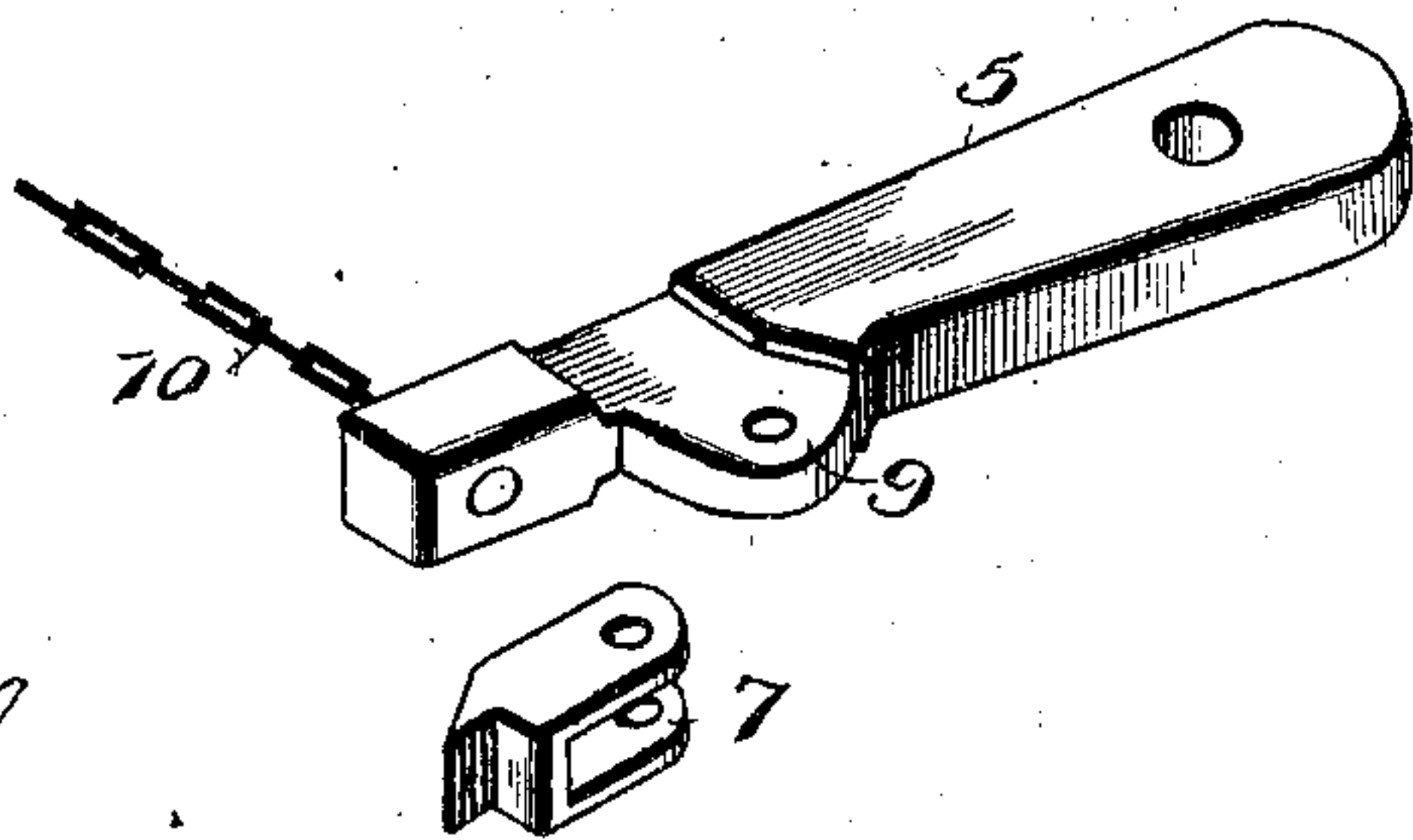
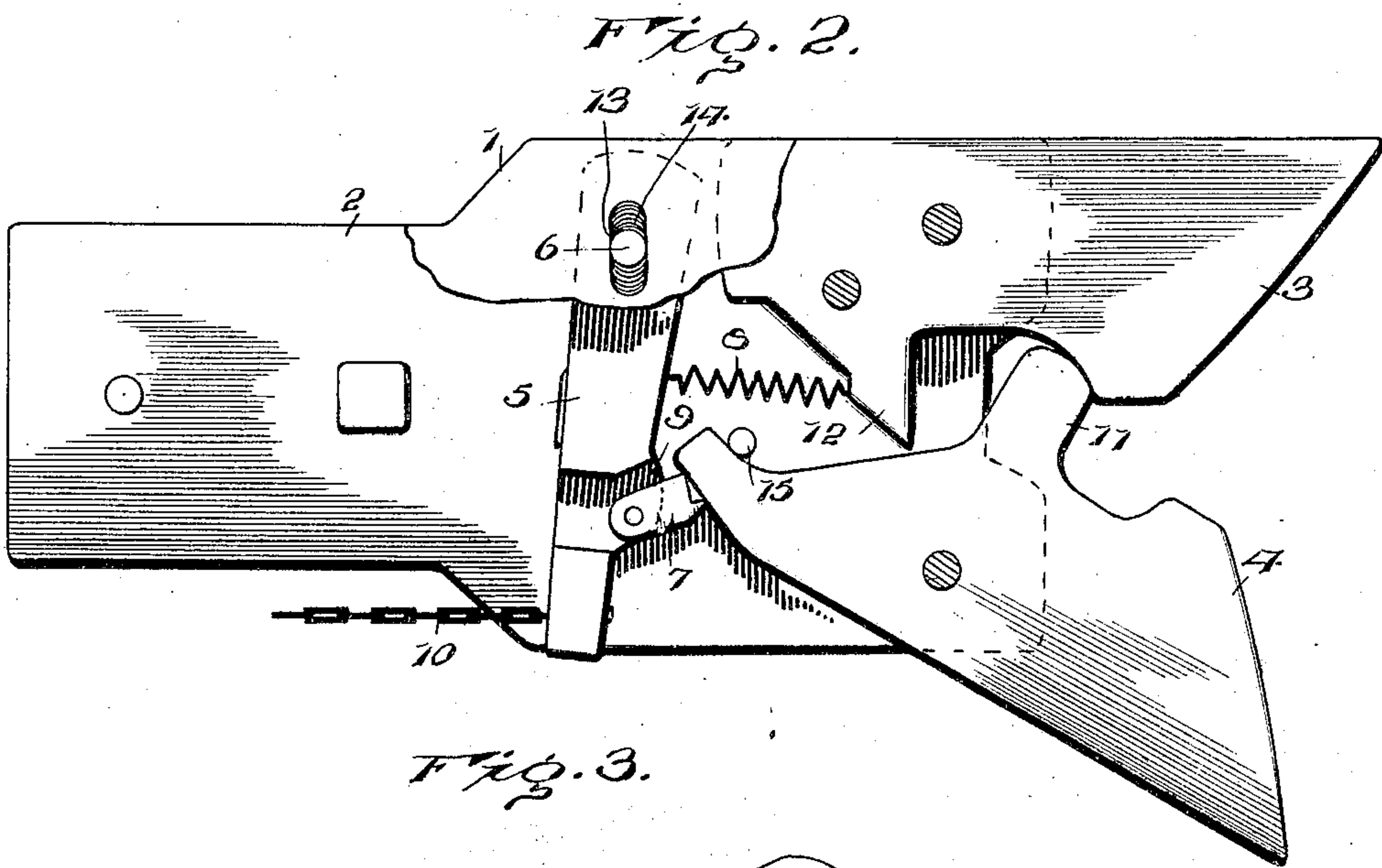
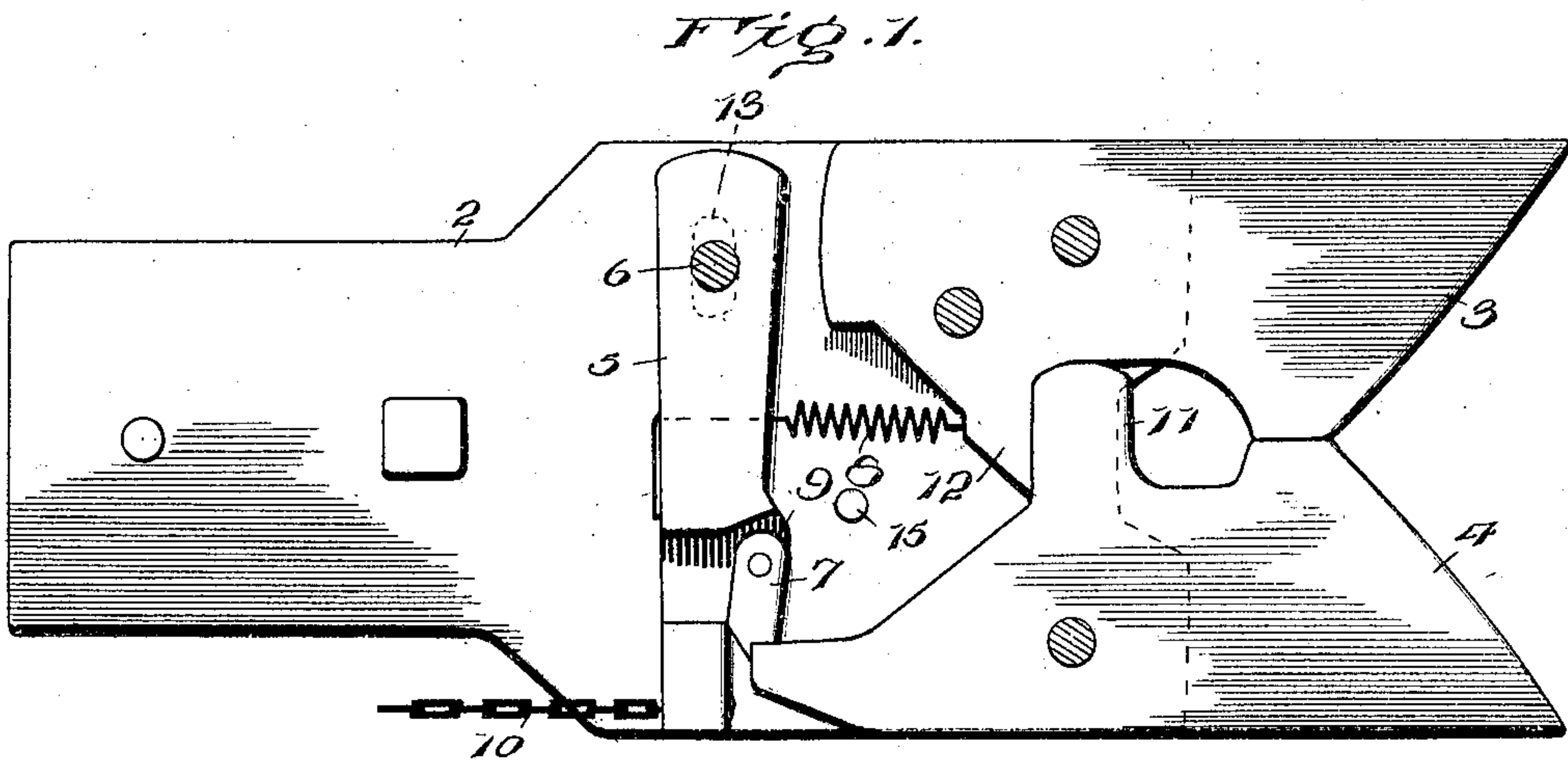


No. 770,004.

PATENTED SEPT. 13, 1904.

O. H. GRUPE.
CAR COUPLING.
APPLICATION FILED APR. 14, 1904.

NO MODEL.



Witnesses

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 770,004, dated September 13, 1904.

Application filed April 14, 1904. Serial No. 203,178. (No model.)

To all whom it may concern:

Be it known that I, OTTO H. GRUPE, a citizen of the United States, residing at Alden, in the county of Hardin and State of Iowa, have
5 invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to improvements in car-couplers, and embodies a construction of
10 device of this type particularly adapted for coupling engines and tenders or the like.

The coupling consists particularly of hook members peculiarly mounted relative to each other and a special form of lock means for
15 locking the coupling members and unlocking same.

A special feature of the invention resides in the general simplicity of the device both relative to the arrangement of the parts and the
20 operation of the same, whereby the coupling may be manufactured cheaply yet possessed of the necessary rigidity and strength requisite to devices of this class.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

30 While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

35 Figure 1 is a plan view showing the relative arrangement of the parts of the coupling when locked closed, the upper plate of the casing being shown in dotted lines. Fig. 2 is a view similar to Fig. 1, the coupling members being open in the positions assumed thereby preparatory to the coupling operation. Fig. 3 is a detail perspective view of the lock-bar and the detent member carried thereby.

45 Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the coupling de-

vice comprises a casing composed of upper 50 and lower plates 1 and 2, respectively, the said plates being spaced from each other, so as to receive therebetween coupling devices, which consist of hook members 3 and 4, respectively. The plates 1 and 2 are carried by
55 the draw-bar of the car or vehicle which is designed to carry the coupler. It will be understood that the hook members 3 and 4 cooperate with the coupling-pin, which is suitably mounted upon the draw-bar of the car
60 which is to be coupled with the car having the draw-bar carrying the said members 3 and 4. Any suitable kind of coupling-pin device commonly employed may be used in connection with the coupling members 3 and 4 in the
65 contemplation of my invention.

The coupling member 3 is rigidly secured in position between the plates 1 and 2 of the casing, wherein the member 4 is movable, being pivotally mounted adjacent the rigid member 3. Both of the members 3 and 4 are of
70 hook form, so as to engage the coupling-pin with which they cooperate. The movable hook member 4 is adapted by a pivotal movement to open or close with relation to the
75 rigid member 3, and this hook member 4 is locked closed by means of a lock-bar 5, which is pivotally mounted upon a pivot-pin 6, disposed approximately in rear of the rigid hook member 3. The lock-bar 5 does not directly
80 engage the movable hook member 4, but carries a movable element in the form of a detent 7, pivotally secured thereto, which latter is adapted to engage the member 4 to hold the same closed or open, as the case may be.
85 When the hook member 4 is open, the detent 7 engages the outer side of the rear end thereof to hold this member in the position indicated, a spring 8 cooperating with the lock-bar 5 to cause a normal engagement of the
90 detent with the hook member 4 under all conditions of service. The cooperation of the detent 7 with the hook member 4 when the latter is open is simply such as to exert a pressure against this member sufficient to hold
95 same open, but not sufficient to lock same in such position. When the detent 7 engages the hook member 4 after automatic closing of

said member, however, the coöperation above mentioned is a locking coöperation which positively holds the movable hook member 4 from any movement whatever. The detent 7 is pivoted to a projection 9 of the lock-bar 5, and when the lock member 4 is closed the spring 8 coöperates to hold the detent in engagement with the inner side of the rear end of the hook member to prevent any movement of the latter as above set forth. At the same time because of the provision of a movable element in the form of the detent 7 the coupling member 4 may be readily unlocked even though a great pulling force is being exercised thereon for the reason that the member 7 affords a loose connecting means which is adapted for ready and quick disengagement from locking coöperation with the member 4. To disengage the detent 7 after the coupling member 4 has closed against the rigid hook member 3, operating means in the form of a chain 10 or like part is connected with the end of the lock-bar adjacent which the detent is disposed, and this chain may be readily pulled, so as to move the lock-bar 5 against the tension of the spring 8. After the chain 10 has been pulled the pull of the coupling-link upon the member 4 will cause same to open, and the spring 8 immediately forces the detent against the outer side of the member 4 to hold same open.

The coupler constructed in accordance with my invention is adapted for automatic coupling, and for this purpose an extension 11 is projected from the inner side of the hook member 4, and this extension when struck by the coupling-link as the cars are forced together will automatically close the said member 4 against the member 3, after which the detent 7 coöperates to lock the member 4 in this position. To limit the movement of and to reinforce the extension 11, a stop projection 12 is extended from the rigid hook member 3 in rear of the extension 11 of the hook member 4, and this projection is engaged by the extension 11 in the closing movement of the hook member 4.

In order to take up the wear consequent to the engaging coöperation of the detent 7 with the member 4, the point of pivotal support of the lock-bar 5 is adapted for adjustment, and for this purpose the pivot-pin 6, upon which the lock-bar 5 is mounted, extends through slotted openings 13 in the plates 1 and 2. To adjust the pivot-pin 6 spacing members 14 are provided which may be removed and adjusted, so as to thereby adjust the position of the pivot-pin and the lock-bar 5, which is mounted thereon.

A stop member or pin 15 is disposed adjacent the rear end of the movable jaw 4 and is designed to limit and brace the jaw 4 in the separating movement of the latter with reference to the jaw 3. The stop member 15 is disposed between the rear ends of the jaws 3 and

4 and coöperates with the inner end of the movable jaw 4 to limit the opening movement of the latter, as aforesaid. In its bracing coöperation the stop member 15 reinforces the jaw 4, so as to brace the same should the coupling-pin strike the outer portion of the jaw 4 instead of entering the space between the two jaws 3 and 4. No liability of breakage of the projections 12 or the extensions 11 is incurred therefore, since the strain is distributed in a manner which will be readily appreciated.

Having thus described the invention, what is claimed as new is—

1. In a car-coupling, the combination of a movable hook member, a lock-bar, and a member movable upon and carried by the lock-bar for engagement with the hook member aforesaid.

2. In a car-coupling, the combination of a movable hook-bar, a pivoted lock-bar, and a movable detent carried by said pivoted lock-bar for engagement with the movable bar aforesaid.

3. In a car-coupling, the combination of a movable hook-bar, a movable detent carried by the lock-bar, and means for holding the detent in engagement with the hook member when the latter is both open and closed.

4. In a car-coupling, the combination of a rigid hook member, a pivoted hook member movable toward and from the said rigid hook member, a lock-bar, a movable detent carried by the lock-bar, and means for holding the detent in engagement with the pivoted hook member when the latter is opened and closed.

5. In a car-coupling, the combination of a rigid hook member, a pivoted hook member movable toward and from the said rigid hook member, a lock-bar, a movable detent carried by the lock-bar, and spring means for holding the detent in engagement with the pivoted hook member when the latter is open and closed.

6. In a car-coupling, the combination of a rigid hook member, a pivoted hook member adapted for coöperation with the rigid hook member, a pivoted lock-bar, and a detent pivoted to the lock-bar and adapted to engage the pivoted hook member aforesaid.

7. In a car-coupling, the combination of a movable hook member, a lock-bar, means for adjusting the lock-bar relative to the hook member, and a movable detent carried by the lock-bar and engaging the hook member.

8. In a car-coupling, the combination of a movable hook member, a pivoted lock-bar, means for adjusting the point of pivotal support of the lock-bar, and a movable detent carried by the lock-bar and normally engaging the movable hook member.

9. In a car-coupling, the combination of a rigid hook member, a movable hook member, a lock-bar pivoted in rear of said hook members, a detent pivoted to the lock-bar and en-

gaging the movable member when open or closed, and a spring coöperating with the lock-bar to hold the detent in the engagement aforesaid.

5 10. In a car-coupling, the combination of a rigid hook member, a movable hook member, a movable lock-bar, and a detent movable upon and carried by the lock-bar and coöper-

ating with the movable hook member to fix the position thereof. 10

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

OTTO H. GRUPE. [L. s.]

Witnesses:

R. W. BIRDSALL,

U. H. RUMMEL.