

No. 715,124.

Patented Dec. 2, 1902.

A. D. NICHOLS.
CAR COUPLING.

(Application filed June 15, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

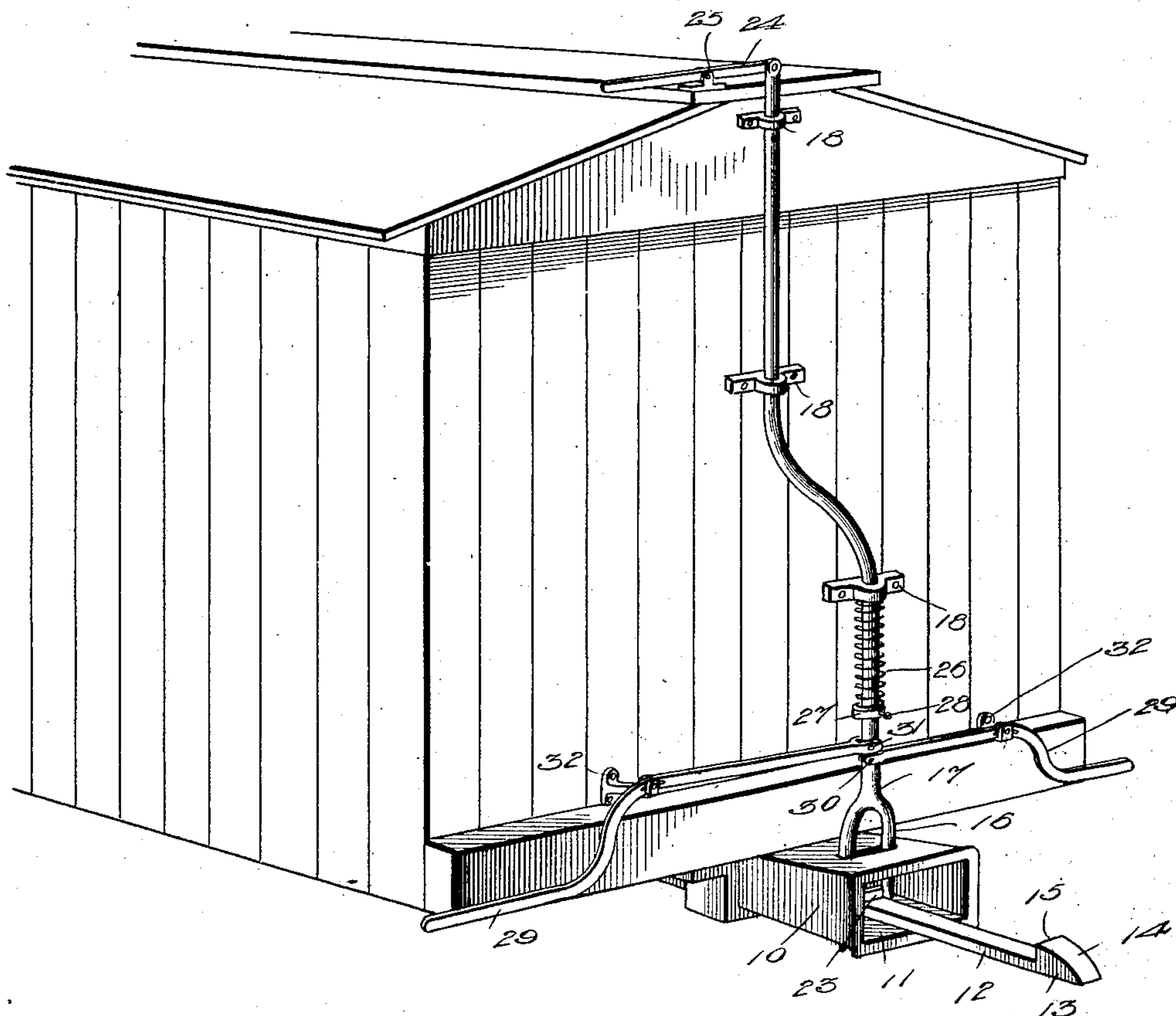


Fig. 3.

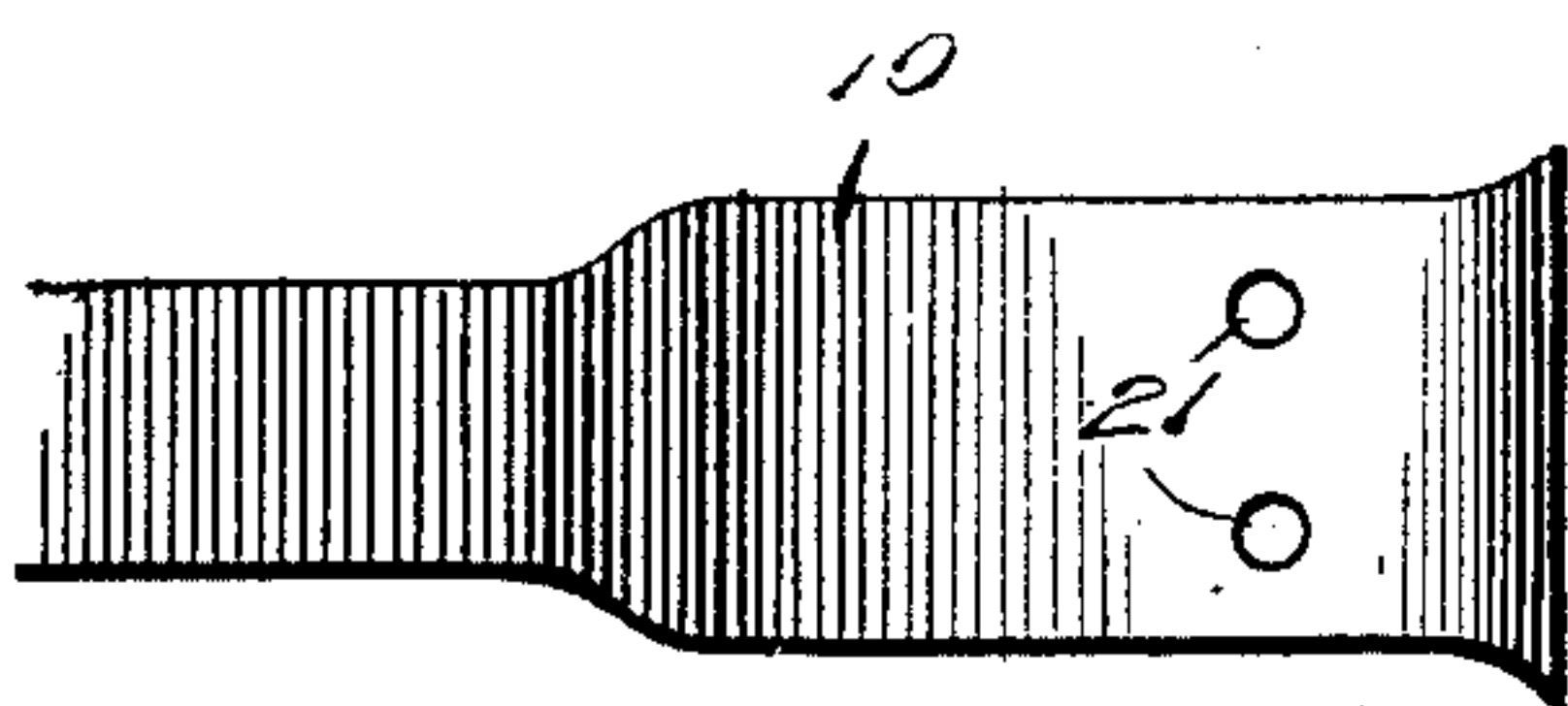


Fig. 5.

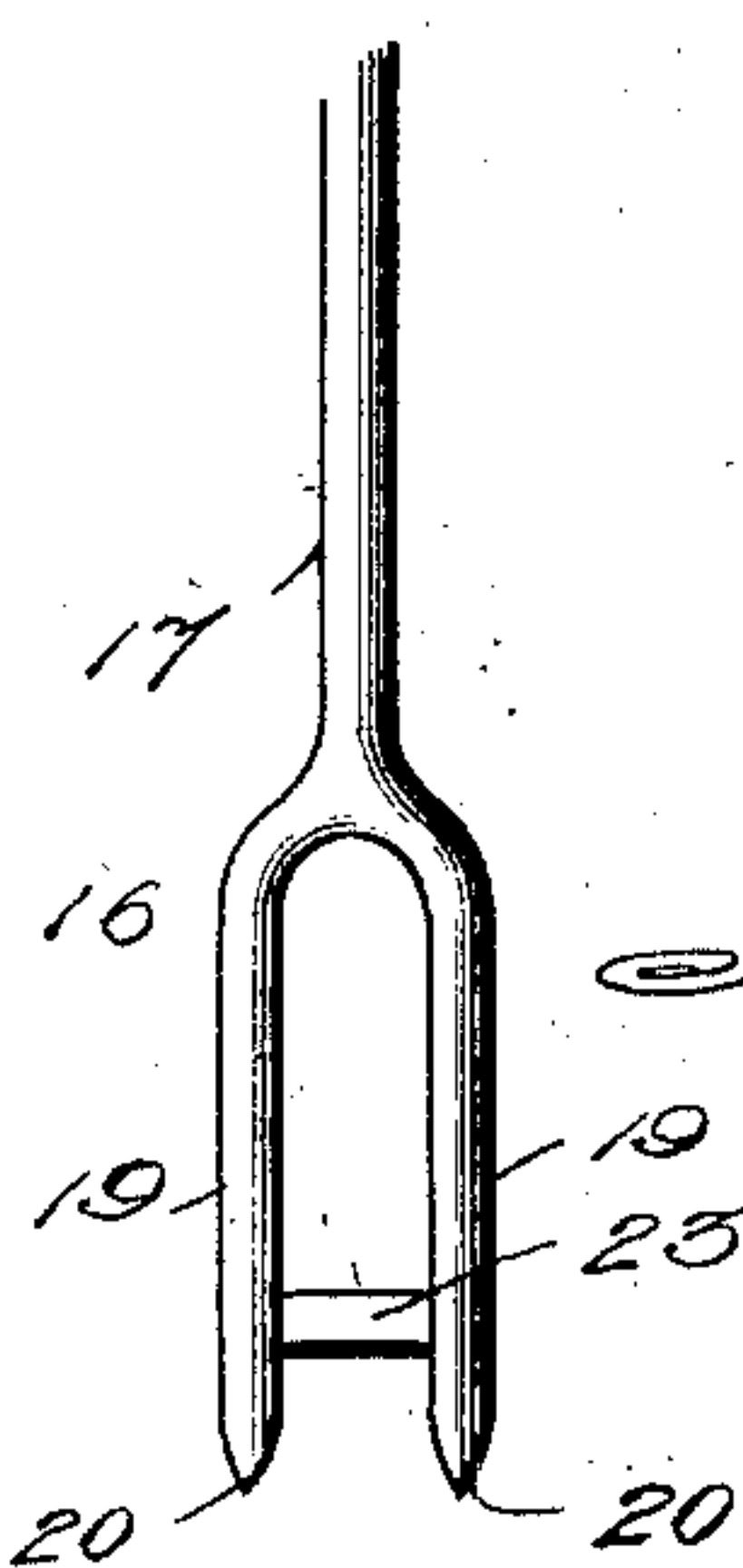
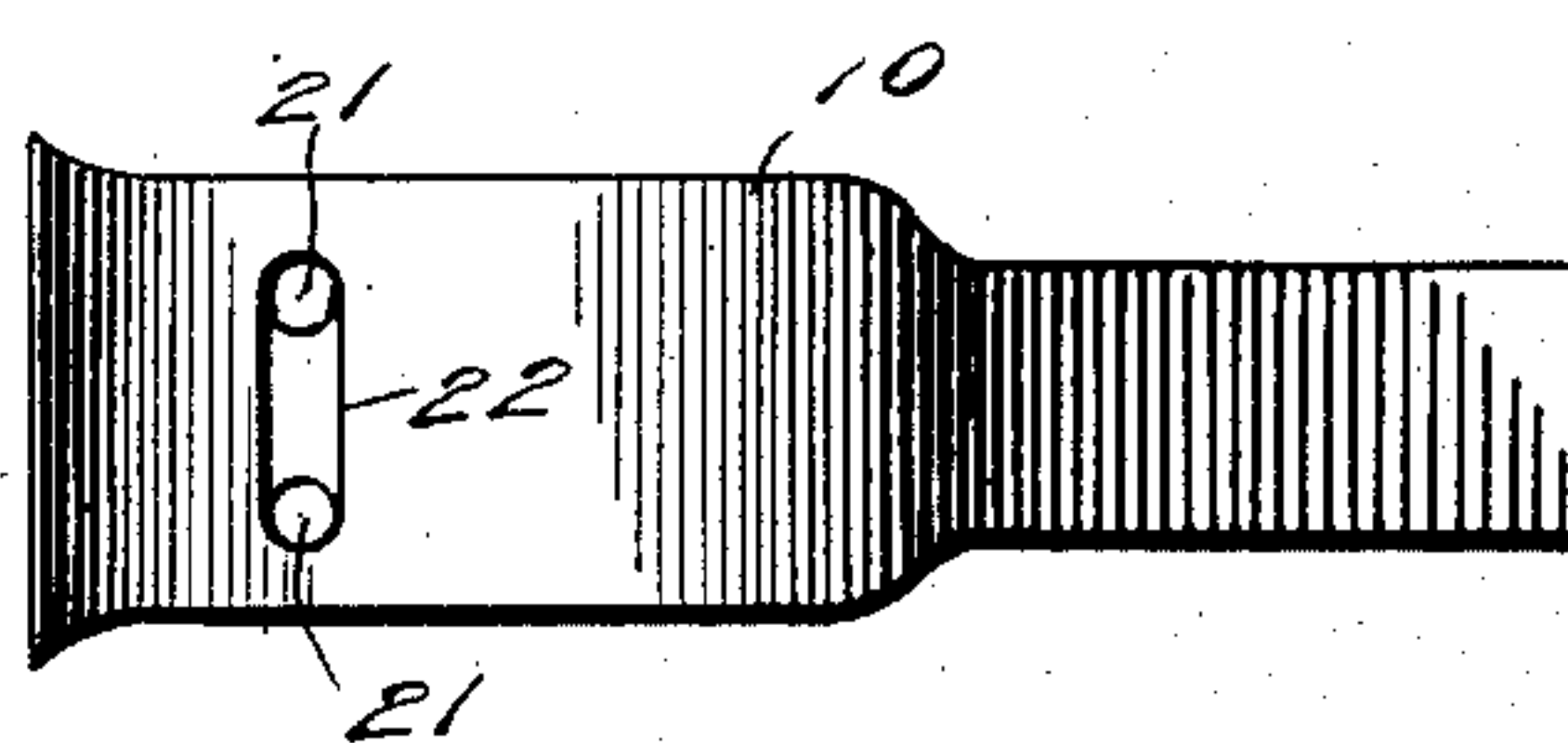


Fig. 4.



Witnesses

Geo. Ackman

Antney D. Nichols,
Inventor

Victor J. Evans
Attorney

No. 715,124.

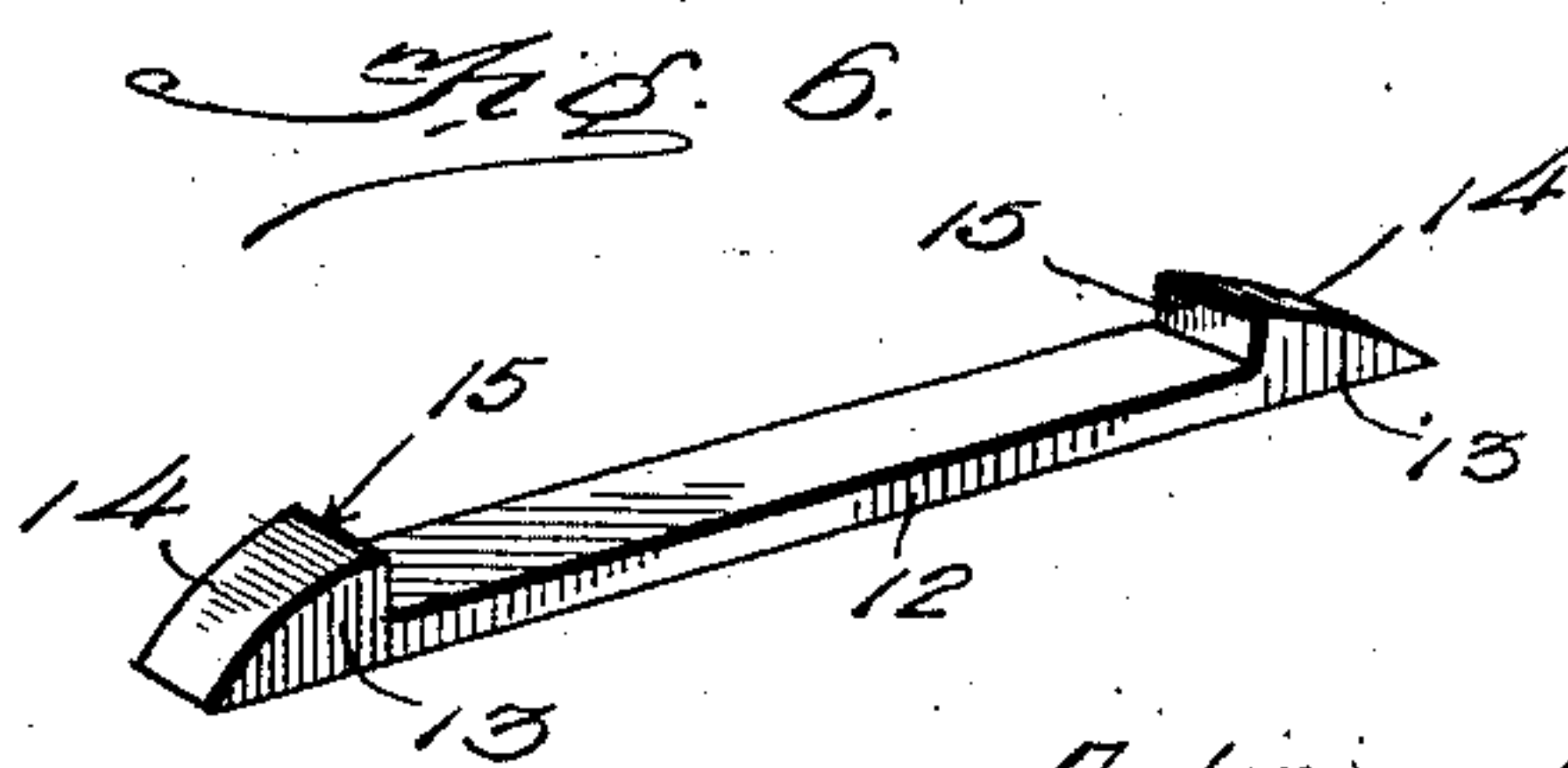
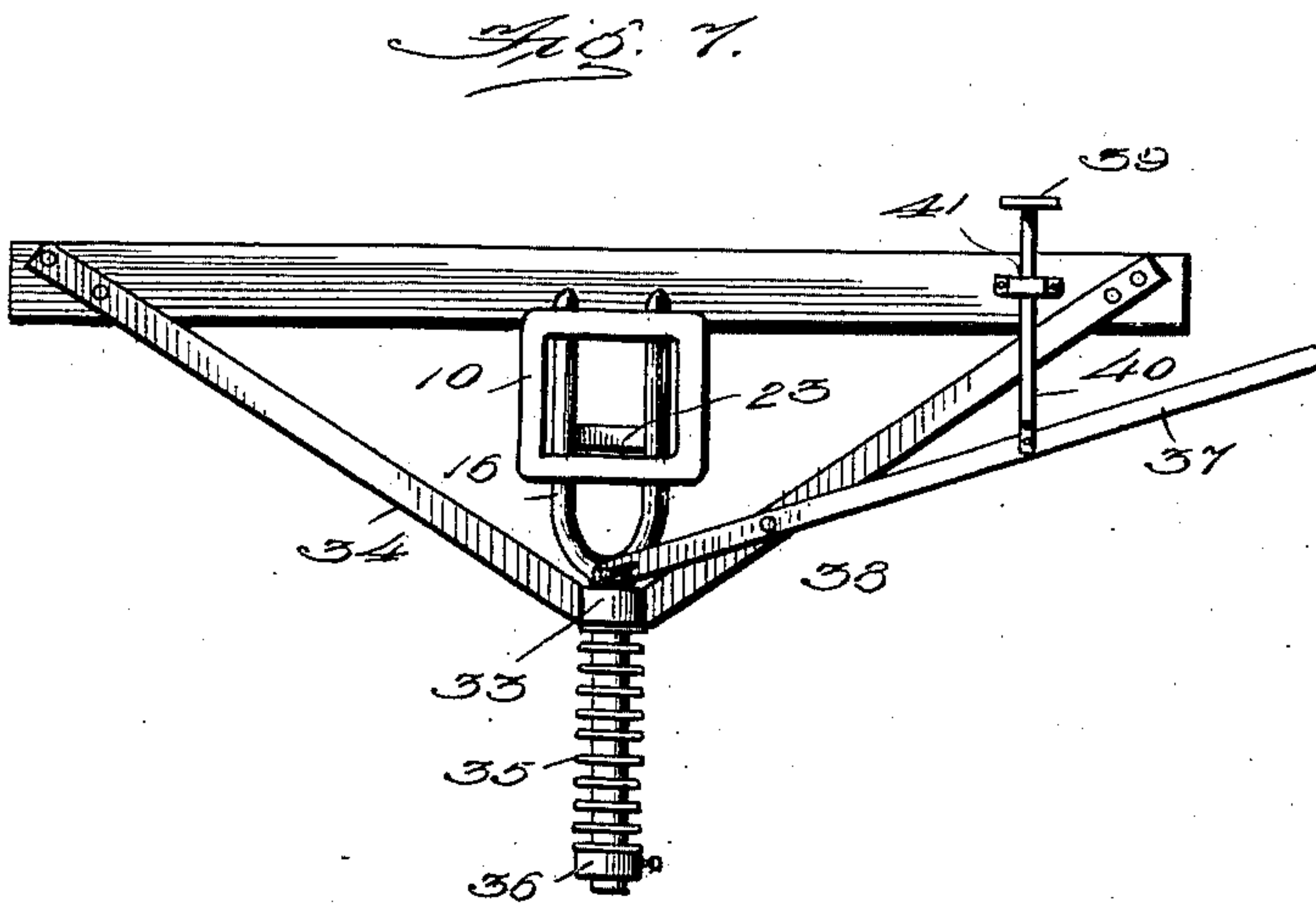
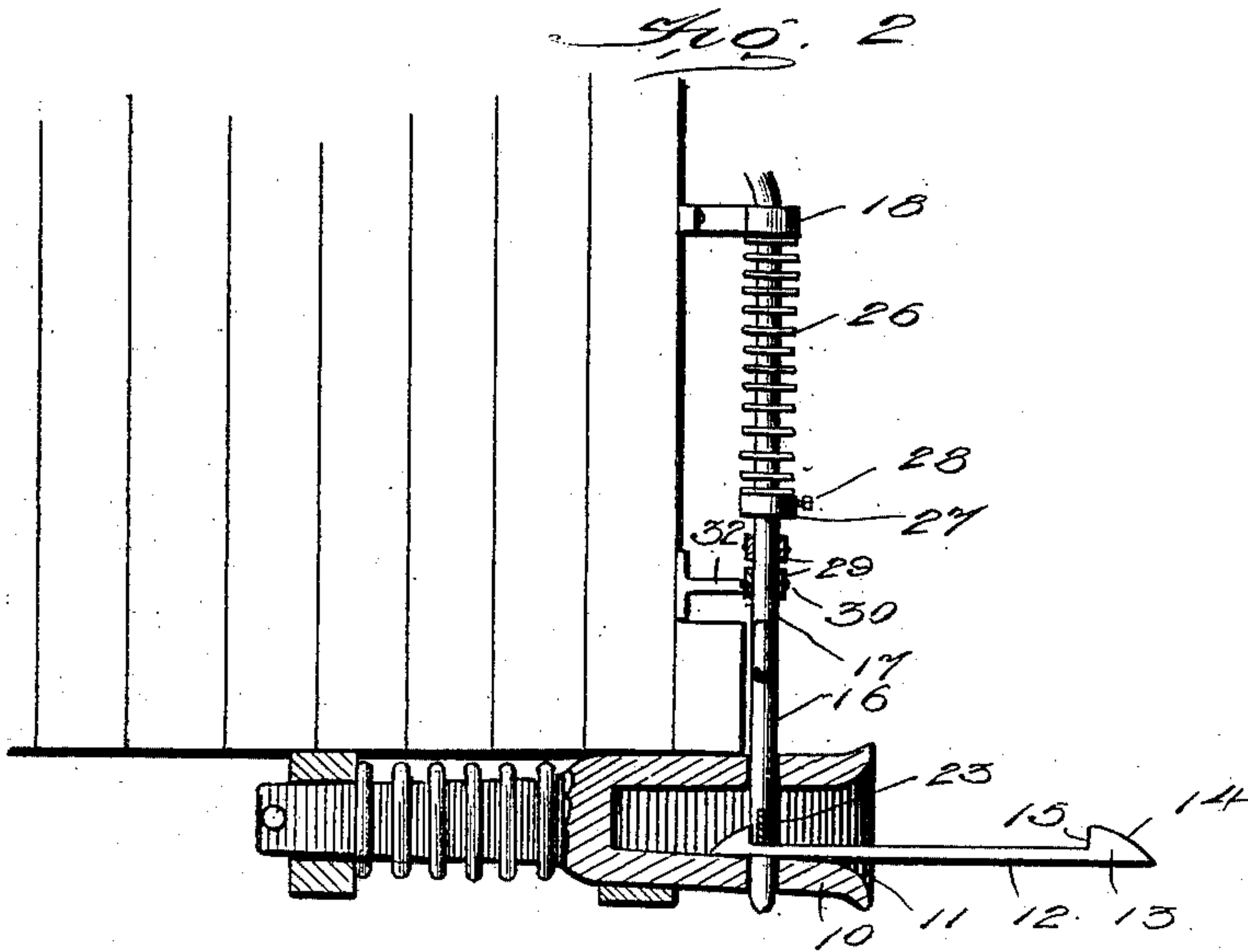
Patented Dec. 2, 1902.

A. D. NICHOLS.
CAR COUPLING.

(Application filed June 15, 1901.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses
Amos Verth
Geo. Eckman

Inventor
A. D. Nichols
By *Victor J. Crane*
Attorney

No. 715,124.

Patented Dec. 2, 1902.

A. D. NICHOLS.
CAR COUPLING.

(Application filed June 15, 1901.)

(No Model.)

3 Sheets—Sheet 3.

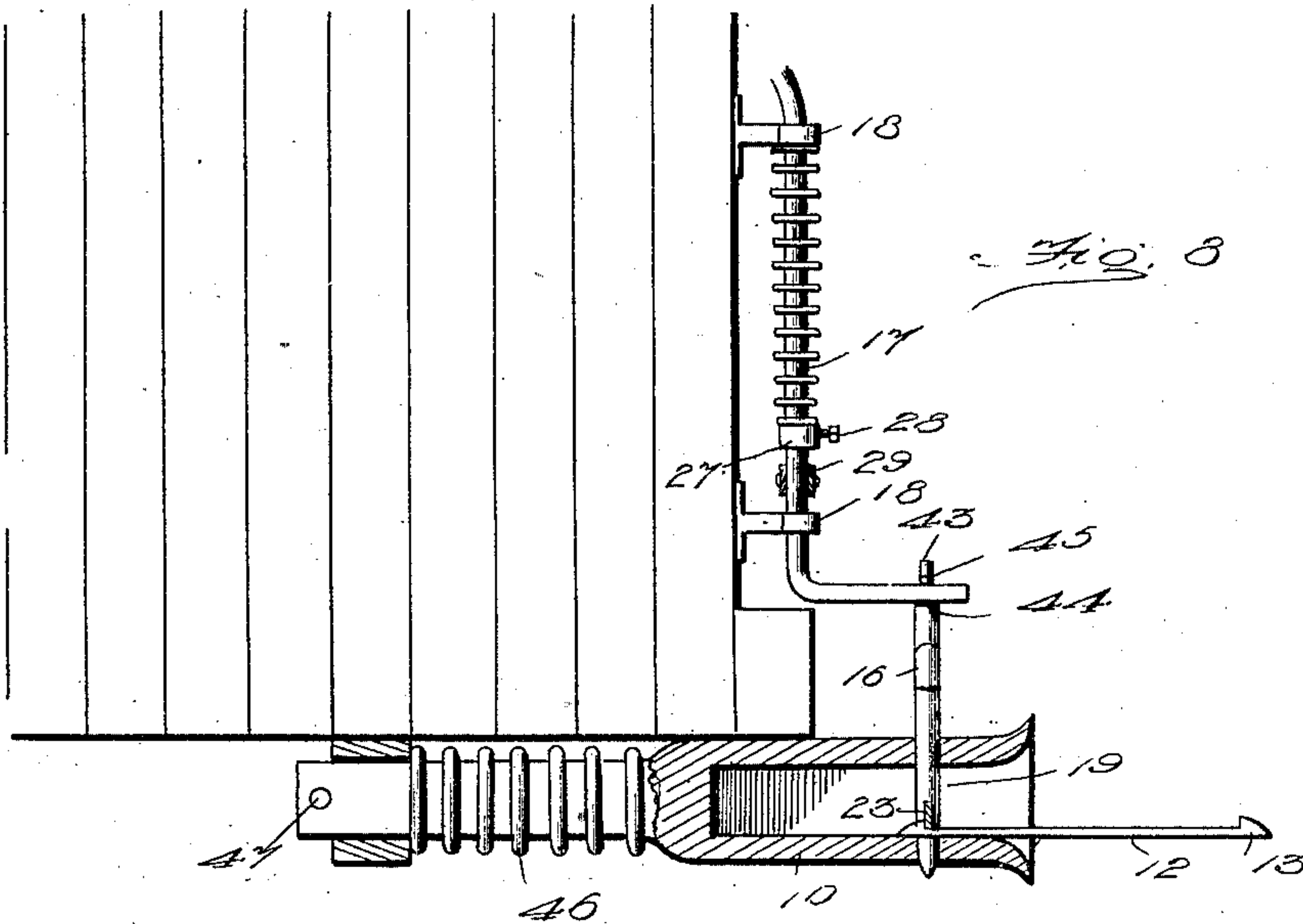
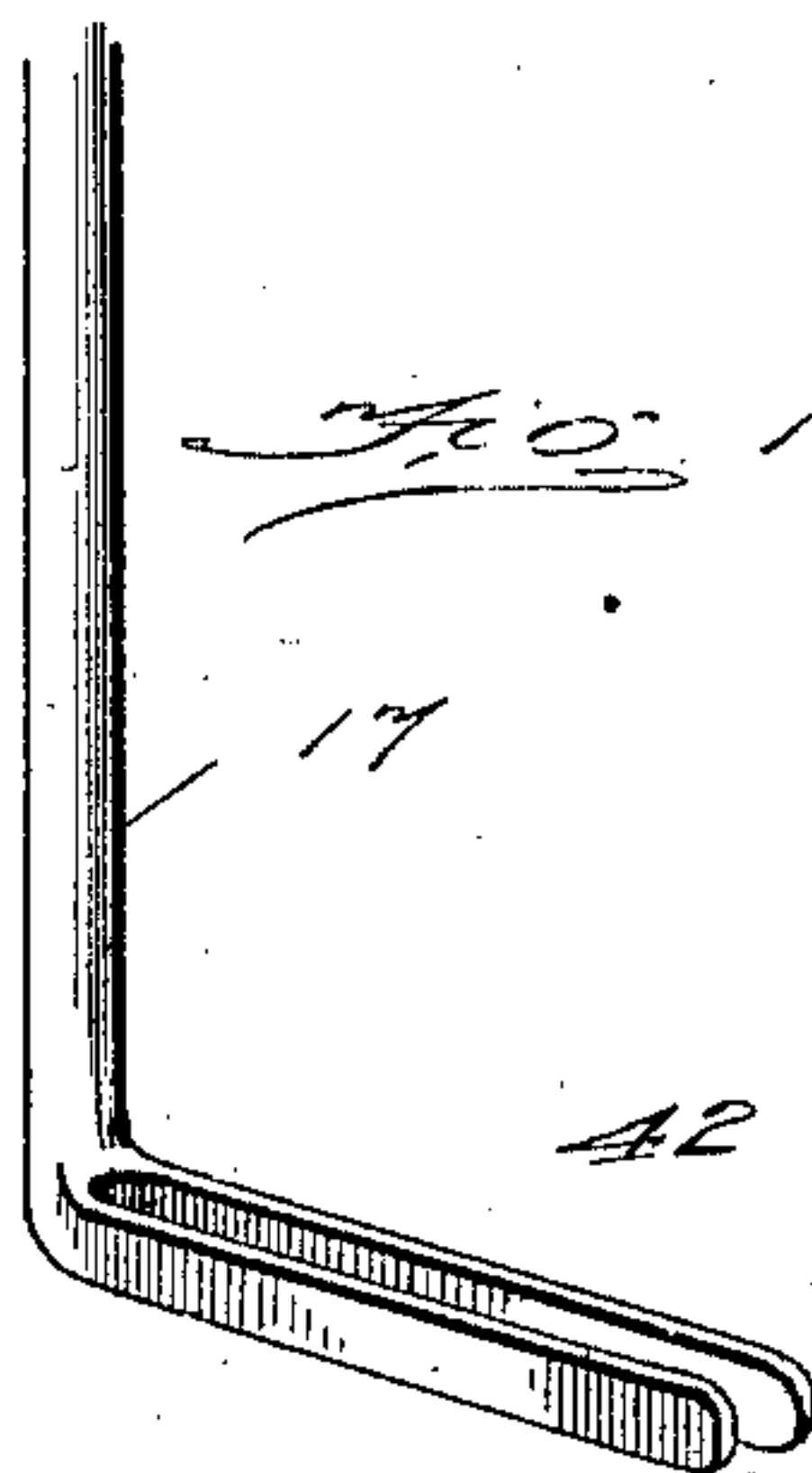
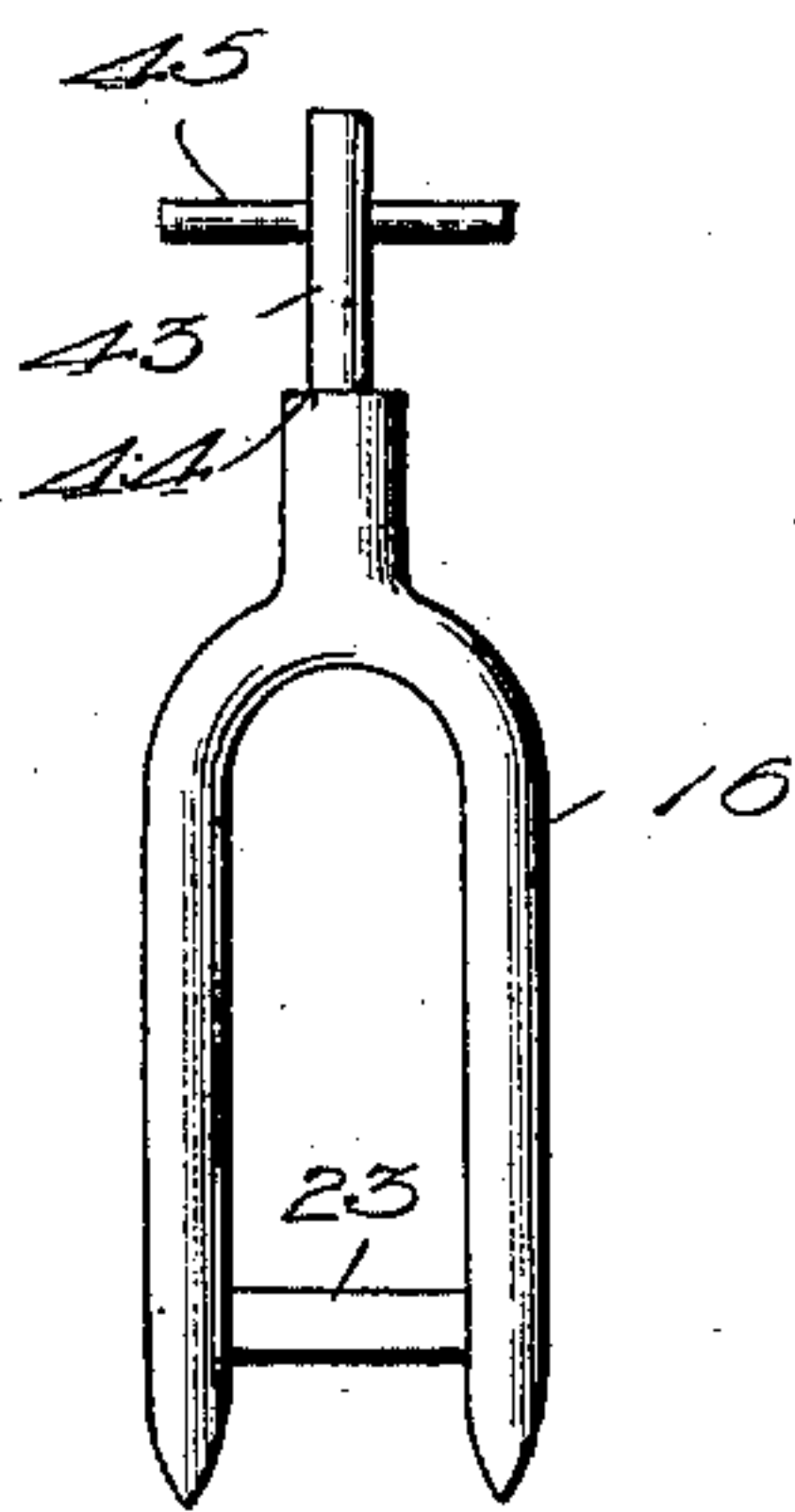


Fig. 9.



A. D. Nichols Inventor

By: Victor J. Evans.
Attorney

Witnesses

Amos North
Geo. Ackman

UNITED STATES PATENT OFFICE.

ANKNEY D. NICHOLS, OF PATOKA, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 715,124, dated December 2, 1902.

Application filed June 15, 1901. Serial No. 64,720. (No model.)

To all whom it may concern:

Be it known that I, ANKNEY D. NICHOLS, a citizen of the United States, residing at Patoka, in the county of Marion and State of Illinois, have invented new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to car-couplers, and has for its object to provide a coupler which is entirely automatic in action and by means of which cars may be coupled together and uncoupled without the necessity of a brakeman or other attendant going between cars and placing himself in a dangerous position.

Another object of the invention is to provide a coupler involving a principle which adapts it for use in connection either with box or flat cars or passenger-coaches, and in connection with the coupling device proper means are employed for enabling cars to be uncoupled from either side thereof or from the top or roof of a box-car.

With the above and other objects in view, which will appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a sufficient portion of a box-car to illustrate the application of the improved car-coupler thereto. Fig. 2 is a side elevation of the same, showing parts of the coupler in section. Fig. 3 is a bottom plan view of the draw-head. Fig. 4 is a top plan view of the draw-head. Fig. 5 is a view in elevation of the coupling-fork. Fig. 6 is a detail perspective view of the coupling-link. Fig. 7 is a front elevation of the form of coupler used upon flat-cars and passenger-coaches. Fig. 8 is a sectional view similar to Fig. 2, showing a modified arrangement which will admit of the thrust of the draw-head without interfering with the coupling device. Fig. 9 is a detail elevation of the fork shown in Fig. 8. Fig. 10 is a detail perspective view of the slotted arm or extension of the stem.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 10 designates a draw-head, which is provided with the usual

flaring mouth or entrance 11, adapting it to receive and guide inward the coupling-link 12, which preferably consists of a straight bar provided at its opposite ends with heads 13, having beveled or inclined surfaces 14, which are adapted to coöperate with and lift the coupling-fork hereinafter described, said inclined surfaces terminating at their inner ends in abrupt transverse shoulders 15, adapted to engage with the cross-bar of the coupling-fork, so as to securely couple the cars together.

The coupling-fork 16 is formed on the lower end of a fork-stem 17, consisting of a rod which is slidingly mounted in a series of brackets or guides 18, fastened to the end of the car, as shown in Fig. 1, where the coupler is used in connection with a box-car. The lower end of said rod or stem 17 is bifurcated to form the fork 16, and the lower extremities of the arms or branches 19 of the fork are tapered or pointed, as shown at 20, to facilitate their entrance into a pair of transversely-opposite openings 21, formed in the bottom of the draw-head and extending through the lower wall thereof. In line with the openings 21 the upper wall of the draw-head is provided with a transverse slot 22 of sufficient size to receive the coupling-fork, as illustrated in Figs. 1 and 2. The arms 19 are connected at a suitable distance above their extremities by the cross-bar 23, with which one head of the coupling-link is adapted to engage directly in the manner illustrated in Fig. 2, the inclined surface 14 of the link enabling the latter to pass beneath the cross-bar 23 and automatically lift the coupling-fork, which is subsequently thrown downward by a tension-spring hereinafter described, so as to effect a positive engagement between the cross-bar 23 and one of the shoulders 15, hereinabove referred to.

The fork-stem 17 is connected pivotally at its upper end to one arm of an operating-lever 24, fulcrumed intermediate its ends in a bracket 25, mounted adjacent to the top of the car, so that the operator on top of the car by depressing the free end of the lever 24 may elevate the coupling-fork and disengage it from the coupling-link for uncoupling the cars. Beneath one of the bearing-brackets 18 a coil-spring 26 is disposed around the fork-stem 17, said spring bearing at one end against the bracket 18 and at its opposite

end against a collar 27, adjustably mounted upon the fork-stem and held at any desired point of adjustment by means of a set-screw 28, thus enabling the tension of the spring to be increased or diminished, as occasion may require. The tension of this spring is sufficient to maintain an effective engagement between the coupling-fork and coupling-link.

In order to enable the coupling-fork to be operated from either side of the car, I provide a pair of auxiliary operating-levers 29, which pivotally connect at their inner adjacent ends at 30 and 31 with the fork-stem and have their outer extremities arranged adjacent to the sides of the car near the sill thereof, where they may be readily operated by an attendant without the necessity of going between cars.

The levers 29 are fulcrumed intermediate their ends on brackets 32, connected with the car-body, as shown in Figs. 1 and 2. By the connections described it will thus be seen that the coupling-fork may be lifted either by an operator on top of the car or standing at either side thereof.

In Fig. 7 I have illustrated the application of the coupler to a flat-car or passenger-coach, in which case the arrangement of openings 21 and 22 in the draw-head is reversed, the openings 21 being formed in the top wall of the draw-head, while the slot 22 is formed in the bottom wall thereof. The coupling-fork is also inverted, so that the stem thereof extends downward, where it passes through a bearing 33, carried by a hanger-frame 34, comprising upwardly-diverging bars, which are connected rigidly at their upper ends to the sill or frame of the car-body. The coupling-fork 16 is upheld by means of a tension-spring 35, which encircles the fork-stem and is rendered adjustable by means of a nut 36.

Connected pivotally with the crown of the fork 16 is an operating-lever 37, which extends toward the side of the car, at which point it may be manipulated for lifting the coupling-fork and releasing the coupling-link. The lever 37 is fulcrumed at 38 on the hanger-frame and may also be operated by means of a foot-standard or treadle 39, the shank 40 of which extends through a suitable guide 41, connected to the car-sill, and pivotally connects at its lower end to said lever, so that the lever 37 may be operated by an attendant standing on the car or the adjacent sill thereof. Two of such levers 37 and treadles or foot-standards 39 are ordinarily employed, whereby the operator may uncouple cars from either side without going between same.

In order to provide for the longitudinal movement of the draw-head in the absence of the usual bumpers, the construction hereinabove described may be modified, as illustrated in Figs. 8, 9, and 10, in which the stem 17 is formed separately from the fork 16. The stem is, however, mounted to slide vertically in the bearing-brackets 18, while its lower end is extended outward substantially

at a right angle and slotted or forked, as shown at 42, adapting it to receive slidably the reduced shank 43 of the fork 16. In forming the shank 43 a shoulder 44 is established above the fork-crown, which is adapted to bear and slide beneath the slotted arm 42, while the fork is prevented from dropping out of place by means of a cross-head 45 in the form of a pin extending transversely of the shank 43 through an opening therein.

The fork 16 bears the same relation to the draw-head and coupling-link as previously described and illustrated in the preceding figures, but under the reciprocatory movements of the draw-head as controlled by the usual spring 46 and stop 47 the fork 16 is adapted to slide back and forth in the slotted arm 42 of the stem 17, which avoids any danger of breaking or bending either the fork or stem were said parts formed in one piece, as illustrated in Figs. 1 and 2. In adapting the form of coupler last described to flat and passenger cars no further changes are necessary except to connect the hanger 34, illustrated in Fig. 7, to the top of the draw-head instead of to the car-platform or body-sill, as illustrated in said figure.

From the foregoing description it will be seen that the car-coupler of this invention is entirely automatic in operation and that the coupling may be effected from either side of the car or from the top thereof, as may be most convenient; further, that the coupling is applicable either to a box-car or to a flat or passenger coach and that the same will not interfere with the air-brake connections and vestibule extensions now in common use.

I do not desire to be limited to the details of construction and arrangement hereinabove set forth, and accordingly reserve the right to change, modify, or vary the construction within the scope of the appended claim.

Having thus fully described the invention, what is claimed, and desired to be secured by Letters Patent, is—

In a car-coupler, the combination with the draw-head having an elongated slot in one wall and openings in another wall thereof, of a spring-actuated stem movably secured to a car-body and having forked arms with tapering terminal ends mounted in the slot and openings, a cross-bar extending between and secured to the opposite arms of the fork, a link adapted to coact with the cross-bar whereby to slidably move the forked arms and their terminal ends in the slot and openings so as to lock the links to the cross-bar, and means connected with said spring-actuated stem to release the link from the cross-bar, substantially as specified.

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

ANKNEY D. NICHOLS.

Witnesses:

JOS. SCHWARZ,
D. F. NICHOLS.