

(No Model.)

L. N. BEDFORD.
CAR COUPLING.

No. 259,081.

Patented June 6, 1882.

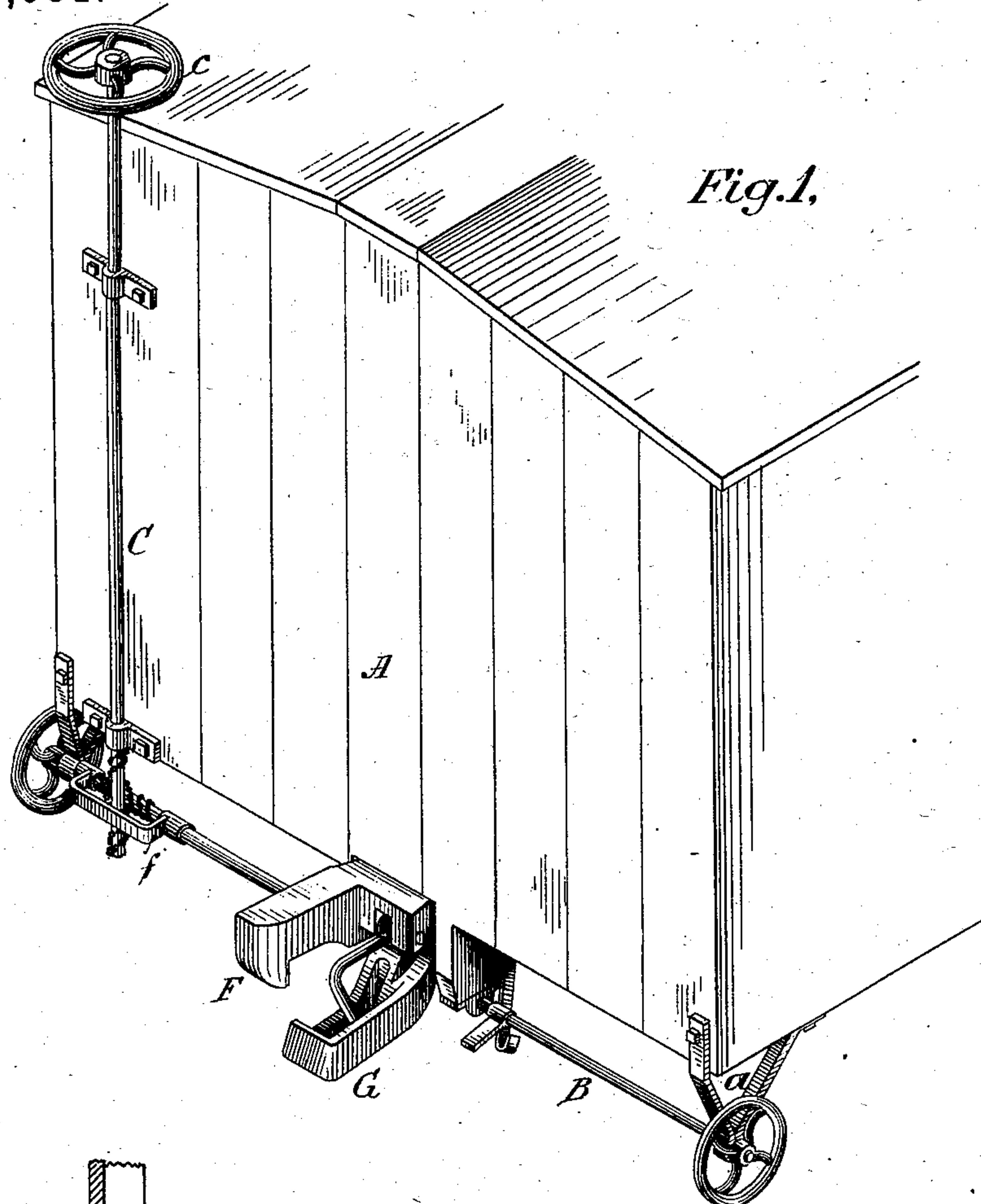


Fig.1.

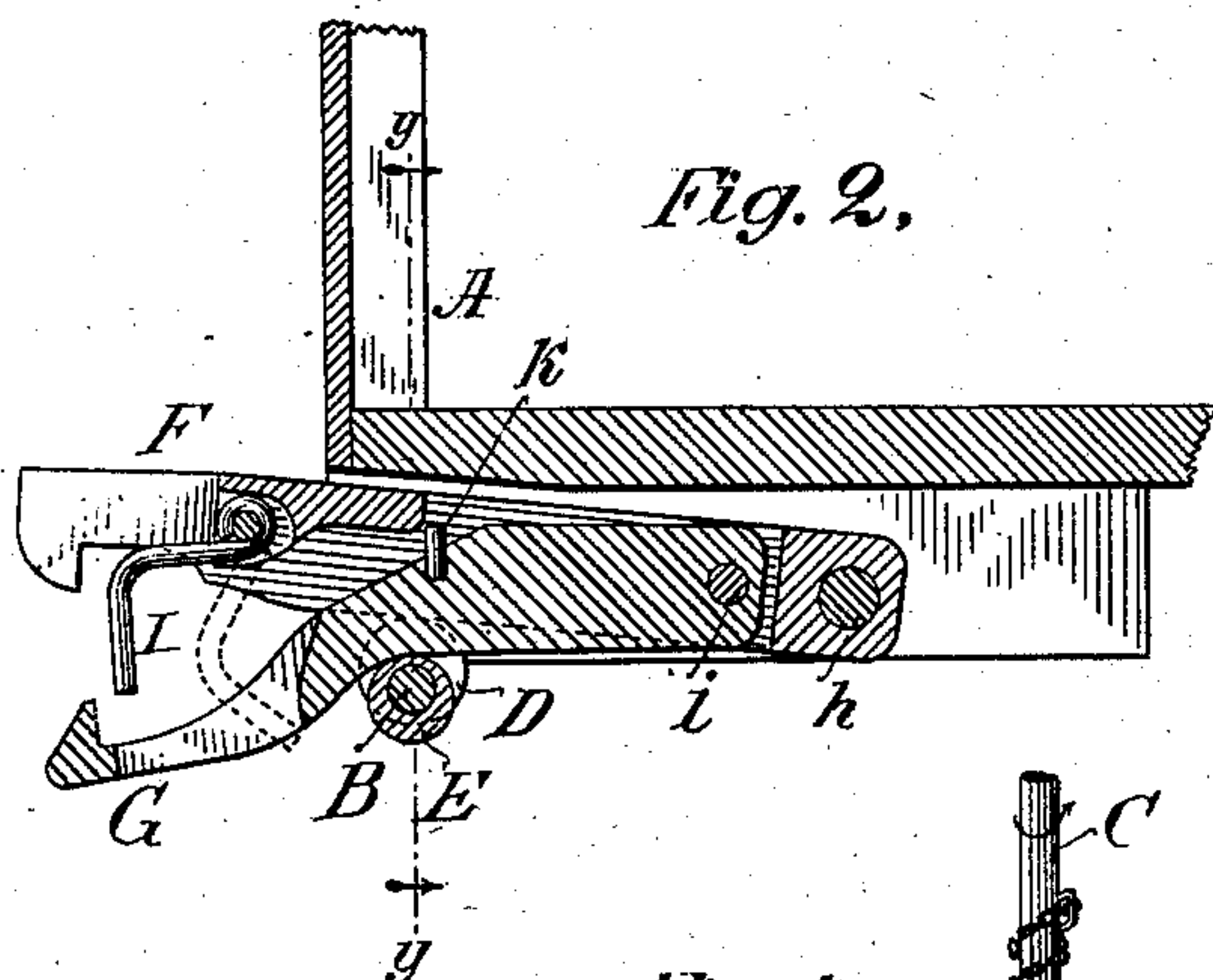


Fig. 2.

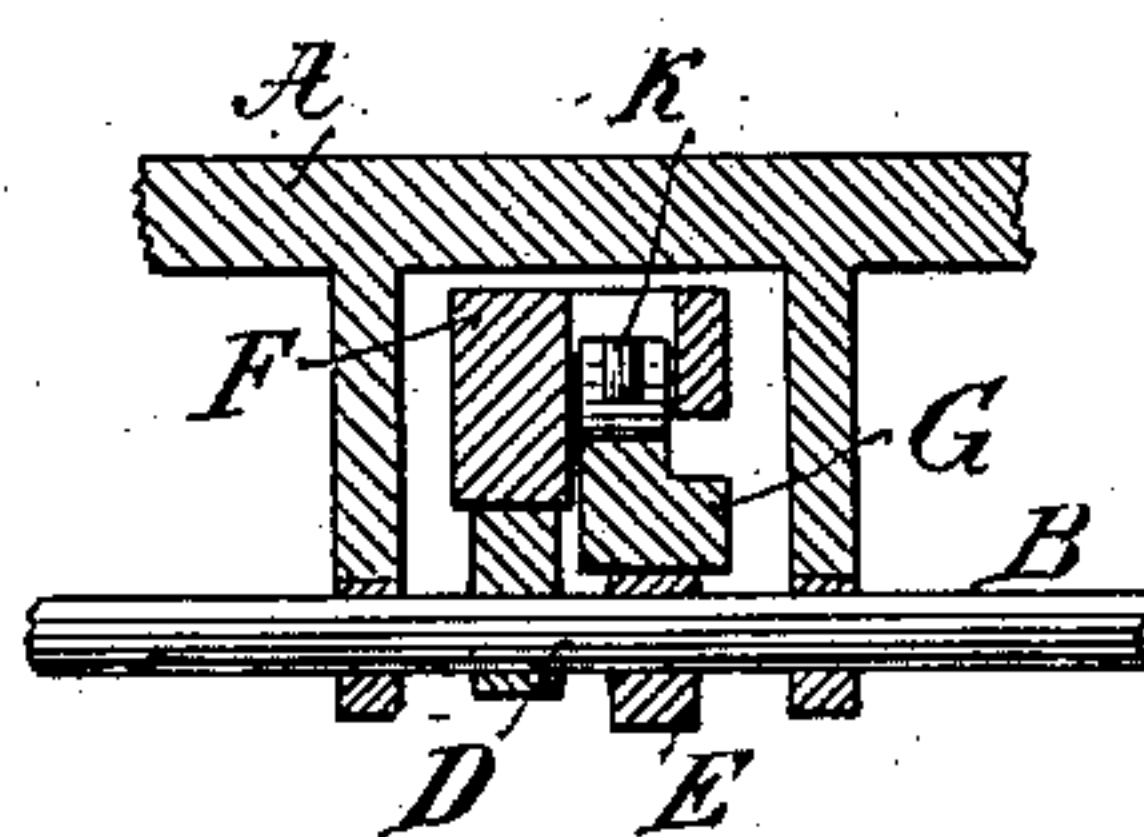


Fig.3,

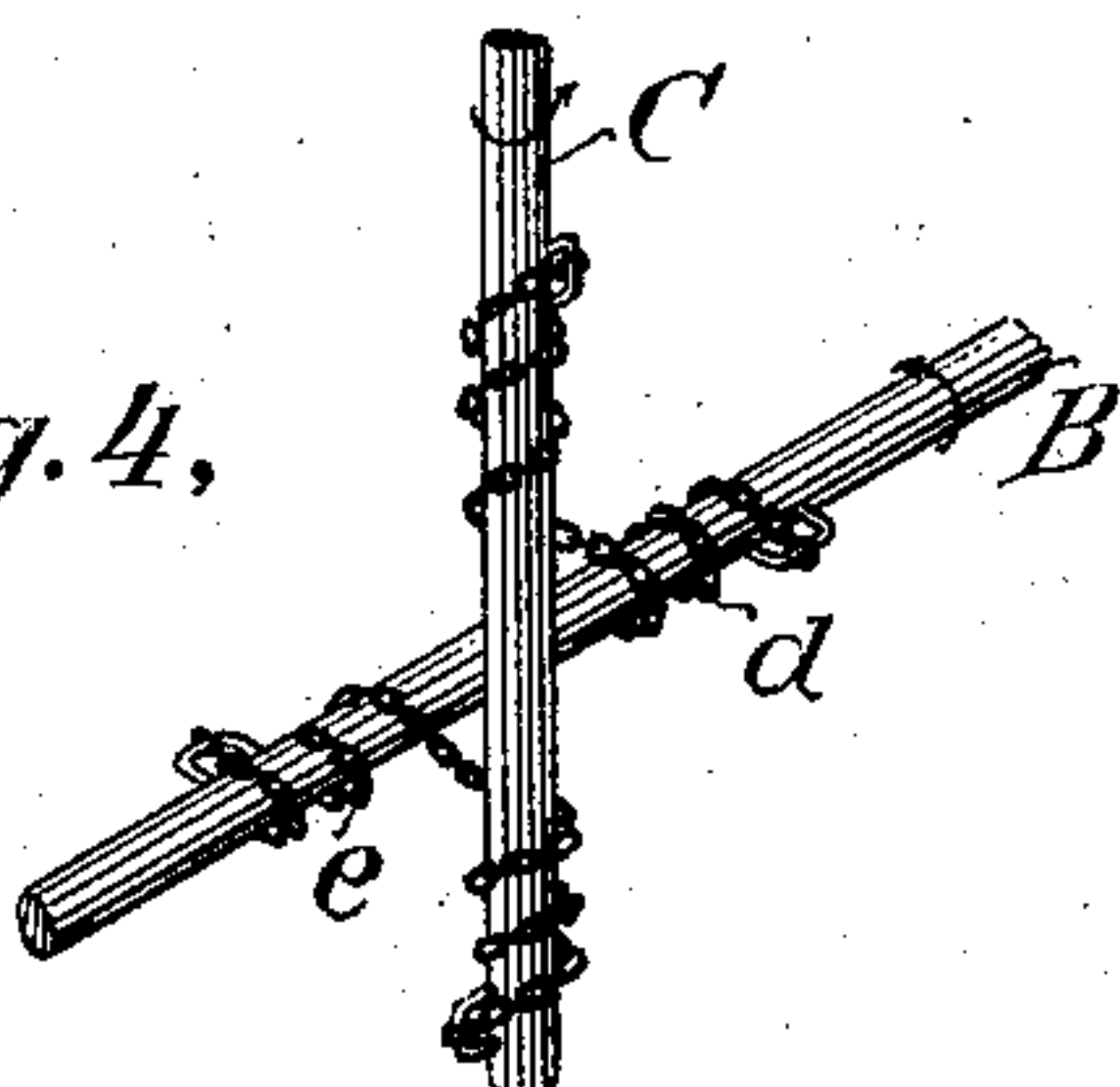


Fig. 4.

WITNESSES

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 259,081, dated June 6, 1882.

Application filed February 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, LYMAN N. BEDFORD, of Sioux Falls, in the county of Minnehaha and Territory of Dakota, have invented certain Improvements in Car-Couplings, of which the following is a specification.

The object of my invention is to produce an automatic coupling which may be operated either from the sides or top of the car at will, and to adapt the same for use in connection with the ordinary draw-heads or couplings.

To this end it consists in the coupling-head composed of two hooked jaws of peculiar construction and arrangement, arranged to open one upward and the other downward; in peculiar devices for operating said jaws; in a hook or latch operating in connection therewith, and in other details which will be hereinafter described.

Referring to the accompanying drawings, Figure 1 represents a perspective view of one end of a car having my improvement applied thereto, the platform or buffer being omitted to expose the coupling device to view. Fig. 2 is a longitudinal vertical section through the center of the draw-head. Fig. 3 is a transverse section of the same on the line *y y*, Fig. 2; Fig. 4, a perspective view, showing the connection between the two operating-shafts.

A represents an ordinary car-body, and B a horizontal rock-shaft extended transversely below the end of the body and sustained in hangers or brackets *a*, depending therefrom. This shaft B is provided at its end with hand wheels or levers *b*, by which it may be operated by an attendant standing at the side of the car.

C represents a vertical shaft mounted in bearings upon the end of the car, and provided at its upper end with a hand-wheel or equivalent operating device, *c*. The shaft C extends downward past a horizontal shaft, and the two are united, as clearly represented in Figs. 1 and 4, by means of two chains, *d* and *e*—the former wound first around the shaft C and thence around the shaft B, and the latter also wound around the two shafts in like manner, but in the opposite direction, as plainly represented. The result of this arrangement is that upon turning the vertical shaft C in either direction the chains are caused to impart a positive motion therefrom to the shaft B, one chain being slackened as the other is strained. While

it is preferred to retain this connection between the two shafts, miter-gears may be substituted in their place.

In order to retain the shafts in their proper relative positions and prevent the vertical shaft from springing under the strain of the chains, a bearing block or bracket, *f*, is mounted loosely upon the horizontal shaft and provided with a stop or socket, through which the lower end of the vertical shaft passes.

The coupling-head is located centrally beneath the end of the car, as usual. It consists of two hooked jaws, F and G, the former having its hook or lip on the under side, and the latter having a somewhat similar hook on the upper side. The upper jaw, F, is mounted upon a horizontal pivot, *h*, passing through cheek-plates or equivalent devices on the under side of the car-body, so that the forward end of the jaw is free to rise and fall. The lower jaw, G, has its rear end mortised into and pivoted at the point *i* within the upper jaw, as clearly represented in Fig. 2, the lower jaw being provided, as shown in said figure, with a shoulder, *k*, which engages with a corresponding shoulder in the upper jaw to resist the pulling strain and relieve the pivot *i*.

It will be observed that the hooked portions of the two jaws stand in different vertical planes, the lower jaw being at one side of the upper. This arrangement is for the purpose of enabling both jaws to engage with the two corresponding jaws of a similar draw-head.

The jaw F rests near its middle on an eccentric, D, mounted on the horizontal shaft, while the jaw G rests in like manner upon a second eccentric, E, also mounted on said shaft. The two eccentrics project in diametrically-opposite directions, or substantially so, so that on turning the shaft in the proper direction the eccentric D will elevate the jaw F, while at the same time the eccentric E will lower the jaw G, the two jaws being thus moved simultaneously in opposite directions. A reverse movement of the shaft and eccentrics causes the two jaws to close together.

On referring to Fig. 3, it will be observed that, inasmuch as the lower jaw G is pivoted to the upper jaw at a point in advance of the pivot of the latter, the elevation of the upper jaw raises the rear end of the lower jaw, permitting the latter to rock or tip on the

eccentric as a fulcrum, whereby the forward end of the lower jaw is depressed—that is to say, the elevation of the upper jaw serves at the same time to depress the end of the lower jaw. In view of this fact the eccentric E is not absolutely necessary; but, as a better action of the parts is secured it is preferred to retain it.

The upper jaw, being of greater weight than the lower jaw, serves in descending to throw the end of the lower jaw upward, so that the two hooks will close together automatically when released from the action of the eccentrics.

The coupling-head constructed and arranged as above described will be opened by and will engage automatically with a corresponding head when the two are brought together by the movement of the cars. When thus engaged the two heads, while permitting limited motion of the cars with reference to each other, will maintain a firm connection between them while they remain upon the track; but in the event of the cars being thrown from the track, or being otherwise thrown to a great extent out of line with each other, the coupling-head will automatically disconnect.

In order to adapt the head for use with ordinary links and draw-bars, I pivot to the upper end a draft-hook or finger, I, arranged to swing downward through a vertical slot in the lower jaw. When the jaws are opened apart the lower end of the finger I may be inserted into the slot in the lower jaw; but upon closing the jaws together the lower end of the finger is caught and retained by the lower jaw, as represented in Fig. 3, the finger being thus

locked in position and caused to retain firmly the link or draft-bar.

Having thus described my invention, what I claim is—

1. The coupling-head consisting of the two hooked pivoted jaws, having their hooked ends arranged to swing in different vertical planes, and means, substantially as described, for moving said jaws simultaneously in opposite directions.

2. In combination with the upwardly-moving jaw, pivoted at its rear end, the lower jaw pivoted thereto at a middle point, and a bearing or fulcrum to the lower jaw, located in advance of its pivot, whereby the elevation of the upper jaw is caused to depress the lower jaw, and vice versa.

3. In combination with the hooked jaws F and G, arranged to move in opposite directions, the two eccentrics D and E, located thereunder, as shown and described.

4. In combination with the two coupling-jaws, as described, the eccentrics and the horizontal eccentric shaft, the vertical shaft, connected with the horizontal shaft by chains, as described and shown.

5. In combination with the hooked jaws F and G, arranged to open in opposite directions, the finger I, pivoted to one of the jaws, and arranged to engage at its free end with the opposite jaw, as described and shown, whereby the movement of the jaws is caused to lock and unlock the finger.

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Witnesses:

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