

(No Model.)

3 Sheets—Sheet 1.

R. HAUB.
CAR COUPLING.

No. 515,771.

Patented Mar. 6, 1894.

FIG. 1.

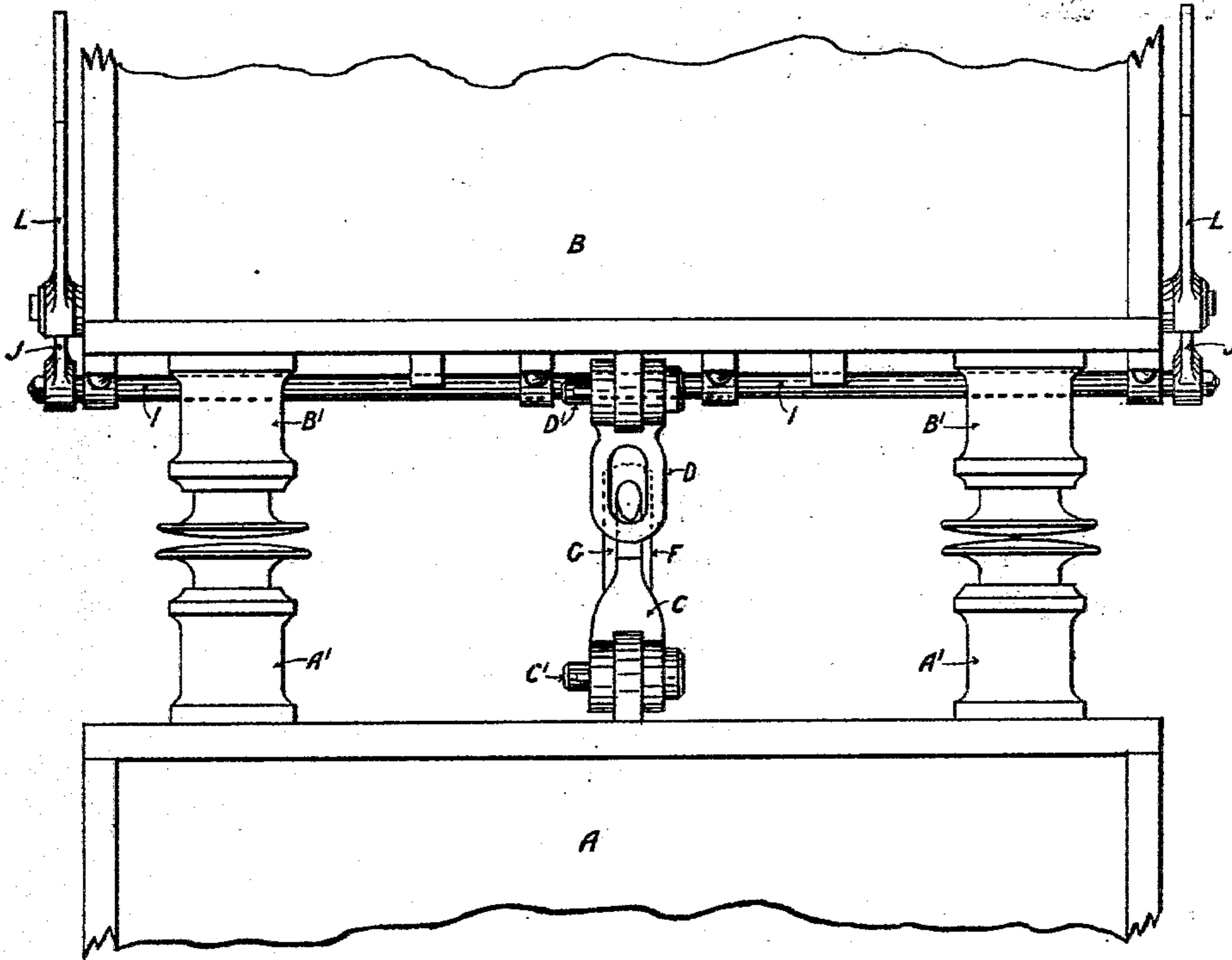
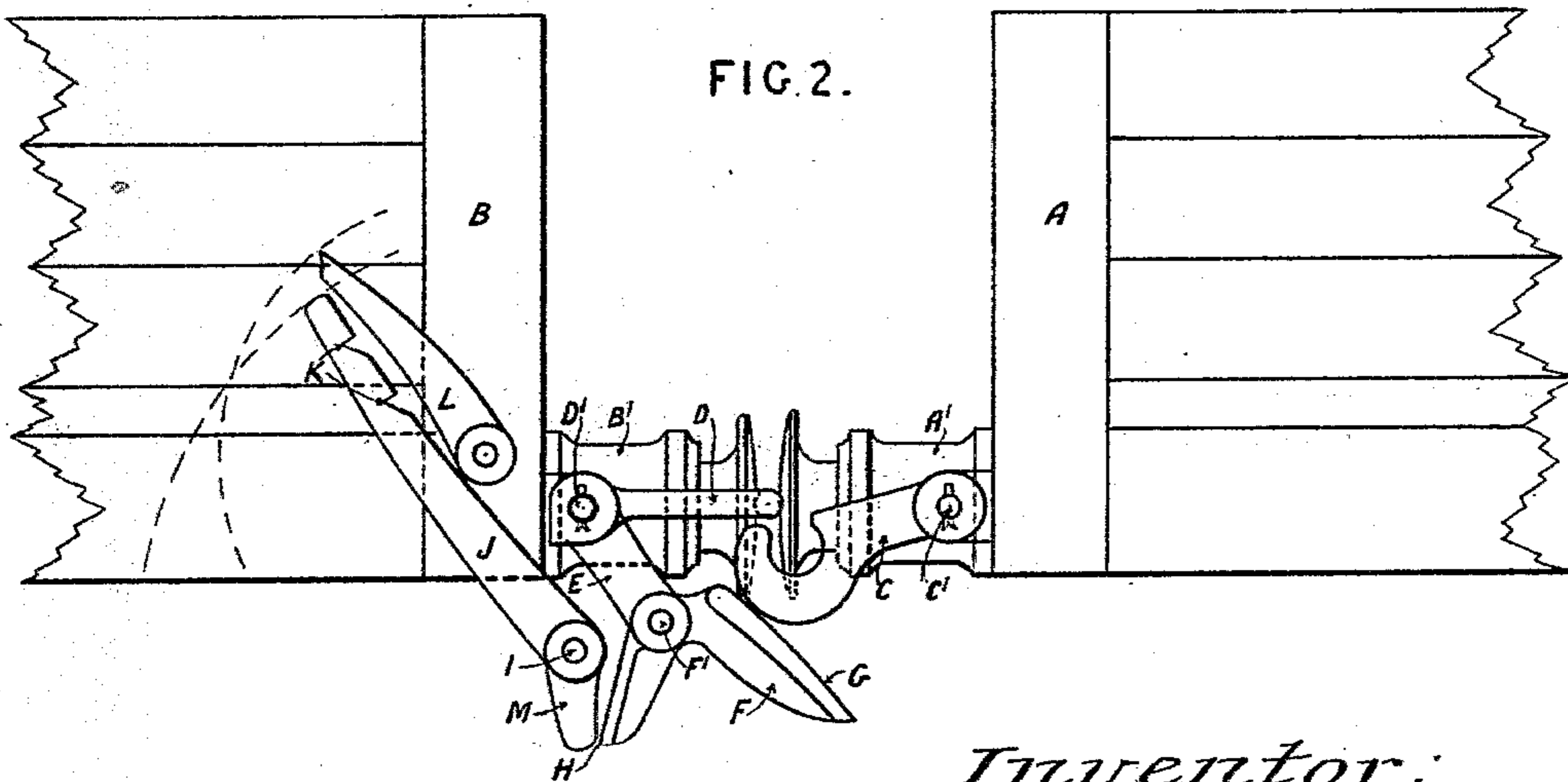


FIG. 2.



Witnesses:

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Inventor:

Rudolph Haub

By Richard Lee

his Attorneys.

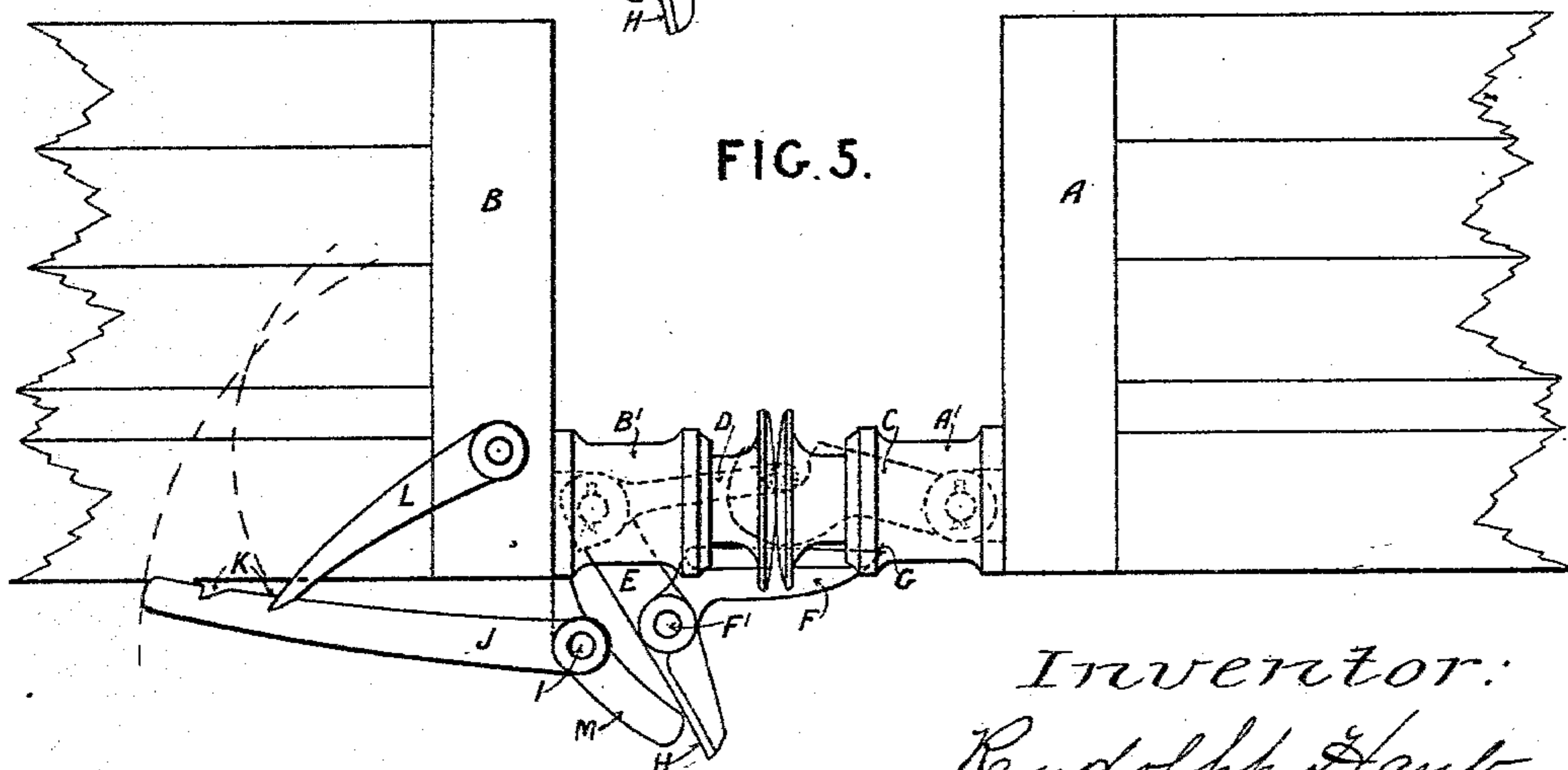
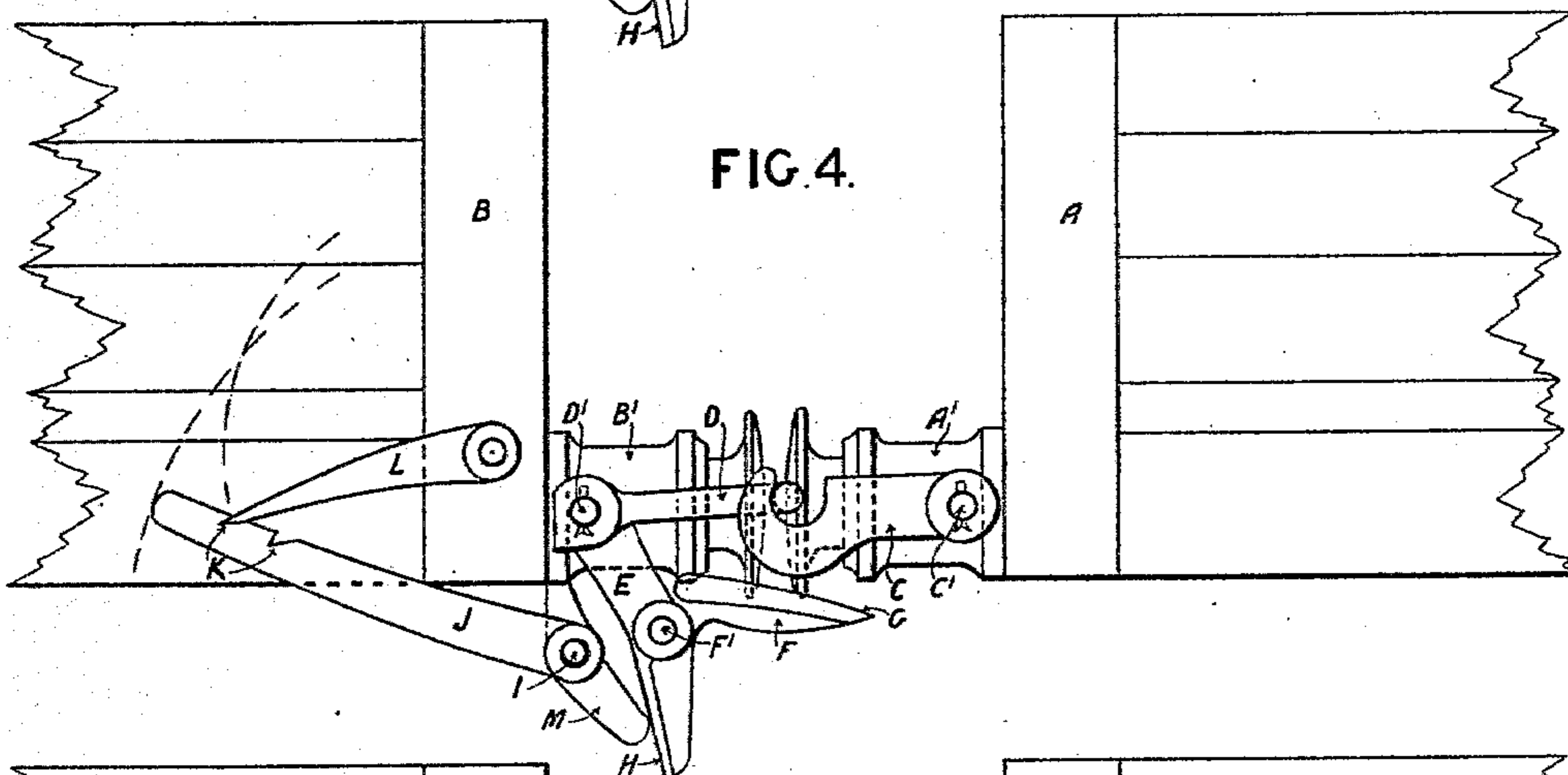
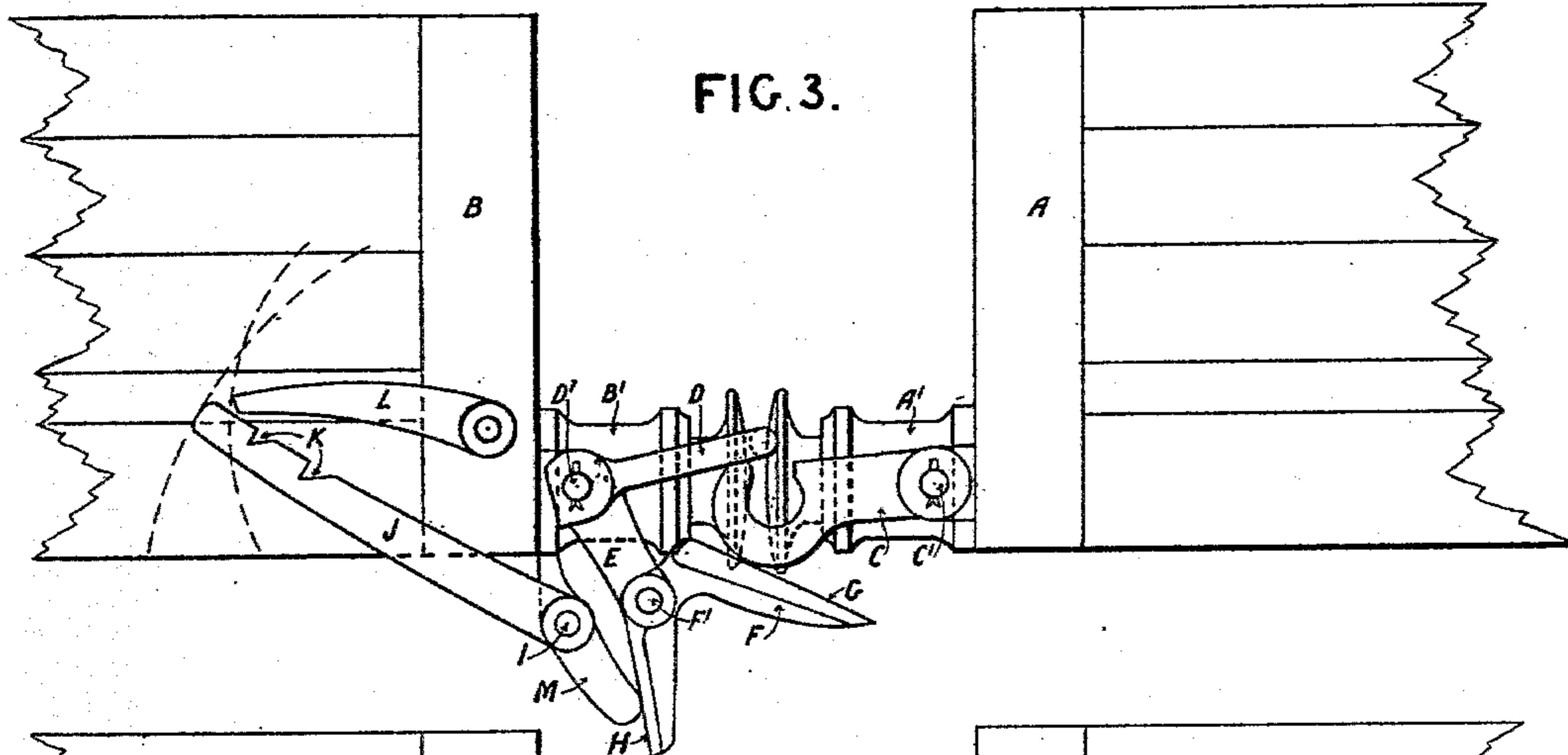
(No Model.)

3 Sheets—Sheet 2.

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Witnesses:

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(No Model.)

3 Sheets—Sheet 3.

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FIG 6.

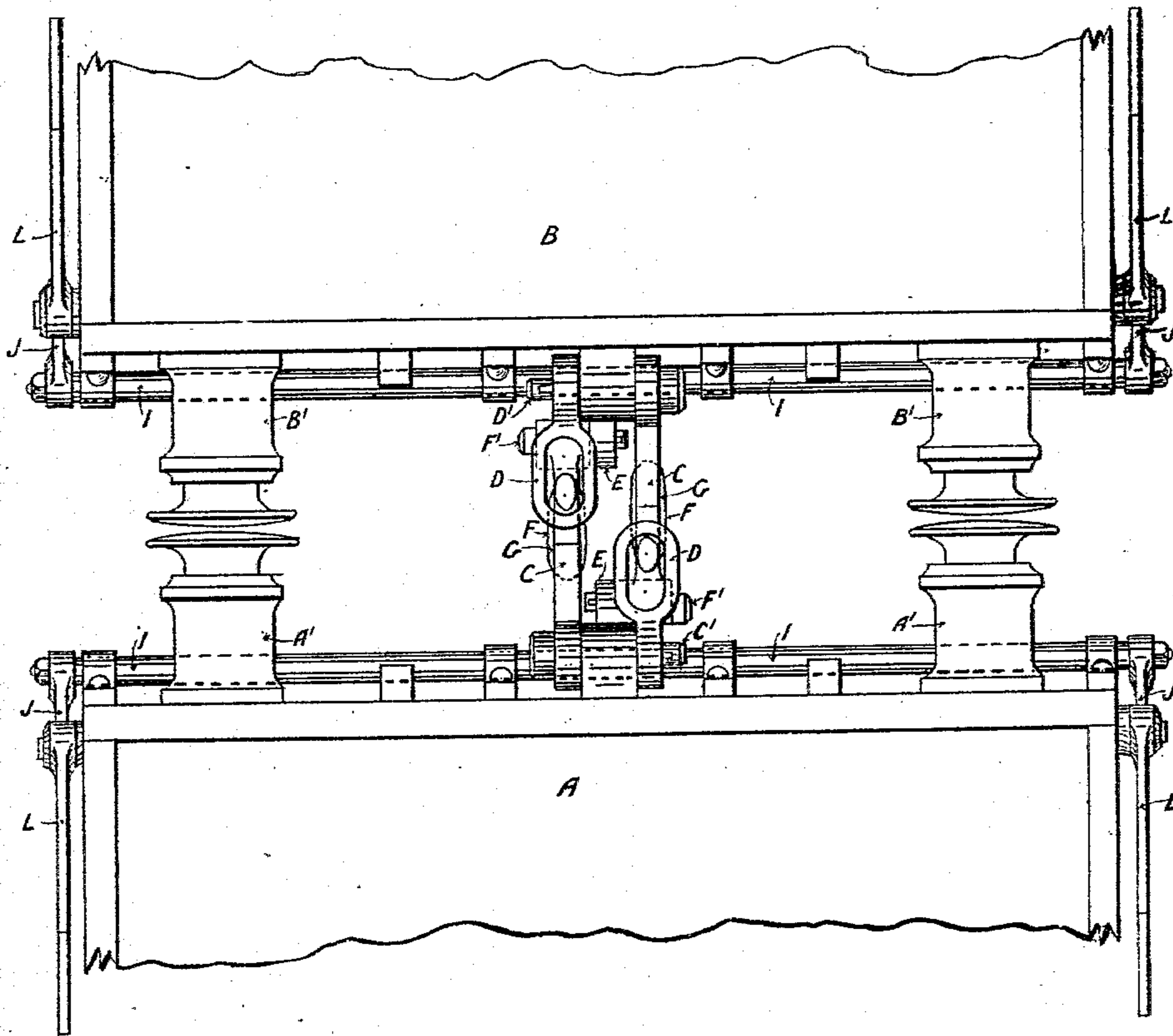
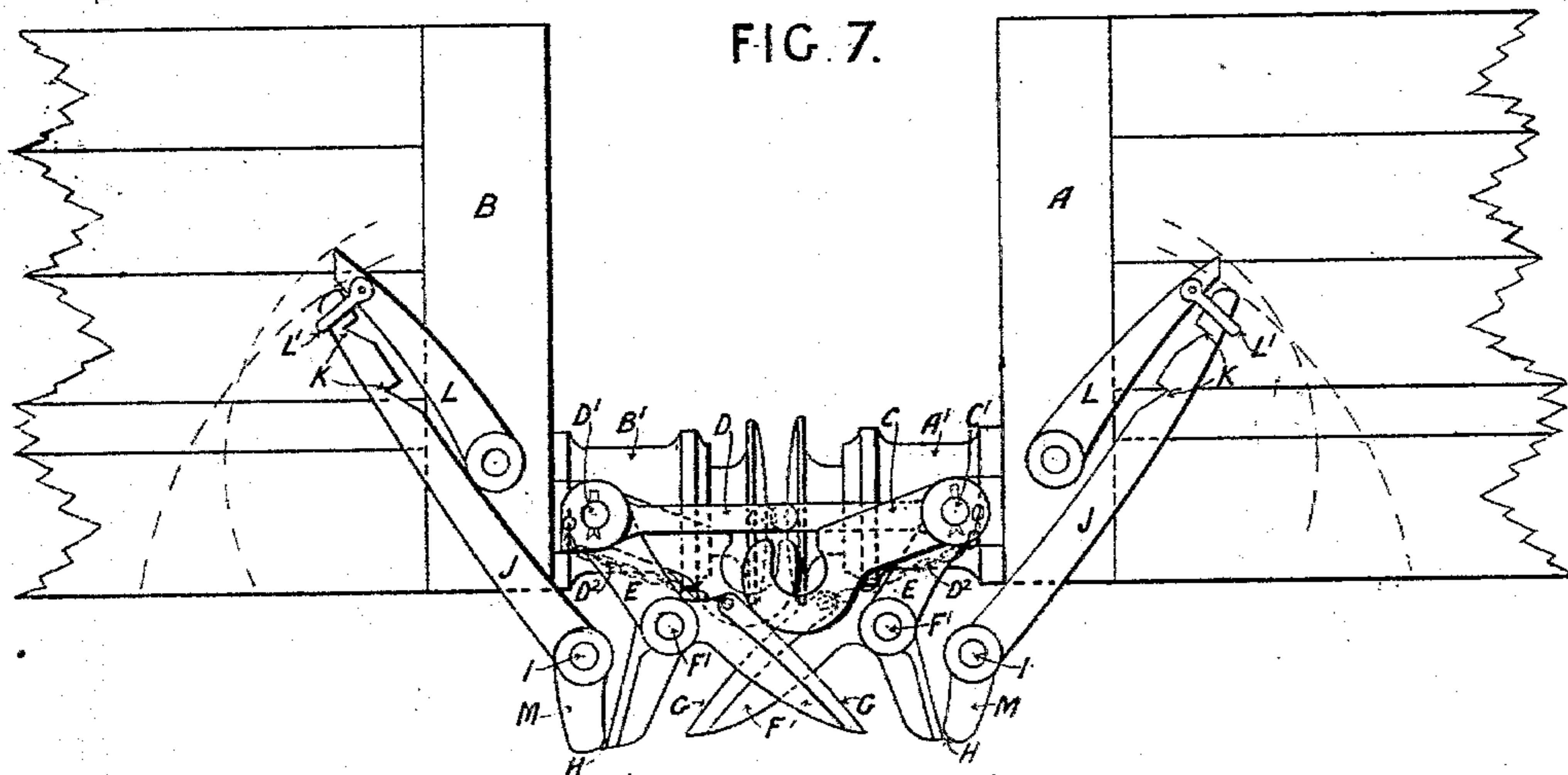


FIG 7.



Witnesses.

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UNITED STATES PATENT OFFICE.

RUDOLPH HAUB, OF SYDNEY, NEW SOUTH WALES.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 515,771, dated March 6, 1894.

Application filed August 12, 1893. Serial No. 482,960. (No model.) Patented in New South Wales January 19, 1891, No. 2,746.

To all whom it may concern:

Be it known that I, RUDOLPH HAUB, engineer, a subject of the Queen of England, residing at No. 145 Macquarie Street, south, in the city of Sydney, Colony of New South Wales, have invented a new and useful Automatic Coupling Suitable for Railway or Tramway Rolling-Stock, (for which I have obtained a patent in the Colony of New South Wales, No. 2,746, bearing date January 19, 1891,) of which the following is a specification.

My invention provides a ready and expeditious means of both joining and detaching railway or tramway vehicles, and is so devised that the action of coupling shall be performed automatically at the time when the vehicles are brought together; the action of uncoupling being also performed with the aid of the same mechanism.

To carry out these objects I attach contiguously a hinged hook to the end of one vehicle, and a hinged link, in combination with an adjustable lever, to the end of the other vehicle. These appliances are secured preferably to the drawbars, but may, if desired, be pivoted to brackets attached to the end framework of the vehicles. The hook and link, though hinged, are practically in the same plane when coupled, and are each capable of adjustment to a rising and falling movement. The range of these movements, which occur simultaneously, is, however, limited, so as to secure ready contact of the hook with the adjustable lever, and of the link with the hook. The falling movement of the hook only takes place during the action of uncoupling, the link being then stationary. The rising movement takes place during the action of coupling, that is to say, the hook is made to ascend by means of the adjustable lever, and is at the same moment brought in contact with the end of the link which is pushed upward, and, passing over the point of the hook, falls between the jaws. The adjustable lever, if attached to the drawbar, is made in the form of a bell crank lever, one arm being constructed so as to form an inclined plane for the hook to slide upon, and the other to receive the motion imparted by an actuating cam or lever attached to a transverse bar having on its outer ends handles provided

with ratchets and pawls. If the adjustable lever is bracketed to the body of the vehicle, the cam may be dispensed with and the transverse bar passed through the boss of the lever, in which case the form will only be that of an inclined plane whose position may be varied by operating the handles attached to the transverse bar.

I am aware that one or more rollers may be provided in the arm of the adjustable lever for the hook to slide upon, in which case the inclined plane may be dispensed with. Such a device would, however, be a mechanical equivalent.

In operating the adjustable lever by means of the transverse bar, whether I use an actuating cam or the transverse bar only, the handles on the ends thereof are so placed, that after the coupling action has taken place, the attendant may press the handle downward and lock it by means of the pawl provided. This will have the effect of tightening the grip of the hook and link, and will at the same time cause the inclined plane to assume a truly horizontal position. When this movement is accomplished, it will not be possible to increase the strain or pressure on the surface of the inclined plane, so that any movement of the buffers will only cause a sliding motion to be imparted to the hook and link upon the inclined plane, without exerting a downward pressure. By releasing the pawl referred to, and raising the handles, the hook will descend and disengage itself from the link, the vehicles being thus uncoupled. The attendant then by allowing the handles to fall, will cause the pawl to again engage with the handles, the various parts of the mechanism will then be so disposed that the operation of coupling may be repeated automatically the moment the vehicles are brought together again.

The foregoing description has reference to my mechanism when attached singly to vehicles, but it is capable of being used in a combined form, that is to say, a hook and link, adjustable lever, and inclined plane, together with its actuating mechanism are all attached to each end of the vehicles. The hook and link being placed side by side, preferably upon the draw bar, the parts are thus

3 duplicated, and will act in unison with each other in the manner described for the single coupling.

5 To assist in the rapid release or disengagement of the coupling, the link is provided with a connecting chain which is also attached to the adjustable lever, which, when actuated by the attendant operating the handles on the transverse bar, imparts a lifting
10 movement to the link, such movement occurring simultaneously with the downward movement of the hook. When the aforesaid handles on the ends of the transverse bar are allowed to descend to their normal position
15 for disposing the various parts for coupling automatically, the chain referred to is in a slack condition, which allows the link to occupy its rightful position for sliding upon the point of the hook attached to the contiguous
20 vehicle, the hook at its side being also in its rightful position to engage with the link attached to the contiguous vehicle. When it is desired to prevent the vehicles coupling after they have been disengaged, the handles at-
25 tached to the transverse bars are operated by the attendant as for uncoupling, and are retained in that position by the pawls, which are provided with a loop or link into which the ends of the handles are inserted.

30 My invention is illustrated by the accompanying drawings, in which similar letters are used throughout the different views to indicate similar parts, and in which—

35 Figure 1, Sheet 1, is a plan, showing the hook attached to the end of one vehicle, and the link, adjustable lever, transverse bar, and handles and pawls attached to the end of the other vehicle. Fig. 2, Sheet 1, is a side elevation showing the relative positions of the
40 hook, link, adjustable lever, transverse bar, and one handle and pawl when the vehicles are uncoupled, the buffers on the one side of the mechanism being omitted so as show the hook and link distinctly. Fig. 3, Sheet 2, is
45 a repetition of Fig. 2, showing the coupling action commencing. Fig. 4, Sheet 2, is a repetition of Fig. 3, showing the coupling action completed. Fig. 5, Sheet 2, is a side elevation, showing the maximum movements of
50 the various parts of my mechanism to prevent disarrangement of the coupled hook and link. Fig. 6, Sheet 3, is a plan showing the various parts represented in Fig. 1 duplicated. Fig. 7, Sheet 3, is a side elevation
55 similar to Fig. 2, but with the parts duplicated.

60 In the various figures: A and B represent the ends of two railway trucks: A' and B' buffers of same: C, hook attached to drawbar of A: C', pin pivoting C: D, link attached to drawbar of B: D', pin pivoting D: D², lifting chain attached to D and F: E pendent attachment to drawbar supporting adjustable lever
65 F: F adjustable bell crank lever: F', pin pivoting F: G, inclined plane formed on F: H, cam face of F: I, transverse bar carrying

handles J: J, handles: K, ratchet teeth in J: L pawl engaging in K: L', loop or link on L: M cam attached to I for adjusting F.

In Fig. 2, C and D are shown disengaged 70 and occupying their maximum downward position; F is also at the lowest point of contact with C, the handle J being at its rising limit.

In Fig. 3, F and J occupy their relative 75 normal positions requisite to produce automatic coupling when the vehicles are brought together, link D is shown rising upon the point of hook C, and is in the act of falling into the jaws of C. 80

In Fig. 4, the coupling action is completed the handle J being engaged with the pawl L and the outer ratchet K.

In Fig. 5, the adjustable lever F is raised so that the inclined plane G is truly horizon- 85 tal, and hook C and link D are raised to their maximum height by the handle J being pressed downward, so that the pawl L shall engage the inner ratchet K, the cam, M, pressing against cam face, H, of adjustable le- 90 ver F.

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

1. In a car coupler, a vertically swinging 95 link carried by one car, a vertically swinging hook carried by the other car, a bell lever pivoted beneath the link having a forwardly extending inclined face for lifting the hook into engagement with the link, and means 100 for tilting said bell lever to hold the hook and link in engagement, substantially as described.

2. In a car coupler, the combination with a vertically swinging link carried by one car 105 and a vertically movable hook carried by the other car, of a bell lever pivoted beneath the link having an inclined face or arm for raising the hook into engagement with the link, and a hand lever for operating said bell le- 110 ver to bring its forward face into a horizontal plane to support the coupled parts, substantially as described.

3. In a car coupler, a vertically swinging link secured to one car, a vertically swinging 115 hook secured to the adjoining car, a bell lever pivoted beneath the link having an inclined forward portion for lifting the hook, a connection between the link and lever whereby the downward movement of said forward 120 portion will raise the front end of the link, and means for manually bringing said forward portion of the bell lever to a horizontal position beneath the coupled parts, substan- 125 tially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

RUDOLPH HAUB.

Witnesses:

HARRY A. SMEDLEY,
ARTHUR J. STONE.