

No. 698,215.

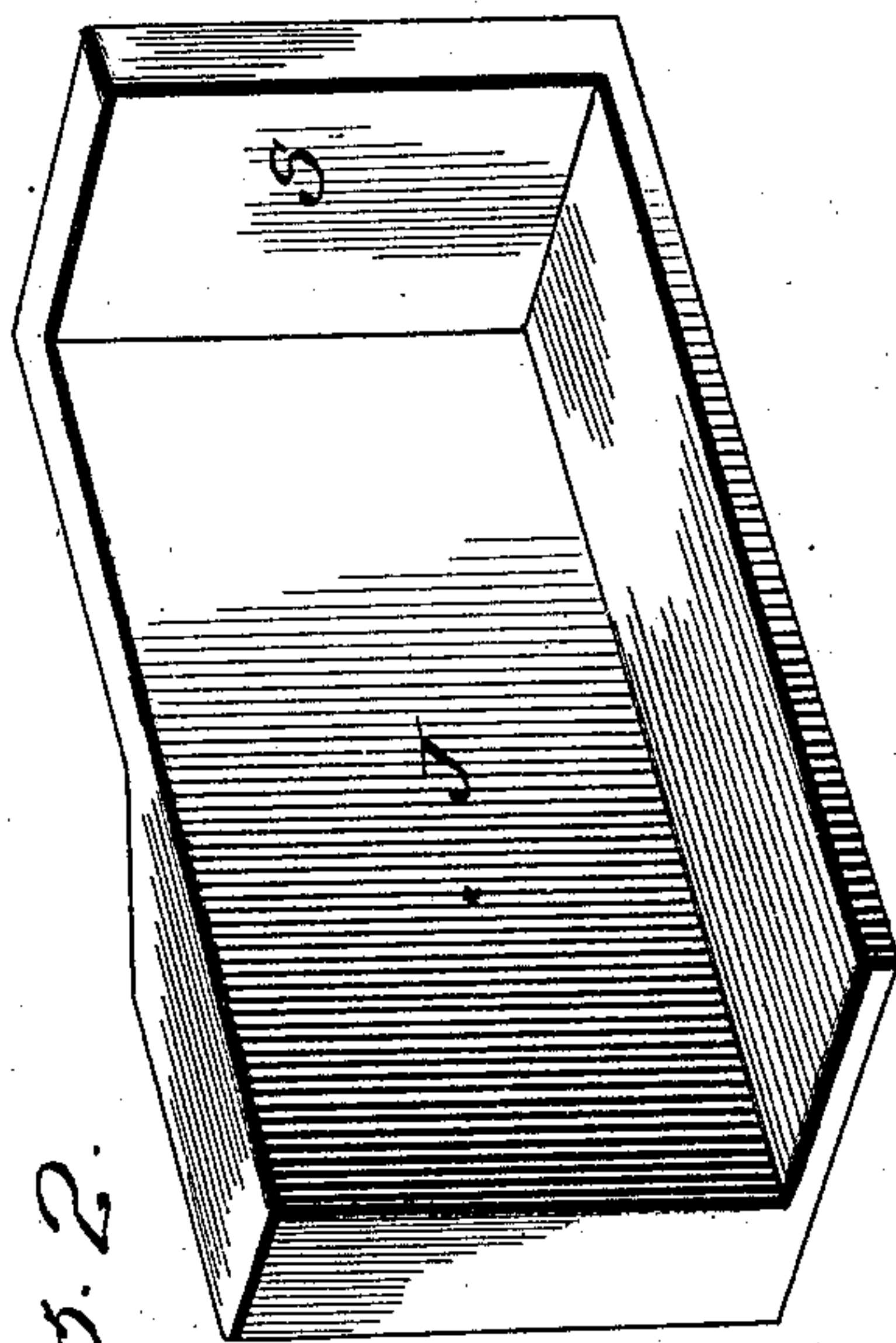
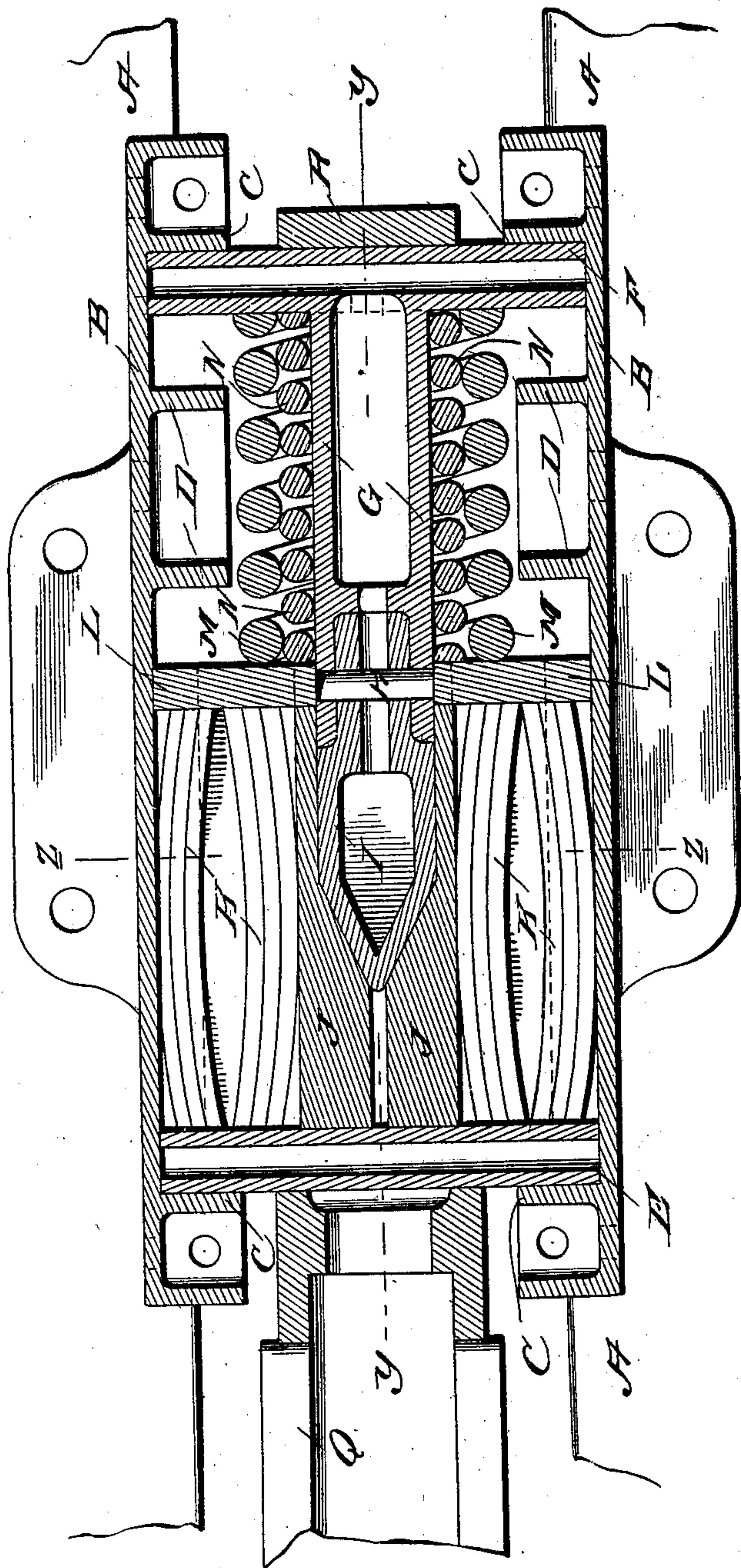
Patented Apr. 22, 1902.

T. L. McKEEN.  
FRICTION DRAFT RIGGING APPLIANCE.

(Application filed Feb. 6, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

*John Moore*  
*W. Williams*

*Thos. L. McKen*

Inventor

By

*Geo. W. Entwistle*

Attorney



No. 698,215.

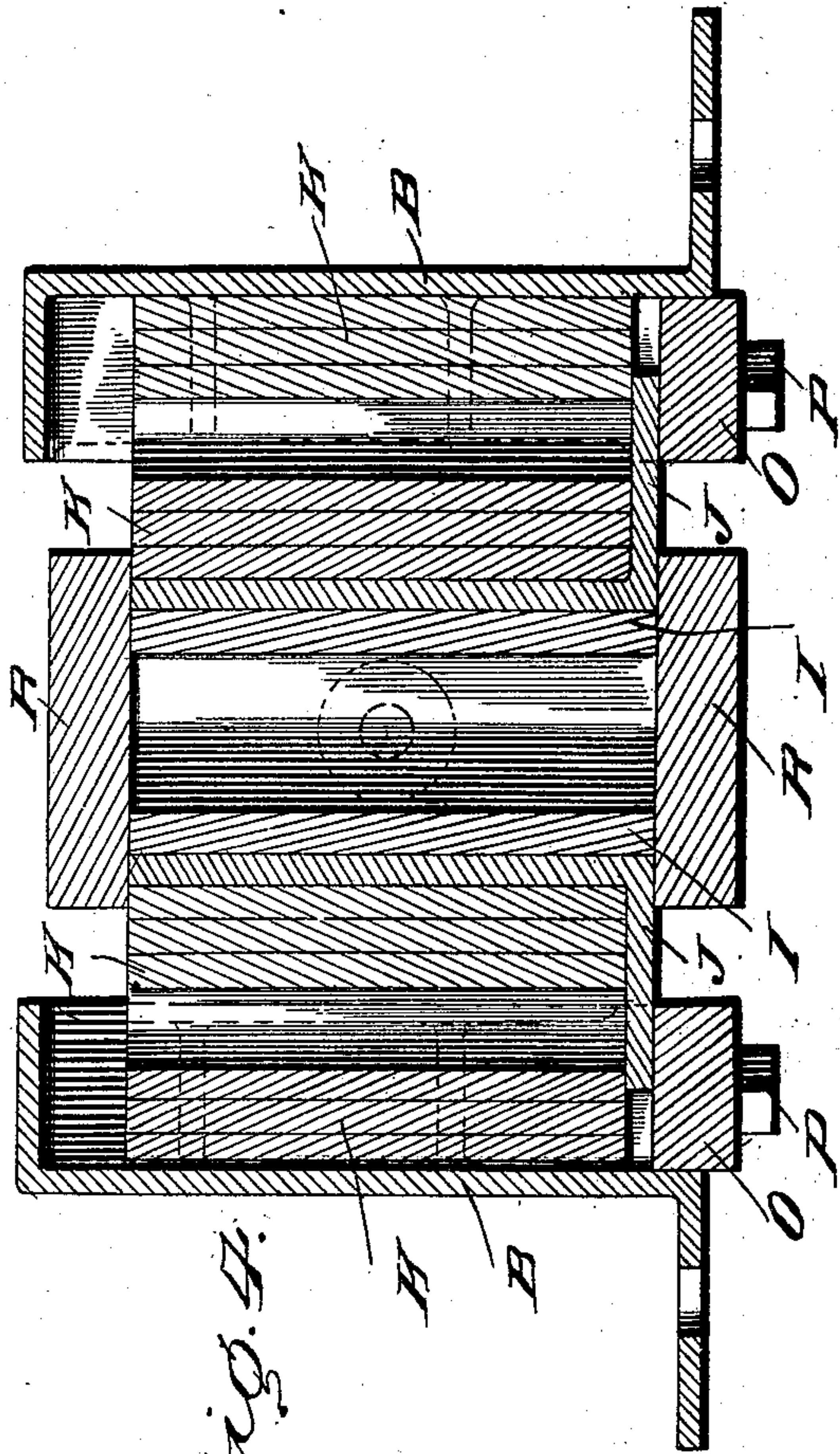
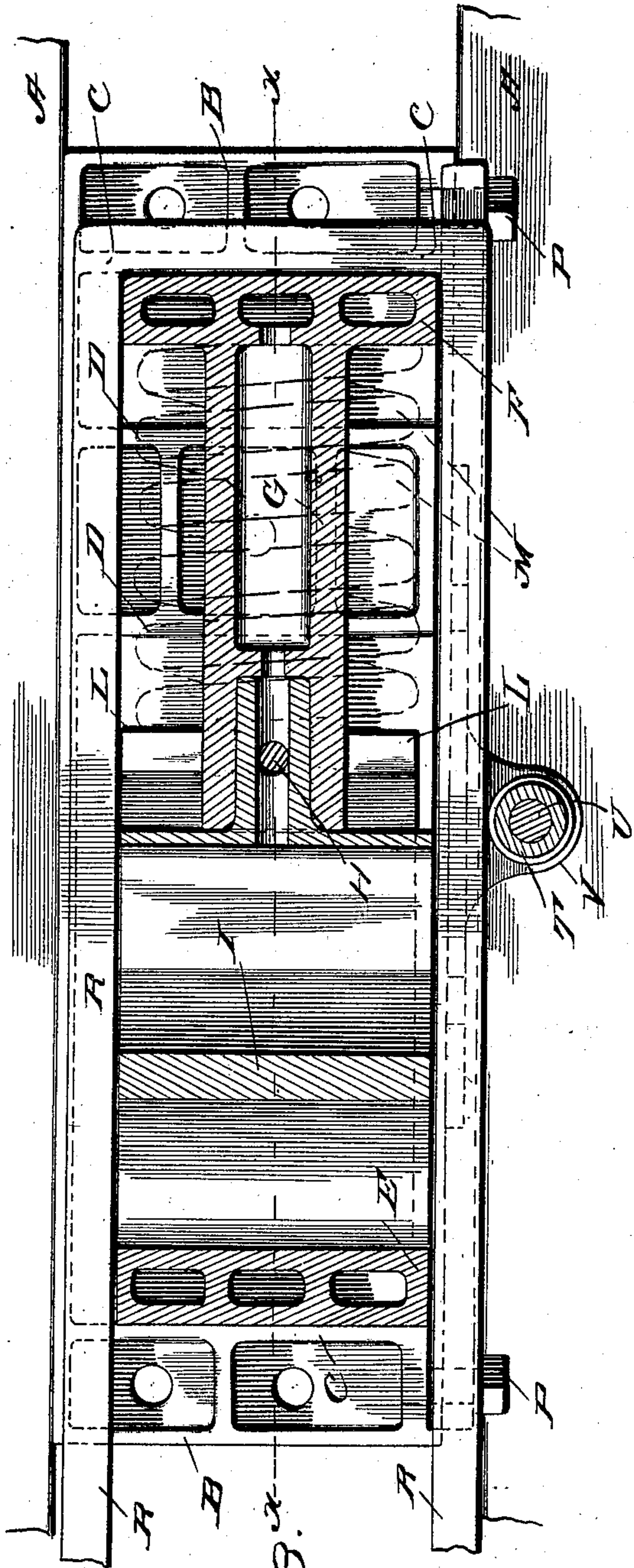
Patented Apr. 22, 1902.

T. L. McKEEN.  
FRICTION DRAFT RIGGING APPLIANCE.

(Application filed Feb. 6, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

*John J. Williams*  
*W. L. Williams*

*Thos. L. McKen* Inventor

By *Wm. C. W. Smith* Attorney



# UNITED STATES PATENT OFFICE.

THOMAS L. MCKEEN, OF EASTON, PENNSYLVANIA.

## FRICITION DRAFT-RIGGING APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 698,215, dated April 22, 1902.

Application filed February 6, 1902. Serial No. 92,820. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. MCKEEN, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Friction Draft-Rigging Appliances; 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.

My invention relates to certain new and useful improvements in draft-rigging for railroad-cars, and particularly to that class known as "friction" draft-rigging. It has for its object simplicity and economy of construction, durability of use, and the ready assembly or disassociation of its several parts.

With these ends in view my invention consists in the construction and arrangement of parts, as will be hereinafter and in detail explained.

In order that those skilled in the art to which my invention appertains may know how to make my improved draft-rigging and fully understand its operation, I will proceed to describe the same, referring by letters to the accompanying drawings, in which—

Figure 1 is a horizontal central section taken on the line  $xx$  of Fig. 3. Fig. 2 is a perspective view of a modified form of one of the boxes for containing the friction-springs. Fig. 3 is a central longitudinal section taken on the line  $yy$  of Fig. 1, and Fig. 4 is a transverse section taken on the line  $zz$  of Fig. 1.

Similar letters of reference denote like parts in the several figures of the drawings.

A A are the ordinary draft-timbers of a railroad-car, to which are secured the housings or check-plates B, which are formed with vertical follower stops or shoulders C at each end and with two follower-stops D D adjacent to the rear end followers C, as clearly shown at Fig. 1.

E is an end follower located at the forward end and between the housings B B, and F is an end follower located in a similar manner at the rear end. This rear follower E is formed with an integral central stem G, which is secured by a suitable bolt or pin H to a wedge-shaped block or head I, as clearly shown at Figs. 1 and 3.

J J are open-ended and open-top boxes

adapted to receive a series of spring plates or leaves K, the ends of which abut, respectively, against the forward end follower E and intermediate or central followers L, as shown at Fig. 1.

Before passing the arrow-head and stem through the intermediate follower coiled buffing-springs M N are secured in position around the stem G, so that when the intermediate follower is placed in position the springs M N will, as clearly shown, be confined between said follower and the rear-end follower F.

The adjacent vertical walls of the spring-boxes J J are tapered and cut away, as clearly shown at Fig. 1, to conform to the design of the arrow-head I. The spring-boxes J J and end followers are supported vertically upon suitable carry-bars O O, secured to the housings by bolts P P or in any other desired manner.

Q is the shank of the draw-bar, which abuts against the forward-end follower E, and R is the yoke, which is secured in the usual or any desired way to the shank Q. In lieu of making the boxes J with both ends open, as shown in Fig. 1, and employing the intermediate followers L said boxes may be formed with the rear ends closed, as shown at S, Fig. 2, said ends constituting intermediate followers and operating in substantially the same manner as the intermediate and separable followers L.

T is a tubular roller surrounding a horizontal cross-bolt U, which is secured in position to vertical lugs V, extending from the housings B, as clearly shown at Fig. 3. The tubular roller T constitutes a support for the carry-bars and also serves as a brace or bridge between the vertical lugs V to prevent the housings from moving outwardly or toward each other. As will be clearly understood, the vertical follower-stops D D of the housings are so disposed and located with reference to the longitudinal movement of the end follower F and intermediate followers L (or closed ends S of the spring-boxes J) as to prevent the "setting" of the coiled springs M N.

Having described the construction of my improved draft-rigging, I will now describe the operation.

With the parts all properly assembled and in normal position, as illustrated at Fig. 1, if a buffing strain is exerted the forward-end



follower E is forced rearward, and by reason  
 of the location of the spring-plates K between  
 the same and the intermediate followers L  
 and the location of the spring-boxes J the in-  
 5 termediate followers L L (or closed ends S of  
 the boxes J, as the case may be) are forced  
 against the coil-springs M N, which are ac-  
 cordingly compressed between such follower  
 and the rear-end follower F, which is held  
 10 against movement by the end follower-stops  
 C C. During this movement the inclined por-  
 tion of the adjacent vertical walls of the  
 spring-boxes J J ride upon the correspond-  
 ingly-inclined surfaces of the wedge block or  
 15 head I, which causes the said boxes to travel  
 laterally or away from each other and against  
 the spring-plates K, and thus not only offer-  
 ing a spring resistance to the rearward move-  
 ment of the draw-bar, but at the same time  
 20 producing increasing frictional contact be-  
 tween the wedge-block and the spring-boxes,  
 as well as between the spring-plates and the  
 inside faces of the housings B. Simultane-  
 ously with this described action the coil-  
 25 springs M N are compressed between the inter-  
 mediate followers and the rear end follower  
 F, thus offering additional spring resistance  
 to the movement of the draw-bar and consti-  
 tuting, together with the spring-plates, a tan-  
 30 dem spring-action. Under a pulling strain  
 and where it is desirable to have somewhat  
 less spring resistance than in buffing the coil-  
 springs M N are compressed between the rear  
 end follower F and the intermediate followers  
 35 L, (or ends of the boxes J,) and the arrow-  
 head I forces the boxes J J laterally against  
 the spring-plates K; but as the boxes J J  
 during the pulling strain do not move longi-  
 tudinally, but are held against such action  
 40 by the forward-end follower E and vertical  
 stops C, the frictional action between the  
 spring-plates K and inside faces of the hous-  
 ings, as above described, does not take place  
 and only such friction results as ensues from  
 45 the movements of the several plates upon one  
 another and the wedge-block against the  
 spring-boxes during the lateral compressive  
 action. It will be seen from the construction  
 and operation described that the spring-plates  
 50 K constitute at all times a substantial brace  
 between the forward-end follower E and the  
 intermediate followers L L, (or closed ends S  
 of the boxes J,) so that substantially the en-  
 tire area thereof is supported and braced and  
 55 the tendency of the movable parts to wobble  
 or bite is avoided, and hence undue and ex-  
 cessive wear does not take place. The closed  
 bottom of the boxes J constitute shelves,  
 upon which the spring-plates K are support-  
 60 ed and held during the assembling of the  
 parts and at all other times.

As clearly shown in the drawings, the end  
 followers E F, stem G, and wedge-block I are  
 cast hollow to secure the necessary degree of  
 65 tightness without sacrificing strength.

Various changes may be made in the mere  
 details and designs of the several parts—such,

for instance, as the substitution of coiled  
 springs for the spring-plate—without depart-  
 ing from the spirit of my invention, which 70  
 resides in the generic idea of the lateral plate-  
 springs to produce friction and to increase  
 the area of support or bracing of the forward  
 and intermediate followers and axially-ar-  
 ranged springs to coöperate with the friction 75  
 plate-springs in receiving buffing and pulling  
 strains and means within the several spring-  
 plates and axially-arranged springs for hold-  
 ing the same in position and compressing the  
 same, as hereinbefore explained. 80

Having described the construction and op-  
 eration of my improved draft-rigging, what I  
 claim as new, and desire to secure by Letters  
 Patent, is—

1. In combination with the housings se- 85  
 cured to the draft-timbers, and end and inter-  
 mediate followers located therein, laterally-  
 compressible spring-plates, adapted to move  
 bodily in a longitudinal direction, means for  
 compressing said spring-plates and causing 90  
 frictional contact with the housings, and  
 springs interposed between the intermediate  
 and the rear-end follower, substantially as  
 and for the purpose set forth.

2. In combination with the housings se- 95  
 cured to the draft-timbers, end and interme-  
 diate followers located therein, and laterally-  
 compressible and longitudinally-movable  
 spring-plates, means for compressing the lat-  
 erally-located spring-plates, axially-arranged 100  
 coil-springs between the intermediate fol-  
 lower, and the rear-end follower, and means  
 for moving the end followers, substantially  
 as and for the purpose set forth.

3. In combination with the housings se- 105  
 cured to the draft-timbers and end and inter-  
 mediate followers located therein, laterally-  
 compressible spring-plates mounted in closed-  
 bottomed laterally-movable supporting-boxes  
 having their adjacent vertical faces beveled 110  
 rearwardly, carry-bars secured to the hous-  
 ings and supporting the boxes, and a longi-  
 tudinally-movable push-bar formed with a  
 beveled forward terminal for spreading the  
 boxes, and means for reciprocating the push- 115  
 bar, and spring-supporting boxes, substan-  
 tially as and for the purpose set forth.

4. In a draft-rigging such as described and  
 provided with laterally-compressible spring-  
 plates supported in movable boxes, and lon- 120  
 gitudinally-compressible coil-springs; a for-  
 ward-end movable partition or follower, and  
 followers intermediate of the spring-plates  
 and coil-springs, a rear-end follower having  
 a central stem for supporting the coil-springs, 125  
 and having its forward terminal adapted to  
 spread apart the spring-plate-supporting  
 boxes, substantially as hereinbefore set forth.

5. In a draft-rigging such as described, the  
 laterally and longitudinally movable spring- 130  
 plate-supporting boxes, open on one end, top  
 and on one side, and having the rear end  
 closed to constitute an intermediate follower,  
 substantially as and for the purpose set forth.



6. In a draft-rigging such as described and embodying longitudinally-movable end followers, and intermediate follower and laterally-movable spring-supporting boxes between the forward end follower, and the intermediate follower, flat spring-plates located within the supporting-boxes and having their ends abutting respectively against the said followers, and constituting braces between said followers, and coil-springs between the rear-end follower and the intermediate follower, substantially as and for the purpose set forth.

7. In a draft-rigging such as described, the rear-end follower F formed with an axial stem G, and separable wedge-block I, connected by a removable bolt or pin H, substantially as hereinbefore set forth.

8. In combination with the housings secured to the draft-timbers, end and intermediate followers and yoke located therein, and coil-springs between the intermediate and a rear-end follower having a central stem terminating in a wedge-shaped head; laterally-movable boxes having inclined adjacent faces located each side of the wedge-shaped head of the follower-stem, and adapted to receive and compress friction-producing springs, substantially as hereinbefore set forth.

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

THOMAS L. McKEEN.

Witnesses:

H. D. MAXWELL,  
J. WHIT. WOOD.