

No. 849,556.

PATENTED APR. 9, 1907

C. J. NASH.
DRAFT RIGGING.
APPLICATION FILED DEC. 17, 1906.

2 SHEETS—SHEET 2

Fig. 3

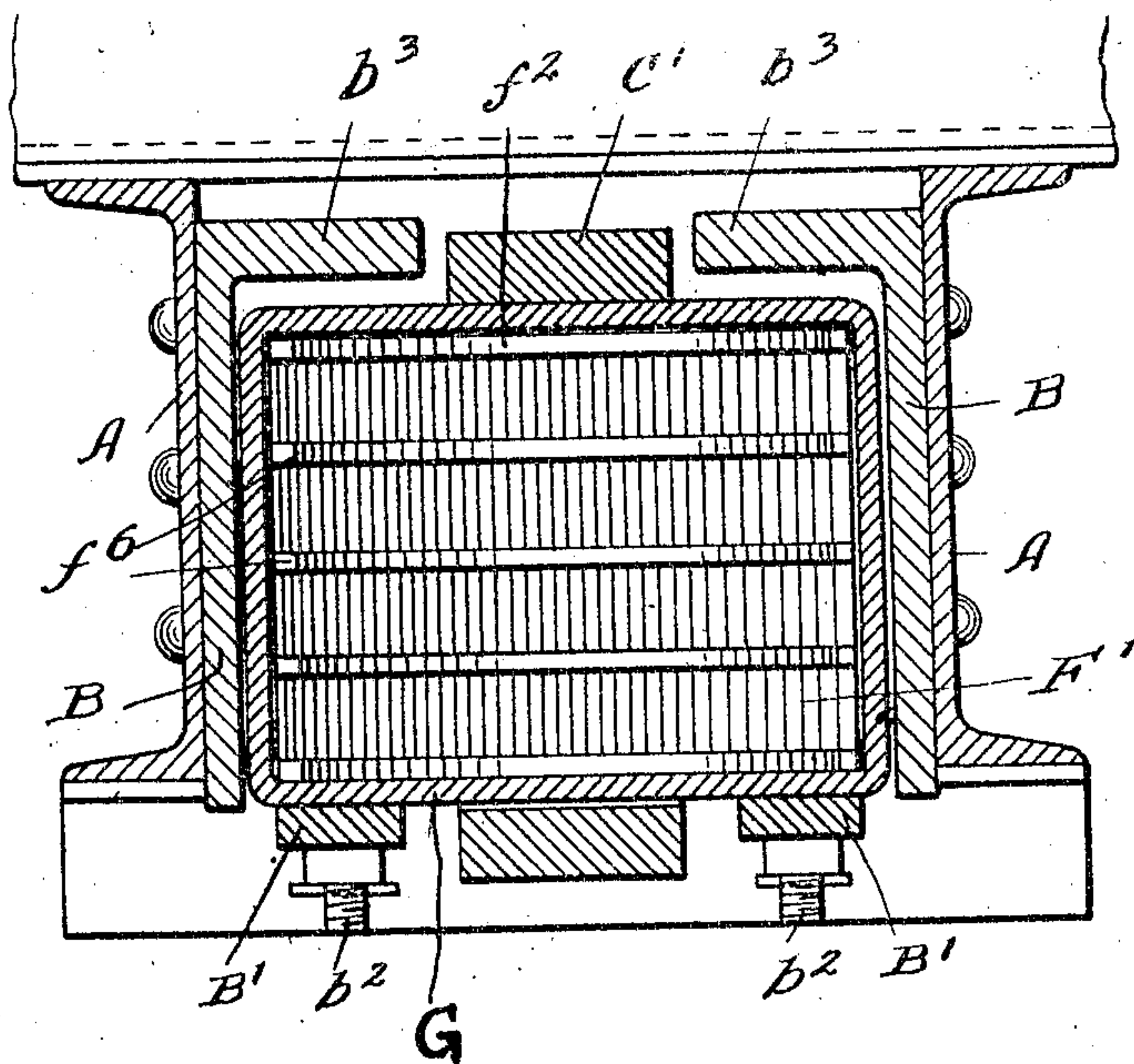


Fig. 4

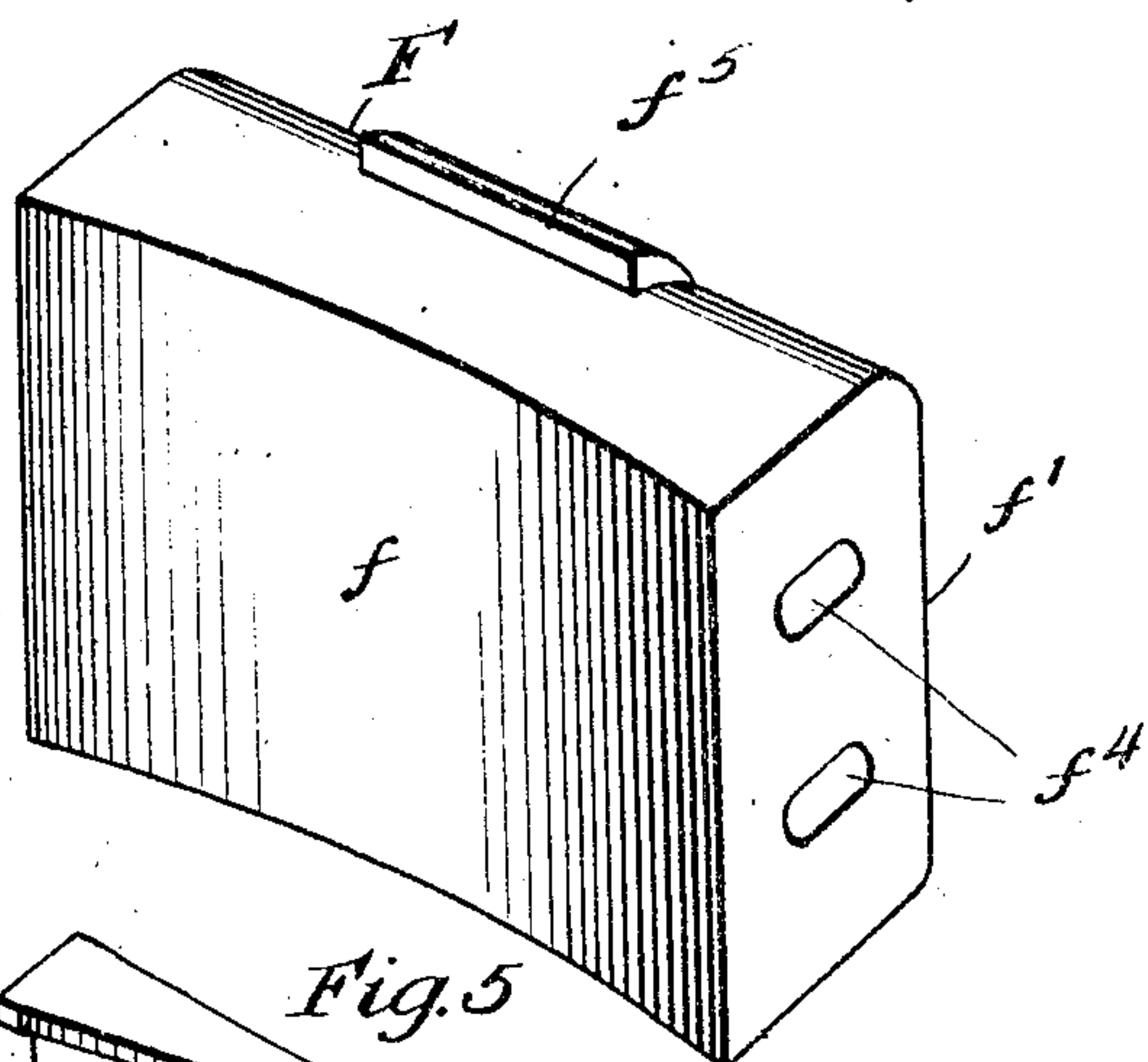


Fig. 5

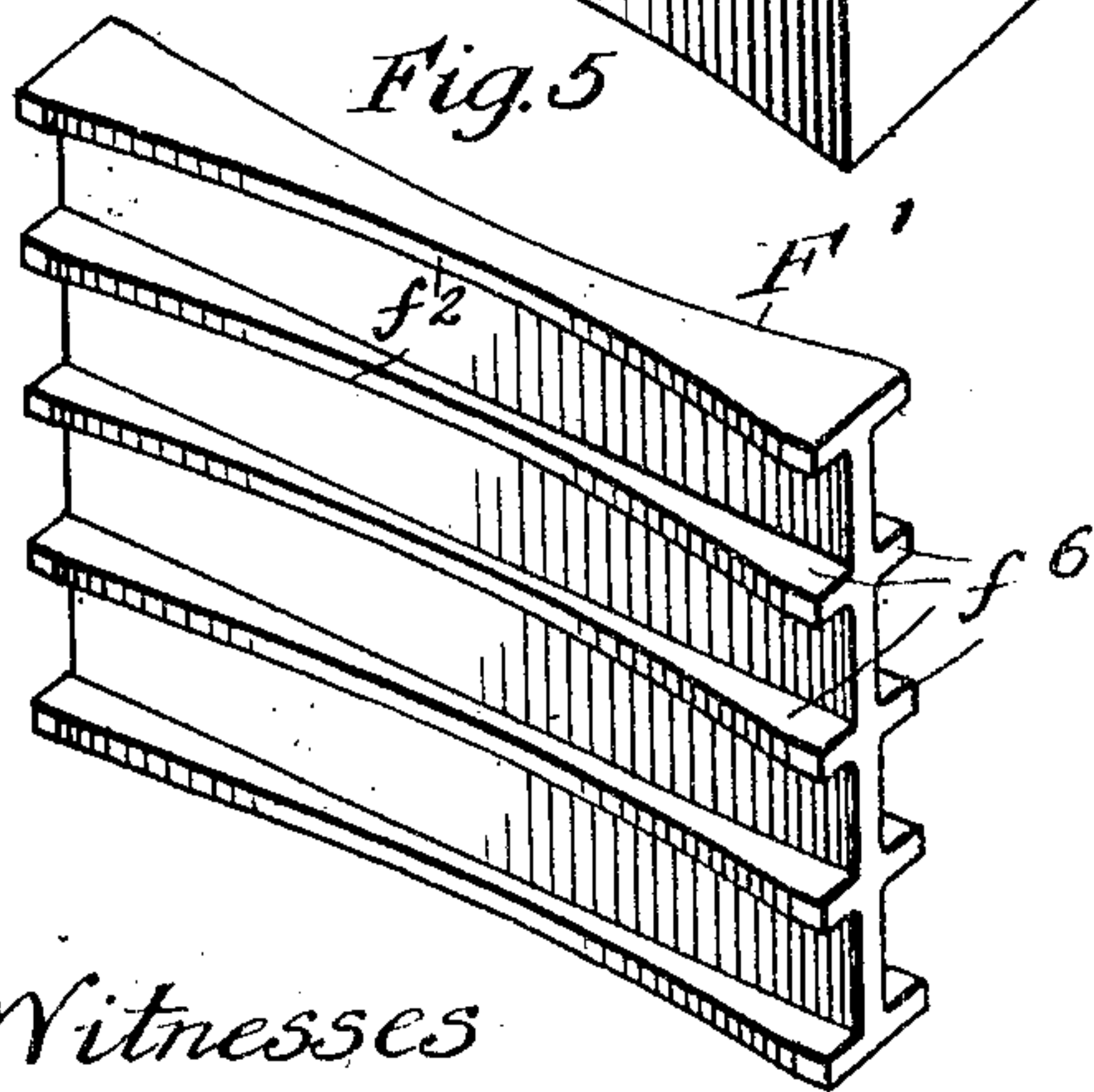
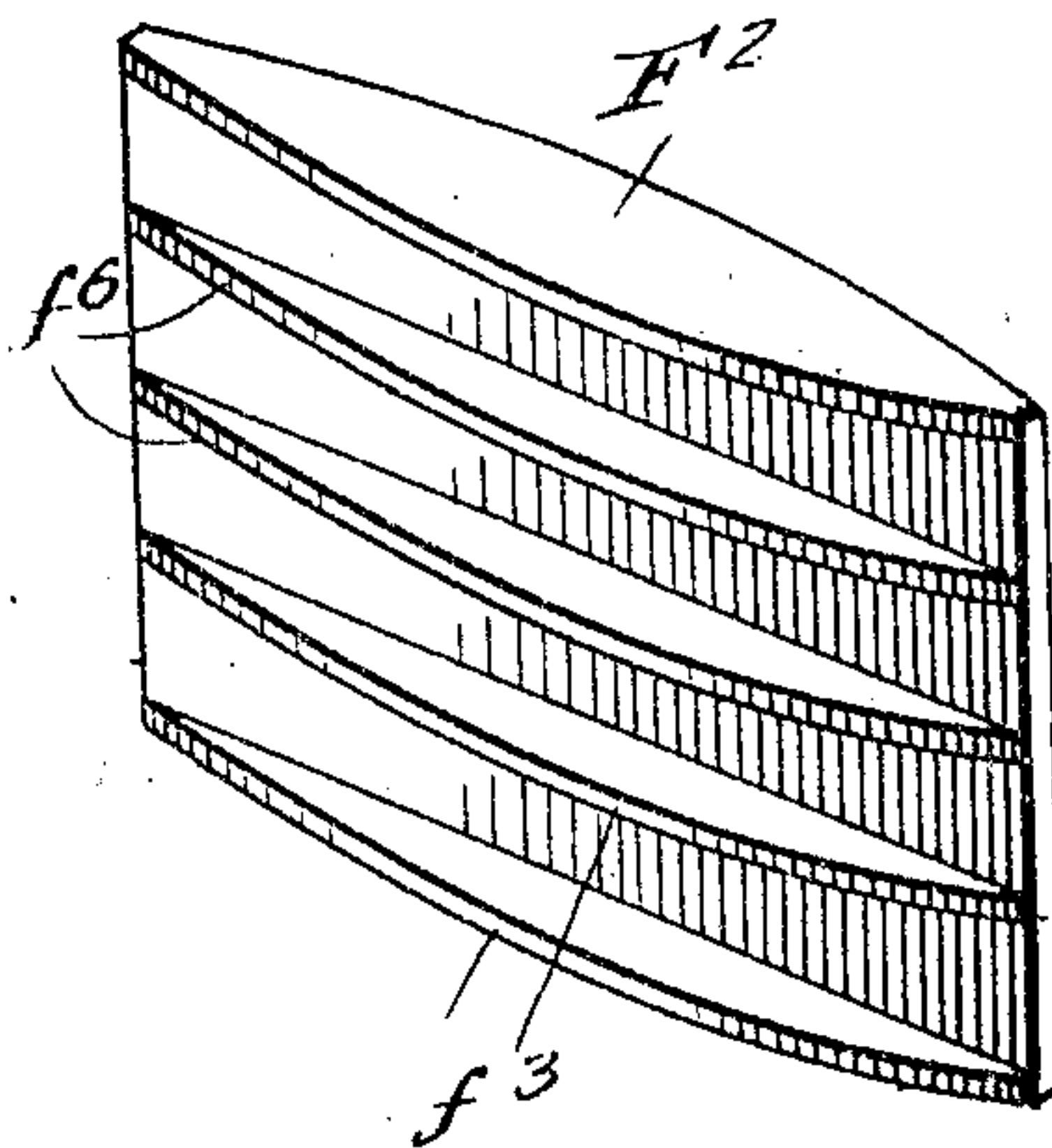


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

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DRAFT-RIGGING.

No. 849,556.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES J. NASH, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Draft-Rigging, of which the following is a specification.

My invention relates to improvements in draft-rigging for railway-cars.

The object of my invention is to provide a draft-rigging of a simple, strong, efficient, and durable construction which will be compact in form, which may be made of any desired tension or cushioning power without materially increasing the space occupied by the springs or cushioning devices, in which neither the springs nor the cooperating parts will be liable to injury or breakage, however great may be the blows or strains to which the same are subjected, in which all the parts may be easily and conveniently assembled, and in which the draft-rigging may be readily and conveniently removed from and applied to cars as occasion requires.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists, in connection with the draw-bar, draw-bar yoke or strap, and the draft-rigging side plates or stops secured to the center sills or car-framework, of a plurality of sets of straight flat springs and a plurality of alternating convex and concave bearing-blocks for the springs interposed between the different sets of straight flat spring-plates, the concave blocks bearing against the ends of the springs and the convex blocks against the middle portions thereof, and the front and rear bearing-blocks engaging the draw-bar or its yoke and the draft-rigging stops the same as ordinary followers, the alternating convex and concave bearing-blocks and the springs being embraced or extending through the draw-bar strap or yoke and fitting and nesting within a movable box or case which holds the several parts properly nested or assembled together and which reciprocates within the pockets of the side or stop plates and is supported by the bottom guides or tie-plate of the draft-rigging.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation, partly in vertical longitudinal section, of a draft-rigging embodying my invention. Fig. 2 is a horizontal section on line 2 2 of

Fig. 1, but showing the draw-bar in plan. Fig. 3 is a cross-section on line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of one of the end bearing-blocks or followers. Fig. 5 is a perspective view of the middle concave bearing-block, and Fig. 6 is a perspective view of one of the convex bearing-blocks for the flat springs.

In the drawings, A A represent the frame-pieces of the car to which the draft-rigging is applied, the same being in the example represented in the drawings metal center sills; B B, the side or stop plates secured thereto and having front and rear stops $b\ b'$; C, the draw-bar; C', the draw-bar yoke secured thereto by rivets c , and B' B' the removable bottom guides or plates secured to the side plates B B by short bolts b^2 .

D D are sets of straight flat springs, the sets being of any desired or required number and the springs d of each set fitting flat together and being of any desired or required number. As illustrated in the drawings, I have shown four sets of springs, each composed of six straight flat spring-plates nesting together and extending transversely of the draw-bar and through the draw-bar yoke or strap.

F, F', and F² are alternating concave-faced and convex-faced bearing-blocks engaging the several sets of springs or interposed between adjacent sets and movable therewith and with the draw-bar, the front and rear blocks F F each having a single curved spring-engaging face f , preferably concavely curved, and a straight or flat face f' to engage at its ends the stationary stops or shoulders $b\ b'$ of the side plates B and at its middle portion the draw-bar or draw-bar yoke and the remaining blocks F' F² each having two curved spring-engaging faces, those, f^2 , on the blocks F' being concave and those, f^3 , on the blocks F² being convex. The convex-faced spring bearing or engaging blocks F² alternate with the concave-faced blocks F F', and the bearing-blocks F F' F² alternate with the sets of flat springs D D, so that all the sets of springs are simultaneously flexed under both pulling and buffing strains.

G is a movable case or shell inclosing and confining the alternating nesting sets of springs and curved-face bearing-blocks and to which the front and rear bearing-blocks

or followers F F are movably secured by connecting-rods *g*, fitting in holes in and secured to the case G and extending through slots *f*¹ in the front and rear bearing-blocks F, so that this inclosing case may move in respect to the rear follower when that is held stationary in buffing by engagement with the rear stops *b'* and so that it may move in respect to the front follower or bearing-block F when that is held stationary by engagement with the front stops *b*.

The box or case G reciprocates upon and is supported by the movable guides or bottom plates B' and fits between the same and the upper guide-flanges *f*³ of the side plates or stop-castings B. The front and rear bearing-blocks or followers F are furnished with shoulders or projecting lips *f*⁵, which abut against the ends of the movable or reciprocating case G, so that the case G, interposed between the front and rear blocks F F, may also serve to limit the compression of the springs, and thus aid in preventing the springs from receiving any permanent set or flexure. The abutment of the front and rear blocks or followers F F against the interposed sliding box or case G also serves to relieve the connecting-rods *g* from strain. The front and rear blocks F F are made sufficiently thick in relation to their extent of movement with the draw-bar to prevent disengagement from the case or box G when the parts are assembled.

The intermediate bearing-blocks F' F' to make the same lighter are preferably furnished with a series of ribs *f*⁶, the edges of which have the required concave and convex shapes.

I claim—

1. In a draft-rigging, the combination with the draw-bar, draw-bar yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, and a box or case inclosing said bearing-blocks and springs, substantially as specified.

2. In a draft-rigging, the combination with the draw-bar, draw-yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, a box or case inclosing said bearing-blocks and springs, and the front and rear bearing-blocks being movably connected with said inclosing box or case, substantially as specified.

3. In a draft-rigging, the combination with the draw-bar, draw-bar yoke and side plates or stop-castings having front and rear stops, of a plurality of alternating sets of straight flat springs and curve-faced bearing-blocks, the bearing-blocks having alternately convex and concave faces engaging the springs, the front and rear blocks acting as followers and engaging the stops and draw-bar, a box or case inclosing said bearing-blocks and springs, the front and rear bearing-blocks being movably connected with said inclosing box or case, and intermediate bearing-blocks having a series of ribs, substantially as specified.

4. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, a movable case inclosing said bearing-blocks and springs, and a bottom guide supporting said movable case, substantially as specified.

5. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, and the front and rear bearing-blocks having flat outer faces for engagement with the stops and draw-bar, a movable case inclosing said bearing-blocks and springs, and a removable bottom guide supporting said movable case, substantially as specified.

6. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the concave-faced bearing-blocks alternating with the convex-faced bearing-blocks, a case inclosing said springs, and the front and rear bearing-blocks being movably connected with said inclosing case, substantially as specified.

7. In a draft-rigging, the combination with the stops and draw-bar, of a series of sets of straight flat springs, and convex-faced and concave-faced bearing-blocks interposed between the sets of springs, the convex-faced bearing-blocks alternating with the concave-faced bearing-blocks, a case inclosing said springs, the front and rear bearing-blocks being movably connected with said inclosing case, and provided with shoulders to abut against the case, substantially as specified.

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