

No. 804,649.

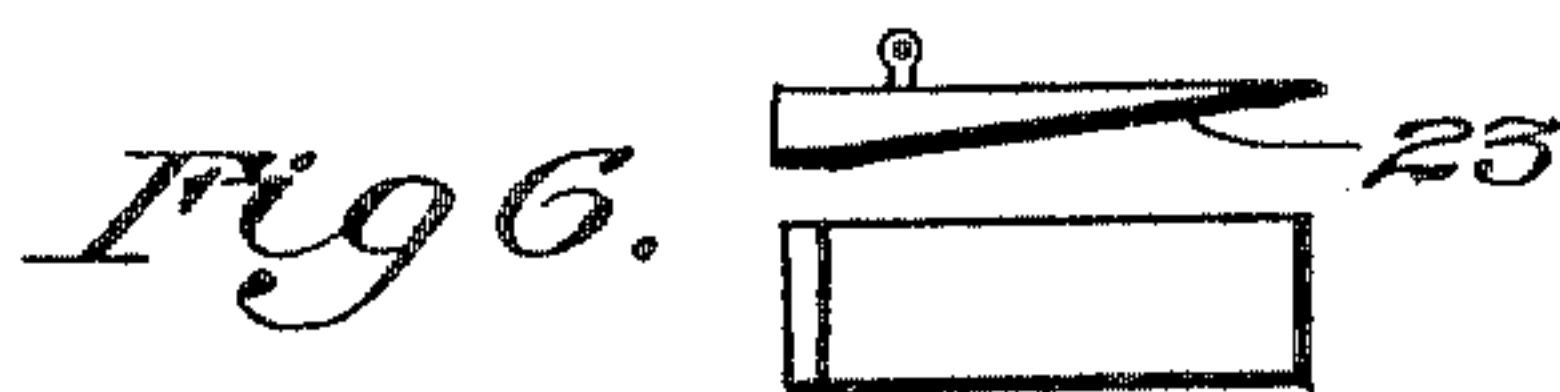
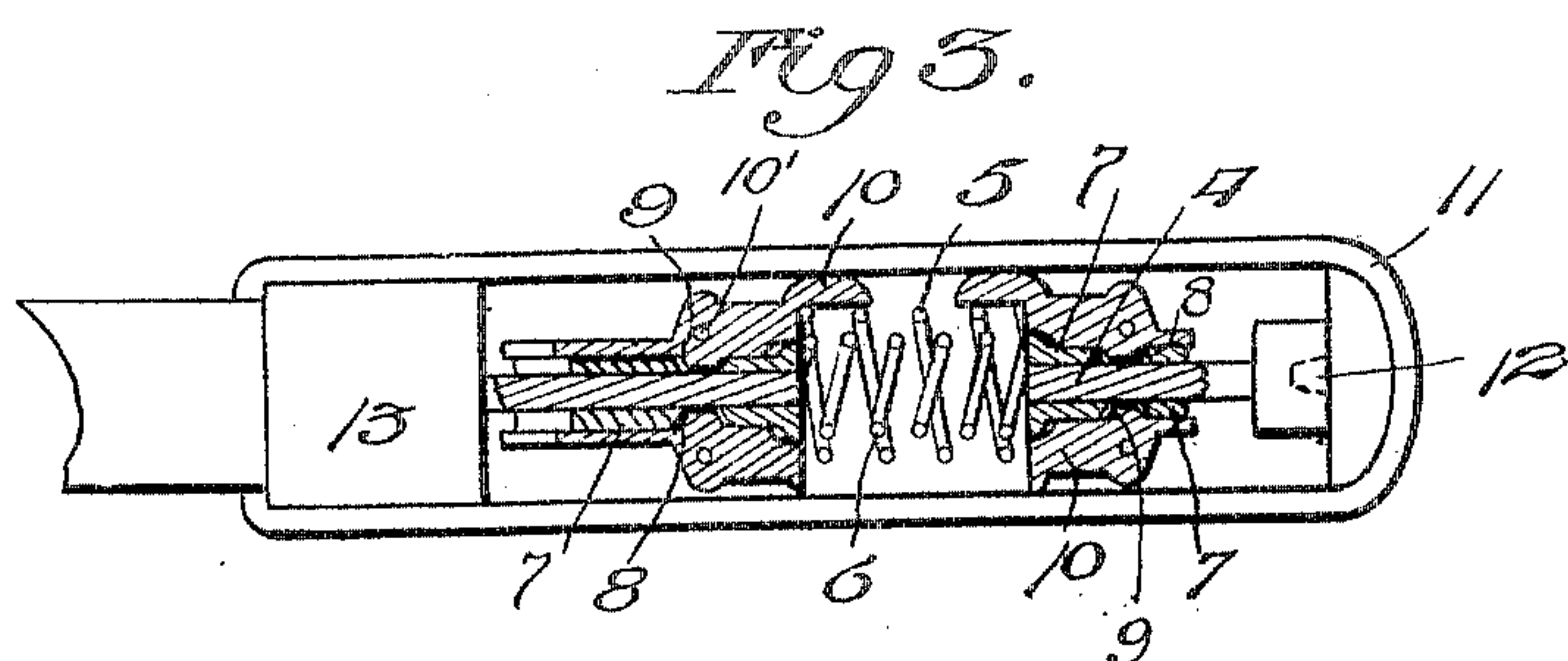
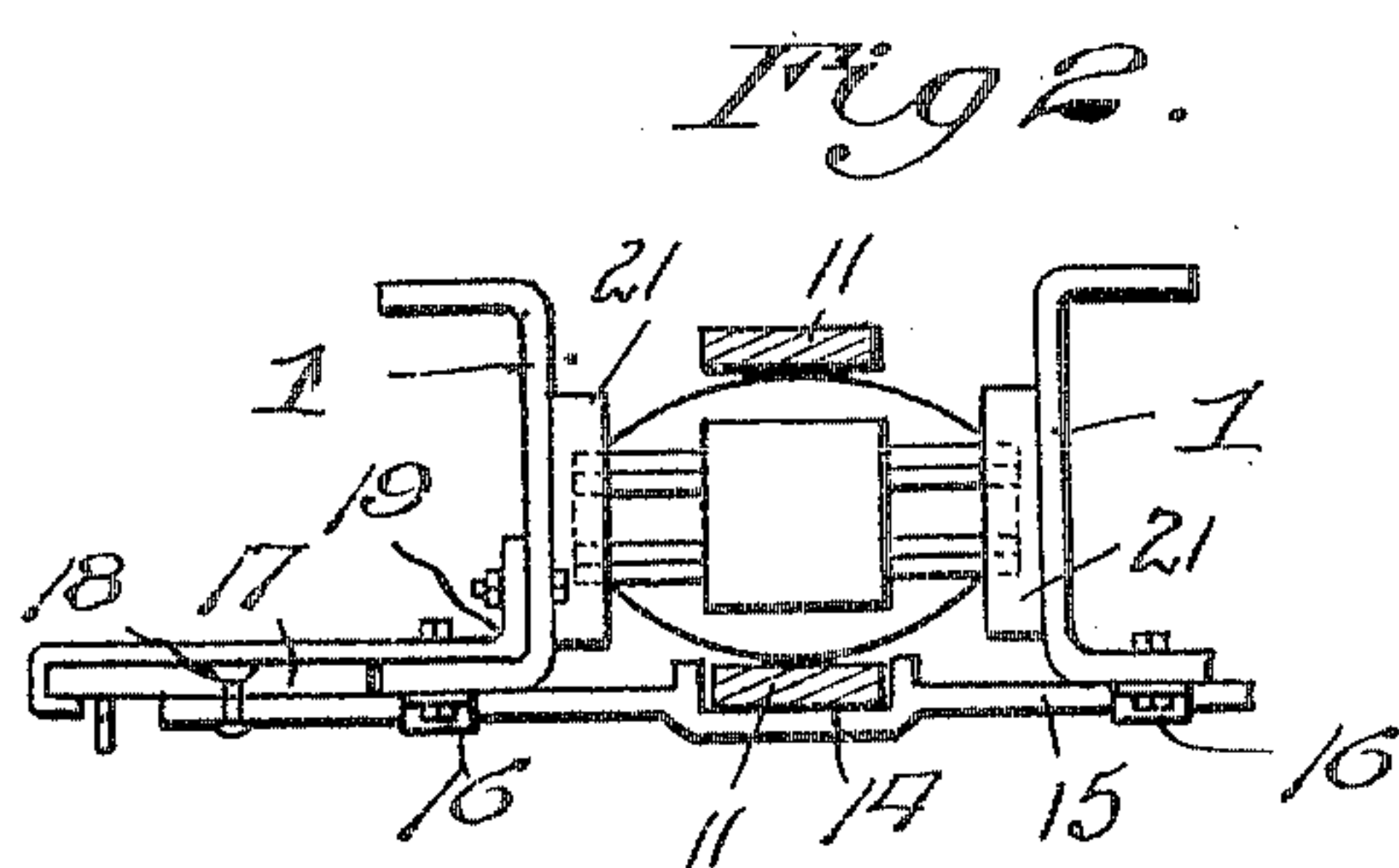
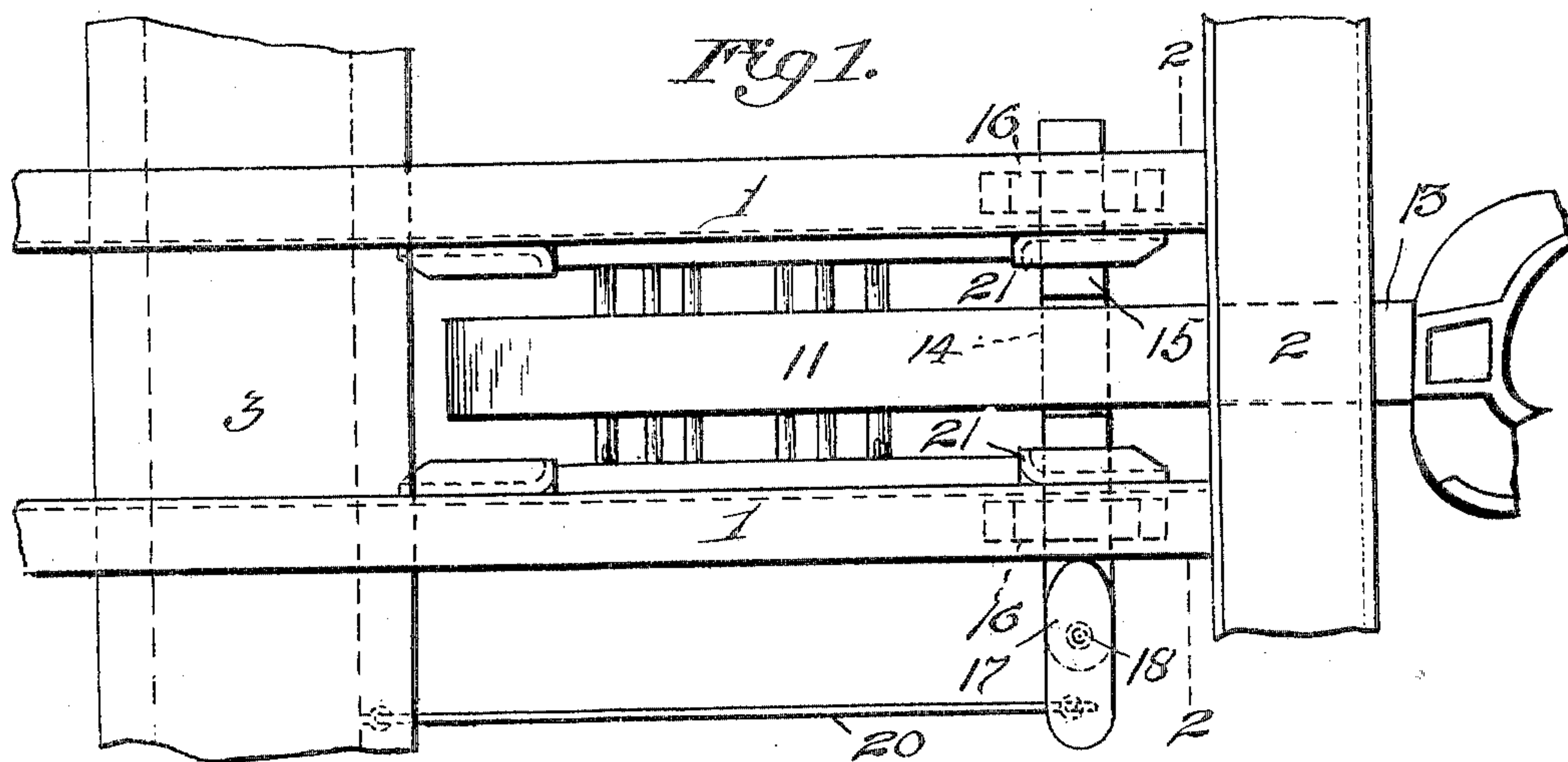
PATENTED NOV. 14, 1905.

J. F. COURSON.

DRAFT RIGGING FOR RAILWAY CARS.

APPLICATION FILED SEPT. 8, 1904.

3 SHEETS—SHEET 1.



Inventor

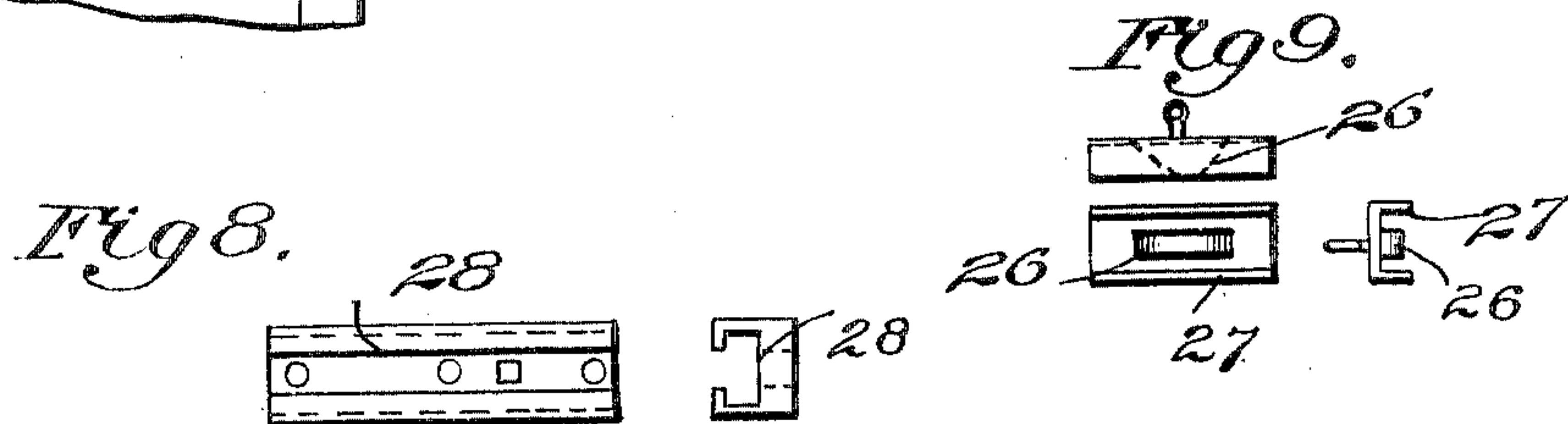
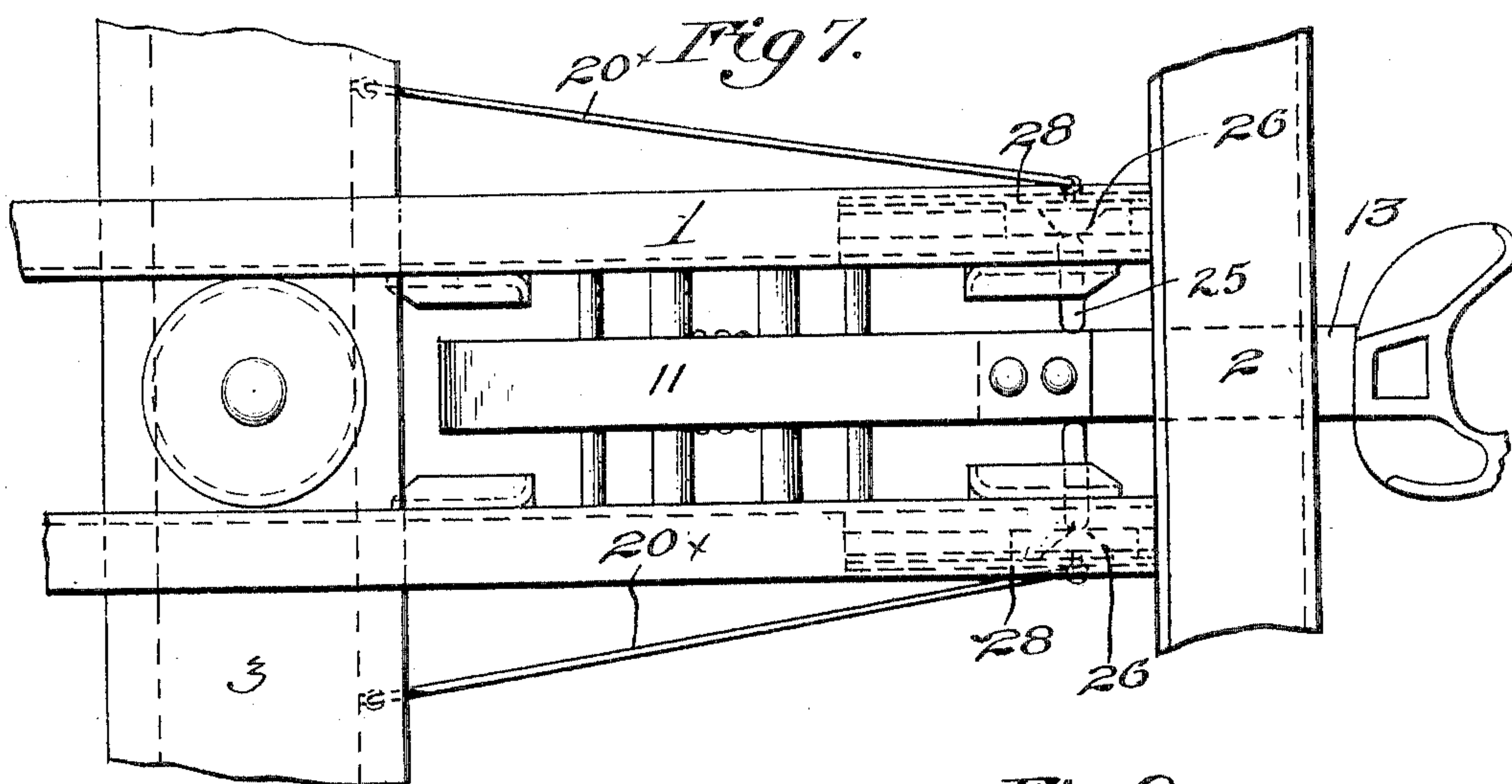
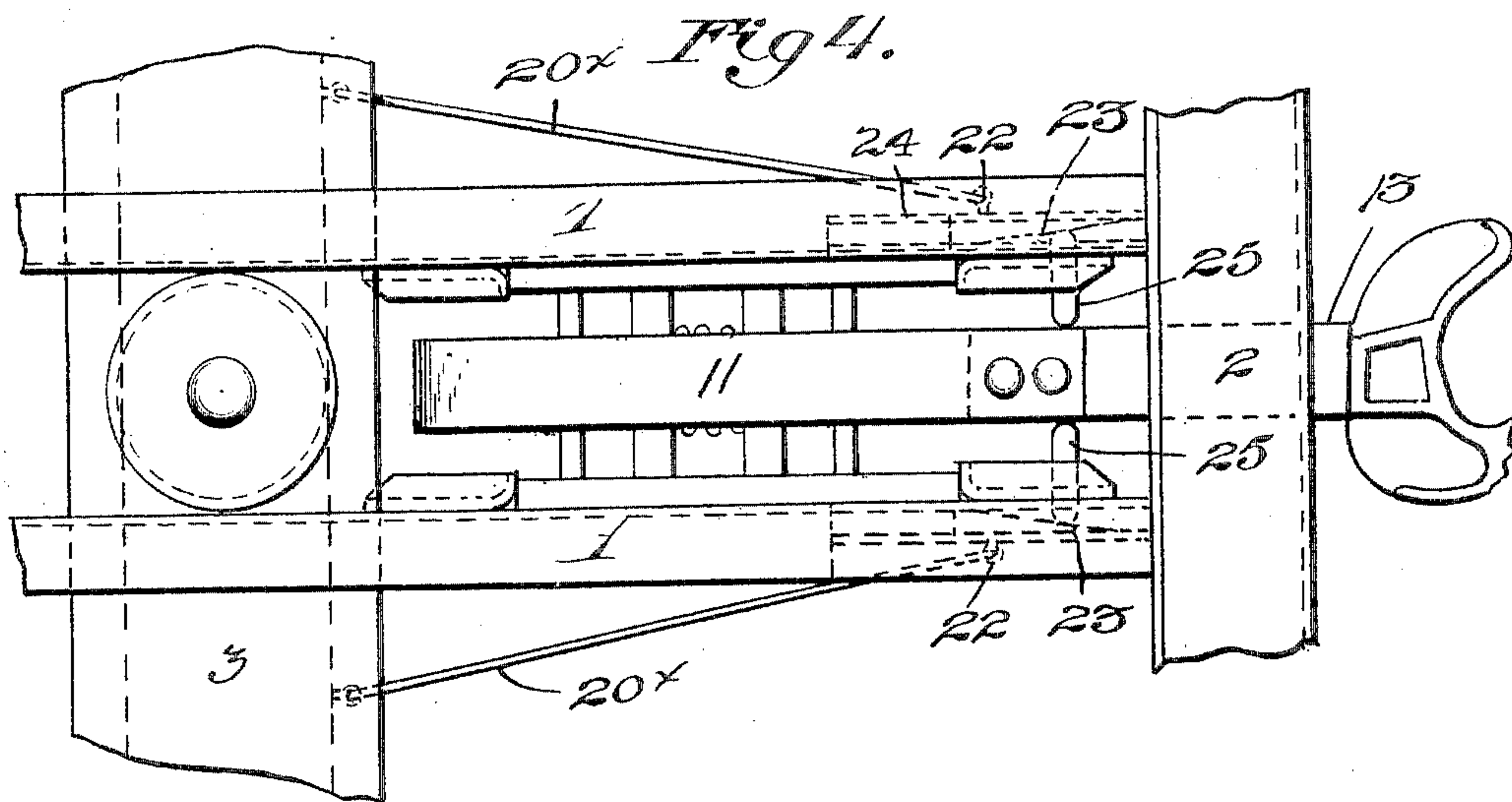
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3 SHEETS—SHEET 2.



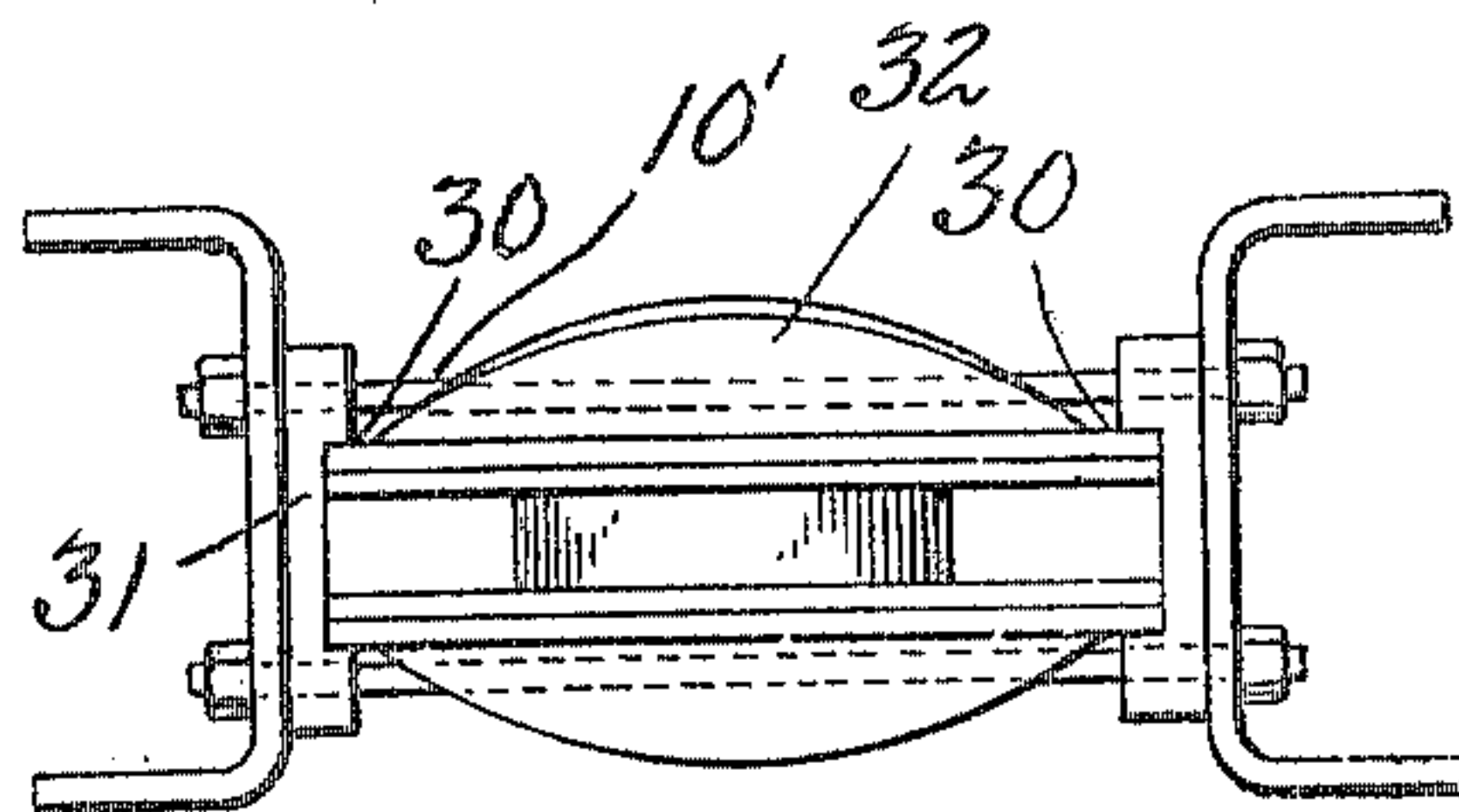
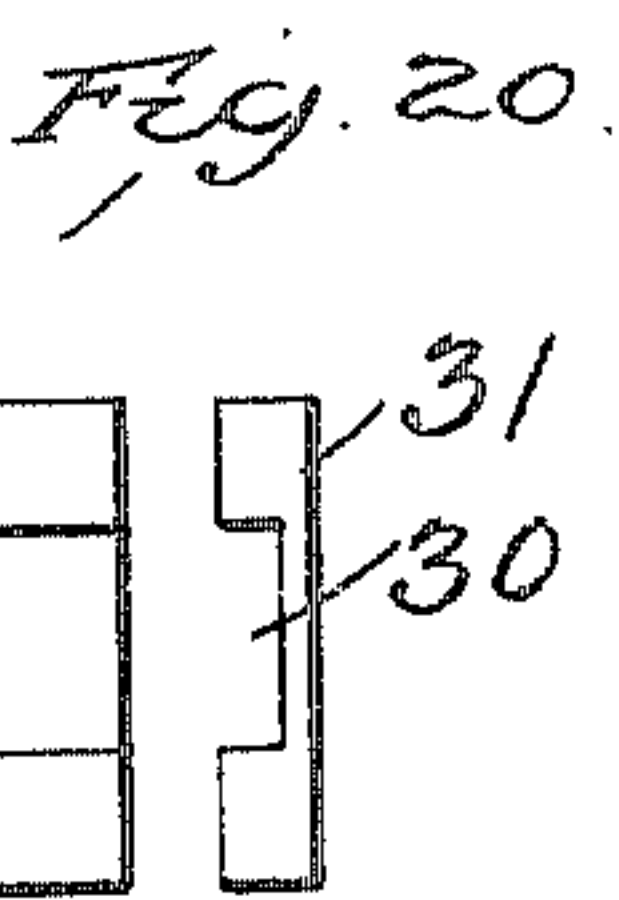
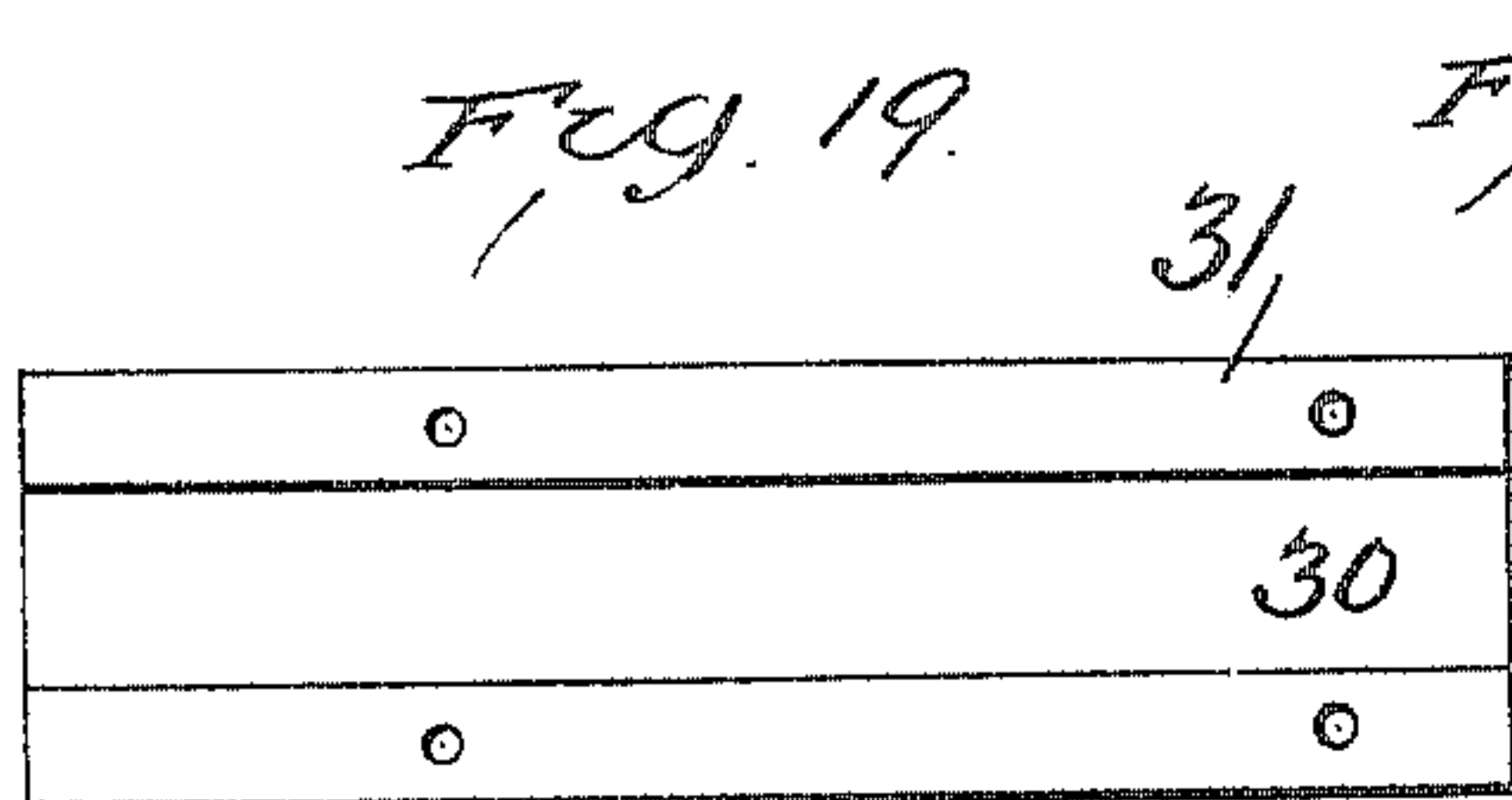
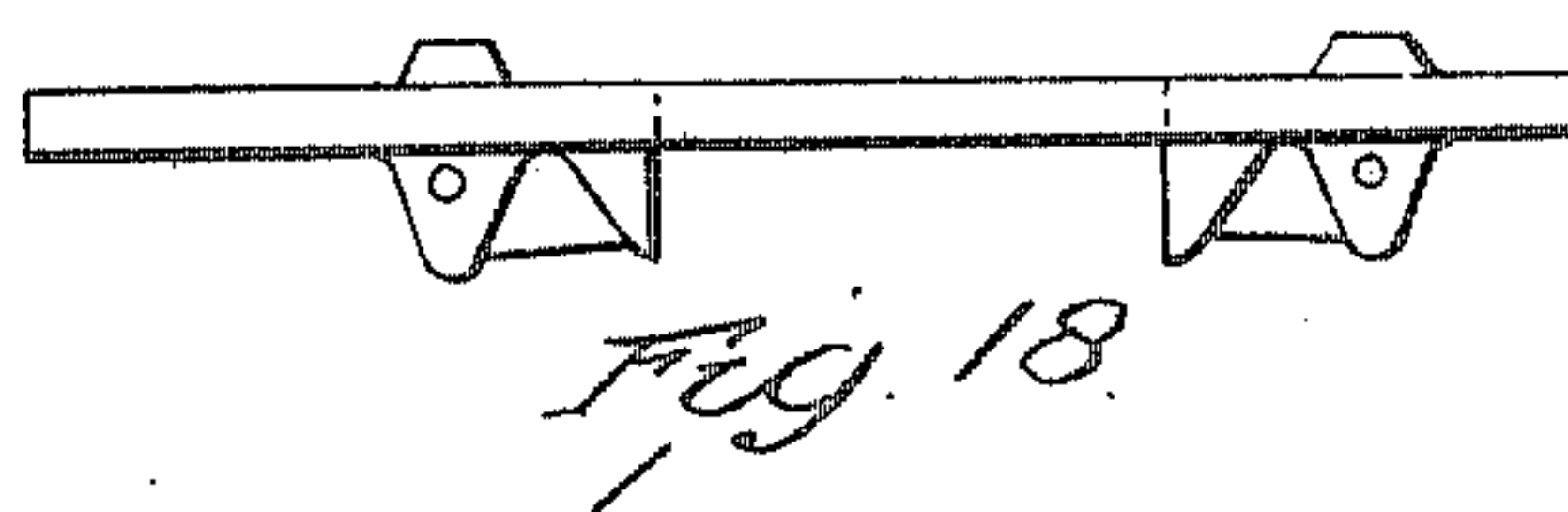
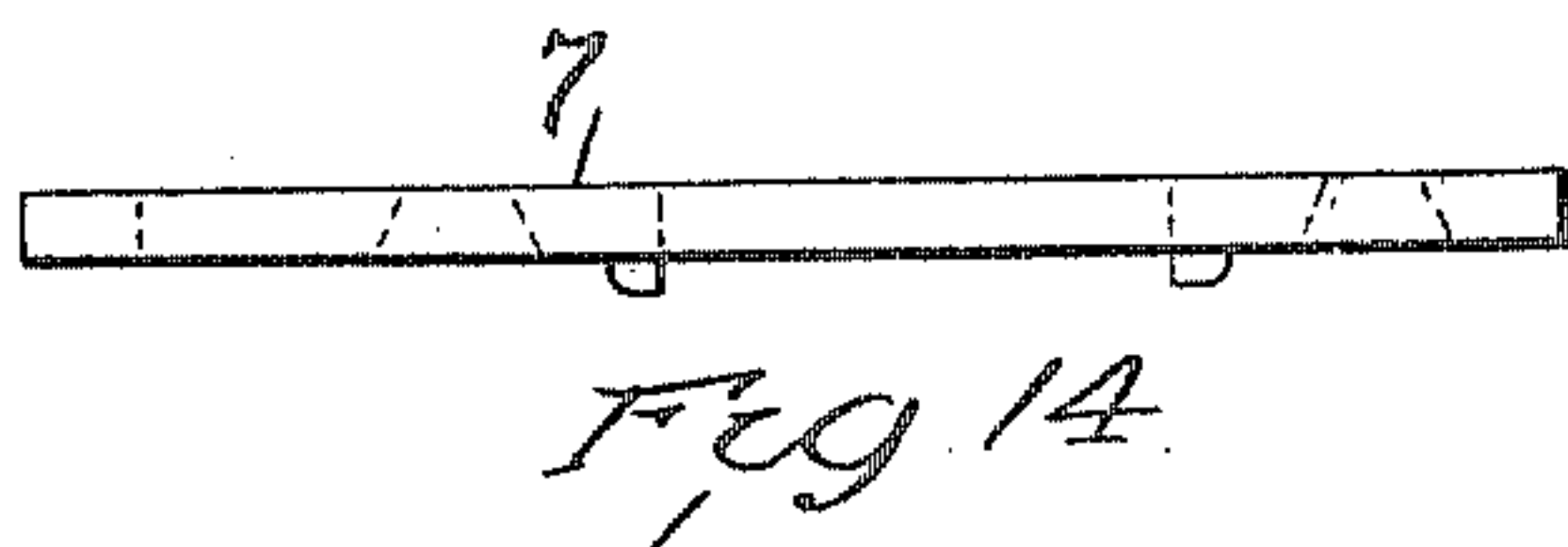
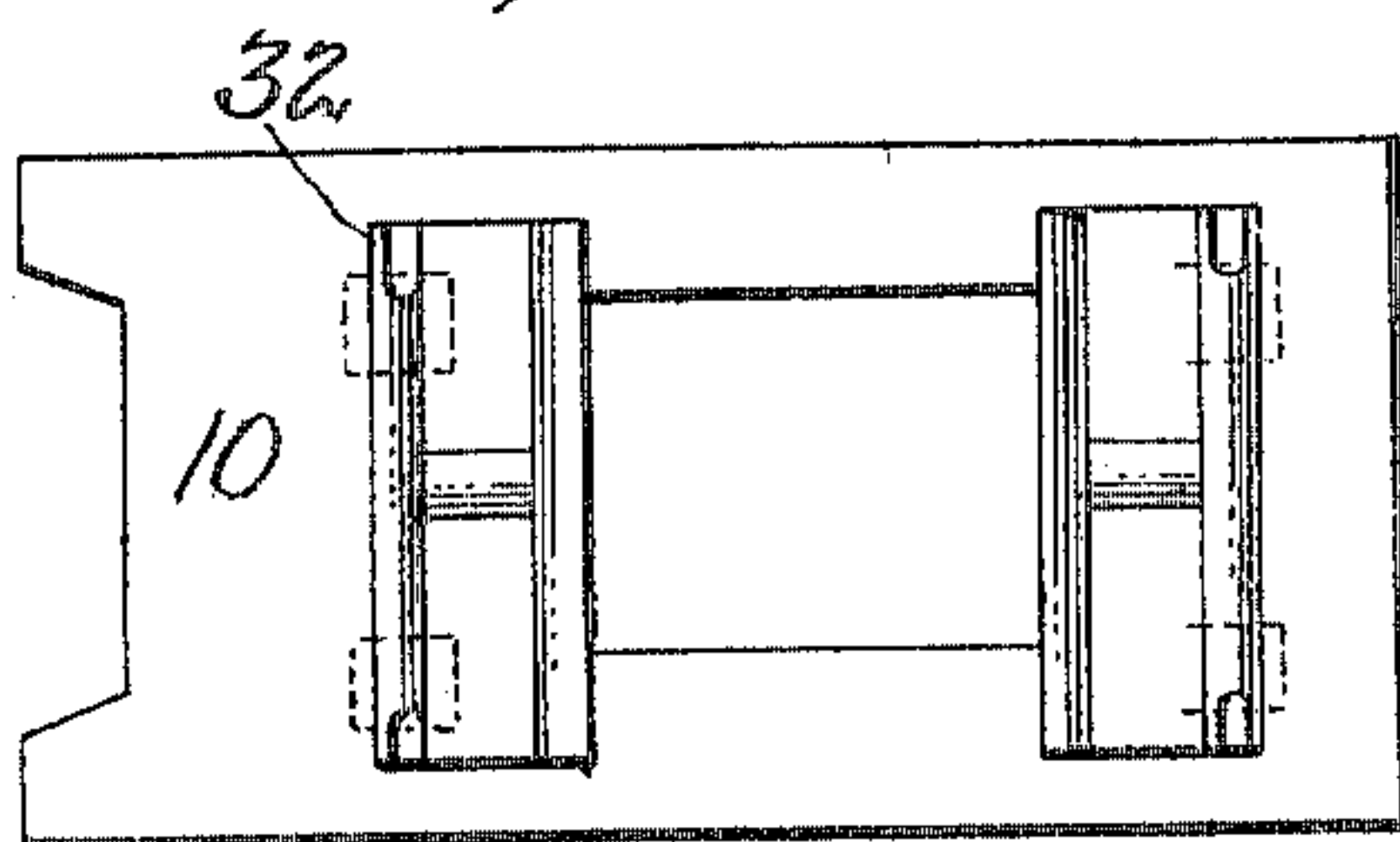
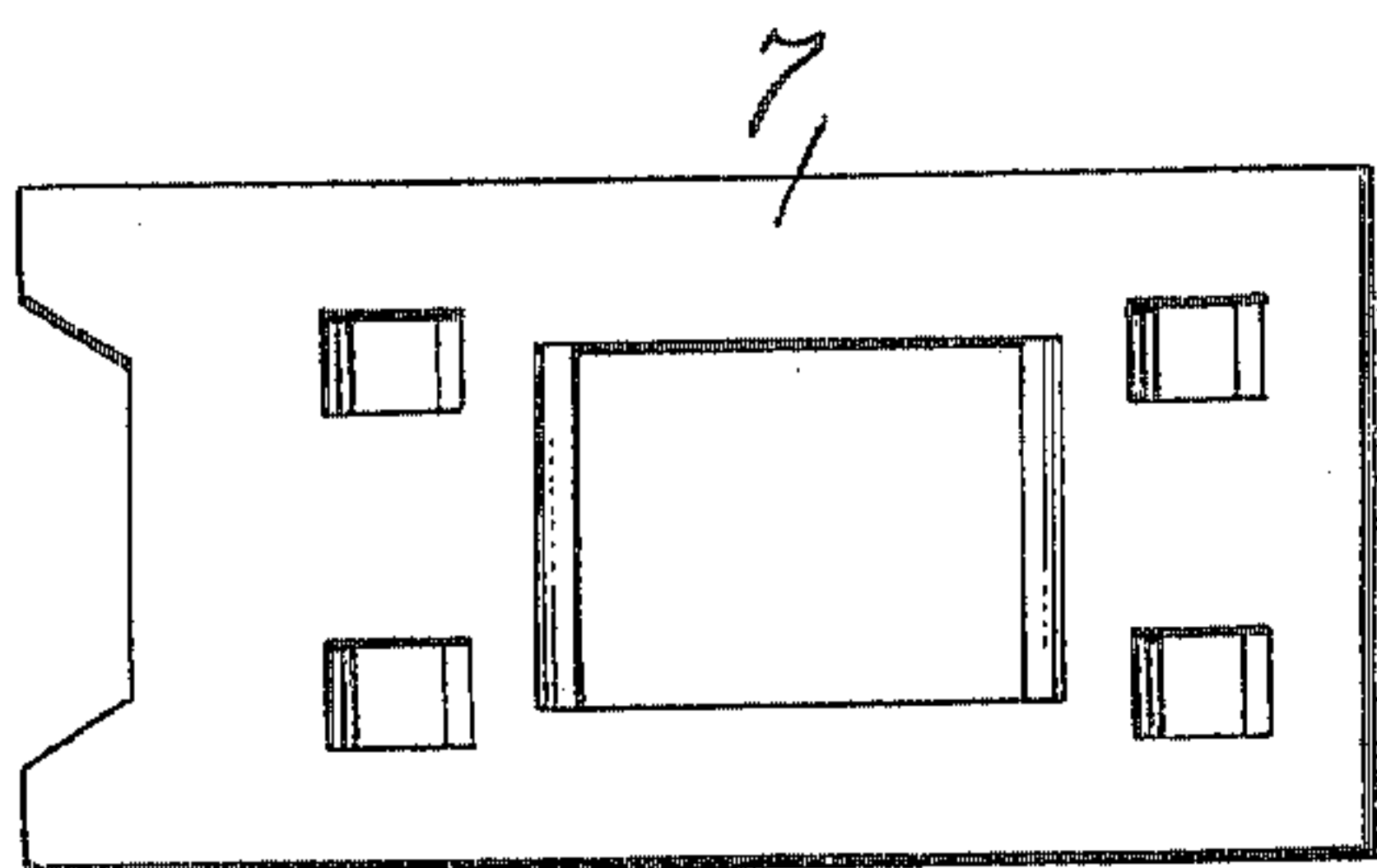
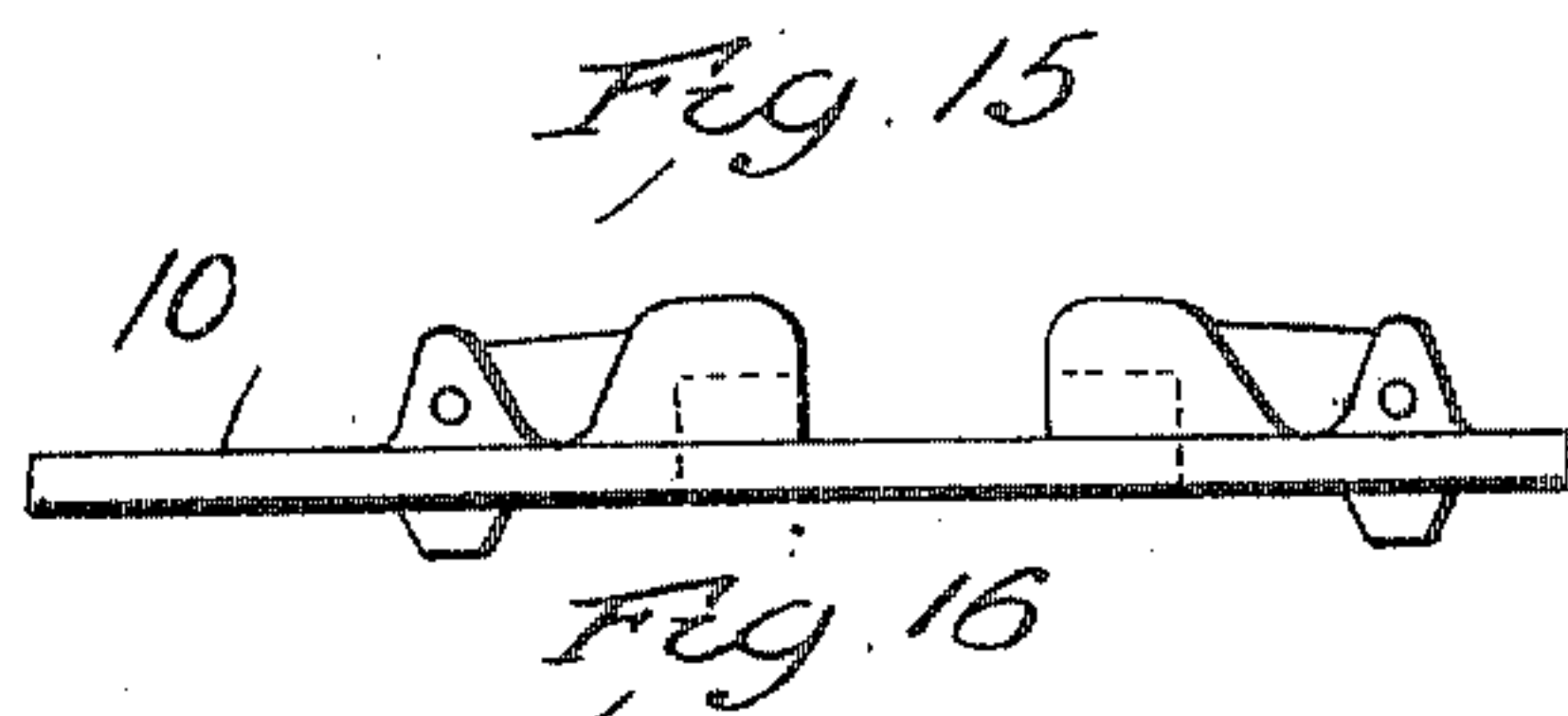
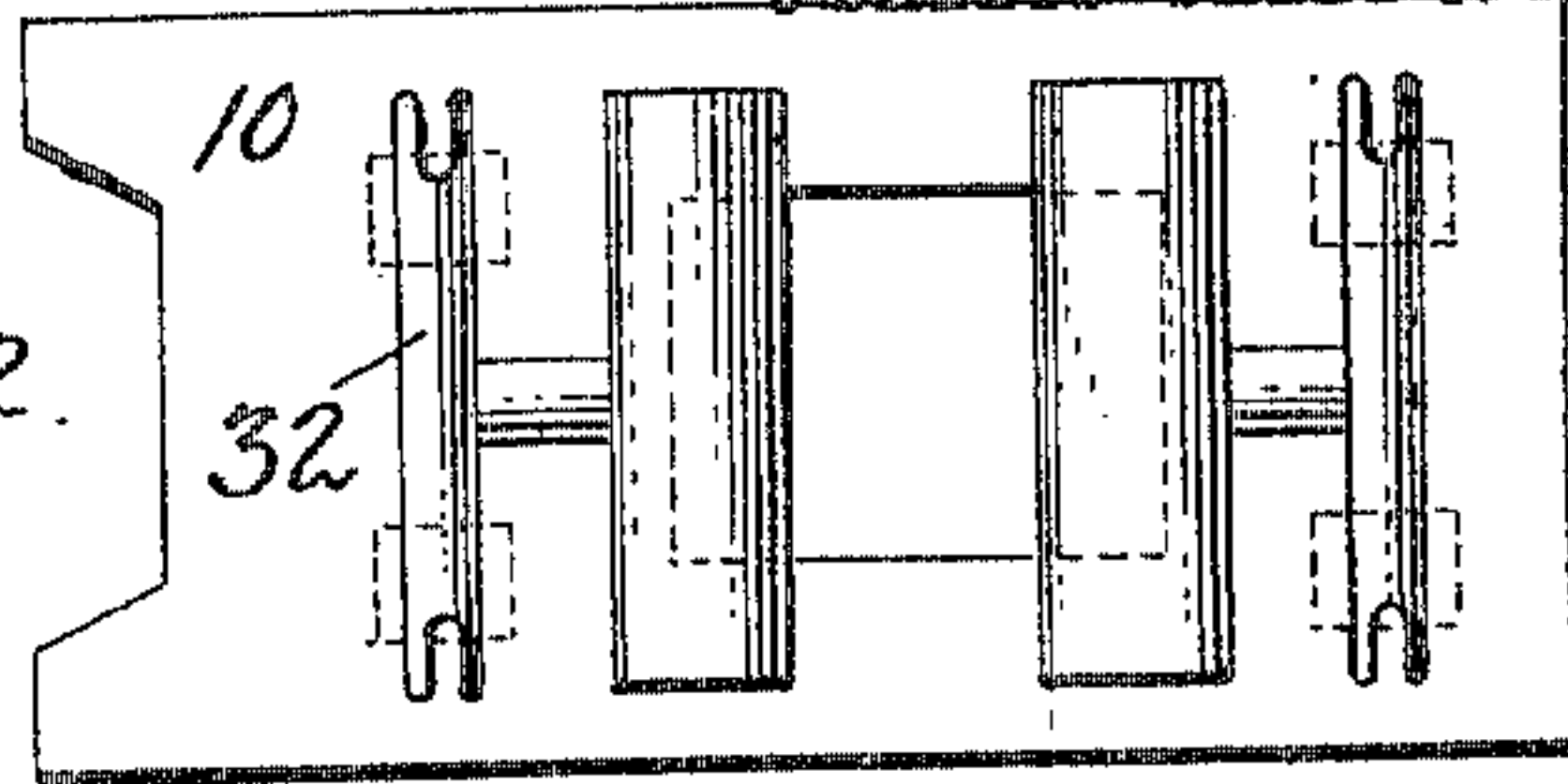
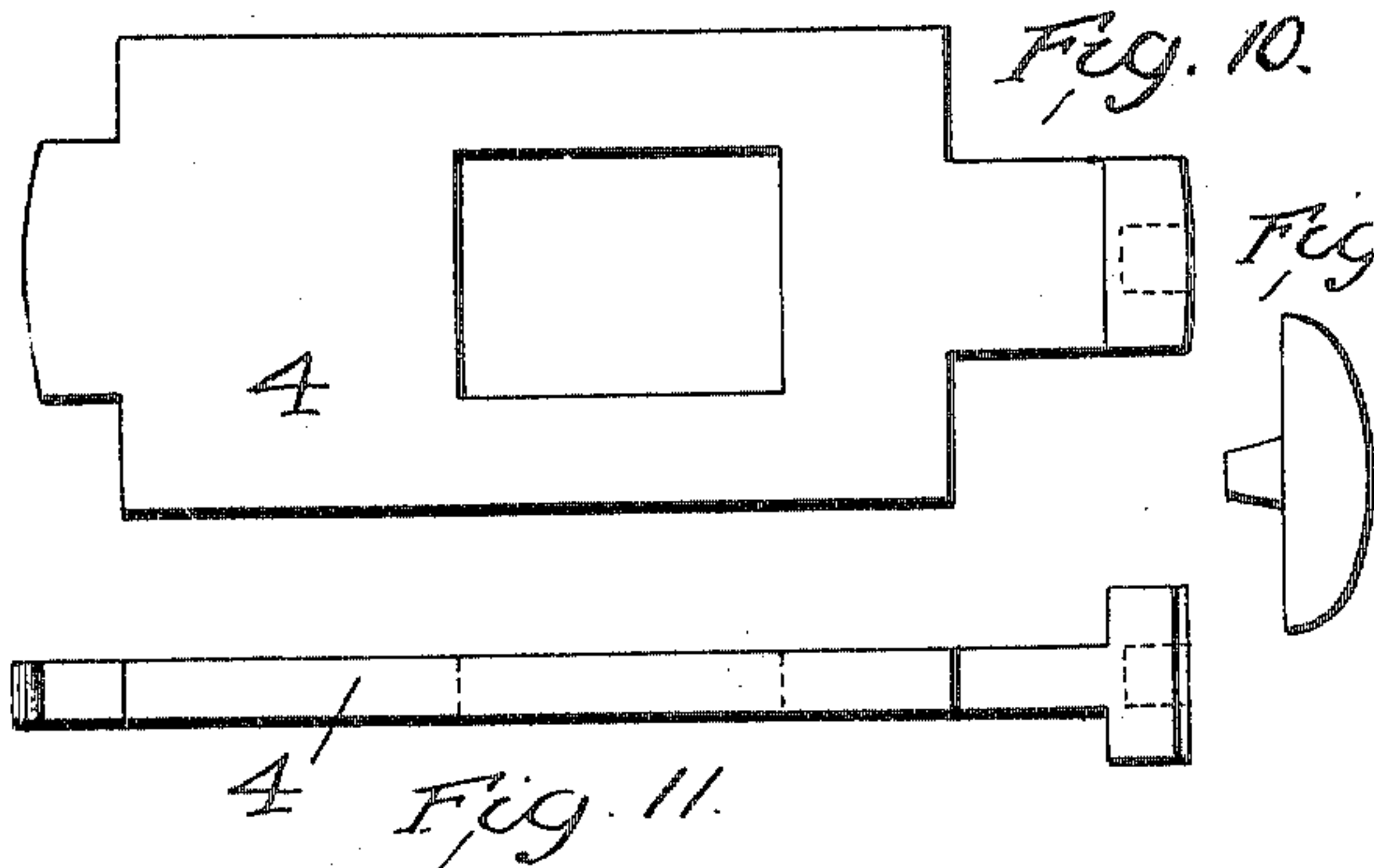
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3 SHEETS—SHEET 2



Attest:
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Inventor
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By: *[Signature]*
Attys.

UNITED STATES PATENT OFFICE.

JOHN FRANKLIN COURSON, OF PITCAIRN, PENNSYLVANIA.

DRAFT-RIGGING FOR RAILWAY-CARS.

No. 804,649.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed September 8, 1904. Serial No. 223,726.

To all whom it may concern:

Be it known that I, JOHN FRANKLIN COURSON, a citizen of the United States, residing at Pitcairn, Pennsylvania, have invented certain
5 new and useful Improvements in Draft-Rigging for Railway-Cars, of which the following is a specification.

My invention relates to draft-rigging for railway-cars, and more particularly to means
10 for controlling the position of the draft-bar, so that, for instance, when the car is on a straight track the draft-bar will be positioned automatically in the center line of the car, thus avoiding the necessity of the men going
15 between the cars to line up the couplers.

My invention relates to other features concerning the connection between the draft-bar or coupler and the other parts of the draw-gear, whereby the said bar is permitted to
20 have lateral and rocking movement.

The invention consists in the features and arrangement of parts hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view
25 of the preferred form of my invention. Fig. 2 is a cross-sectional view on line 2 2 of Fig. 1. Fig. 3 is a view of the coupler or draft-bar with the friction-gear and buffer-spring in section. Fig. 4 is a plan view relating to
30 another form of the invention. Fig. 5 shows details of a guide for a sliding wedge which controls the coupler. Fig. 6 shows the wedge adapted to the said guide. Fig. 7 is a plan view of another form of my invention. Figs.
35 8 and 9 are views of details relating to Fig. 7. Figs. 10 and 11 represent, respectively, a plan view and a side elevation of the centrally-arranged draft bar or plate. Fig. 12 is a side
40 view of the block fitted to the end of the loop or yoke. Fig. 13 is a plan view of one of the friction-plates. Fig. 14 is an edge view of the same. Fig. 15 is a plan view of the upper abutment-plate. Fig. 16 is a side view of the same. Figs. 17 and 18 are views of
45 the lower abutment-plate. Figs. 19 and 20 are respectively a side and end view of the abutment-supporting plates, one of which is fixed to the inner side of each central sill and which receives the lateral edges of the abut-
50 ment-plates and the other plates, and thus sustain the same. Fig. 21 is an end view of a draft-rigging supported between the center
sills.

In the drawings, 1 indicates the longitudinal
55 sills of the car, and 2 the end sill. The truck-bolster is shown at 3. The draft-gear is car-

ried by the sills of the car-body, and the coupler or draft-bar is adapted to have lateral play and is controlled through connections leading to the truck, said connections being
60 operated when the truck alters its position in relation to the car-body when going from a straight part to a curved part of the track or the reverse.

The draft-gear proper comprises a center
65 bar or plate having an opening for the springs 5 6, said plate being borne upon by friction-plates 7, provided with cams or inclines 8 to coact with inclines or cam-surfaces 9 on the abutment-plates 10, which are held to the sills
70 of the car, the said abutment-plates holding firmly one end of the spring when the other end is borne upon and compressed by the movement of the center plate. These parts are substantially the same in arrangement and
75 operation as those disclosed in an application for Letters Patent of the United States filed by me February 10, 1905, Serial No. 245,161. The abutment-plates 10 are held to the sills
80 of the car by bolts 10', passing through the said plates. Briefly stated, the operation of these parts is that when the center bar is moved in either direction it will compress the large spring 5. The friction-plates and also
85 the inner small spring 6 move with the center bar or plate until the inclines of the friction-plates strike the inclines of the abutment-plates when the said friction-plates will be forced inwardly to place the center plate or
90 bar under strong frictional restraint and then the continued movement of the center bar is against the tension of both the large and small spring. This center plate at its ends receives the pull and push of the draft-bar proper,
95 which is in the form of a loop or yoke 11, having a swiveled connection at 12, with the rear end of the center plate, said connection also allowing the draft-bar or loop to have lateral swinging movement at its front end
100 where it carries the coupler-head 13. The coupler-head is thus allowed lateral movement in order to prevent strain on the parts when the car is going around curves. This swiveled connection consists of a conical pin on
105 the yoke fitting a socket in the rear end of the center plate. In order to automatically return the coupler to a central position when the car passes onto a straight track and to hold it in this central position so long as it is
110 upon this portion of the track, I provide connections between the coupler or draft-bar and the car-truck, so that the turning of the car-

truck in relation to the car-body and the coupler supported thereon will cause the said coupler to be swung to its central position and there held. This connection is as follows:

5 The lower side of the loop or draft-bar rests in a seat 14 of a bar 15, extending transversely of the longitudinal sills of the car, arranged to slide in the straps or loops 16, secured to the lower side of the sills. This bar carries a
10 locking and releasing lever or arm 17, pivoted thereto at 18 and arranged to work within a bracket or arm 19, bolted to the center sill. This locking arm or lever is connected to the truck-bolster by a rod 20, pivoted to the lock-
15 ing-arm and to the truck. With the parts in the position of Fig. 1—*i. e.*, with the car on a straight track and the truck-frame occupying its normal position in relation to the car-body—the rod 20 will hold the locking
20 arm or lever in a position transversely of the frame and the inner end of said arm or lever will bear on the edge of the car-sill, while its outer end will bear on the downturned end of the bracket 19, and thus the slide-bar 15 will
25 be held firmly in place, and thereby the draw-bar will be held in central position, and these same connections also serve to return the draw-bar to its central position when it has been moved therefrom, for it will be clear
30 that as the car runs from a curved to a straight track the connections will be operated and the locking-arm will move the slide-bar 15 so as to adjust the draw-bar to central position. It will be noticed that the ends of the lock-
35 ing arm or lever are rounded, so that they have a camming action against the surfaces upon which they bear. No springs are employed, and, further, it will be noticed that only the loop or coupler swings laterally,
40 while the main part of the gear, including the friction-plates and the buffer-springs, remain fixed to the frame. This fixed part of the draft-gear is held by the projections or lugs 21 on the longitudinal sills of the car.
45 Only one connection 20 is necessary; yet the action is the same whichever way the car may turn—that is to say, the arm or lever 17 will be turned and the draft-bar left free to swing laterally.

50 In Fig. 4 I show a modified arrangement in which I employ two rods 20^x, one on each side of the draft-gear. These rods are pivotally connected to the truck, and at 22 they are pivotally connected to wedges 23, slidable
55 in ways 24, fixed to the car-frame. These wedges act on pins 25, extending transversely of and guided in the frame, with their inner ends bearing on the sides of the coupler or draw-bar. No springs are used in this case, and
60 when the truck turns in relation to the car the pin on one side will be thrust in while the pin on the other side will retract or move outwardly, and thus the draft-bar will be controlled, being shifted laterally when the car passes onto
65 a curve. This arrangement will keep the

coupler in the center of the track at all times, and it may be used when all the cars which are to be coupled together are equipped with this mechanism.

With the form first described the coupler 70 is free to go in either direction on curves, and only when it goes on a straight line is it held firmly in the center of the sills. It can be applied to any one car and not interfere with the movement of the truck in case it is 75 coupled onto another car that has no lateral movement and can be applied to any construction of cars now running.

In Figs. 7, 8, and 9 a further modification is shown in which the laterally-movable pins 80 25, which bear on the draw-bar or coupler instead of being controlled by the wedges, as in the form just described, are operated by cams or double inclines 26 on slide blocks or pieces 27, movable in guideways 28 on the 85 car-sills. The cam-blocks are operated by bars 20^x, connected thereto and to the sill. In this form, like that first described, the invention may be applied to any one car in a train without interfering with or binding on the 90 car it is on when the coupler on the opposite car is stiff and cannot turn. This form permits the draft-bar to swing freely and without restraint from the operating means when the car goes around curves. 95

In all the forms there is a common feature of action in that the connections extending in a transverse direction on the car—*i. e.*, the pins 25 in two of the forms and the slide 15 in the other form—are all operated or controlled by means exerting a wedging or cam- 100 ming action thereon.

Reverting again to the specific form of draft-rigging, I would state that the plates of which this is composed, consisting of the center bar 105 or plate 4, the friction-plates 7, and the abutment-plates 10, are all supported by having their edges extend into grooves or recesses 30 on the inner sides of the plates or bars 31, which are held to the inner sides of the cen- 110 ter sills. These supporting bars or plates are shown in detail in Figs. 19 and 20, and Fig. 21 illustrates the manner in which the various parts of the draft-gear are supported thereby. The abutment-plates 10 are further 115 held by the cross-bolts 10', which extend through the enlargement or bosses 32 on the abutment-plates and also through the supporting-plates 31 and the webs of the center sills, as illustrated clearly in Fig. 21. In Figs. 1, 4, and 7 I have indicated in dotted lines the outline of the abutment-plates. 120

I claim as my invention—

1. In draft-rigging for railway-cars, buffer means held to the car-sills and a draft-bar em- 125 bracing the buffer means and having a swivel connection with the buffer mechanism to permit said draft-bar to have lateral swinging movement, and rocking movement, substan- 130 tially as described.

2. In combination in draft-rigging for railway-cars, buffer mechanism fixed to the car and a draft-bar in the form of a yoke having a swivel connection at its rear end to permit the said bar to swing laterally or to rock, substantially as described.

3. In combination in a draft-rigging for railway-cars, buffer means comprising a center plate 4, a spring engaging the center plate, abutment-plates between which the plate 7 moves and a draft-bar bearing on the ends of the center plate and adapted to exert a pulling and a pushing force thereon, said draft-bar being pivoted at its rear end in relation to the buffer means, substantially as described.

4. In combination, in a draft-rigging, a frame, a draft-bar having lateral movement, means engaging the draft-bar to move the same in both directions and guided in the frame to move transversely of the car, and connections for positively operating said transversely-moving means, said connections being joined to the truck-frame to be operated by the movement thereof, substantially as described.

5. In combination in a draft-rigging, a frame, a draft-bar having lateral movement, means engaging the draft-bar to move the same in both directions and guided in the frame to move transversely of the car, and connections for operating said means, said connections being joined to the truck-frame to be operated by the movement thereof, said connections including a device exerting a camming action on the transversely-extending means, substantially as described.

6. In combination, in a draft-rigging, a draft-bar supported to swing laterally of the car, means connected to the truck for returning the draft-bar to central position when the car is on a straight track, said means allowing the draft-bar to turn freely on curves and not under control of the said means, substantially as described.

7. In combination, in a draft-rigging, a draft-bar supported to swing laterally, means movable transversely of the draft-bar for moving it in both directions, and connections to the truck for controlling the said means, said connections and operating means exerting no control of the draft-bar on curves but returning and holding the bar in central position when the car is on a straight track, substantially as described.

8. In combination, in draft-rigging for cars, a laterally-movable draft-bar, means for moving the bar in either direction, and a single rod or connection between the said means and the car-truck, substantially as described.

9. In combination, in draft-rigging, a laterally-movable draft-bar, means for moving the same in either direction including a pivoted cam or lever, adapted to exert a pulling or a pushing effect on said draft-bar, and a connection from said cam or lever to the truck-frame, substantially as described.

10. In combination, in draft-rigging for cars, a draft-bar adapted to swing laterally, a slide movable transversely of the car-body, a cam or lever pivoted to the slide and adapted to bear on a frame part to either pull or push the draft-bar, and a rod connecting said cam or lever with the car-truck, substantially as described.

11. In combination, in draft-rigging for cars, a draft-bar adapted to swing laterally, a double-acting device to push or pull the said draft-bar in a direction transversely of the car, and a connection between the said double-acting device and the car-truck, said draft-bar being free from the restraint of said double-acting device in going around curves, substantially as described.

12. In combination, a laterally-swinging draft-bar, a slide-bar for pushing or pulling the said draft-bar laterally, a lever or cam pivoted to the slide-bar, frame parts between which the swinging cam turns and upon which it bears to push or pull the slide, and a rod connecting the cam to the truck to be operated thereby, the said draft-bar being free from the restraint of the said cam in going around curves.

13. In combination in draft-rigging for railway-cars, buffer mechanism fixed to the car and a draft-bar in the form of a yoke having a swivel connection at its rear end to permit the said bar to swing laterally or to rock, said swivel connection consisting of a conical pin on one part fitting in a socket in the other part, substantially as described.

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

JOHN FRANKLIN COURSON.

Witnesses:

RANDOLPH PEALE,
GEORGE PERRY MERTZ.