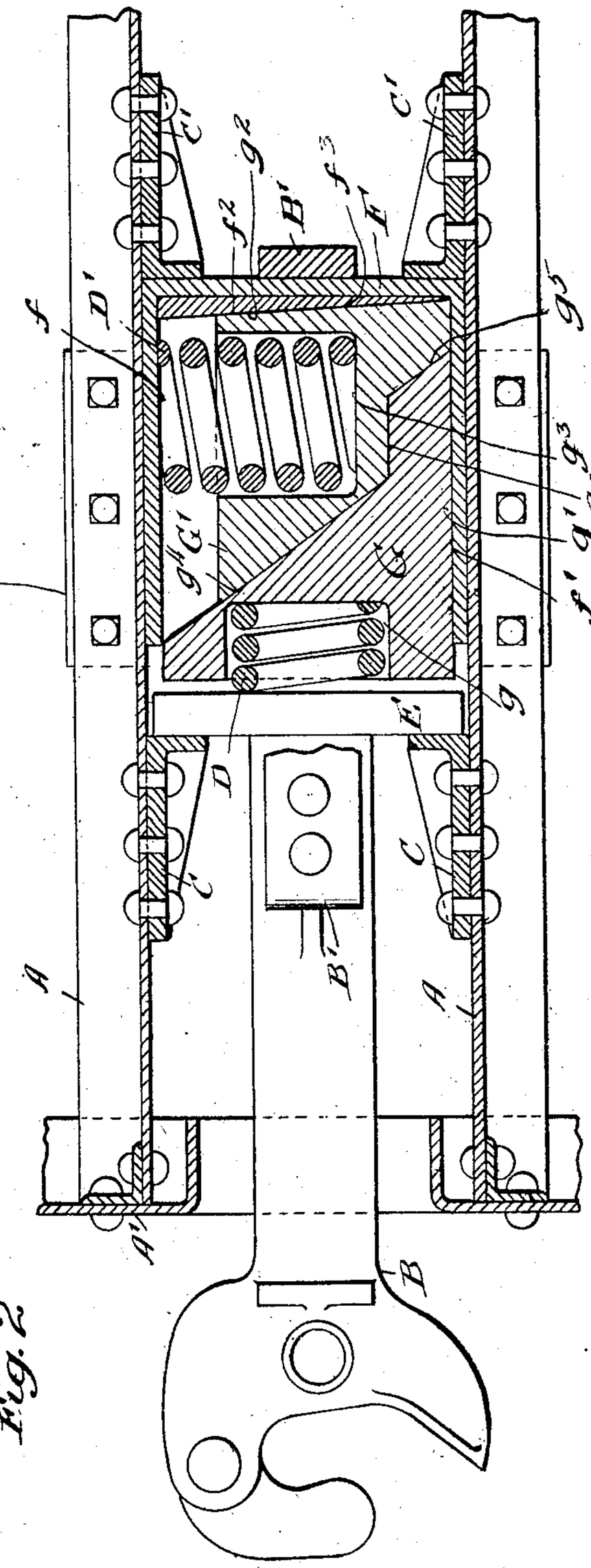

Fig. 2

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Fig. 3

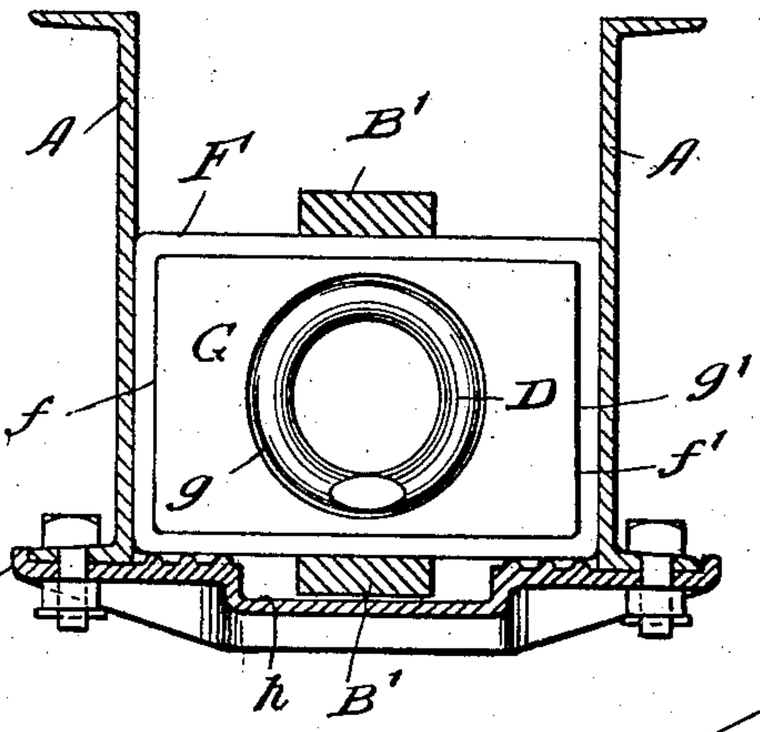


Fig. 4

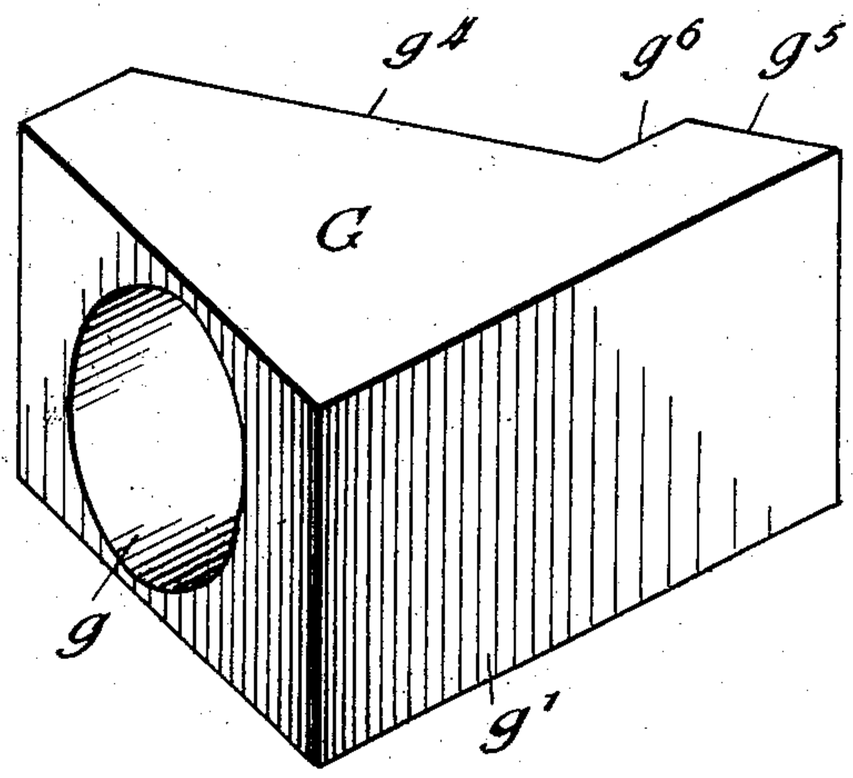


Fig. 5

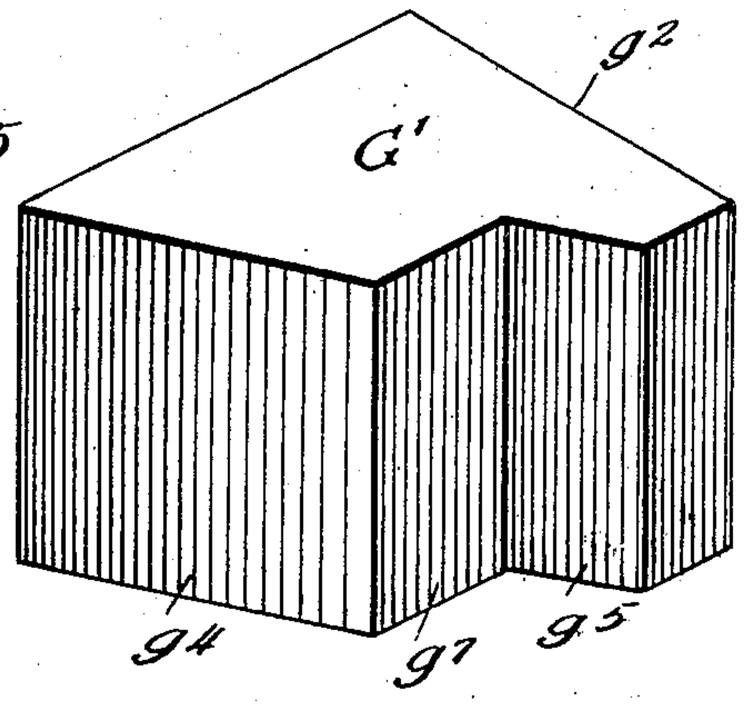
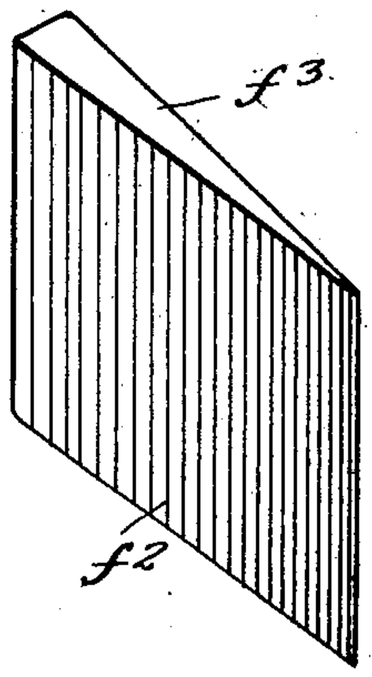


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN J. HENNESSEY AND PETER N. MOORE, OF MILWAUKEE, WISCONSIN, ASSIGNORS OF ONE-HALF TO SAID HENNESSEY AND ONE-HALF TO WILLIAM H. MINER, OF CHICAGO, ILLINOIS.

FRICTION SPRING DRAFT-RIGGING FOR RAILWAY-CARS.

No. 862,910. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed April 25, 1907. Serial No. 370,190.

To all whom it may concern:

Be it known that we, JOHN J. HENNESSEY and PETER N. MOORE, citizens of the United States, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Friction Spring Draft-Rigging for Railway-Cars, of which the following is a specification.

Our invention relates to improvements in friction spring draft rigging for railway cars.

Our invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation, partly in vertical section, of a friction spring draft rigging embodying our invention; Fig. 2 is a plan view, partly in horizontal section; Fig. 3 is a vertical cross section on line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of one of the friction blocks. Fig. 5 is a detail perspective view of the other friction block, and Fig. 6 is a detail perspective view of the removable filler block.

In the drawing A A represent center sills or other longitudinal frame members of the car to which the draft rigging is applied, and A^1 the front or cross sill.

B is the draw-bar and B^1 the draw-bar extension, strap or yoke secured to the draw-bar in the usual manner.

C C^1 are front and rear stops secured to the center sills or other longitudinal frame members of the car.

D is a longitudinally arranged direct acting spring in line with the draw bar and abutting at one end against the front follower E; and D^1 is a transversely arranged spring abutting at one end against the upright side wall f of the longitudinally movable friction box or shell F. The rear end of the movable friction box or shell F may serve as the rear follower and engage the rear stops C^1 under buffing strains and the rear end of the draw bar strap B^1 under pulling strains.

The friction box or shell F has an internal longitudinal friction face f^1 parallel to the line of draft, and it may have integrally but preferably in a separate piece a transverse friction face f^2, preferably slightly wedging or inclined at a small angle to a line at right angles to the draw bar, and preferably formed by a readily removable filler block f^3, placed in the rear end of the friction box of shell F.

G and G^1 are sliding friction blocks within the friction box or shell F. The friction block G is longitudinally movable with the draw bar, and is acted upon directly by the longitudinal spring D, and is furnished with a recess g to receive the rear end of said spring D. This longitudinally movable friction block G has a longitudinally extending friction face g^1, in sliding frictional engagement with the longitudinally extending friction face f^1 of the friction box or shell F.

The transversely movable friction block G^1 has a transversely extending and preferably slightly wedging or inclined friction face g^2 in sliding frictional engagement with the transversely extending friction face f^2 of the filler block f^3 at the rear end of the friction box or shell F. And this transversely movable friction block G^1 is furnished with a recess or socket g^3 to receive one end of the transverse spring D^1.

The friction blocks G G^1 have inclined or wedging meeting faces g^4 g^5 in sliding frictional engagement with each other. The inclined or wedging meeting faces g^4 g^5 of the longitudinally and transversely movable friction blocks G G^1 are preferably furnished with steps or offsets g^6 g^7, so that these inclined or wedging meeting faces are sectional, or extend in part in two different planes parallel to each other, instead of extending continuously in one plane. The angle of the meeting faces g^4 g^5 is preferably about 60°, so as to give a greater transverse frictional sliding movement to the block G^1 than longitudinal movement to the block G, as the longitudinal movement of the block G, is, necessarily, limited to about the two and one-half inches permitted to the draw bar, although this angle may be varied as desired. The incline of the transverse friction face f^2 is preferably about as indicated in the drawing, although this also may be varied as desired. By slightly increasing the incline or wedging action of the transverse friction face f^2 the resisting power of the draft rigging as a whole may be increased to any extent desired or required. As each of the friction blocks is directly acted upon by one of the springs in the direction of its movement, the draft rigging, though exerting a powerful frictional resistance, will always act smoothly, uniformly, certainly and regularly, both in compressing and releasing, and without tendency to sticking or to violent recoil.

H is the tie plate, having a longitudinal channel or guide h for the lower member of the draw bar strap or yoke B^1, and by which the draft rigging is supported. The inner upright faces of the center sills A A may serve as guides or cheek plates to guide the longitudinally movable friction box or shell F, in cases where metal center sill are employed, as illustrated in the drawing, or where side plates or stop castings furnished with integral front and rear stops are not employed.

We claim:

1. In a friction spring draft rigging, the combination with the draw bar and draw bar strap or yoke, front and rear stops and a follower, of a longitudinally movable friction box or shell, having an interior longitudinal friction face and an interior transverse friction face, a longitudinally movable friction block having a longitudinal

friction face in sliding frictional engagement with the longitudinal friction face of said box or shell, a transversely movable friction block having a transversely extending friction face in sliding frictional engagement with said transverse friction face on said box or shell, a longitudinally arranged spring acting against said longitudinally movable block, and a transversely arranged spring acting against said transversely movable block, substantially as specified.

2. In a friction spring draft rigging, the combination with the draw bar and draw bar strap or yoke, front and rear stops and a follower, of a longitudinally movable friction box or shell, having an interior longitudinal friction face and an interior transverse friction face, a longitudinally movable friction block having a longitudinal friction face in sliding frictional engagement with the longitudinal friction face of said box or shell, a transversely movable friction block having a transversely extending friction face in sliding frictional engagement with said transverse friction face on said box or shell, a longitudinally arranged spring acting against said longitudinally movable block, and a transversely arranged spring acting against said transversely movable block, said friction blocks having inclined meeting faces in sliding frictional engagement with each other, substantially as specified.

3. In a friction spring draft rigging, the combination with the draw bar, draw bar yoke and stops, of a follower, a longitudinally movable friction box having internal longitudinal and transverse friction faces, longitudinally and transversely movable friction blocks having inclined meeting faces, one having a longitudinal friction face and the other a transverse friction face, a longitudinal spring bearing against the longitudinally movable block, and a transverse spring bearing against the transversely movable block, substantially as specified.

4. In a friction spring draft rigging, the combination with the draw bar, draw bar yoke and stops, of a follower, a longitudinally movable friction box having internal longitudinal and transverse friction faces, longitudinally and transversely movable friction blocks having inclined meeting faces, one having a longitudinal friction face and the other a transverse friction face, a longitudinal spring bearing against the longitudinally movable block, and a transverse spring bearing against the transversely movable block, the inclined meeting faces of said friction blocks having steps or offsets, substantially as specified.

5. In a friction spring draft rigging, the combination with the draw bar, draw bar yoke and stops, of a follower, a longitudinally movable friction box having internal longitudinal and transverse friction faces, longitudinally and transversely movable friction blocks having inclined meeting faces, one having a longitudinal friction face and the other a transverse friction face, a longitudinal spring bearing against the longitudinally movable block, and a transverse spring bearing against the transversely movable block, the transversely extending friction face of said box being inclined or wedging, substantially as specified.

6. In a friction spring draft rigging, the combination with a movable friction box having longitudinal and transverse friction faces, of a plurality of friction blocks within said friction box in sliding frictional engagement therewith, and springs, one bearing directly against each of said friction blocks, substantially as specified.

7. In a friction spring draft rigging, the combination with a movable friction box having longitudinal and transverse friction faces, of a plurality of friction blocks within said friction box in sliding frictional engagement therewith, and springs, one bearing directly against each of said friction blocks, the transversely extending friction face of said friction box being slightly inclined or wedging, substantially as specified.

8. In a friction spring draft rigging, the combination with a movable friction box having longitudinal and transverse friction faces, of a plurality of friction blocks within said friction box in sliding frictional engagement therewith, and springs—one bearing directly against each of said friction blocks, said friction blocks having stepped or offset inclined meeting faces, substantially as specified.

9. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having a longitudinal and a transverse friction face, of a longitudinally movable friction block, a transversely movable friction block and a transverse spring bearing against said transversely movable friction block, substantially as specified.

10. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having a longitudinal and a transverse friction face, of a longitudinally movable friction block, a transversely movable friction block and a transverse spring bearing against said transversely movable friction block, the transverse friction face of said box being inclined or wedging, substantially as specified.

11. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having a longitudinal and a transverse friction face, of a longitudinally movable friction block, a transversely movable friction block and a transverse spring bearing against said transversely movable friction block, the transverse friction face of said box being inclined or wedging and on a removable filler block, substantially as specified.

12. In a friction spring draft rigging, the combination with the draw bar, draw bar yoke and stops, of a follower, a longitudinally movable friction box having internal longitudinal and transverse friction faces, and longitudinally and transversely movable friction blocks having inclined meeting faces, one having a longitudinal friction face and the other a transverse friction face, a longitudinal spring bearing against the longitudinally movable block, and a transverse spring bearing against the transversely movable block, the transverse friction face of said box being slightly inclined and on a removable filler block, substantially as specified.

13. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having longitudinally and transversely extending friction faces, of a longitudinally movable friction block having a longitudinally extending friction face, a transversely movable friction block having a transversely extending friction face said friction blocks having meeting inclined friction faces and being furnished with recesses to receive springs, a longitudinal spring bearing against said longitudinal movable friction block, and a transverse spring bearing against said transversely movable friction block, substantially as specified.

14. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having longitudinally and transversely extending friction faces, of a longitudinally movable friction block having a longitudinally extending friction face, a transversely movable friction block having a transversely extending friction face, said friction blocks having meeting inclined friction faces and being furnished with recesses to receive springs, a longitudinal spring bearing against said longitudinal movable friction block, and a transverse spring bearing against said transversely movable friction block, and a wedge faced filler block within said friction box, substantially as specified.

15. In a friction spring draft rigging, the combination with a longitudinally movable friction shell having longitudinally and transversely extending friction faces, of a longitudinally movable friction block having a longitudinally extending friction face, a transversely movable friction block having a transversely extending friction face, said friction blocks having meeting inclined friction faces and being furnished with recesses to receive springs, a longitudinal spring bearing against said longitudinal movable friction block, and a transverse spring bearing against said transversely movable friction block, the inclined meeting faces of said friction blocks being stepped or offset, substantially as specified.

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