

(No Model.)

2 Sheets—Sheet 1.

W. DUNLAP.  
CAR COUPLING.

No. 518,492.

Patented Apr. 17, 1894.

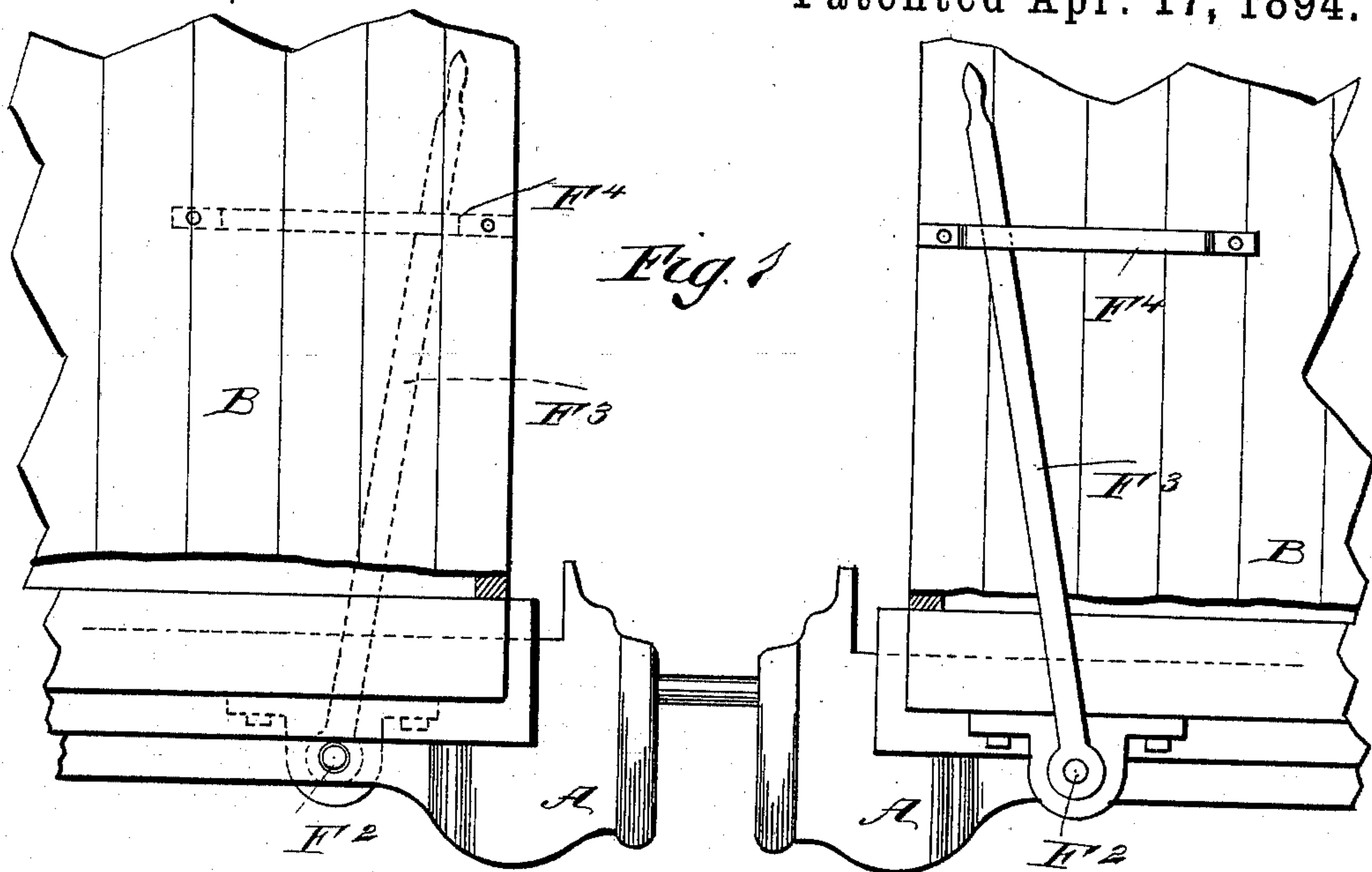
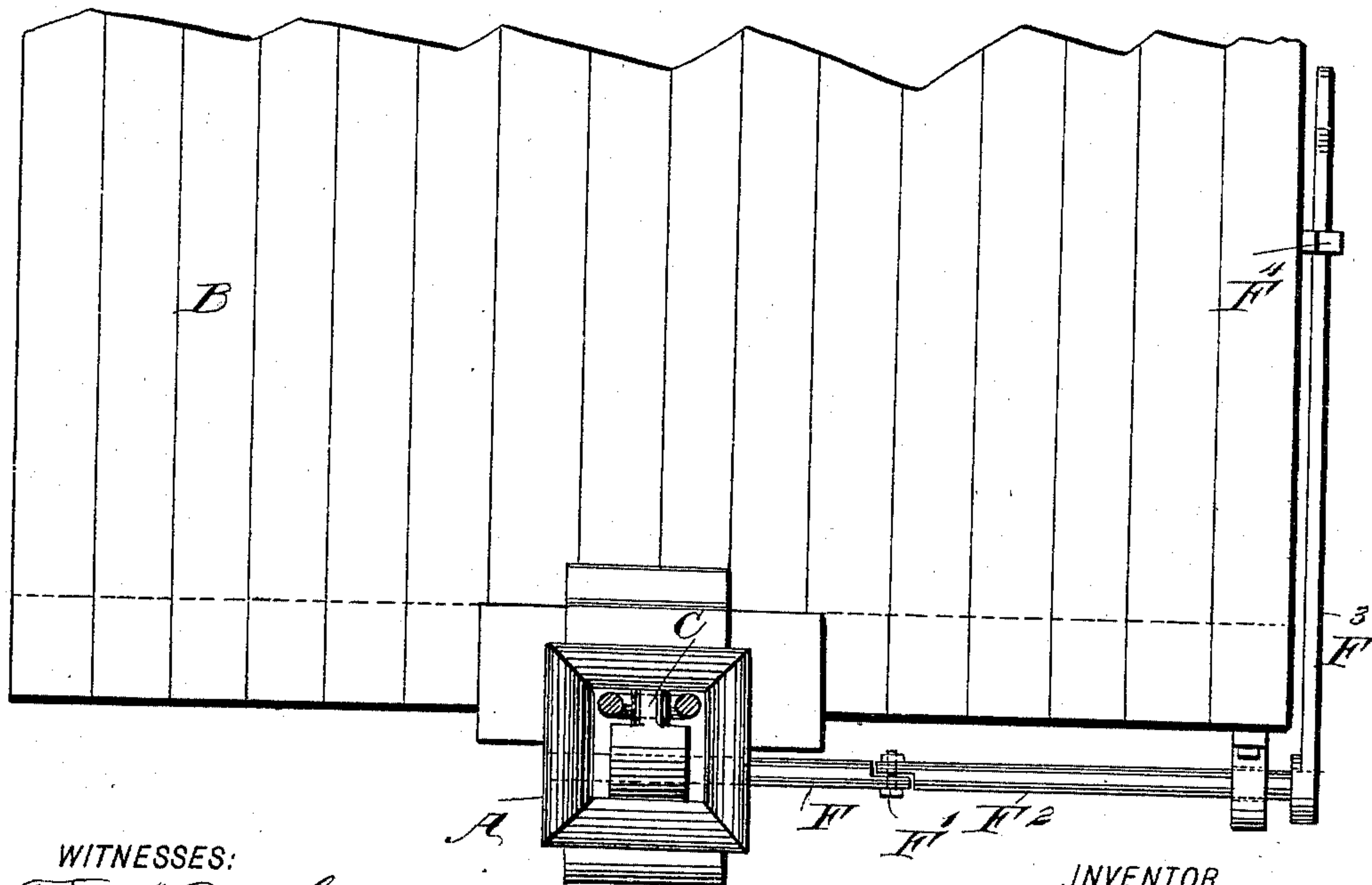


Fig. 1

Fig. 2



WITNESSES:

*J. M. Andle*  
*C. Sedgwick*

INVENTOR

*W. Dunlap*  
BY *Munn & Co*

ATTORNEYS.

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2 Sheets—Sheet 2.

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Fig. 3

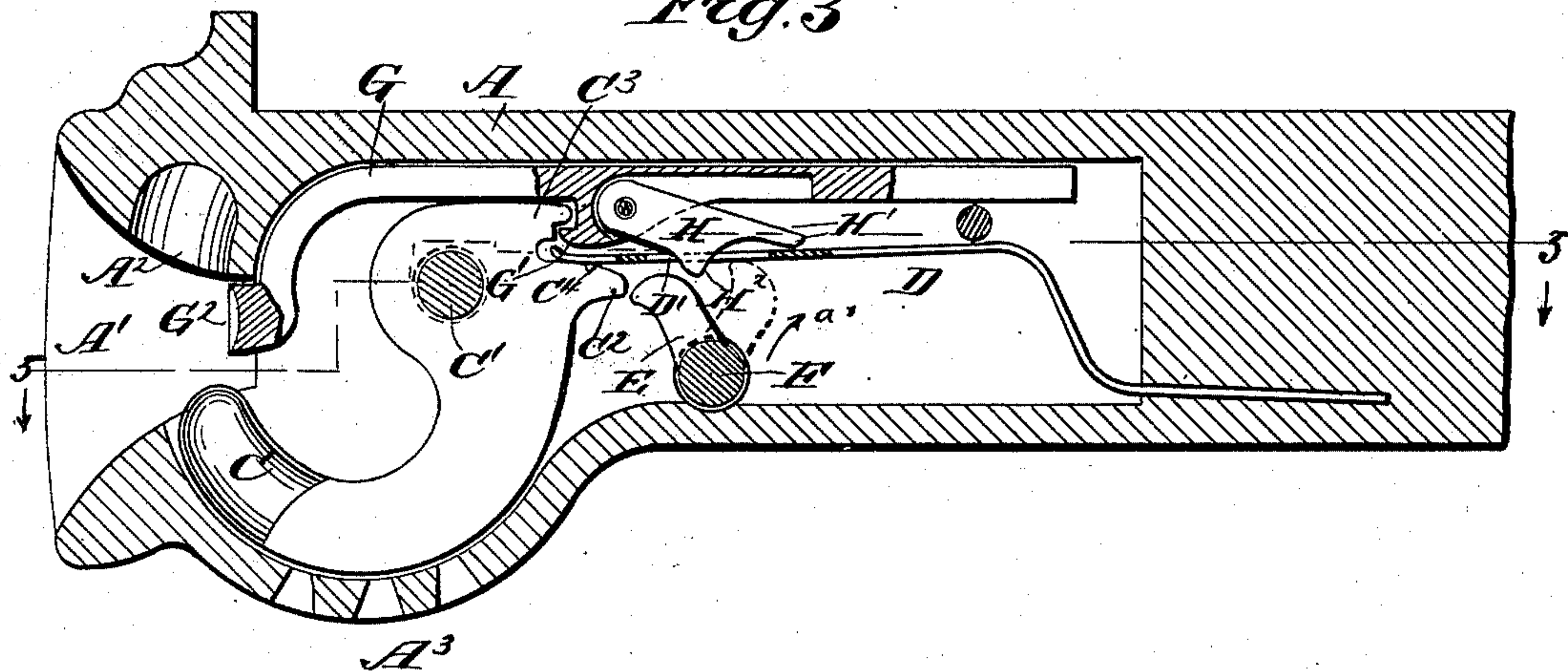


Fig. 4.

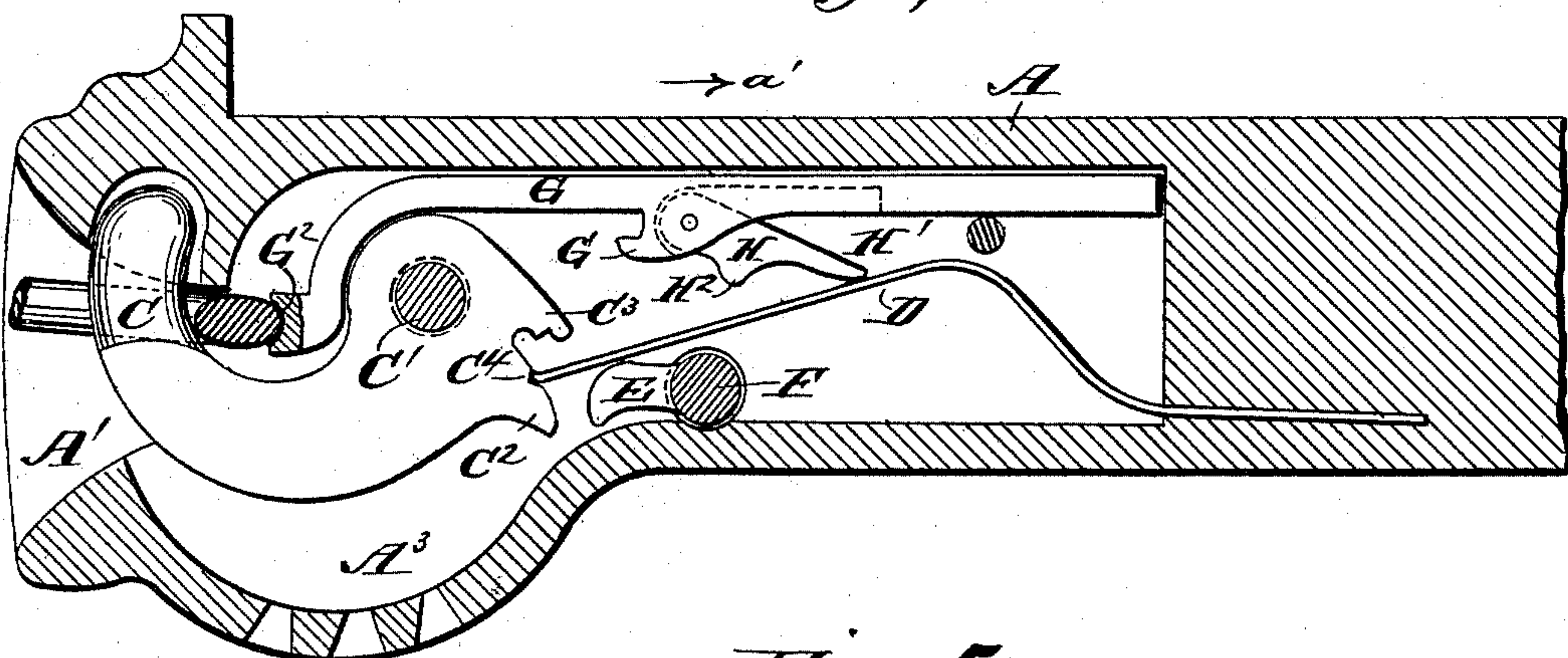
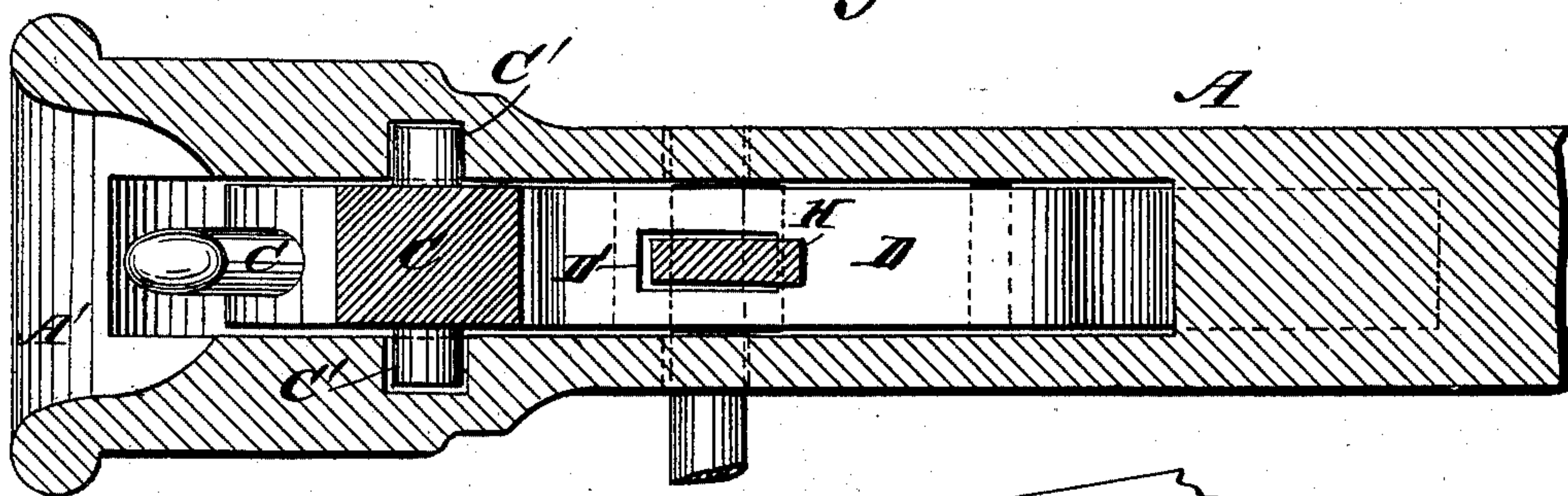
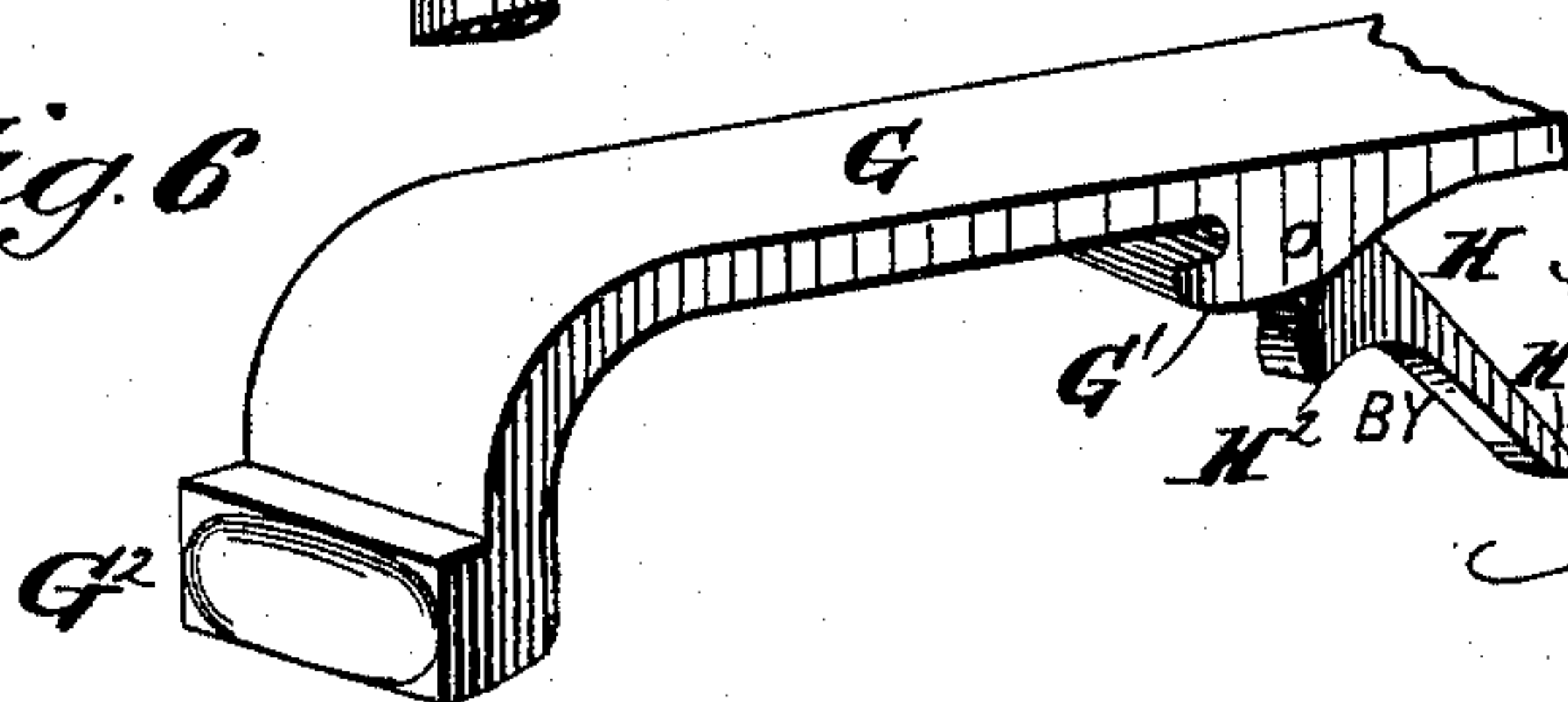


Fig. 5.



WITNESSES: Fig. 6

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C. Sedgwick



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# UNITED STATES PATENT OFFICE.

WILLIAM DUNLAP, OF SAN DIEGO, CALIFORNIA, ASSIGNOR OF ONE-HALF  
TO EDWARD M. REINHARDT, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 518,492, dated April 17, 1894.

Application filed February 3, 1894. Serial No. 498,982. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM DUNLAP, of San Diego, in the county of San Diego and State of California, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved car coupling, which is comparatively simple and durable in construction, very effective in operation, and arranged to automatically couple the cars and to permit of conveniently uncoupling, without the operator stepping between the cars.

The invention consists principally of a spring-pressed coupling hook adapted to engage the link, and a slide for locking the said hook in an open position, the said slide being adapted to be engaged by the entering link.

The invention also consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied, showing two cars coupled. Fig. 2 is a face view of the improvement as applied. Fig. 3 is an enlarged sectional side elevation of the improvement, showing the hook in an open position. Fig. 4 is a similar view of the same with the link engaged by the closed hook. Fig. 5 is a sectional plan view of the same on the line 5—5 of Fig. 3. Fig. 6 is a perspective view of part of the slide and its dog.

The improved car coupling is provided with a draw-head A, held on the under side of the car B, in the usual manner and formed at its front end with a mouth A', for the entrance of the link of the usual construction, the said link being adapted to be engaged by a hook C, provided with trunnions C', journaled in suitable bearings in the sides of the draw-head A. The rear end of this hook C is provided with a lip C<sup>2</sup>, pressed on by the free end of a spring D, attached to the drawhead A, as plainly shown in the drawings. The free end of the spring D is adapted to be lifted

by a cam E, secured on a transversely-extending shaft F, journaled in the sides of the drawhead A, and connected at one or both its outer ends by a coupling F', with a rod F<sup>2</sup> mounted to turn in suitable bearings attached to the car B, as plainly shown in Figs. 1 and 2. On the extreme outer end of this rod F<sup>2</sup> is attached a handle F<sup>3</sup>, arranged along the side of the car so as to be within convenient reach of the operator, without requiring the latter to step between the cars to turn the rod F<sup>2</sup>, the shaft F and cam E, to manipulate the spring D for uncoupling the cars, as hereinafter more fully described. The swinging movement of the handle F<sup>3</sup> and consequently that of the cam E is limited by a loop F<sup>4</sup>, attached to the side of the car and illustrated in Figs. 1 and 2.

On the pivot end of the hook C and above the lip C<sup>2</sup> is arranged a second lip C<sup>3</sup>, adapted to be engaged by a corresponding hook G', formed or secured on the under side of a slide G, fitted to slide longitudinally in the drawhead A, the said slide being adapted to lock with its hook G' the loop C<sup>3</sup> in place and consequently the hook C in an open position. The forward end of the slide G is bent downward to carry a head or cross piece G<sup>2</sup>, extending with its front face into the mouth A' of the drawhead directly above the free end of the hook C, so that the link entering the mouth of the drawhead strikes the said head G<sup>2</sup> and moves the latter rearward to disengage the hook G' from the lip C<sup>3</sup>, to permit the spring D pressing on the lip C<sup>2</sup> to impart a swinging motion to the hook C in an upward direction, to engage the link and thus couple the two cars. The free end of the hook C is adapted to pass into a recess A<sup>2</sup>, formed in the top of the mouth A' as plainly shown in Figs. 3 and 4, so that the hook is securely held in place and the link is not liable to accidentally become detached from the hook C.

On the slide G is pivoted a dog H, adapted to rest with its free end H' on top of the spring D, as plainly shown in Figs. 3 and 4, the said dog being provided on its under side with a lug H<sup>2</sup>, adapted to pass through a slot D', formed in the spring D. This lug H<sup>2</sup> is adapted to be engaged by the cam E at the time



the latter is turned forward, so that the slide G is moved forwardly to engage with its hook G' the lip C<sup>3</sup> at the time the hook C is open.

On the top surface of the lip C<sup>2</sup> is formed a notch C<sup>4</sup>, adapted to be engaged by the extreme outer end of the spring D at the time the hook C is closed, see Fig. 4, so that the said hook is securely locked in place and is not liable to open accidentally, as the spring D prevents such movement. The free end of the spring D is, however, lifted out of the notch C<sup>4</sup> in the lip C<sup>2</sup> at the time the cam E is swung upward in the direction of the arrow α', thus releasing the hook C from the pressure of the spring D and permitting the hook to open partly by its own weight and partly by the upward swinging free end of the spring D, caused by the turning of the cam E, it being understood that the free end of the spring D in swinging upward strikes against the under side of the lip C<sup>3</sup>.

The operation is as follows: When the several parts are in position, as illustrated in Fig. 3, then the hook C is open and locked in an open position by the hook G' engaging the lip C<sup>3</sup>. The head G<sup>2</sup> of the slide G now extends into the mouth A' of the drawhead and when the link of the approaching car strikes the said head, it pushes the slide G rearward to finally disengage the hook G' from the lip C<sup>3</sup>, so that the free end of the spring D in pressing on the lip C<sup>2</sup> causes the hook C to swing upward to engage the link which has now sufficiently entered the mouth A' of the drawhead to be locked in place by the upwardly swinging hook C, (see Fig. 4.) The two cars are thus coupled. Now, when it is desired to uncouple the cars, the operator takes hold of the handle F<sup>3</sup> and swings the same rearwardly to cause the cam E to move in the same direction, to lift the free end of the spring D and to cause the hook C to swing downward, as previously explained. By now moving the cars apart, the link will move out of the mouth A' of the drawhead A, so that the two cars are uncoupled. Now, in order to set the coupling for automatically coupling, the operator swings the handle F<sup>3</sup> forward to cause a like movement of the cam E which now, by its free end, engages the downwardly-extending lug H<sup>2</sup> of the dog H, thus exerting a pressure on the said dog and consequently on the slide G in a forward direction, to shift the said slide forward and cause the hook G' to engage the lip C<sup>3</sup>, at the same time moving the head G<sup>2</sup> into the mouth A' of the drawhead. Thus, the forward movement of the slide G locks the hook C in place, brings the head G<sup>2</sup> in such a position as to be acted on by the entering link, and the free end of the spring D becomes released from the cam E and presses on the lip C<sup>2</sup>, so that when the slide G is forced rearward by the entering link the hook C is closed by the action of the spring.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. A car coupling, comprising a spring-pressed coupling hook adapted to engage the link, and a slide for locking the said hook in an open position, the said slide being adapted to be engaged by the entering link, substantially as shown and described.

2. A car coupling, comprising a spring-pressed coupling hook provided with two lips, of which one is pressed on by the spring, and a slide provided with a hook adapted to engage the other lip to lock the hook in an open position, the said slide being provided at its forward end with a head adapted to be engaged by the entering link, to shift the slide rearwardly to move its hook out of engagement with the said lip, to permit the hook to close, substantially as shown and described.

3. A car coupling, comprising a spring-pressed coupling hook provided with two lips, of which one is pressed on by the spring, a slide provided with a hook adapted to engage the other lip to lock the hook in an open position, the said slide being provided at its forward end with a head adapted to be engaged by the entering link, to shift the slide rearwardly to move its hook out of engagement with the said lip, to permit the hook to close, a dog pivoted on the said slide and provided with a lug, and a cam adapted to engage the lug of the said dog to impart a forward sliding movement to the said slide, substantially as shown and described.

4. A car coupling, comprising a spring-pressed coupling hook provided with two lips, of which one is pressed on by the spring, a slide provided with a hook adapted to engage the other lip to lock the hook in an open position, the said slide being provided at its forward end with a head adapted to be engaged by the entering link, to shift the slide rearwardly to move its hook out of engagement with the said lip, to permit the hook to close, a dog pivoted on the said slide and provided with a lug, a cam adapted to engage the lug of the said dog to impart a forward sliding movement to the said slide, and means, substantially as described, for operating the said cam from the side of the car, as set forth.

5. A car coupling, comprising a spring-pressed coupling hook provided with two lips, of which one is pressed on by the spring, a slide provided with a hook adapted to engage the other lip to lock the hook in an open position, the said slide being provided at its forward end with a head adapted to be engaged by the entering link, to shift the slide rearwardly to move its hook out of engagement with the said lip, to permit the hook to close, a dog pivoted on the said slide and provided with a lug, a cam adapted to engage the lug of the said dog to impart a forward sliding movement to the said slide, means, substantially as described, for operating the said cam from the side of the car, and means, substan-



tially as described, for limiting the swinging motion of the said cam, as set forth.

5 6. A car coupling, comprising a coupling hook mounted to swing and adapted to engage the link, the said coupling link being provided with a lip having a notch, and a spring pressing on the said lip and adapted to engage with its free end the said notch, to lock the hook in a closed position, substantially as shown and described.

10 7. A car coupling, comprising a coupling hook mounted to swing in the drawhead and adapted to engage the link, a spring pressing on the said hook and formed with a slot, a slide fitted for longitudinal movement in the drawhead and provided with a hook adapted

to engage a lip on the said link, the forward end of the said slide being provided with a head adapted to be engaged by the coupling link, a dog pivoted on the said slide and resting with its free end on the said spring, the said dog being provided with a lug extending into the slot in the said spring, and a cam mounted to swing and adapted to engage the said spring and the lug of the said dog, substantially as shown and described. 20 25

WILLIAM DUNLAP.

Witnesses:

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H. F. NORCROSS.