

(No Model.)

2 Sheets—Sheet 1.

M. FENNELL.

CAR COUPLING.

No. 356,932.

Patented Feb. 1, 1887.

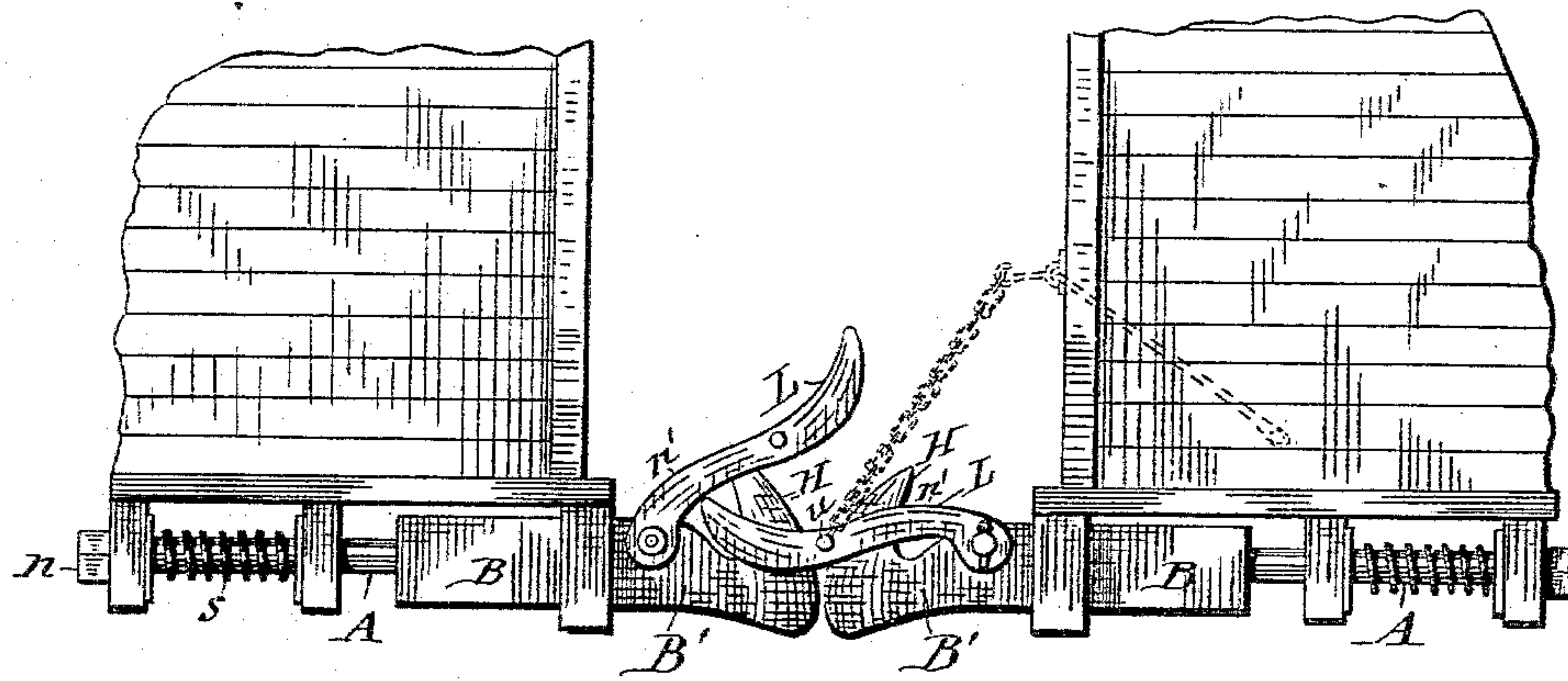


Fig. 1

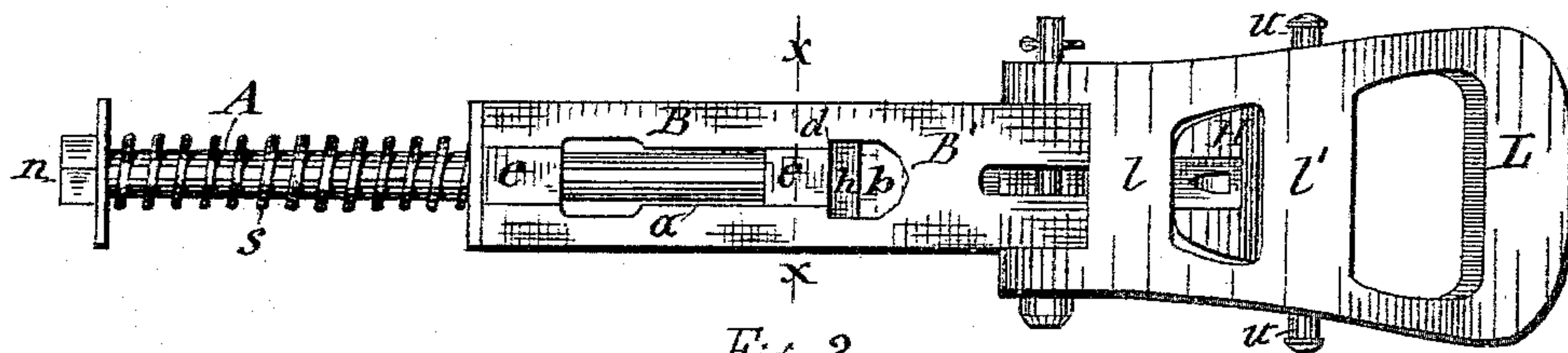


Fig. 2

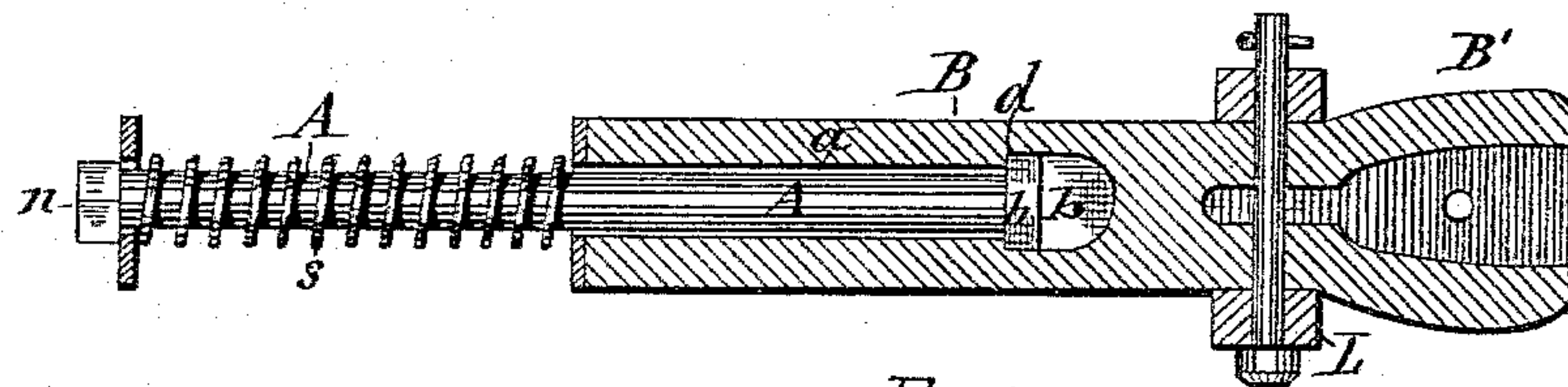


Fig. 3

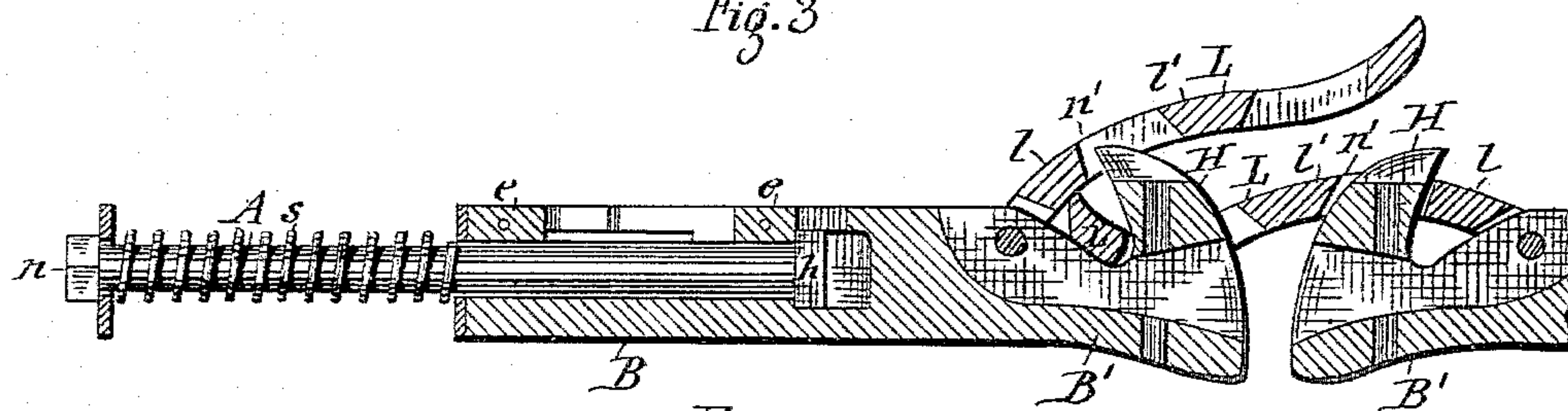


Fig. 4

WITNESSES:

A. F. Walz,
C. Bendixson.

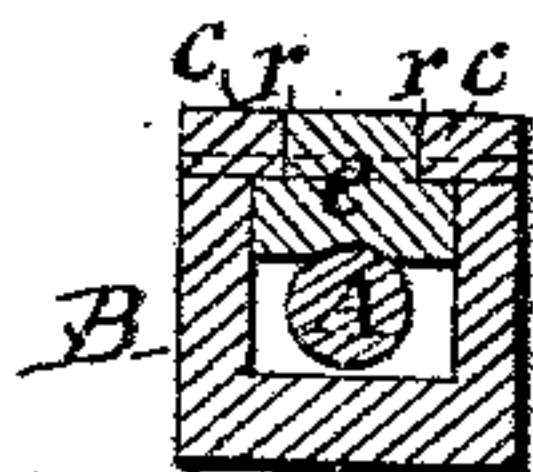


Fig. 5

INVENTOR:

Martin Fennell

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(No Model.)

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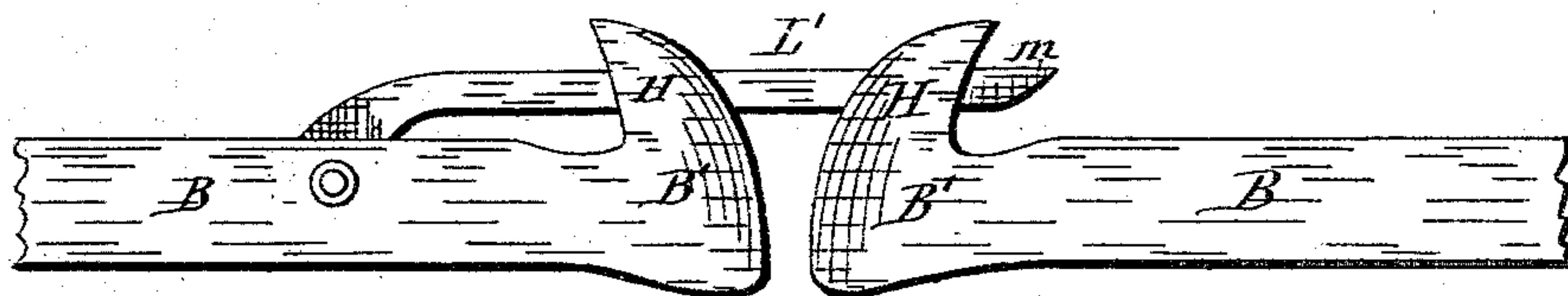


Fig. 6

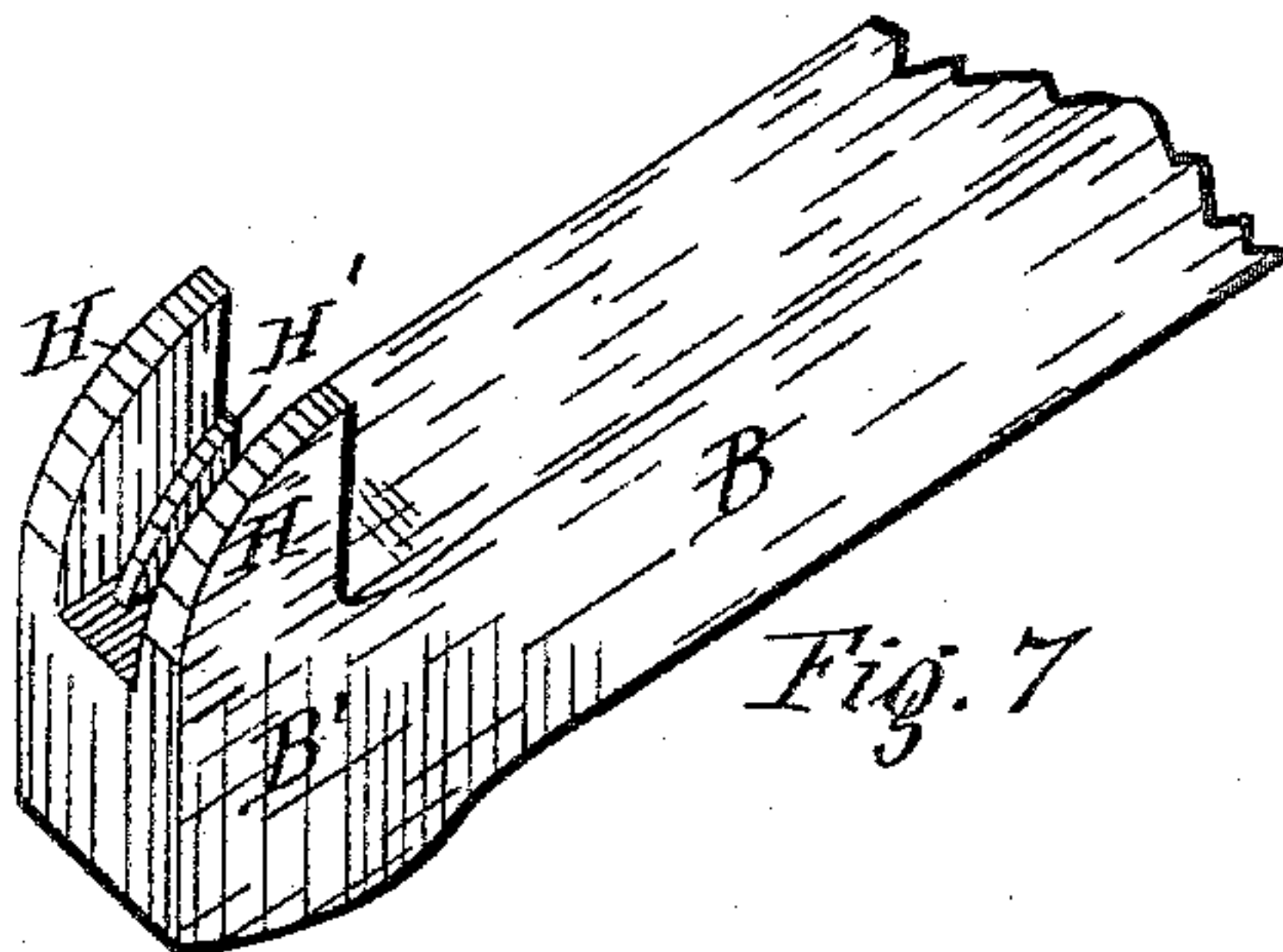


Fig. 7

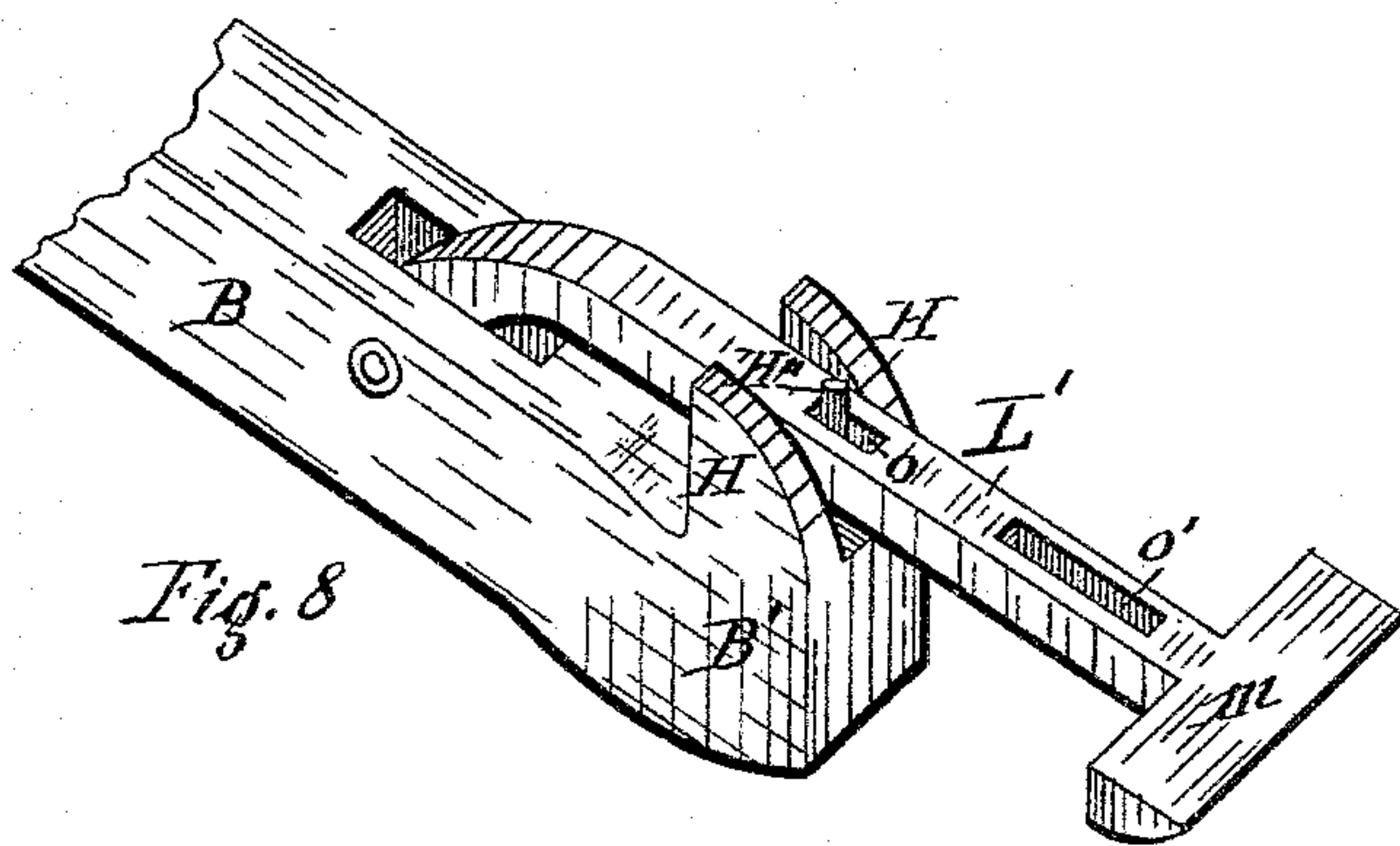


Fig. 8

WITNESSES:

A. F. Walz,
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INVENTOR:

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UNITED STATES PATENT OFFICE.

MARTIN FENNEL, OF SKANEATELES, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 356,932, dated February 1, 1887.

Application filed September 25, 1886. Serial No. 214,507. (No model.)

To all whom it may concern:

Be it known that I, MARTIN FENNEL, of Skaneateles, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Car-Couplers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of car-
10 couplings which are in a measure automatic in their operation and obviate the necessity of a person going between the cars to couple and uncouple the same, and it has special reference to the car-coupling for which I have
15 obtained Letters Patent of the United States No. 321,014, dated June 30, 1885.

My present invention consists in an improved construction of the component parts of said car-coupling, whereby the same is rendered more efficient and more secure in its operation, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a side elevation of the adjacent ends of two car-bodies
25 coupled together by my improved coupler. Fig. 2 is a detached top plan view of the draw-bar, with its link and stale-bolt attachment. Fig. 3 is a horizontal longitudinal section of the attachment of the draw-bar to the stale-
30 bolt. Fig. 4 is a vertical longitudinal section of the draw-bar with the draw-head interlocked with a link of a companion coupler. Fig. 5 is a transverse section on line *x x*, Fig. 3. Fig. 6 is a side view of a car-coupling embodying modifications of my invention, and
35 Figs. 7 and 8 are detached isometric views further illustrating modifications of my invention.

Similar letters of reference indicate corresponding parts.

B represents the draw-bar, formed at one end with the draw-head B', and connected at the opposite end in the usual manner to the car by means of the stale-bolt A. The connection of
45 said stale-bolt to the draw-bar I make as follows, to wit: The draw-bar B, I form with a longitudinal recess or channel, *a*, adapted to contain a portion of the length of the stale-bolt from one end thereof. Said channel terminates in a longitudinally elongated and
50 widened recess, *b*, for the reception of the

head *h* on the inclosed end of the stale-bolt. The junction of the recess *b* with the channel *a* forms a lock or shoulder, *d*, against which the back of the head *h* abuts, so as to prevent
55 the withdrawal of the stale-bolt endwise from the draw-bar.

To prevent the stale-bolt from slipping laterally out of the channel *a* and recess *b*, I place across said channels keys *e e*, which are secured in position by providing the outer edges of the keys with rabbets *r r*, and the edges of the channel *a* with inward-projecting flanges
60 *c c*, which enter the rabbets of the keys. The flanges extend only part way the length of the channel, leaving openings to allow the keys to be introduced sidewise into the channel, and
65 then, by pushing them endwise, the flanges *c c* enter the rabbets and thus prevent the removal of the keys sidewise from the channel. 70 By means of pins passing transversely through the draw-bar and keys the latter are prevented from moving longitudinally.

It will be observed that the described construction and combination of parts permits of
75 a ready attachment and detachment of the stale-bolt and draw-bar when desired for renewal or repair of the same. The other end of the stale-bolt passes loosely through a suitable support on the car-frame, and is provided with
80 a nut, *n*, by which it becomes coupled to said support; and between this support and end of the draw-bar and abutting against the same is a spiral spring, *s*, surrounding the stale-bolt, said spring serving as a buffer-cushion when
85 the draw-head collides with an opposing buffer. The recess *b* is sufficiently elongated to allow the draw-bar to be crowded back against the resistance of the spring when subjected to
90 the aforesaid strain.

From the draw-head B' rises a rigid horn or horns, H, suitably shaped to interlock with a coupling-link, L, of an approaching car. The link L is hinged or pivoted to the sides of the draw-bar, back of the horn H, so as to swing
95 with its free end vertically over the horn and into and out of its coupling position.

In order to relieve the pivot or hinge-pin of the link from the strain incident to the draft on the link, I provide the latter with an intermediate cross-bar, *l*, by which said link, when
100 in its coupled position, abuts against the rear

face of the horn, and thus has an additional auxiliary and positive hold on the draw-head independent of the hinge-pin of the link, as illustrated in Fig. 4 of the drawings. In front of the horn H, I provide the link L with another cross-bar, l' , which encounters the front face of the horn and arrests the descent of the free end of the link below a horizontal position and supports the same in proper position for automatically engaging the horn of a companion coupler, as hereinafter described.

Aside from the functions hereinbefore ascribed to the cross-bars l l' , they also serve to re-enforce the link, which in this case is especially necessary, owing to the flare of the free end of the link, which flare is made for the purpose of allowing sufficient lateral play to the horn of one coupler in the link of the companion coupler to retain their interlocked hold without becoming cramped or bound one within the other when the cars are traveling around curves or subjected to lateral swaying due to an uneven track, and also to allow the horn to uncouple from the link in case the cars are derailed and thrown completely out of line with each other or upset.

The front face of the horn may be either curved from the bottom toward the top, as shown, or beveled or inclined at any suitable angle to allow the free end of the link L of the approaching car to slide up over the horn on the draw-head of the other car, and automatically drop into an interlocked position with said horn; and in order to further insure said action of the link I curve the free end thereof upward, as shown. The hinged end of the link L, I curve downward, and from thence I arch the link, as shown at n' , part way the length of the link, and the free end of the link I curve reverse, so as to terminate it with an upward curvature, as aforesaid.

The arched portion n' of the link rides upon the interlocked end of the link of the companion coupler, and thus serves to hold the same down in its interlocked position. The reversed curved free end portion of the superincumbent link lying inclined over the interlocked link causes it to retain its bearing on the latter.

From the sides of the link project lugs u u , to which is connected a chain, and this in turn is connected to an arm or crank which projects from a shaft extended across the end of the car-body and mounted in suitable bearings thereon to allow said shaft to turn. By means of the suitable lever or crank on the end of the said shaft the latter can be turned so as to cause the arm thereof to lift the link out of its interlocked position on the horn of the draw-head of the companion coupler when desired to uncouple the cars. I do not, however, limit myself to this particular means for uncoupling the cars, as the same may be effected by other suitable and well-known devices employed in connection with other car-couplers. Neither do I wish to confine myself to the particular form of the link L as hereinbefore described, inasmuch as this may be

varied without losing the salient features of my invention.

Modifications of the forms of the link and draw-heads are illustrated in Figs. 6, 7, and 8 of the drawings, in which case the link L' is formed of a single longitudinal bar hinged at one end on the draw-bar B, and having at its free end a horizontal cross-bar, m , and the draw-head B is formed with two main horns, H H, arranged side by side, and with either a third and smaller horn, H' , or a fixed or removable pin, H'' , between the main horns.

The longitudinal bar of the link L' is adapted to lie between the main horns H H, and is provided with a slot or an eye, o , which the intermediate horn, H' , or pin H'' enters, and thus said link receives an auxiliary and positive hold on the draw-head independent of the hinge of the link.

On the approach of the two cars to be coupled, the cross-bar on the free end of one link rides over the horns of the companion coupler and drops into engagement with the back of said horns in the same manner as the first-described link L; and in order to allow the free end of the single bar of the link L' to drop between the two horns of the companion coupler I provide said bar with an additional slot or eye, o' , through which the intermediate horn, H' , or pin H'' of the companion coupler passes.

At the base of the horn H, I provide the draw-head with a cavity, I, extending through the front of the draw-head and flared similar to the usual bell-mouths of ordinary draw-heads, as shown in Fig. 4 of the drawings. Said cavity is adapted to receive the ordinary coupling-link, and a channel, b , is extended vertically through the draw-head for the reception of the ordinary coupling-pin. My improved draw-head is thus adapted to couple with the common bell-mouthed draw-head and by the common link and pin.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the draw-head, of a coupling-link attached thereto and adapted to be thrown in and out of its coupling position and an additional auxiliary and positive connection of said link on its draw-head when the link is in position for coupling with another draw-head, substantially as set forth.

2. The combination, with the draw-head and link hinged thereon, of a rigid rear abutment on said draw-head and a co-operating forward abutment on the link adapted to engage said rear abutment when the link is in its coupling position, as set forth.

3. In combination with the horned draw-head, the link hinged thereon and provided with a cross-bar adapted to abut against the back of the horn and relieve the hinge of the link from strain, substantially as described and shown.

4. In combination with the horned draw-head, the link hinged thereon back of the horn and provided with a cross-bar adapted

to encounter the front of said horn, and thereby support the link in its horizontal position, as set forth.

5 5. In combination with the horned draw-head, the link hinged on said draw-head back of the horn and provided with intermediate cross-bars respectively at the front and rear of the horn, substantially as described and shown.

10 6. In combination with the horned draw-head, the link hinged on said draw-head back of the horn and provided with intermediate cross-bars respectively at the front and rear

of the horn and arched from its hinged end part way its length and curved reverse at its free end, substantially as described and shown. 15

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Skaneateles, in the county of Onondaga, in the State of New York, this 13th day of September, 1886. 20

MARTIN FENNELL. [L. S.]

Witnesses:

GEORGE BARROW,
CHAS. VAN CAMP.