

(No Model.)

J. C. GLASS & J. COWAN.
CAR COUPLING.

No. 536,619.

Patented Apr. 2, 1895.

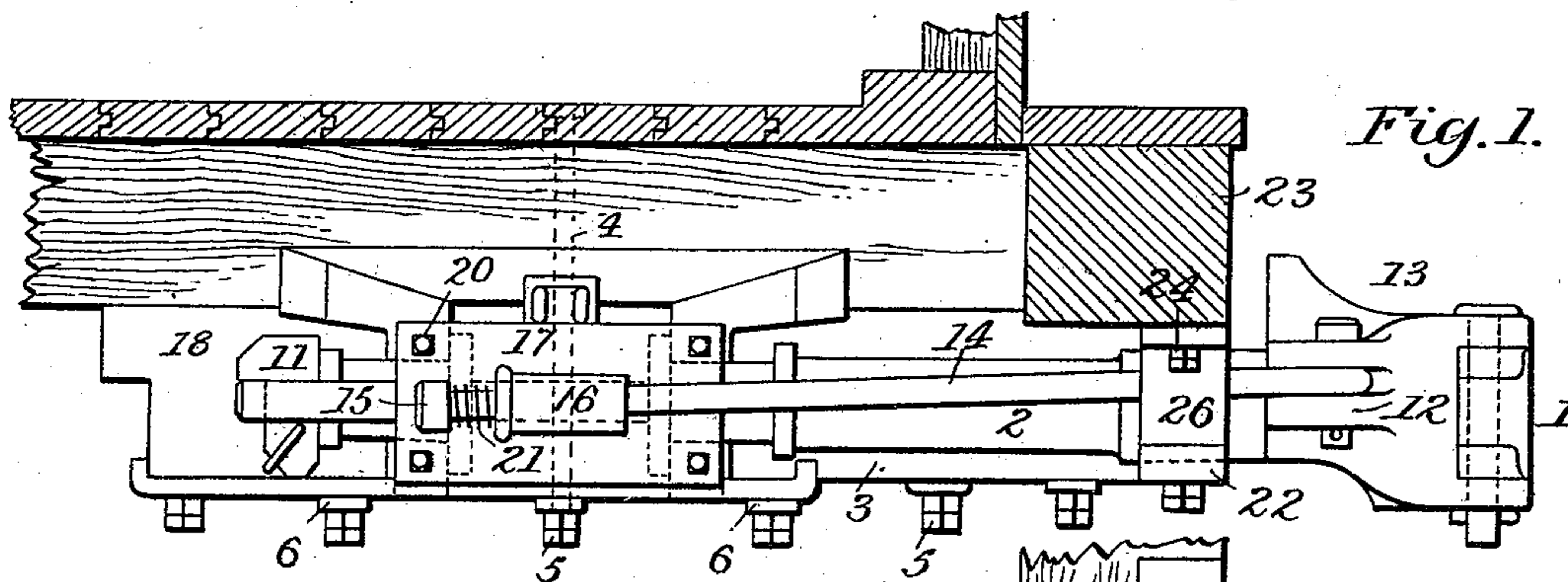


Fig. 1.

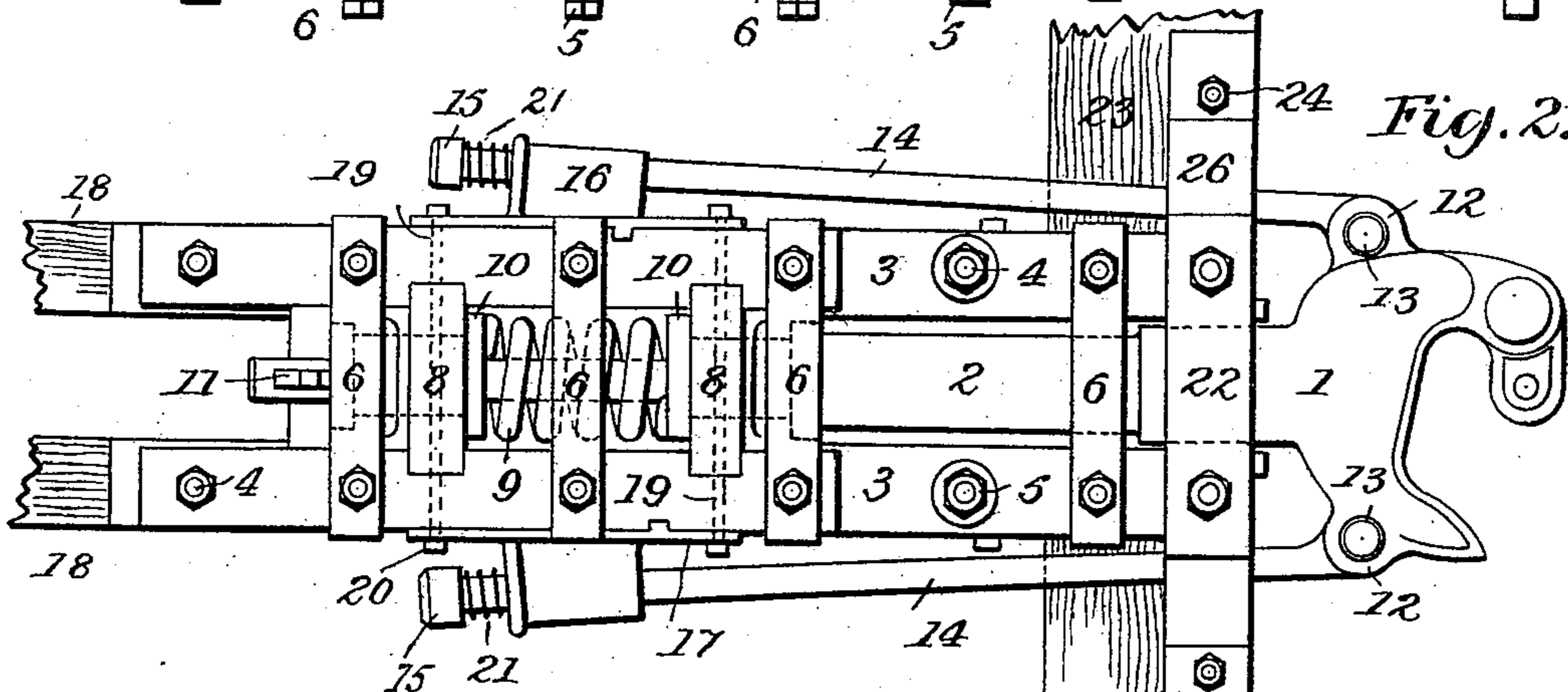


Fig. 2.

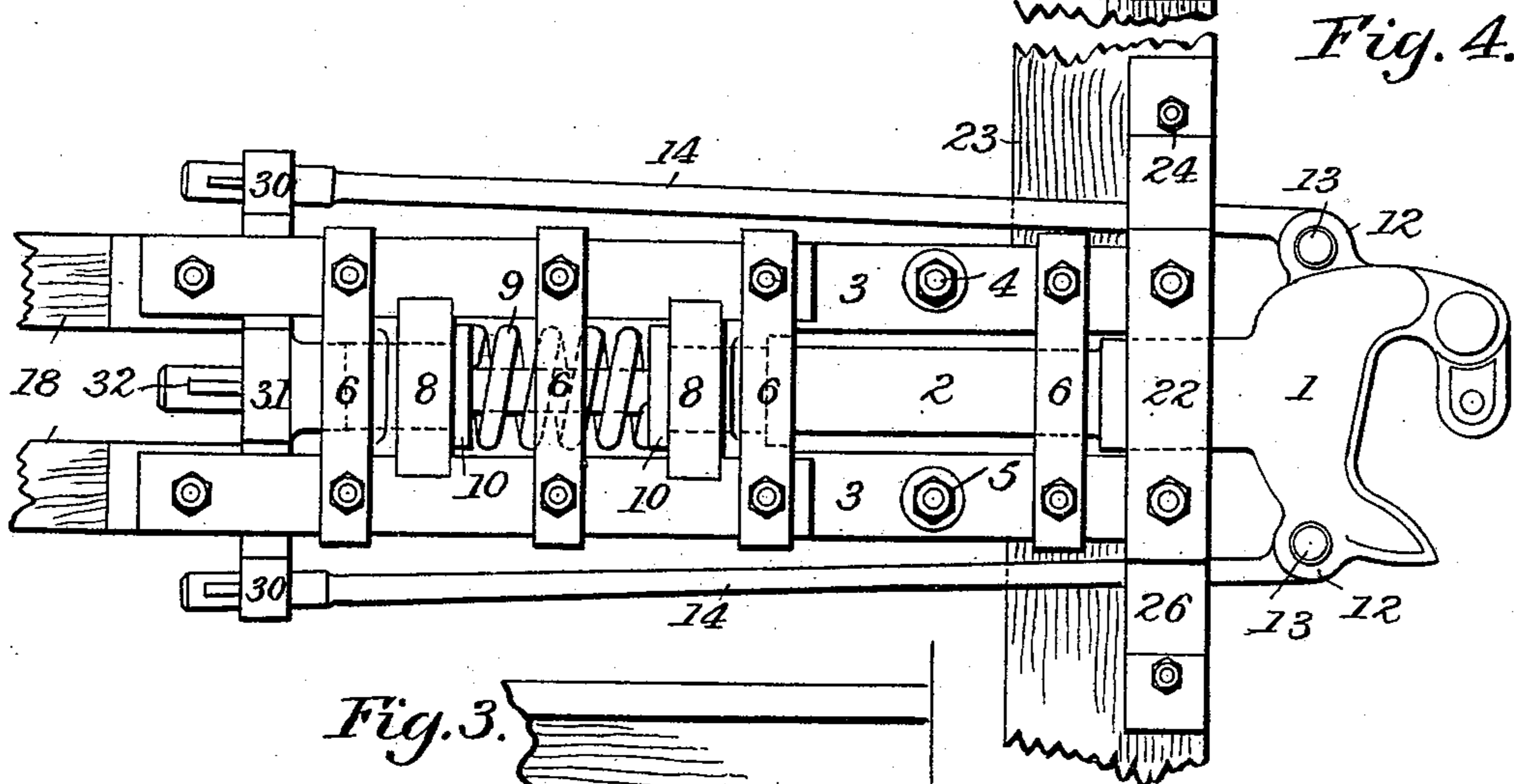
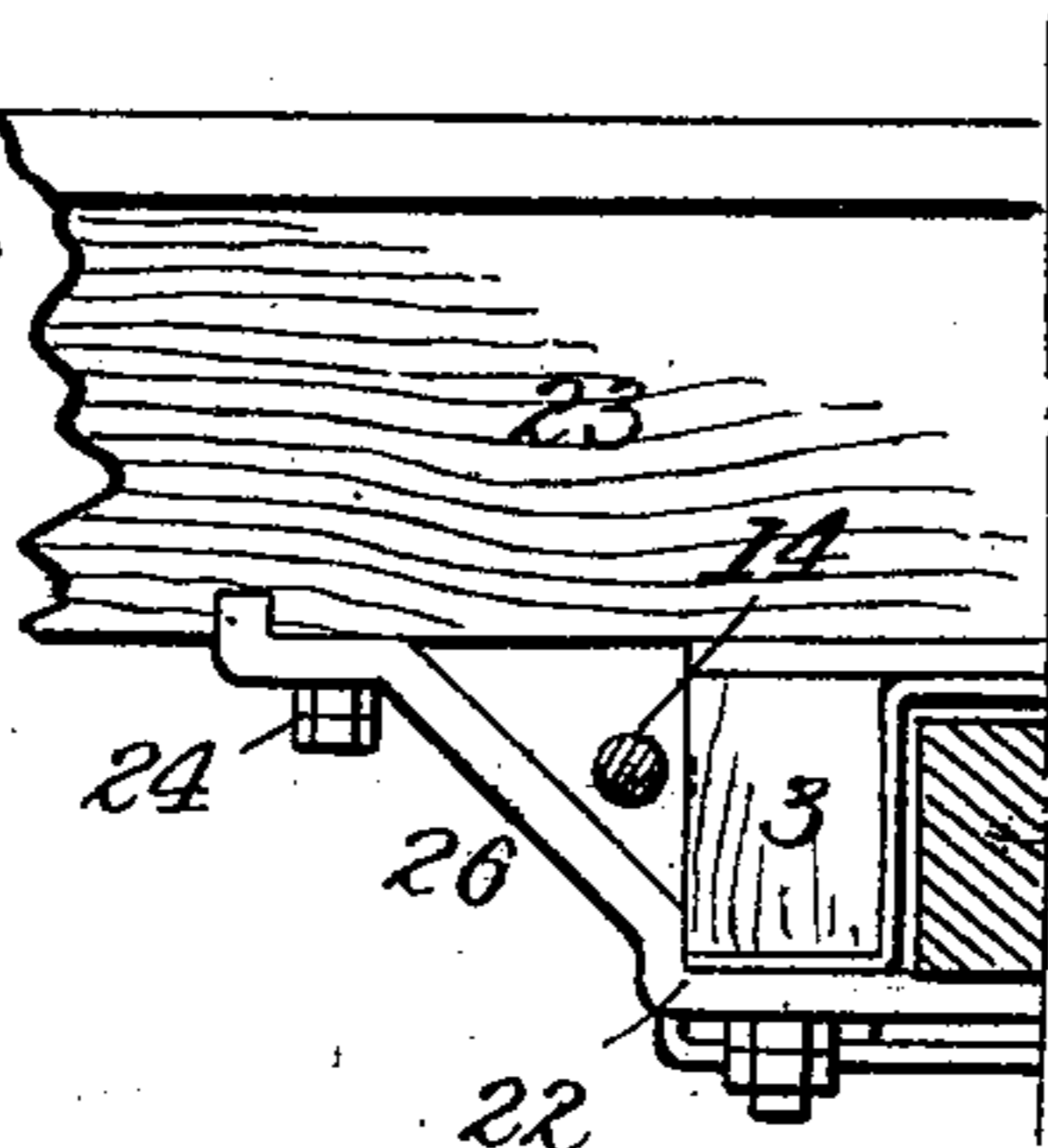


Fig. 4.

Fig. 3.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 536,619, dated April 2, 1895.

Application filed November 15, 1894. Serial No. 528,913. (No model.)

To all whom it may concern:

Be it known that we, JOHN CRESSON GLASS, residing at Oakmont, and JOHN COWAN, residing at Verona, Allegheny county, Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to certain new and useful improvements in car couplers, and it consists substantially in such features of construction, arrangement, and combination of parts, as will hereinafter be more particularly described.

It is particularly desirable in a car-coupler that the coupler-head be made or formed rigid with the draw-bar, but by reason of the swinging action of the cars in fast travel and in rounding curves the coupler-heads are subjected to great strain, and very often they break and fall upon the track, thus uncoupling the cars and causing considerable damage.

The ordinary "Janney" or twin jaw coupler is decidedly stronger and much safer when the coupler head is rigid, owing to the fact that the jaws themselves are generally pivoted within or upon some part of the head, and therefore to also pivot the head weakens the structure that much more. It has been proposed heretofore to provide a so called combined equalizing coupler and buffer, designed to adjust itself on curves and to yield to and to deflect buffing blows, and, incidentally to the construction referred to, the coupler-heads are prevented from falling to the track in the event of an uncoupling or breakage. With such former construction however the coupler-head is pivoted at the sides to draft-stems provided with buffing springs and, at the center, to a safety pin or stop; or else the head is pivoted centrally to a main draft and buffer stem, and at the sides pivoted to safety stems provided with springs to equilibrate and balance the coupler-head. As will be noted, the former construction referred to embodies in every sense of the word a pivoted coupler-head, and therefore the same results are not derived as if the said head were rigid or formed as an integral part with both the draft and safety stems.

Our invention has for its object to provide

a rigid coupler head capable of deflecting and yielding to buffing effects and at the same time to assist in equalizing the draft, as well as to maintain the coupling or prevent the falling or dropping of either one of the coupler heads to the track, substantially as will hereinafter more particularly appear when taken in connection with the accompanying drawings, in which—

Figure 1 represents in side elevation a car coupler embodying our improvements, the cross-sills and draft timbers being shown in section. Fig. 2 is a bottom or plan view; and Fig. 3 is a detail view in end elevation representing the means by which the side rods or stems are supported in the event of breakage of a coupler head, or its connection. Fig. 4 is a bottom or plan view representing a modification of our invention.

In carrying our invention into effect we provide any suitable coupler-head 1, which as shown is preferably of the ordinary twin-jaw or "Janney" type, and which also as will be observed is formed rigid with the draft or draw-bar 2, which extends backward a suitable distance, and is supported or held by any suitable rigging for the purpose. As shown, the rigging consists of suitable plates 3, 3, suitably connected to the draft timbers by means of bolts 4, and nuts 5, which plates are united together and strengthened by means of cross-plates 6. The stem 7 of the draw-head works through and is guided by suitable depending guide-blocks 8, 8, and said stem is surrounded by a strong draft and equalizing spring 9, which is confined between two collars 10, 10, formed with or secured to said stem. Normally, said spring is under slight tension between the collars so that the same serves to resist buffing blows upon the draw-head as well as to equalize the draft thereon. The inner end of the stem is formed or provided with a vertical opening or slot through which is placed and secured a key 11, which maintains the relative arrangement of the coupler head and its draw-bar.

While a certain form of rigging is herein shown and described it is to be understood that the same forms no part of our present invention, and that other forms could be employed with equal results.

The coupler head 1 need not be of any special form as long as it is rigid, and as will be observed the same is formed or constructed with lugs, ears, or offsets 12, 12, through which pass the bolts or rivets 13, 13, which firmly and rigidly unite such coupler head with the outer ends of the safety rods or stems, 14, 14. The said safety rods or stems may extend back any suitable distance connecting with either the draft timbers, body bolster, or center sills, but preferably at their inner ends they are formed or provided with caps or keys 15, so as to prevent them from pulling out of place from any cause whatever, and they are supported and guided at their inner ends by means of sleeves 16, 16, which are formed with or attached to brackets 17, 17, secured to the sides of the draft timbers 18, 18, as shown, suitable bolts 19, and nuts 20 being employed for the purpose. We have found that due to the constant sidewise or swinging action of the cars, the line of draft instead of being direct, is ever alternating to slight extent in oblique or diagonal lines with respect to the coupler head and car, and, likewise in the turning or rounding of curves, the tendency of strain is also in an oblique or diagonal direction on one side or the other according to which side the curve is encountered. Therefore, inasmuch as we employ a rigid coupler head; and, to obtain the same results with such form of head as are obtained with a pivoted head under like conditions, we preferably diverge the safety rods or stems or extend them alongside of the draft timbers in a slightly oblique direction thereto horizontally, substantially as is shown in Fig. 2, of the drawings. In addition also to the sidewise swinging movement of the cars both in ordinary travel and in the rounding of curves, there is also a certain vibrating or up and down movement between cars no matter how even the track or how direct the line of draft, and therefore whether the coupler head be of the pivoted or of the rigid form there is also a considerable strain on the coupler-head in this laterally described direction. For this reason, while the coupler head and its draw-bar have only a comparatively direct movement when yielding to draft and buffing strains, we prefer to give to the safety rods or stems a slight downward inclination from their points of attachment to the head, since the said rods or stems will thereby more effectually perform their intended functions.

As shown in Figs. 1 and 2 the safety rods or stems are made to extend through and beyond the sleeves, and surrounding the rods and exerting their bearings between the heads of the rods and the ends of the sleeves are suitable springs 21 of the same length or longer than the draft spring 9, and which equalize and assist the draft strain in an obvious manner. Should the main draft spring cease to act or should the stem of the draw-bar break, the said safety rods and their springs will still maintain the parts in proper

relationship and no accident will happen. The rods or stems are held or supported at near their forward ends by means of a bracket plate 22, secured to the underside of the cross-sill 23, by means of bolts 24, the said plate being bent to form the brackets 26, which support the rods. See Fig. 3. By dispensing with the springs 21, and shortening the safety rods, so as to bring the heads or caps of the rods closer to the sleeves 16, leaving only space enough to allow for the forward motion of the coupler, the said rods while not materially assisting to equalize the draft strain will still be capable of preventing the coupler heads from falling in the event of said heads becoming broken or snapped off. It will thus be understood that our invention comprehends such use.

Another means of utilizing the safety rods or stems to equalize the draft strain and to yield to any buffing effects or shocks we sometimes resort to the construction illustrated in Fig. 5. In such construction the inner ends of the rods are supported loosely in the ends of a sliding or movable cross-head 31, through the center of which the stem of the draw-bar passes, suitable keys 32, being employed to prevent both the rods and stem from pulling out. The construction is such that normally the cross-head is close up against the follower on the stem, and the connections are taut. It will thus be seen that the safety rods or stems are made to equalize strain in like manner as before, and that should a breakage occur the said rods will maintain the heads in coupled relation.

The coupler sleeve 16, referred to in connection with Figs. 1 and 2 is preferably tubular and is formed integral with the bracket 17, which is secured to the side of the draft timber as already explained, said bracket being formed or provided on its under side with a projection or flange 35, which is sunken or set into the side of said draft timber to prevent undue slipping and strengthen the fastening. It is obvious that this form of support for the inner ends of the rods could be altered or changed in many ways.

From the foregoing description it is thought that the construction and operation of our improvement will be fully understood, and while we have set forth in detail certain preferred forms of the several elements or devices employed we do not mean to limit ourselves thereto in any particular, since it is evident that various immaterial changes therein could be resorted to and still be within the scope of our invention.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination of a rigid coupler head and draw-bar, the draft-spring, safety rods extending rearwardly from the draw-head and rigidly connected thereto, and supports for the inner ends of the rods, said rods being movable in said supports and

provided with devices for preventing their accidental withdrawal, substantially as described.

2. In a car coupler, the combination of a rigid coupler head, and divergent safety rods or stems extending rearwardly from said head and rigidly connected thereto, and supports for said rods or stems, substantially as described.

3. In a car coupler, the combination of a rigid coupler head, and inclined divergent safety rods or stems extending rearwardly from said head and rigidly connected thereto, and supports for said rods or stems, substantially as described.

4. In a car coupler, the combination of a rigid coupler head, the main draft springs safety rods or stems extending rearwardly from said head and rigidly connected thereto, supports for the outer ends of the rods, and a yieldable cross-head uniting the inner ends of said rods, all substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN CRESSON GLASS.

JOHN COWAN.

Witnesses:

JOHN McCULLY,

GEO. R. MORRISON.