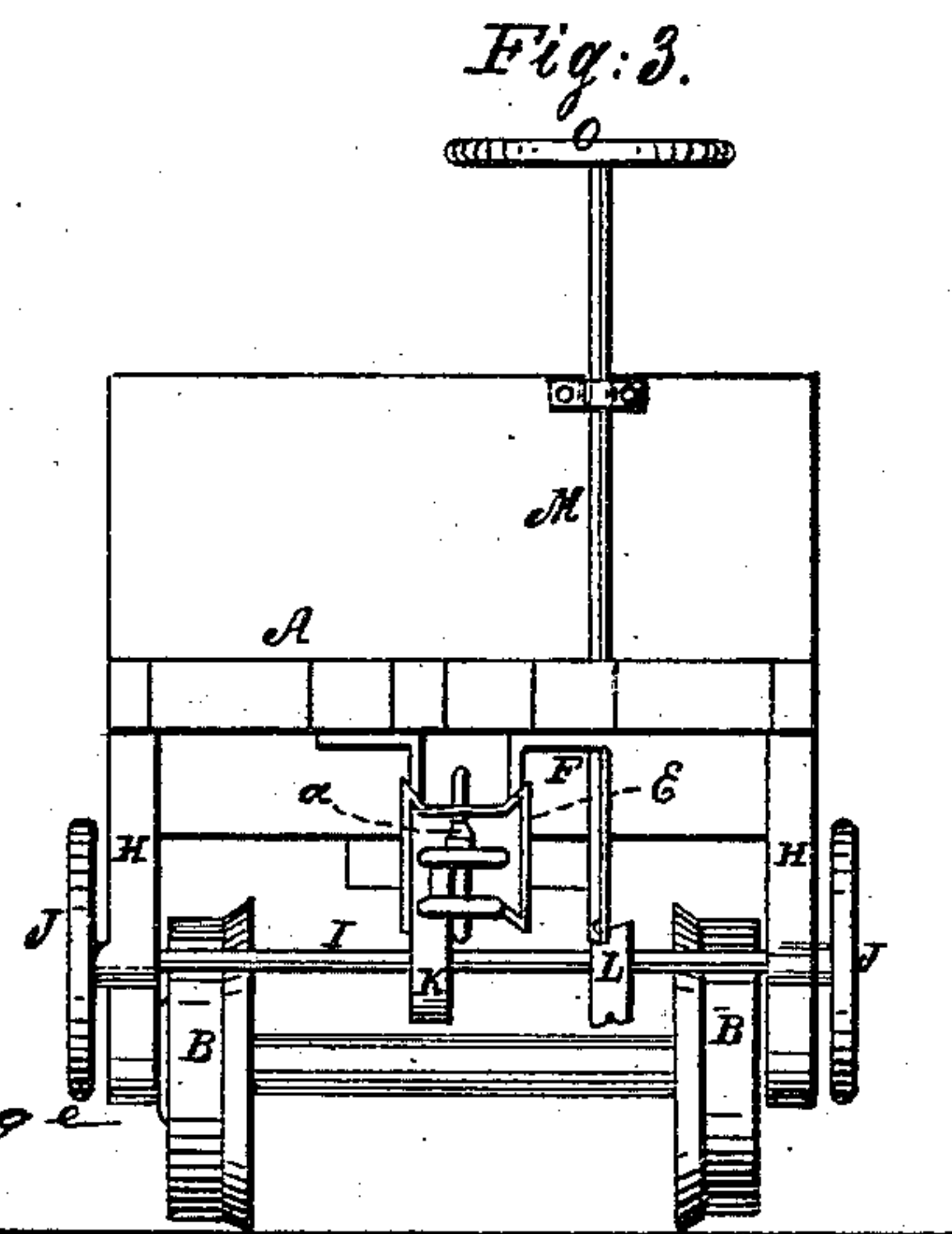
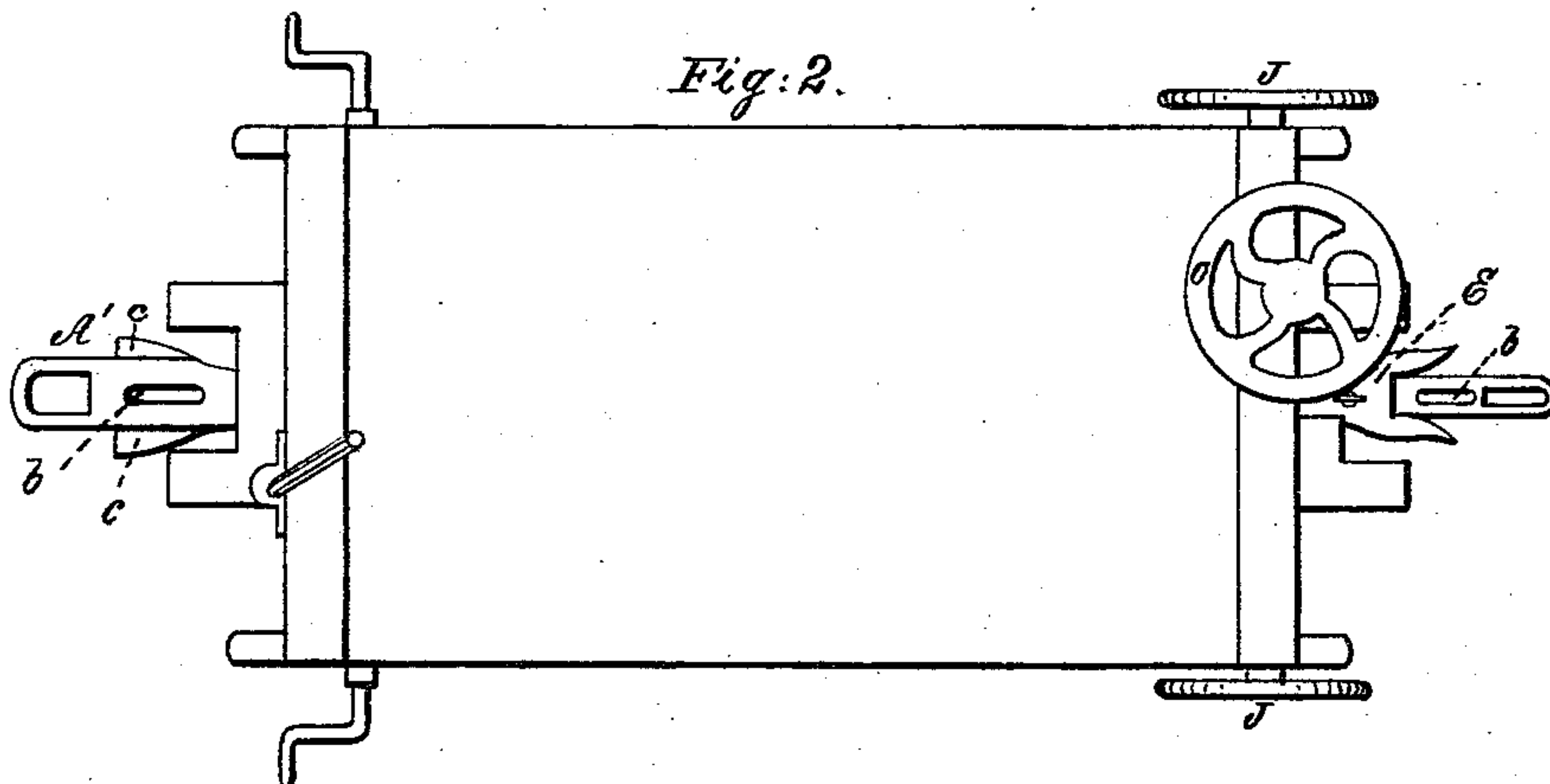
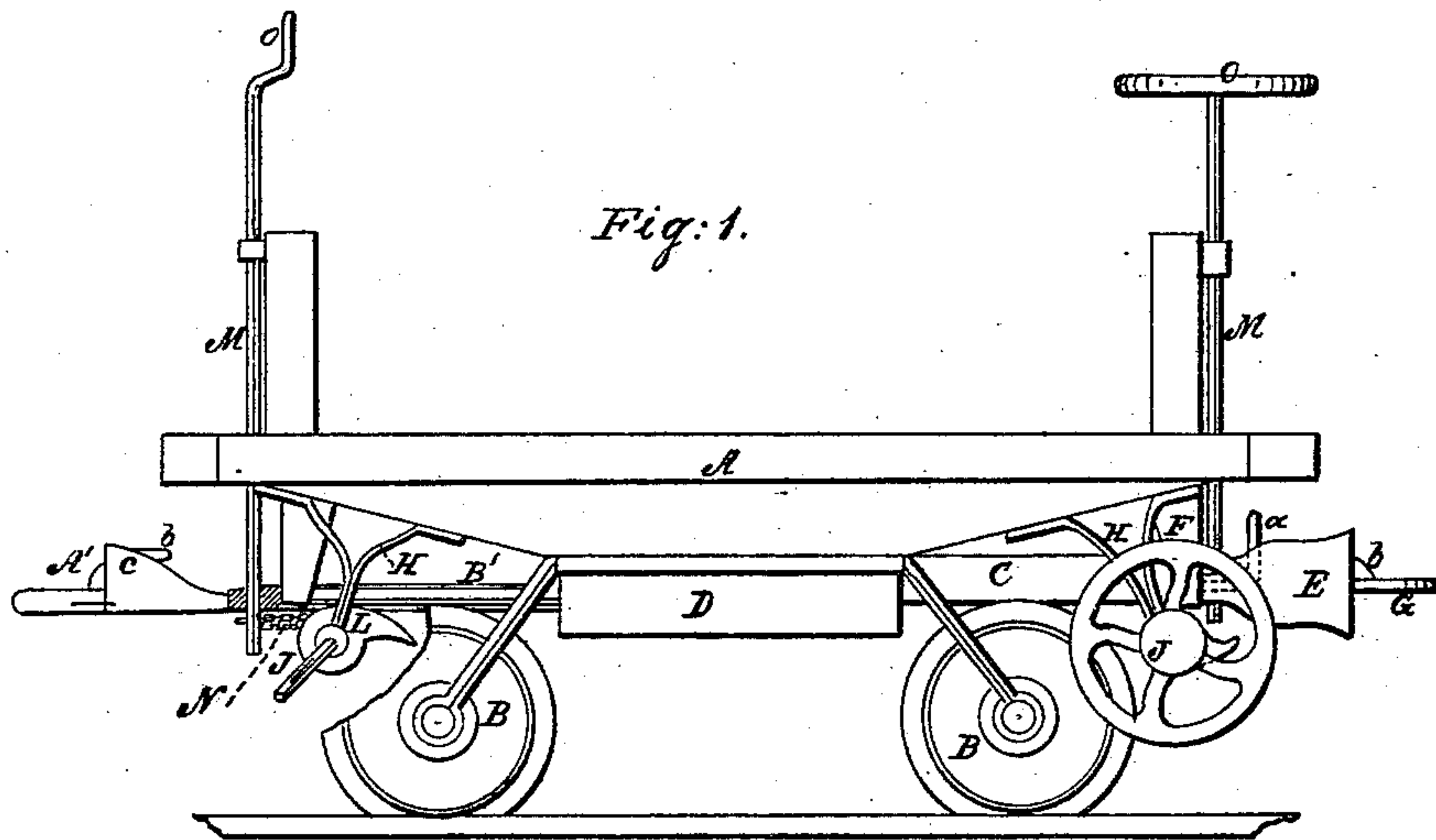


O. S. ST. JOHN.  
Car Coupling.

2 Sheets—Sheet. 1.

No. 84,716.

Patented Dec. 8, 1868.



Witnesses.  
W. H. Burroughs  
E. E. Waite

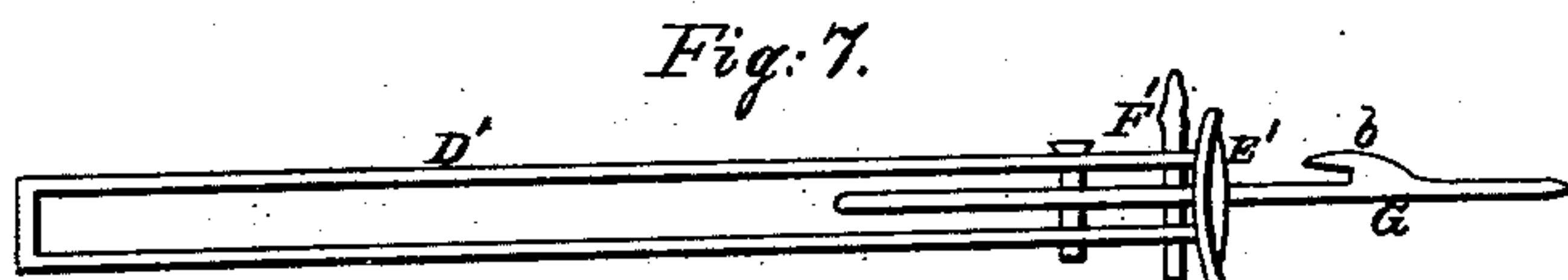
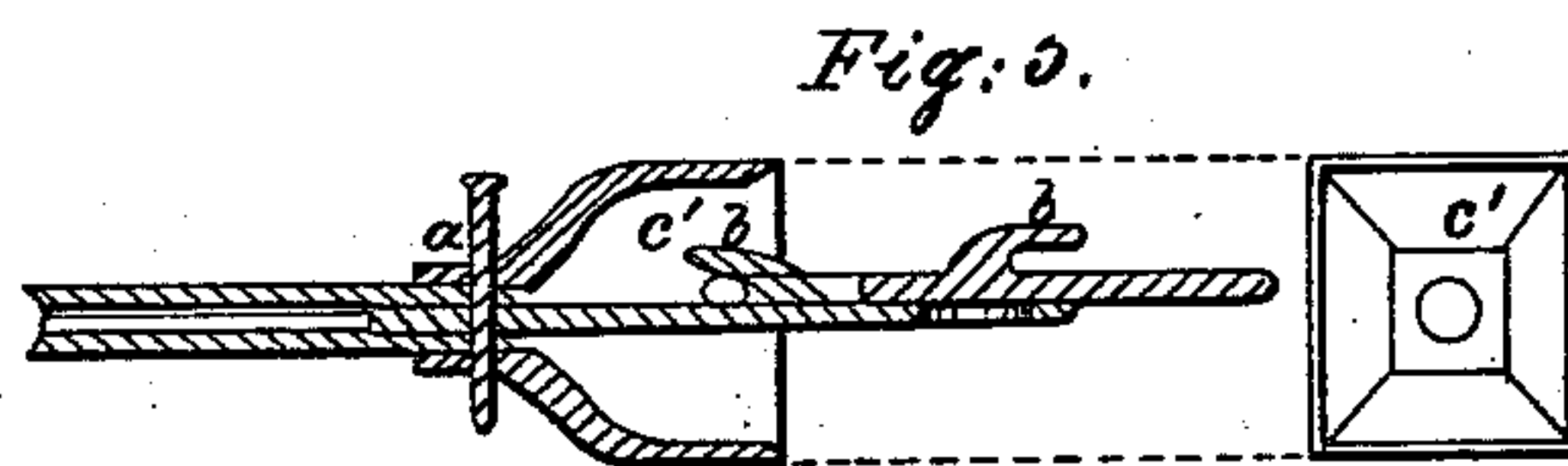
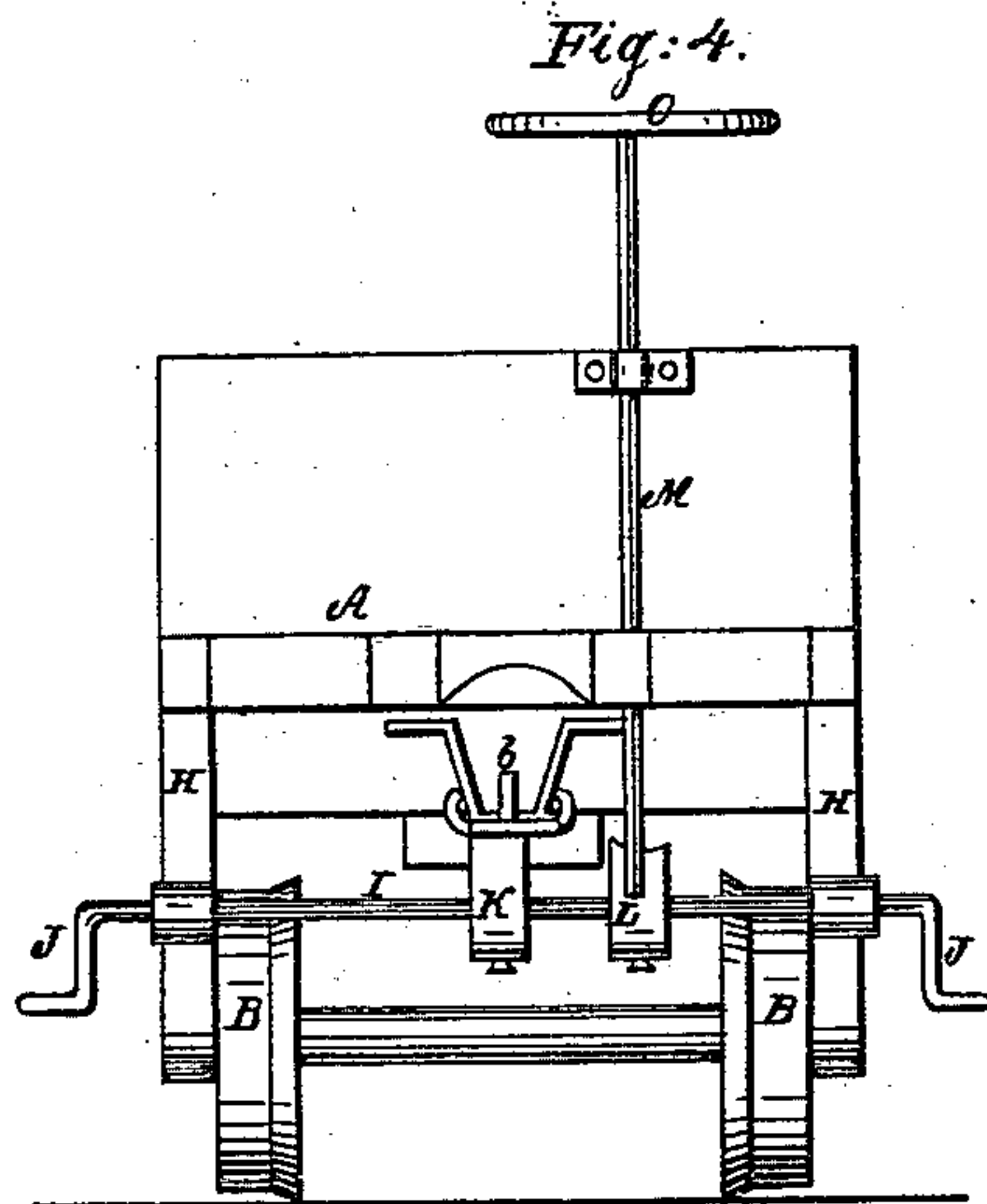
Inventor.  
O. S. St. John

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Witnesses.

W. H. Burroughs  
E. E. Waite

Inventor.

O. S. St. John



# United States Patent Office.

O. S. ST. JOHN, OF WILLOUGHBY, OHIO.

Letters Patent No. 84,716, dated December 8, 1868.

## IMPROVED CAR-COUPLING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, O. S. ST. JOHN, of Willoughby, in the county of Lake, and State of Ohio, have invented certain new and useful Improvements in Car-Coupling; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the car and coupling.

Figure 2 is a view of the top.

Figure 3 is an end view.

Figure 4 is also an end view.

Figures 5, 6, and 7 are detached sections, to which reference will be made.

Like letters of reference refer to like parts in the several views.

The object of this invention is to provide a construction of car-coupling that will at all times be safe and convenient, both to the security of the connection of the cars as well as the safety of the tender or carman, and also to provide a ready means of unlocking the coupling without the attendant going between the cars; and

It consists in a peculiar construction and operation of special devices for unlocking the coupling, when necessary.

In fig. 1, A represents the car, mounted upon wheels B, all of which is or may be constructed in the ordinary way.

To the under side of said car is attached the coupling, consisting of the draw-bar C, the inner end of which is connected to the car by means of the block D, and in such way as to allow it a free longitudinal movement.

To the outer end of said bar is secured the buffer-head E, which consists simply of a pair of flaring sides, open at the top and bottom, as shown in fig. 2.

The head and bar are supported in a stay, F, and by which it is guided in its vertical movement, and retained from a too free lateral deflection.

In the head referred to is secured the coupling-link G, by means of the pin or bolt *a*, inserted in and through the base of the head and link, as shown in fig. 3.

The link referred to is provided with a hook, *b*, having its point directed inwardly, and the heel of the same graduated to an easy curve, as shown in fig. 5, the purpose of which will hereinafter be shown.

H, figs. 1 and 3, are stays, depending from each side of the platform, and in which is journalled a shaft, I. On the extreme ends of said shaft is keyed a hand-wheel or crank, J, and to the centre of the same, a cam, K, immediately under the draw-bar, and by which it is operated, as will be presently shown.

L is also a cam, and is connected to the vertical shaft M by means of a chain, N, fig. 1, and by which said cam is operated, by means of the hand-wheel or crank O.

A similar arrangement to the above is attached to

each end of the car, whereby they are coupled together, as follows:

The links, as shown in the drawing, project horizontally from the head, with their respective hooks in the relative position to each other as shown in fig. 5. Now, as the cars approach and contact, the extreme end of the protruding link strikes upon and slides up over the inclined base of the hook to the point, from which the loop drops into the throat of the hook, thereby locking the cars together, as shown in the longitudinal section, fig. 5.

By this device, it will be obvious that the car-tender is not obliged to go between the cars for the purpose of guiding the link into the head, and inserting the bolt whereby the link is secured, and the coupling up of the cars perfected, hence avoiding the danger to the life of the attendant, an inevitable consequence of the use of the ordinary links and bolt-coupling, the use of which requires that he should go between the approaching cars for the purpose of guiding the link into the head.

The links of this coupling are held in a horizontal position, but not rigidly, they being sufficiently free to move laterally and vertically, to allow them to enter the head, and are guided therein by the flaring sides, between which they pass. Hence, should they be deflected from a right line by the jarring and motion of the cars, they are caught by the sides, and guided directly over the hooks, either one above the other, and are thus self-coupling.

The uncoupling of the cars is done by means of the hand-wheel or crank J, referred to, which, on being turned, will throw up the cam K against the under side of the draw-bar, thereby lifting the head and link from the hook with which it is engaged, which, being thus liberated, the cars are free to be moved apart.

It will be observed that, as the head and bar are being raised, they receive at the same time a forward movement, whereby the disconnecting of the hook is the more readily effected.

The uncoupling of the cars may also be effected by the hand-wheel O, which, on being turned in the proper direction, will wind up the chain N, above referred to, and thereby draw on the cam L, operating at the same time the cam K, which in turn will elevate the draw-bar, as it did when operated by the side-wheels J.

By this means the cars are uncoupled with ease and safety to the car-man, either from the side, by the wheels or crank J, or from the top or platform; thus placing the entire management of coupling and uncoupling of the train under the immediate control of those having it in charge, without in the least exposing themselves to danger.

A', fig. 1, shows a modified form of the coupling, which shows the link as being provided with a pair of shoulders or sides, *c*, between which are the hooks *b*. On one end of this link is cut a thread, by which it is screwed into the draw-bar B', as shown in fig. 1.



The links, on coming together by the approximation of the cars, slide upon and over each other, as above described of the links G, and shown in the detached section, fig. 6.

By the adoption of this form of link, the buffer-head is dispensed with, the shoulders of the sides *c* being made to serve in this capacity.

C', fig. 5, shows an ordinary buffer-head, or one of a similar shape, and which is screwed to the draw-bar B', in place of the links A', just described. With this head are used the links G, secured to the same by the bolts *a*, as shown in fig. 5.

Fig. 7 is also a modification of the former one, and consists of an open draw-bar, D', provided with a plain, slightly-curved plate, E', as a head, into and through which the link G is intruded, and secured therein by the bolts F'.

The draw-bar B', referred to, is made hollow, or tubular, as shown in fig. 5, and which may consist of a section of ordinary gas-pipe, thereby combining strength

and lightness with durability and cheapness in the construction of the bar.

It will be observed that the under side of the platform, fig. 4, immediately over the buffer-head, is rounded, or arching, the purpose of which is to assist in guiding the link into the head, should said link be thrown above the sides of the buffer-head.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The link G, made with hook *b*, and guide-shoulders C thereon, operating in the manner and for the purpose described.

2. In combination with the above, the cams K and L, chain N, and shaft I, arranged as described, and operated by the means, and in the manner, and for the purpose substantially as specified.

O. S. ST. JOHN.

Witnesses:

W. H. BURRIDGE,  
J. H. BURRIDGE.