

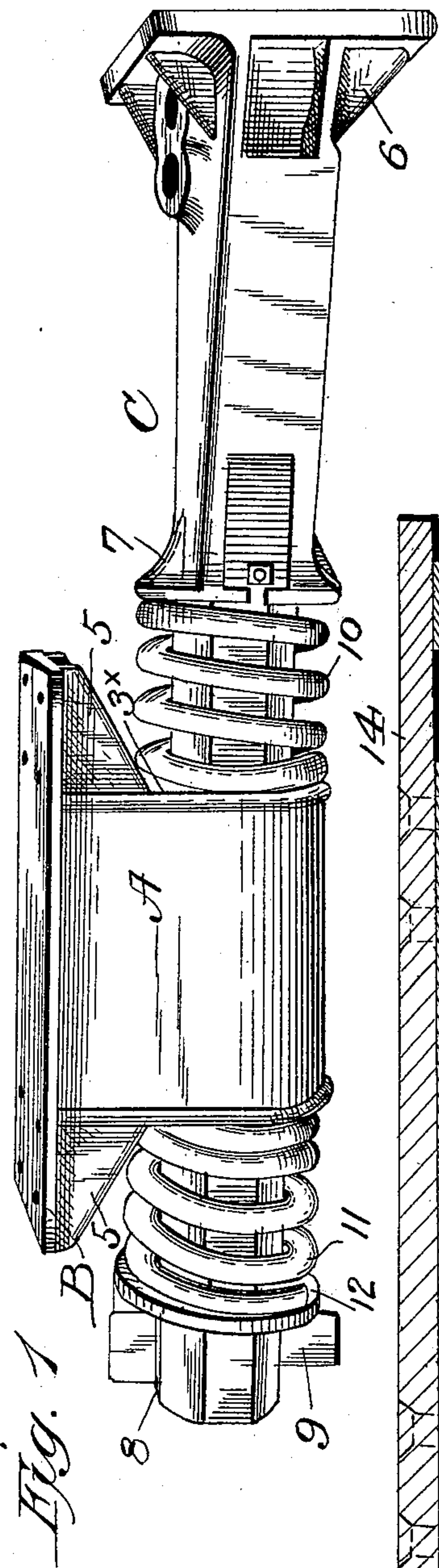
(No Model.)

2 Sheets—Sheet 1.

W. T. VAN DORN.
DRAW BAR FOR RAILWAY CARS.

No. 606,105.

Patented June 21, 1898.



Witnesses
Frank L. Ourand,
Chas. H. Ourand

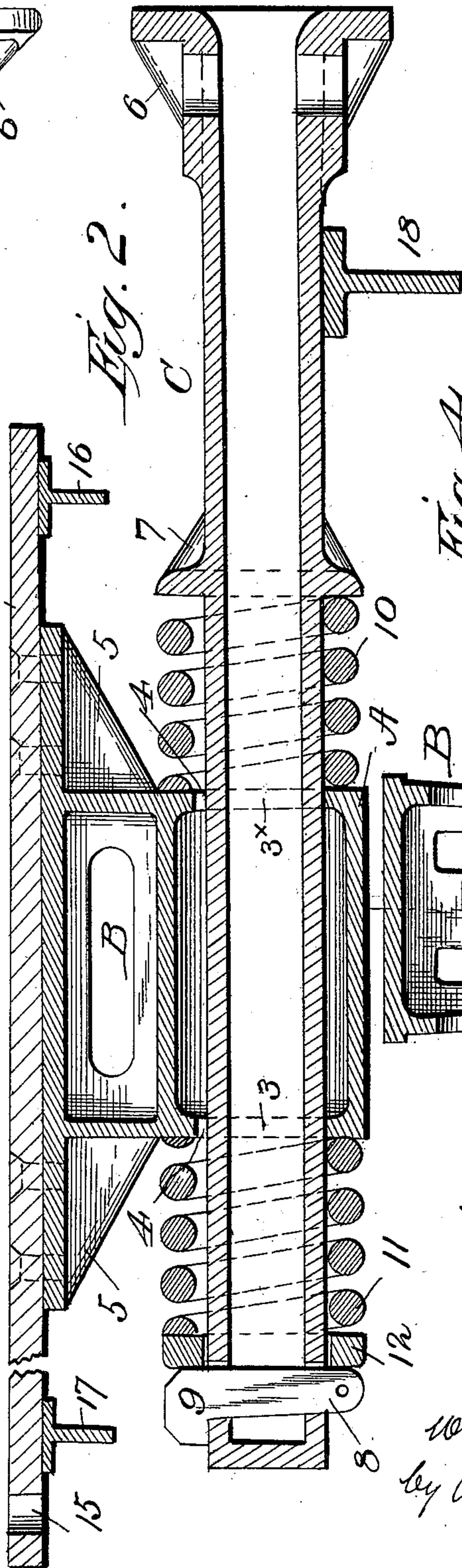


Fig. 4.

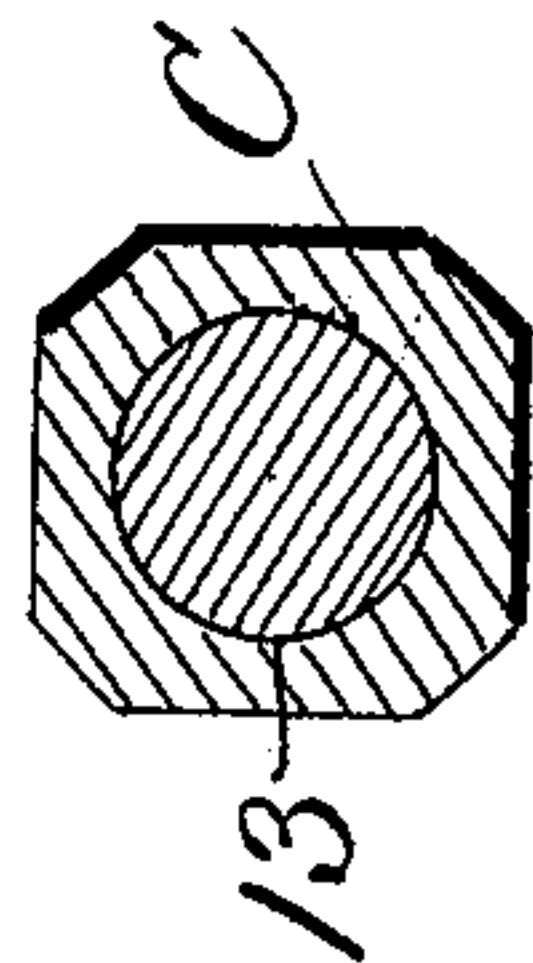
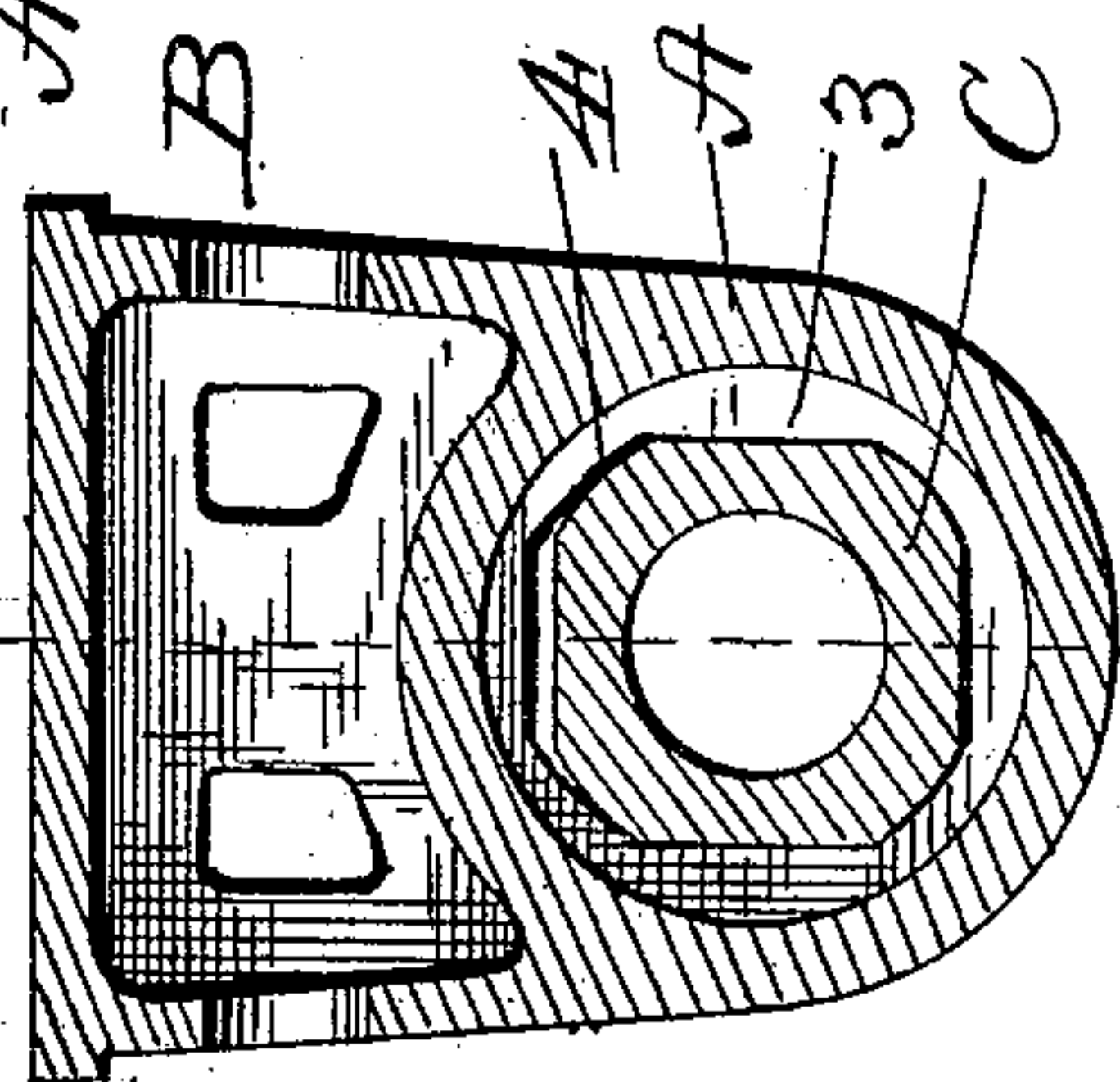


Fig. 3.



Inventor
Wm. T. Van Dorn
by A. G. Keylman
Attorney

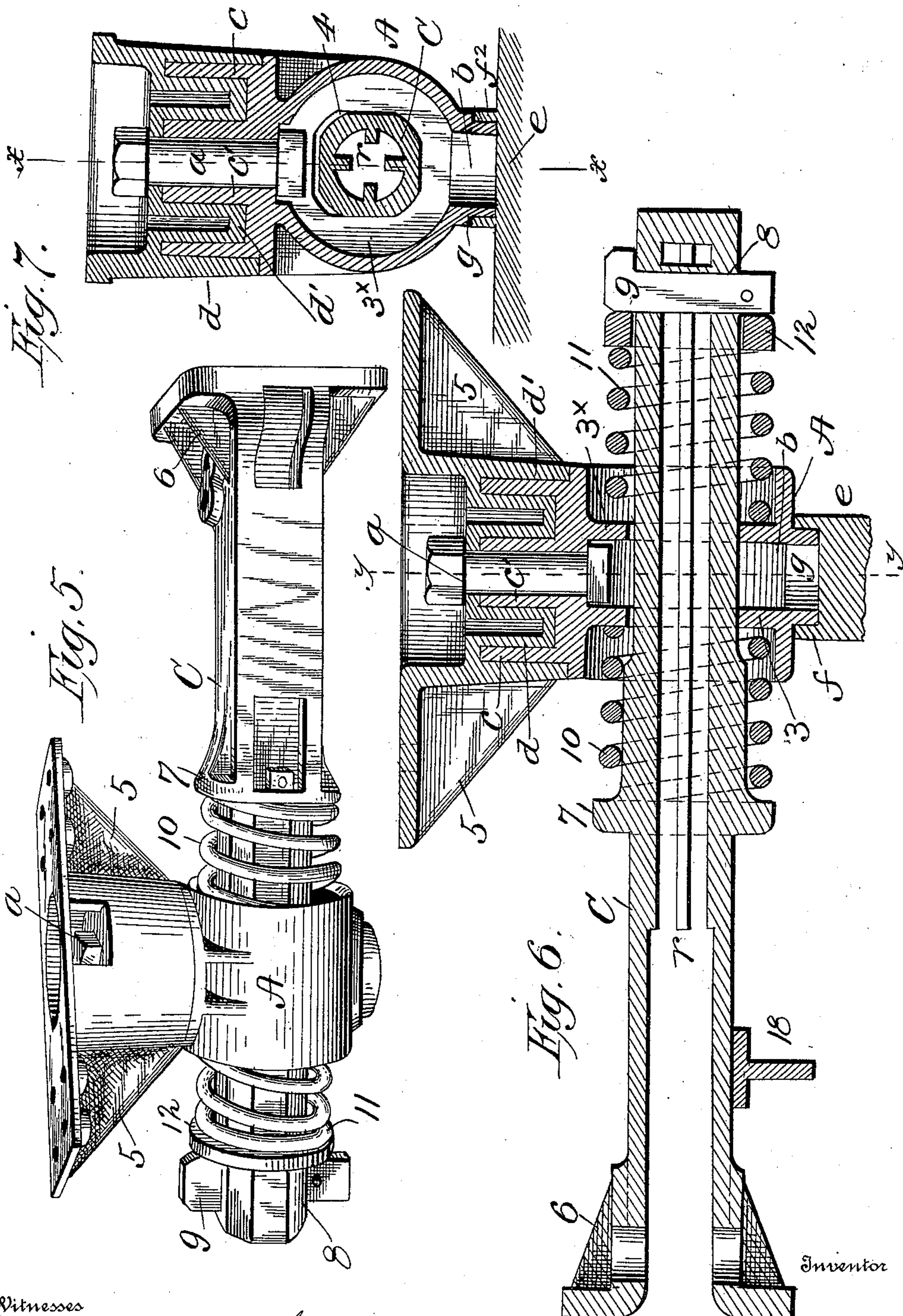
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2 Sheets—Sheet 2.

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Witnesses
Frank L. Orvand
Chas. H. Orvand.

Wm. T. Van Dorn.
by A. G. Keyman
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM T. VAN DORN, OF CHICAGO, ILLINOIS.

DRAW-BAR FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 606,105, dated June 21, 1898.

Application filed January 14, 1898. Serial No. 666,705. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. VAN DORN, a citizen of the United States of America, residing in the city of Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Draw-Bars for Railway-Cars, of which the following is a specification.

My invention has relation to improvements in draw-bars for railway-cars; and the object is to provide an improved draft appliance of the kind named and for the purpose intended which is simple in construction, strong and durable in use, and readily and conveniently applied to the car.

The invention consists in the novel construction and combination of parts, as will be hereinafter described, and particularly as will be pointed out in the claims.

I have fully and clearly illustrated the invention in the accompanying drawings, wherein—

Figure 1 is a perspective view of the draw-bar held in a cylindrical buffer-sleeve having a fastening bracket or casting rigid therewith. Fig. 2 is a central vertical longitudinal section through the respective elements or parts. Fig. 3 is a vertical transverse section on the line 3 3 of Fig. 1. Fig. 4 is a cross-section through the stem of the draw-bar, showing an interior wrought iron or steel central portion fitted therein. Fig. 5 is a perspective view of the draw-bar held in a buffer-sleeve secured to a bracket and turning therein on a pivotal support. Fig. 6 is a central vertical longitudinal section on the line *xx* of Fig. 7. Fig. 7 is a vertical transverse section on the line *yy* of Fig. 6.

A designates a strong buffer-sleeve, made of malleable or steel casting, and, as indicated in Figs. 1, 2, and 3 of the drawings, has cast integral therewith a bracket or casting B, having a flat and plane upper face adapted to fit against and be secured to a carrying-bar 14, as shown in Fig. 2. The buffer-sleeve A is formed with interior annular flanges 3 3^x, having their inner edges shaped to form angular openings 4 4^x, adapted to receive and hold the stem of the draw-bar, which is slidably fitted therein. The interior of the buffer-sleeve A between the annular flanges is larger than the stem of the draw-bar, which

moves therethrough free from contact with the surface of the interior, and the openings 4 4^x are made larger vertically than the vertical thickness of the draw-bar, so that the draw-bar may have a limited vertical play or movement in its seat through the buffer-sleeve without disturbing the sleeve or tending to lift the carrying-bar which carries it.

The bracket B is made of cast or malleable steel and is cast hollow, with its ends extended in opposite directions beyond the ends of the buffer-sleeve A, substantially as shown, which extensions are braced by central tapering flanges 5.

C designates the draw-bar, made of malleable or steel casting, of such length and dimensions as to adapt it to the usages and work to which it may be intended. The draw-head 6 is cast continuously and integral with the stem, and at the proper point on the stem of the draw-bar is formed an annular collar 7 to serve as a stop or stay for the front or buffer spring to abut against, and adjacent to the end or tail of the draw-bar stem is formed a keyway 8, in which a strong key 9 is fitted, as shown in the drawings. On the draw-bar, between the annular collar 7 and the front face of the buffer-sleeve or the interior annular flange, is fitted and arranged a strong spiral buffer-spring 10 to receive or take the force of impacts inflicted on the draw-head, and on the stem, at the rear portion thereof, between the key 9 and the rear face of the buffer-sleeve or the interior annular flange, is arranged a strong spiral spring 11, which serves as a cushion or relief spring against the force of which the pulling force on the draw-bar operates. A washer 12 is fitted between the key 9 and the spring 11, against which the spring 11 bears at that end. The stem of the draw-bar is formed angular in cross-section in order that it shall not turn in its seat in the buffer-sleeve and also that it will pull straight and swing on a horizontal plane without turning in the sleeve.

For the ordinary usages the draw-bar is cast hollow throughout, as shown in Fig. 2 of the drawings; but if additional strength is desired or required a wrought iron or steel bar 13 may be rigidly fitted in the bore, as indicated in Fig. 4 of the drawings, in which case the key slot or way is made through the

wrought bar also; and as another means of strengthening the draw-bar internal radially-directed ribs *r* are formed therein, extending the length of the bore, as indicated in Figs. 5 6 and 7 of the drawings.

The bracket B is strongly secured to a bar or plate 14 of such length as may be desired, one end of the said bar being pivotally secured to the king-pin of the car or to other such pin placed in a suitable point on the car, the connection being made through a pin or bolt hole 15 in the end of the bar 14, so that the bar will move on a horizontal plane about its pivotal connection. The plate or bar 14 is slidingly supported at its free or front end on a cross-bar 16, secured to the car by any proper means, and may also be similarly supported at the rear portion, as by a cross-bar 17, and the front end of the draw-bar is also supported on a cross-bar 18, on which it slides in its lateral movements in turning curves or other irregularities in the track.

In Figs. 5, 6, and 7 of the drawings the invention is illustrated as applied to a pivotally-supported buffer-sleeve turning on a vertically-disposed bolt uniting the buffer-sleeve to the bracket. The draw-bar is identical in construction with that hereinbefore specified; but the interior annular flanges in the buffer-sleeve are disposed toward the middle of the buffer-sleeve and at such distance apart as to be contiguous to the sides of the head of the pivot-bolt *a*, which is let through the buffer-sleeve by an opening *b* in the under side of the sleeve, as indicated in the drawings; and the buffer-sleeve A and the bracket B interengage by means of vertical circular flanges *c c'* on the upper face of the buffer-sleeve, which are engaged by downward-directed circular flanges *d d'*, setting in the seats formed by the circular flanges on the top of the buffer-sleeve. The bracket B in this construction is secured directly and rigidly to a proper support on the car, and the buffer-sleeve is held in pivotal connection therewith by the bolt *a*, the buffer-sleeve being guided and additionally strengthened in the connection by the interengaging circular flanges; but to further maintain the parts in their operative connection a metal stringer or support *e* is secured to any suitable part of the car across and under the buffer-sleeve and formed with a circular rib *f*, which engages in a counterpart circular seat *g* on the bottom of the buffer-sleeve, thus holding the sleeve at this point in direct line with the axial bolt on which it turns.

By making the draw-bar hollow it can be made larger in diameter, thus increasing its strength without materially increasing its weight, and by the use of a buffer-sleeve of the construction described the draw-bar may be made shorter than usual, and thus a saving of material effected. The whole construction is particularly well adapted to service where the draw-bar and coupler must be carried considerably below the floor of the

car, as in elevated railways; but it may be applied with advantage to any kind of service where a simple and efficient assemblage of elements is desired.

To assemble the parts after the buffer-sleeve has been secured in place on the car, all that is necessary is to first slip the front or buffer spring on the stem of the draw-bar and move it forward until it rests against the annular collar. Then the draw-bar is passed through the buffer-sleeve. Then the relief-spring is arranged on the projecting stem portion of the draw-bar, the washer is placed in position, and then by pushing the draw-bar inward to compress the buffer-spring the key is passed into the way and the device is ready for operation.

What I claim as my invention is—

1. In a draft appliance for railway-cars, a combined bracket and buffer-sleeve integral with each other, a suitable supporting-bar secured to the bracket and pivotally connected to the car at one end to move on a horizontal plane, a draw-bar having its stem projected through the buffer-sleeve, and formed with an annular collar, a buffer-spring on the draw-bar between the collar and the front end of the buffer-sleeve, a relief-spring on the stem between the rear face of the buffer-sleeve and the end of the draw-bar stem, and a key projected through the rear end of the draw-bar stem.

2. In a draft appliance for railway-cars, a combined bracket and buffer-sleeve, the buffer-sleeve part being substantially cylindrical and formed with internal annular flanges having angular openings, a suitable pivotally-secured support to which the bracket is secured and movable therewith, a hollow draw-bar projected through the buffer-sleeve and having a limited vertical play in the openings therein, and formed with an annular collar, a spring on the draw-bar between the buffer-collar and the front interior flange of the buffer-sleeve, a spring on the rear portion of the draw-bar stem between the rear internal flange of the buffer-sleeve and the end of the stem, and a key through the rear end of the draw-bar.

3. In combination with a cylindrical buffer-sleeve secured and supported to move on a pivotal support on a horizontal plane, of a draw-bar projected through the buffer-sleeve and formed with an annular buffing-collar, a buffer-spring on the stem of the draw-bar between said annular collar and the buffer-sleeve, a spring on the stem of the draw-bar between the rear of the buffer-sleeve and the rear end of the draw-bar, and a retaining means at the end of the draw-bar stem.

4. In a draft appliance for railway-cars, the combination of a supporting-bracket and a buffer-sleeve pivotally connected together, a draw-bar slidingly projected through the buffer-sleeve, springs on the draw-bar at opposite ends of the said sleeve, and a key to hold the springs and draw-bar in relative position.

5. In a draft appliance for railway-cars, the combination of a suitably-supported buffer-sleeve turning on a vertical axis, a draw-bar projected through the sleeve and having a limited vertical play therein, springs on the draw-bar on opposite ends of the buffer-sleeve with their ends bearing against the ends thereof, and means on the draw-bar stem to

hold the other ends of the springs in operative position.

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

WILLIAM T. VAN DORN.

Witnesses:

A. G. HEYLMUN,
ALFRED S. WILLSON.