

G. HARGREAVES, JR.

DRAFT RIGGING.

APPLICATION FILED APR. 19, 1909.

965,183.

Patented July 26, 1910.

2 SHEETS—SHEET 1.

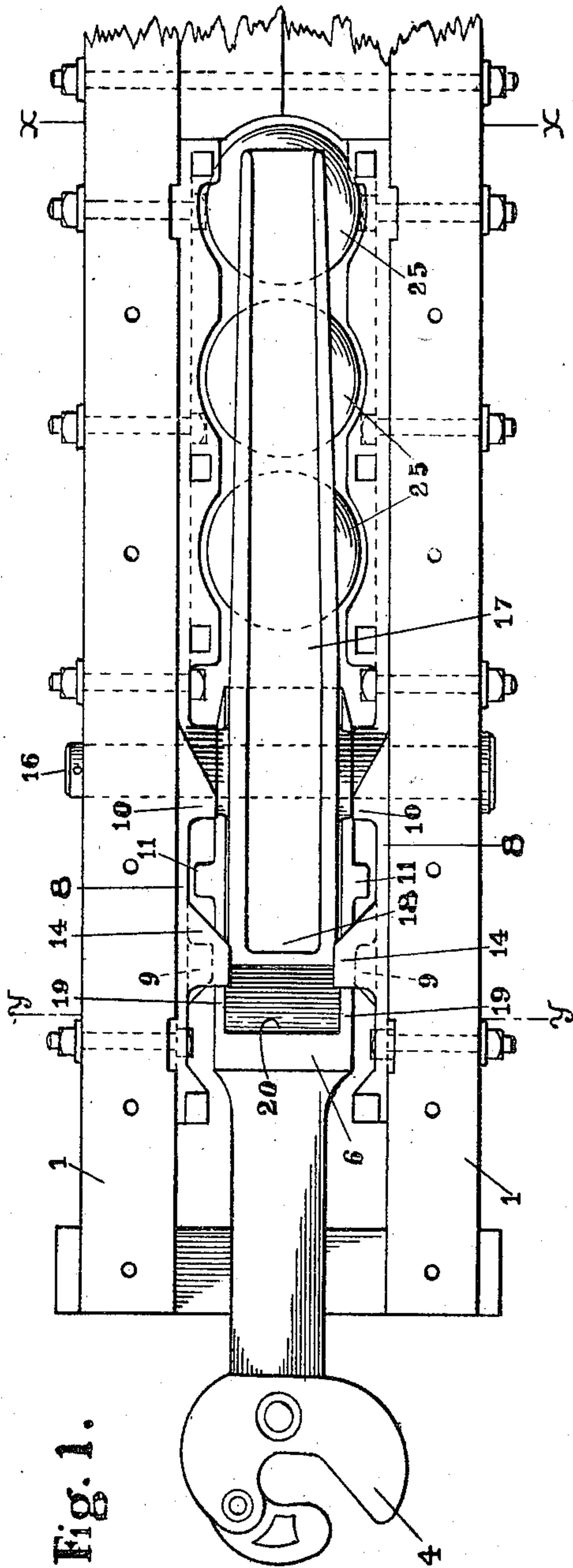


Fig. 1.

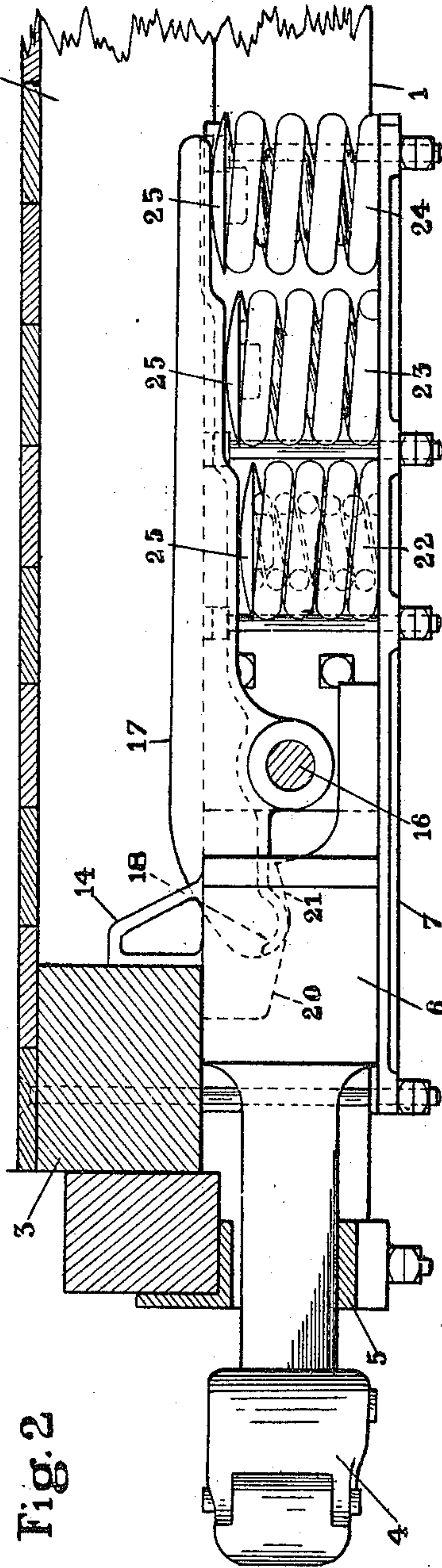


Fig. 2

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3 SHEETS—SHEET 2.

Fig. 3

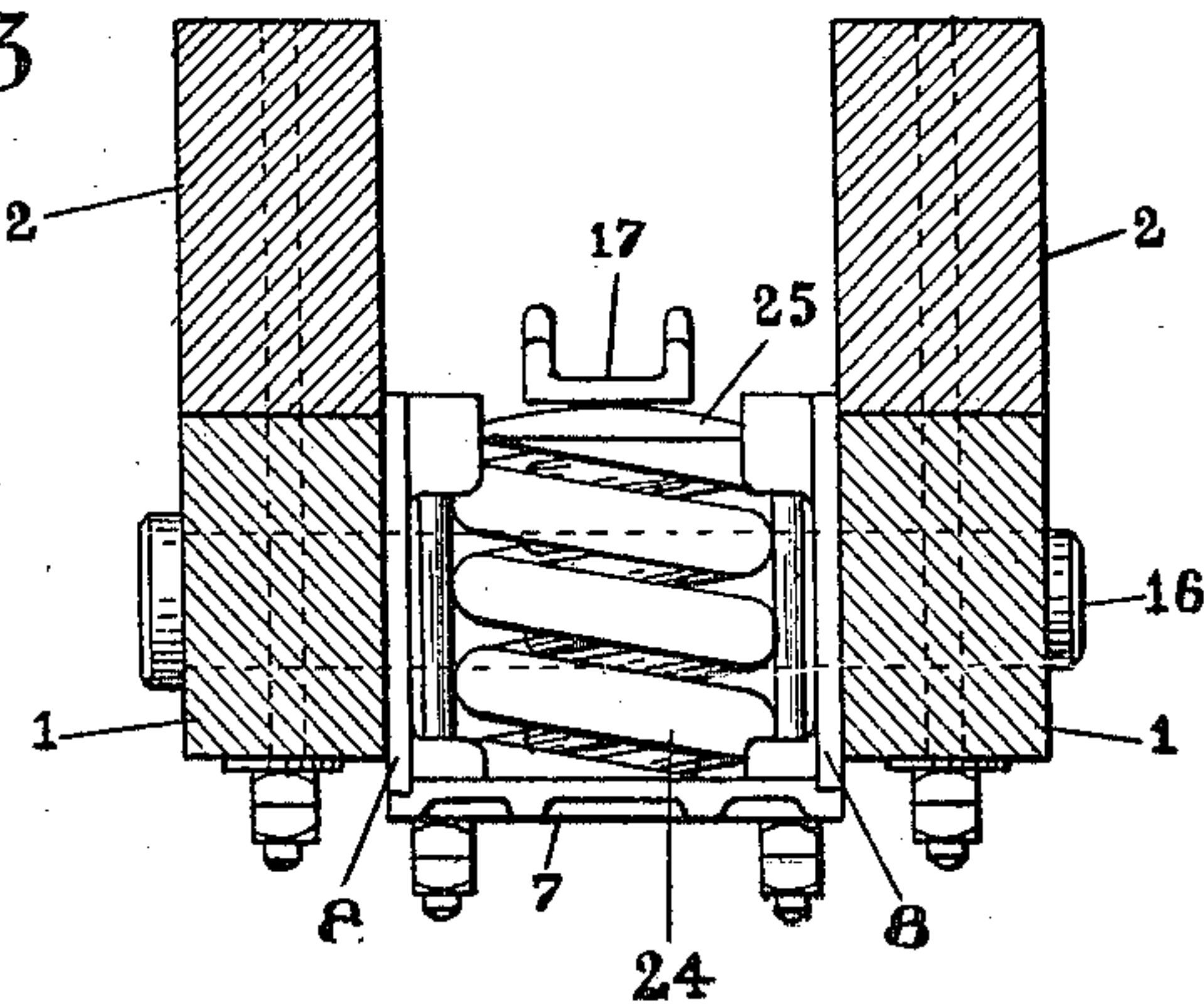


Fig. 4

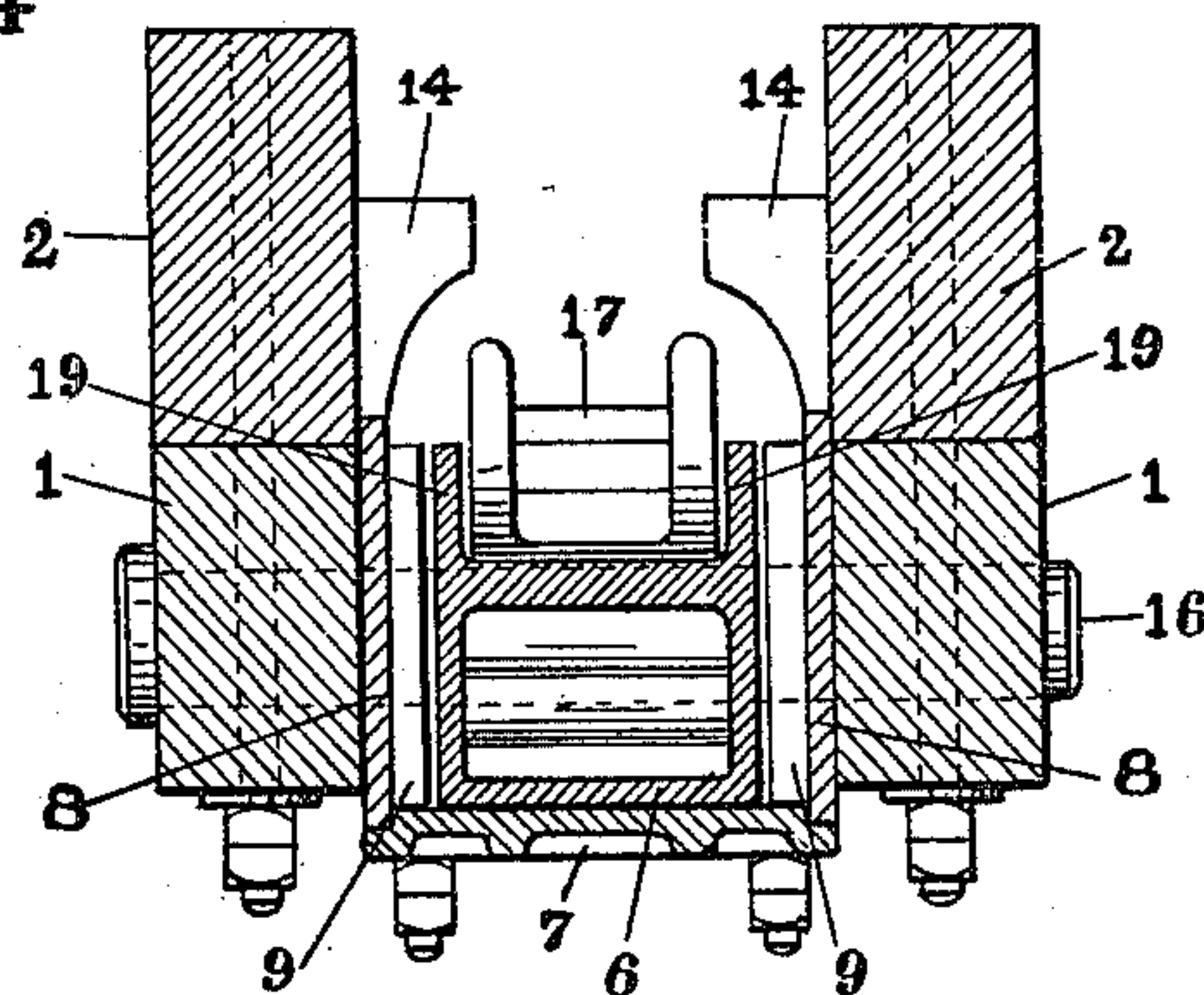
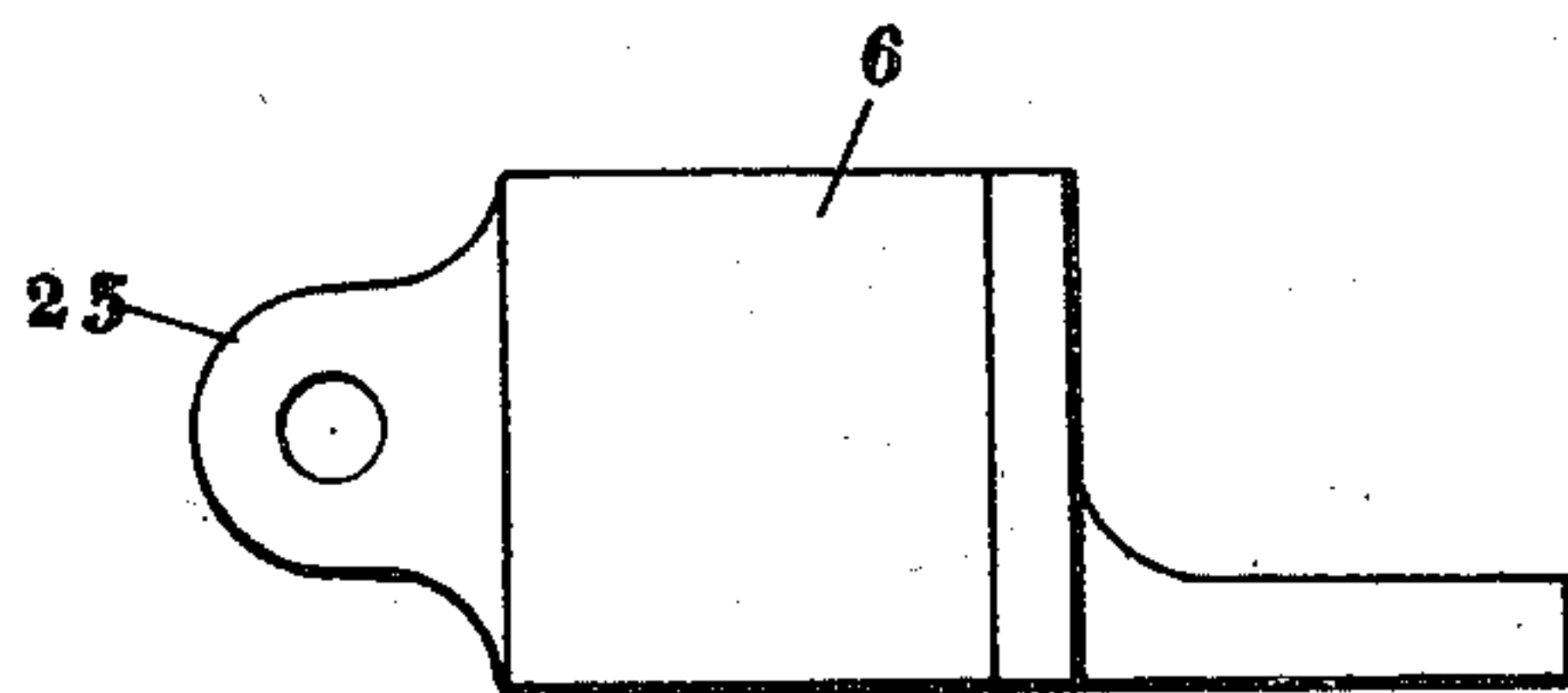


Fig. 5



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UNITED STATES PATENT OFFICE.

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DRAFT-RIGGING.

965,183.

Specification of Letters Patent.

Patented July 26, 1910.

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To all whom it may concern:

Be it known that I, GEORGE HARGREAVES, Jr., a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Draft-Riggings, of which the following is a specification, reference being had therein to the accompanying drawings.

In draft riggings for cars, wherein springs are used to yieldingly transmit buffing and pulling shocks to the draft timbers, it is advisable that the parts be readily accessible for inspection and replacement. It is also desirable to have strains and stresses beyond the limits of the springs, transmitted directly to the draft timbers and not through the overloaded springs.

This invention relates to a draft rigging for cars wherein the parts may be inspected and replaced piece by piece without dismounting the entire mechanism, and wherein excessive shocks and strains above the capacity of the yielding members are carried directly to draft timbers independently of the buffing springs. Another advantageous result of the construction herein disclosed is that both buffing and pulling shocks are transmitted to absorbing springs in the same direction.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claim.

In the drawings, Figure 1 is a plan view of a draft rigging for cars embodying features of the invention. Fig. 2 is a view taken in side elevation with one of the side plates and a draft timber removed. Fig. 3 is an end view of the rigging on or about line $x-x$ of Fig. 1. Fig. 4 is a view in section on line $y-y$ of Fig. 1. Fig. 5 is a view of a modified coupler body.

Referring to the drawings, a pair of parallel draft timbers 1 are bolted or otherwise suitably attached to the underside of the main sills 2 and end sill 3 of a car of standard type. A coupler 4 whose head is of conventional, approved construction rides on a stirrup 5 hung from the car frame, and at its inner end is enlarged into a body 6 longitudinally movable on a plate 7 secured against the lower margins of side plates 8 which are bolted against the proximate faces of the draft timbers. Each plate has a pair of transversely disposed ribs 9 and 10 which limit the movement of lateral lugs 11 on the

body 6 and thus act as stops defining the play of the coupler. Upward displacement of the coupler is limited by properly designed ears 14 on the side plates, the forward projections 14 preferably also abutting the inner face of the end sill 3.

The body of the coupler extends under a cross-pin 16 passing through the side plates and draft timbers, on which a compression lever 17 is pivoted to oscillate in a vertical plane. The forward arm of the lever has a rounded end or nose 18 bearing down on the coupler body which has a V-shaped depression in its upper side between lateral flanges 19, the front face 20 of which forms a cam surface that raises the lever nose when the coupler is driven back by a buffing shock, and the rear face 21 of which acts as a cam to raise the lever nose when the coupler is drawn forward. A lubricant may be applied to the surfaces where it is easily retained.

The rear arm of the lever rests on a series of sets of coil springs 22, 23 and 24, each supported on the bottom plate 7 and held against dislodgment by transversely shallow concave grooves in the adjacent faces of the side plates 8. Bearing disks 25 with convex upper faces on which the lever may tilt, and projecting studs on the lower sides, are interposed between the springs and the lever.

The compression of the springs is graduated, the set 22 nearest the lever fulcrum pin 16 being always in compression while the outer set 24 is normally free or uncompressed when the lever nose is at the bottom of both coupler body cam faces. This adjustment of the springs may be conveniently aided by the stepped underside of the lever, as indicated, if desired.

In the design of the parts, both the coupler and lever as well as the plates are properly ribbed and flanged to insure lightness together with strength to withstand the strains and shocks they receive.

As shown in Fig. 5, the body 6 of the coupler may be provided with ears 26 which are apertured to register with the strap-pin hole of a standard draw bar so that the draft rigging may be used in connection with a standard M. C. B. equipment.

In operation, either buffing shocks or pulling strains within the limits of elasticity of the springs are transferred to them through the oscillations of the lever from

the camming action of the coupler. Excessive shocks in either direction are absorbed by the springs through the lever without allowing the lugs to come in contact with the stops until the springs are compressed to the full limit after which the overload is carried directly to and taken care of by the draft timbers. By removing the bottom plate, any of the springs may be replaced without dismounting the entire rigging, and the coupler or the lever may likewise be as readily repaired.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim as my invention is:—

The combination with the longitudinal and end sills of a car, of a pair of spaced draft timbers secured against the under side of the sills, side plates on the adjacent faces of the timbers, a bottom plate secured against the lower edges of the side plates, a coupler longitudinally movable on the bot-

tom plate between the side plates, provided on its upper side with a recess whose bottom surface is formed by a pair of cam faces inclined in opposite directions to the major axis of the coupler, a cross-pin extending through the draft timbers and side plates above the inner end of the coupler, a lever fulcrumed thereon whose outer end is adapted to ride on the cam faces and is prevented by the recess sides from moving laterally, a main spring in compression between the lever and bottom plate adjacent the fulcrum pin, adapted in all positions of the lever to yieldingly resist the movement thereof and auxiliary springs adapted to successively resist movements of the lever when the main spring is overloaded, the side plates having transverse retaining means for the several springs.

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

GEORGE HARGREAVES, JR.

Witnesses:

ANNA M. DORR,

OTTO F. BARTHEL.