

(No Model.)

W. W. DAVIS.  
CAR COUPLING.

No. 453,382.

Patented June 2, 1891.

Fig. 1.

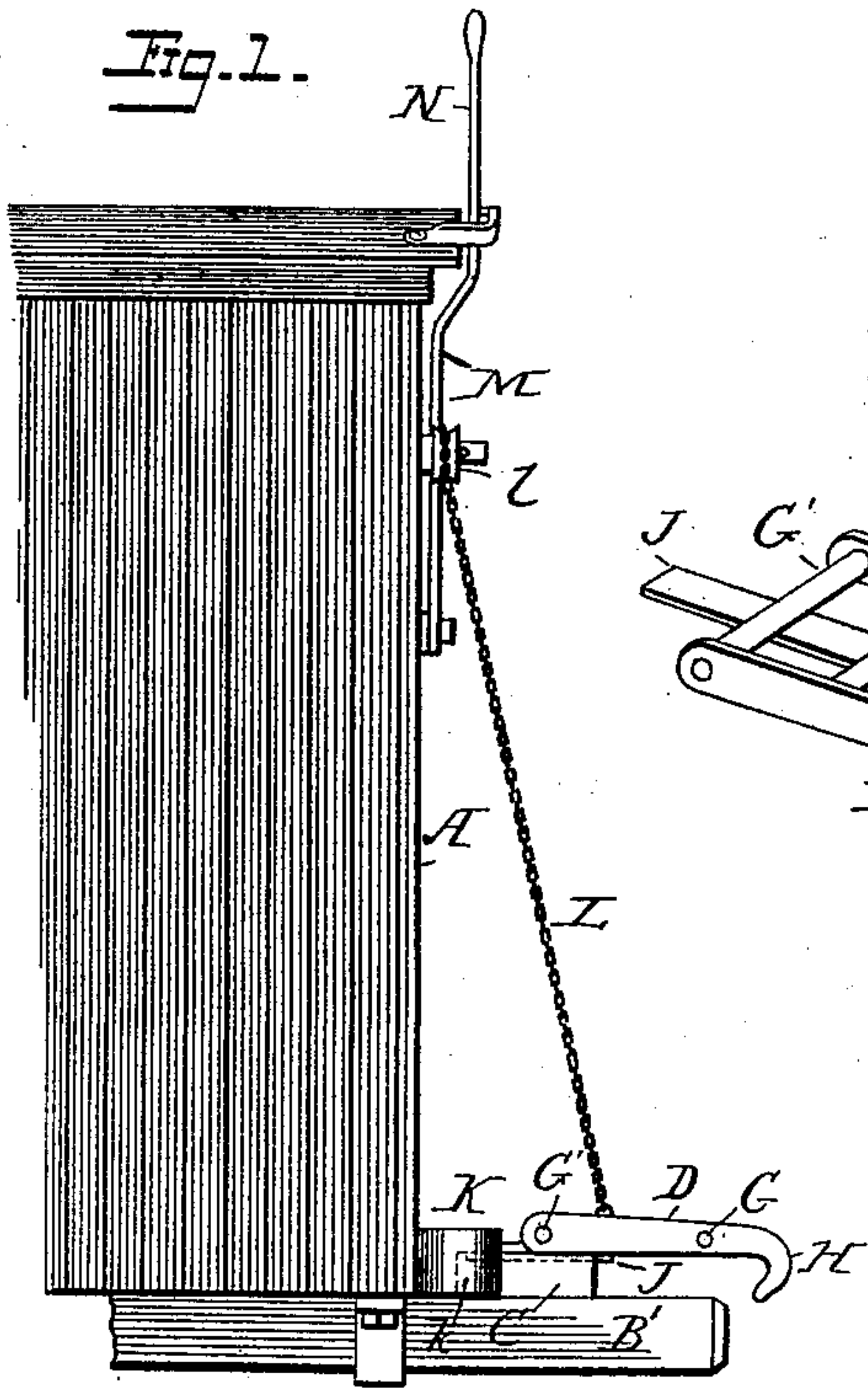


Fig. 4.

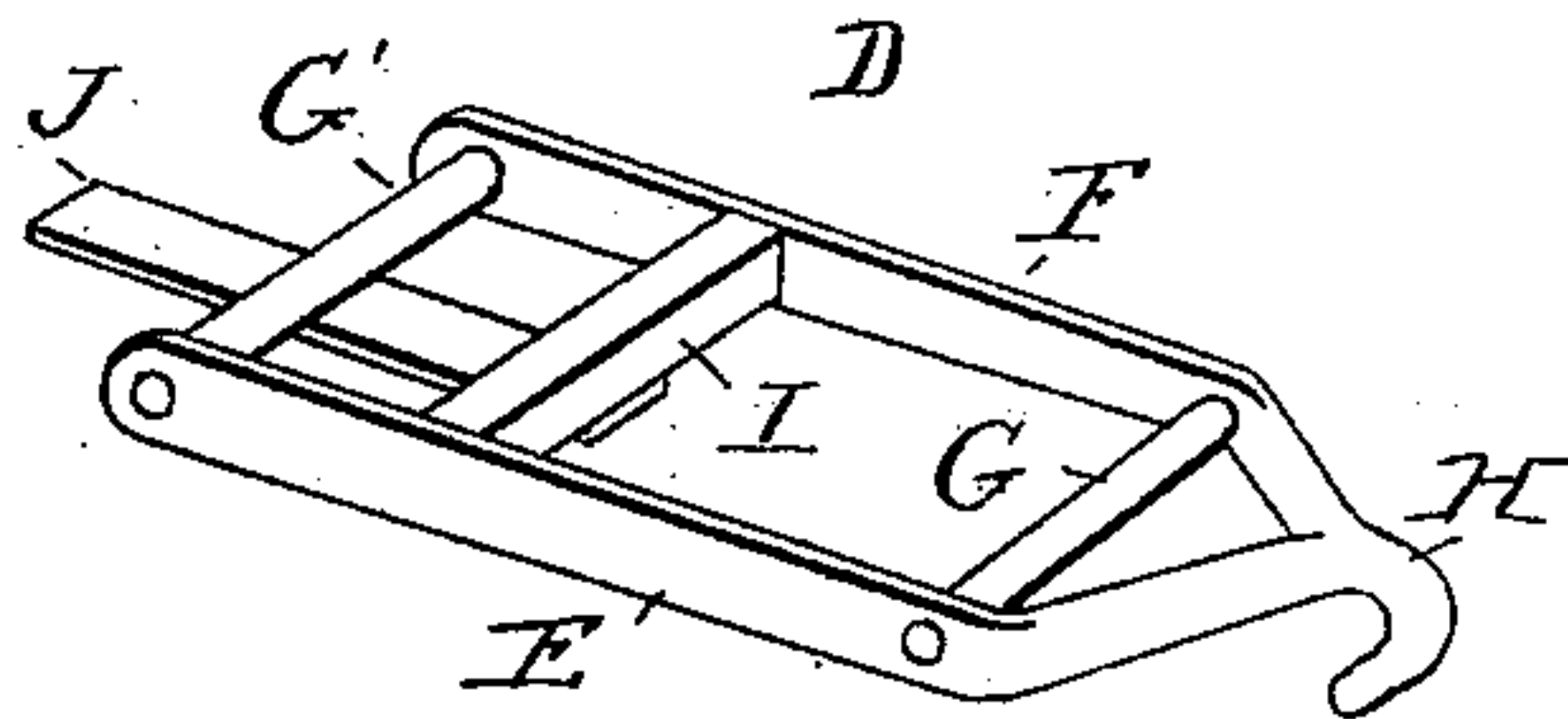


Fig. 2.

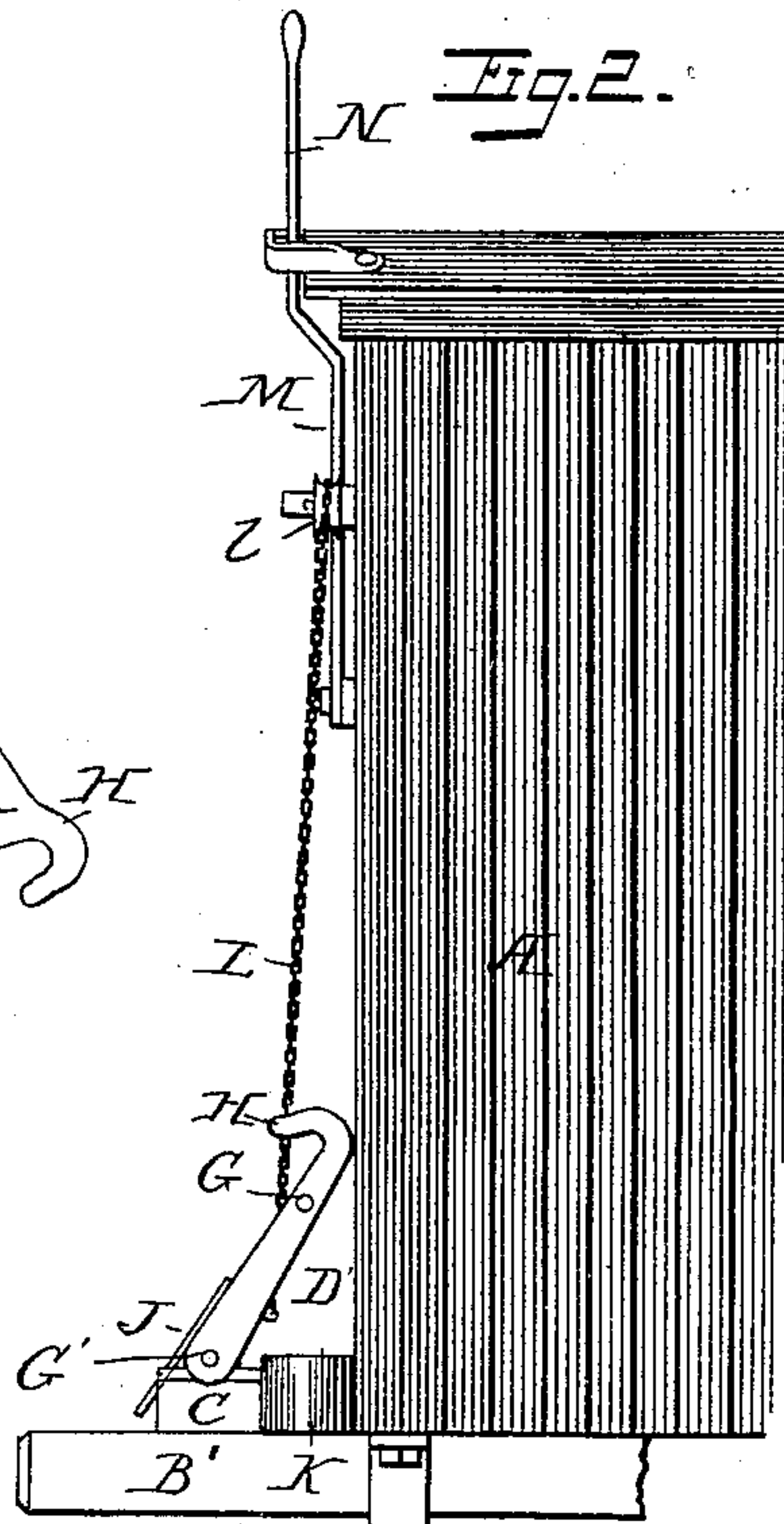


Fig. 3.

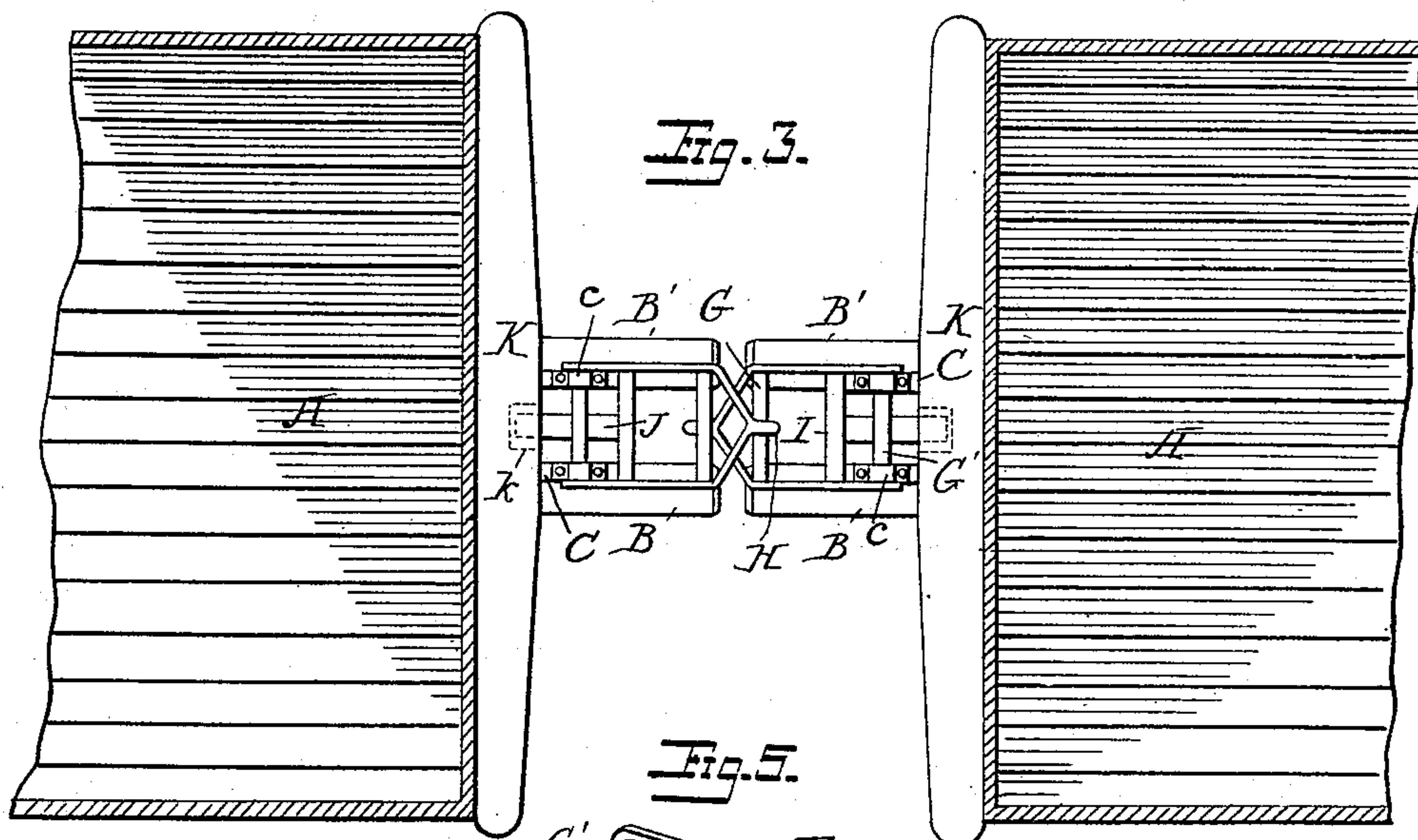
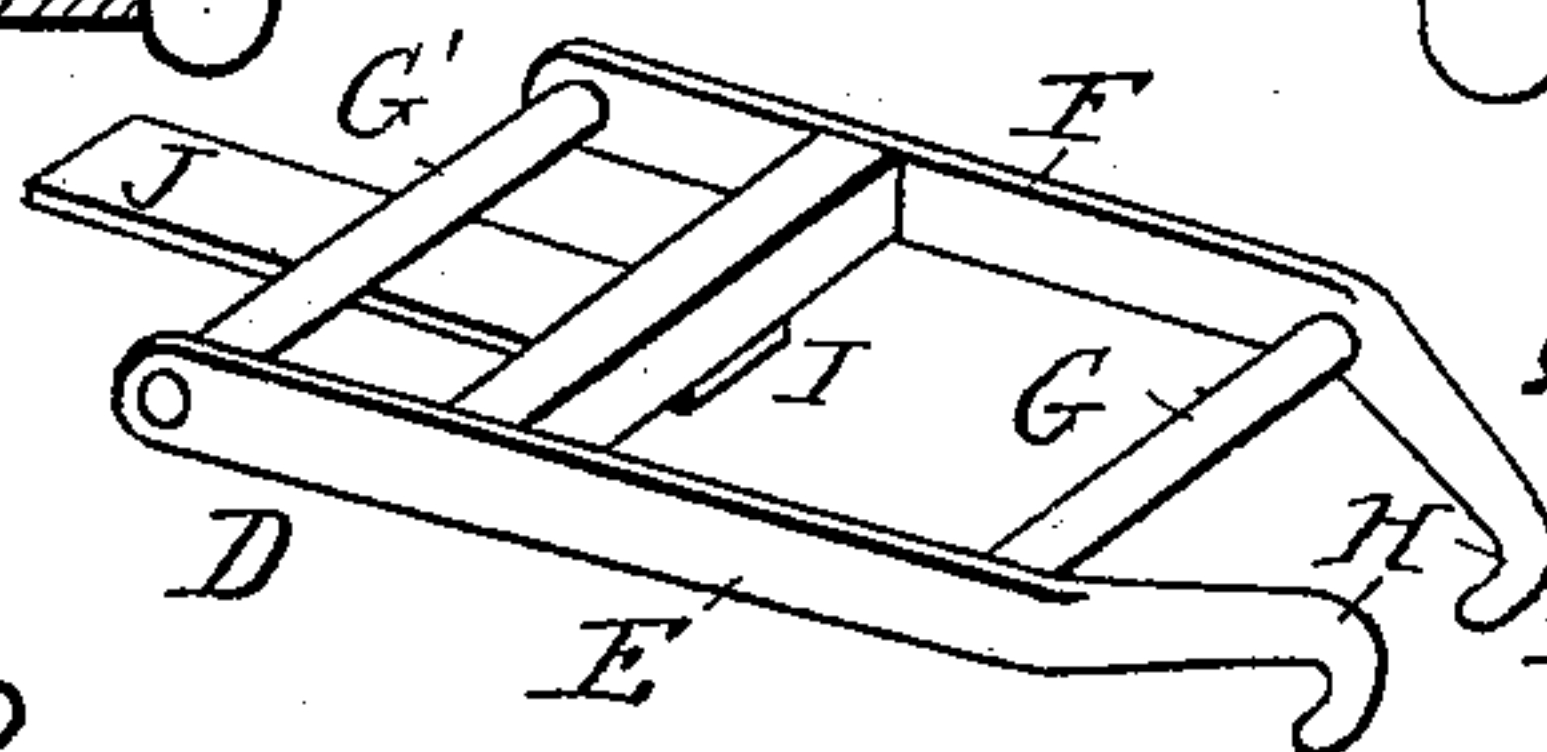


Fig. 5.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM W. DAVIS, OF PENN'S PARK, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 453,382, dated June 2, 1891.

Application filed February 25, 1891. Serial No. 382,697. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. DAVIS, a citizen of the United States, residing at Penn's Park, Bucks county, State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to car-couplers, and more particularly to that class of car-couplers which may be termed "automatic life-saving couplers," in which the cars can be coupled and uncoupled without the necessity of the operator or brakeman exposing himself by passing between the adjacent ends of the cars being coupled.

My invention has for its object to provide an exceedingly simple, cheap, and effective coupler whereby these ends may be obtained, and which shall be especially adapted to freight-cars, either of platform or box shape, and which, while it is simple and effective, may be applied to cars as ordinarily constructed without material change, thereby rendering it unnecessary to remodel the platform to any material extent.

My invention consists of a car-coupler embodying the features of construction and arrangement, substantially as hereinafter more fully pointed out, and illustrated in the accompanying drawings, in which like letters of reference refer to similar parts in each of the figures.

Figures 1 and 2 are respectively side views of the ends of two cars of the box pattern having my improvement attached thereto. Fig. 3 is a plan view of the two cars, showing the coupler in position. Fig. 4 is a perspective view of the coupling device, and Fig. 5 is a similar view of the modification.

The needs of an automatic life-saving car-coupler which is suitable for attachments of cars as ordinarily constructed have long been recognized, and many and various attempts have been made to supply this necessity, and among other attempts it has been proposed to provide pivoted hooks which should be supported upon the end of the car, and which might be raised by suitable means and held in an elevated position, so that when the adjacent ends of two cars abut together the hook should be thrown down to engage with

some connecting device, whereby the cars will be automatically coupled; and my invention relates more particularly to this general form of couplers, and I will now more particularly describe its construction and operation.

In the drawings, A represents the car-body, in this particular case it being an ordinary box car, and this body is provided with the usual bumpers B' B', projecting from the ends of the cars and adapted to impinge upon each other and receive the shock when the cars are brought together for the purposes of coupling. All cars have to be provided with some such means, and I therefore utilize these bumpers for supporting the coupling mechanism.

While in some instances, as cars made from a single manufactory and therefore having a uniform height from the track, it would be practicable to apply the coupling device directly to the bumpers, I have found it better in most instances to attach to the bumpers blocks or bearing-pieces C C, which may be of any desired or necessary height to support the coupler a certain distance above the track, so as to clear the bumper of the adjacent car when coupling takes place.

The coupling device D consists, essentially, of two side pieces E F, united by suitable rods or cross-ties G G' and having their ends united to form a hook H, although in some instances the ends need not be united, but both may be bent to form two hooks, as shown at H', Fig. 5. These hooks should be made in a substantial manner and have a substantial turn, so as to embrace what may be termed a "draw" rod or bar of the complementary part in the manner not to be easily detached therefrom or otherwise thrown out of position. This draw rod or bar is the cross-bar G of the coupler, and the hook H is caused to engage this cross-bar, as clearly seen in Fig. 3, when the cars are coupled. The coupling device is secured to the blocks C in any suitable way, as by the lugs or bearings c, which may be formed integral with the block C or secured thereto by suitable bolts or connections therewith in any other substantial manner.

In order to further stiffen the coupling device, I provide a connecting-bar I between the sides E and F, and to this bar I attach a plate



J, which is arranged to engage the end piece K of the car as is usually constructed, a mortise  $k$  being preferably formed therein, as shown in Fig. 1, and this plate will serve to hold the coupling part in a horizontal position and prevent its falling downward, so as to be engaged by the bumper on the opposite car and to insure its being in position to be engaged by the complementary coupling portion when the cars are brought together in the act of coupling.

In order that the coupling portion may be elevated, as shown in Fig. 2, without the necessity of the brakeman exposing himself between the cars, I provide some suitable means, as a chain L, which passes over a pulley  $l$  and is connected with the lever M, the handle N of which preferably extends above the roof of the car, or in some instances may extend laterally from the side of the car in a position to be operated by the brakeman, and by this arrangement or some equivalent means the coupler may be turned up in the position shown in Fig. 2, where it rests by gravity against the end of the car, ready to be thrown into a locking or coupling engagement when the cars impinge against each other by the jar or momentum imparted to the coupling device.

From the above description of the construction and arrangement of parts the operation of the device will be apparent to those skilled in the art, and it is only necessary to say that when two cars are to be coupled the respective portions of the couplers on their adjacent ends are arranged in the positions shown in Figs. 1 and 2, that in Fig. 1 being supported by the plate J in a horizontal position, while the portion in Fig. 2 rests against the end of the car, ready to be thrown downward by any jar or impulse imparted to it. When the bumpers B contact with each other in the act of coupling, the coupler D' is thrown over and its hook H engages the draw rod or bar G of the complementary coupler and the cars are coupled. It may be remarked that there is usually a space of a few inches between the adjacent ends of the bumpers when the cars are coupled, and this allows for the inclination of the cars in rounding curves and responding to the inequalities of the track; but it will be found that there is no liability to disconnect the coupling, as the coupling portion D' normally rests upon and is supported by the portion D, and its hook H, even if it should become disengaged from the rod G, will immediately re-engage therewith when force is applied to tend to separate the cars.

It will readily be understood that, if perchance, any accident should happen to the hook or rod of one coupling portion the posi-

tion of the portions can be relatively changed so that the hook of the portion D would engage the corresponding rod D of the portion D', and I thus provide each car with practically two means of coupling or connecting them.

While I have shown the coupler as made of bar or plate iron, it will be understood, of course, that round or other form of iron can be used and the configuration of the coupling parts can be varied to suit the exigencies of any particular case.

What I claim is—

1. A car-coupler consisting, essentially, of two metallic bars joined by tie-rods, the ends of the bars being formed into a hook, one of the tie-rods acting as a coupling-rod for the hook of the complementary part of the coupling and another tie-rod operating as a pivot for the coupler, substantially as described.

2. A car-coupler consisting, essentially, of the side bars E and F, having their ends formed into a hook H, the bars being united by the cross-pieces G G', the former of which serves as a coupling-rod for the complementary coupling portion and the latter of which serves as a means for attaching the coupler to the car, substantially as described.

3. The combination, with the bumpers of a car, of the blocks attached thereto, a coupler pivotally mounted on said block, the said coupler being provided with a plate, as J, engaging the end beam of the car for supporting the coupler in its horizontal position, substantially as described.

4. The combination, with the bumpers, of the supporting-blocks attached thereto, the coupling portions pivotally connected to the blocks, each portion consisting, essentially, of the side bars having a hook formed at one end, and connecting-rods between the said bars, one of which serves as a coupling-pin, while the other serves as a means of connecting the coupler to the blocks, substantially as described.

5. The combination, with the bumpers of a car, of a block supported thereon, a coupler consisting of two portions, each of which is pivotally connected to the blocks on one of the cars, a plate connected to the coupler portion to support it in horizontal position, and connections mounted on the car-body for raising the coupler portion to an elevated position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM W. DAVIS.

Witnesses:

WILLIAM C. DAVIS,  
HARRY A. KRUSEN.