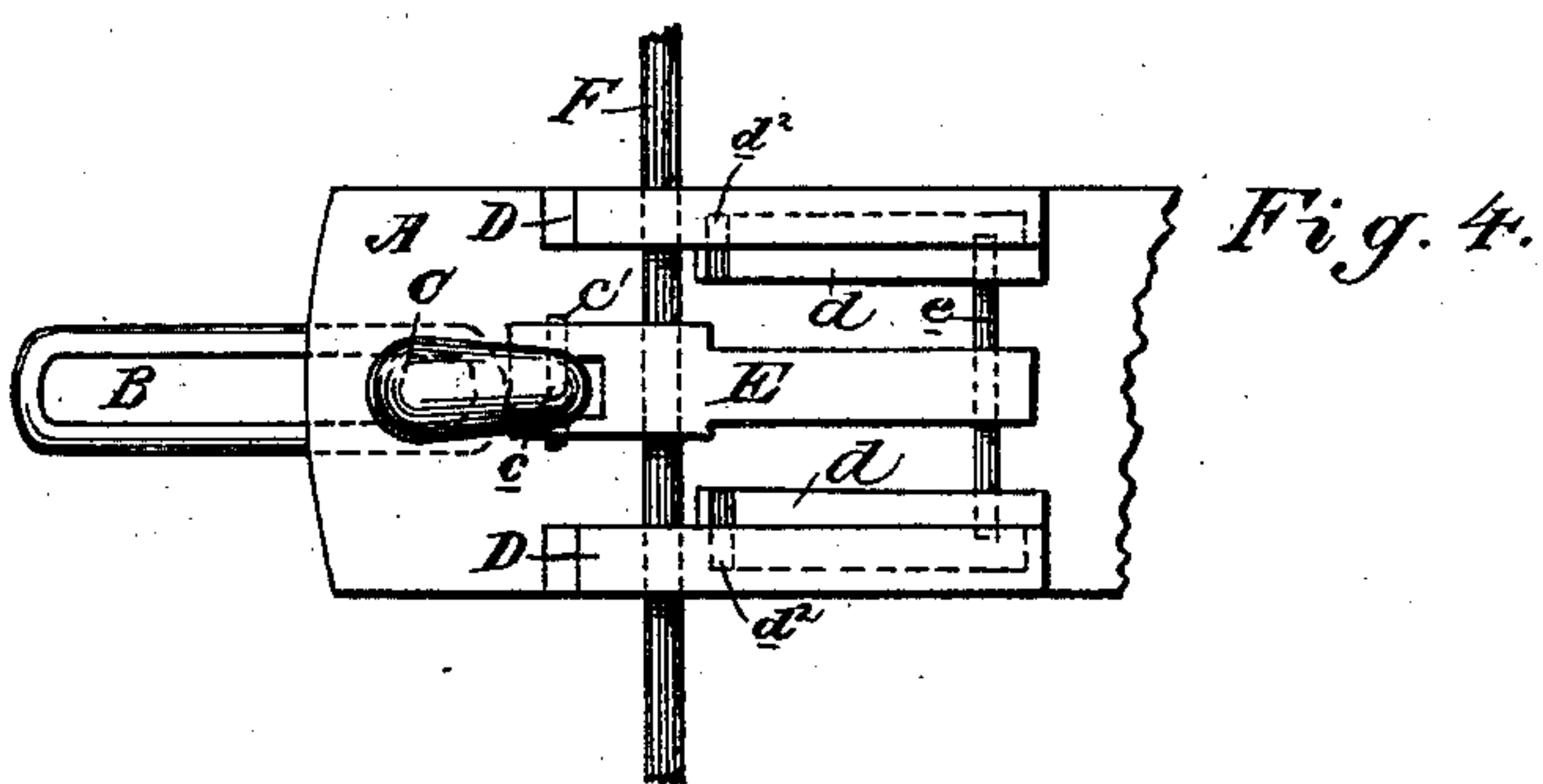
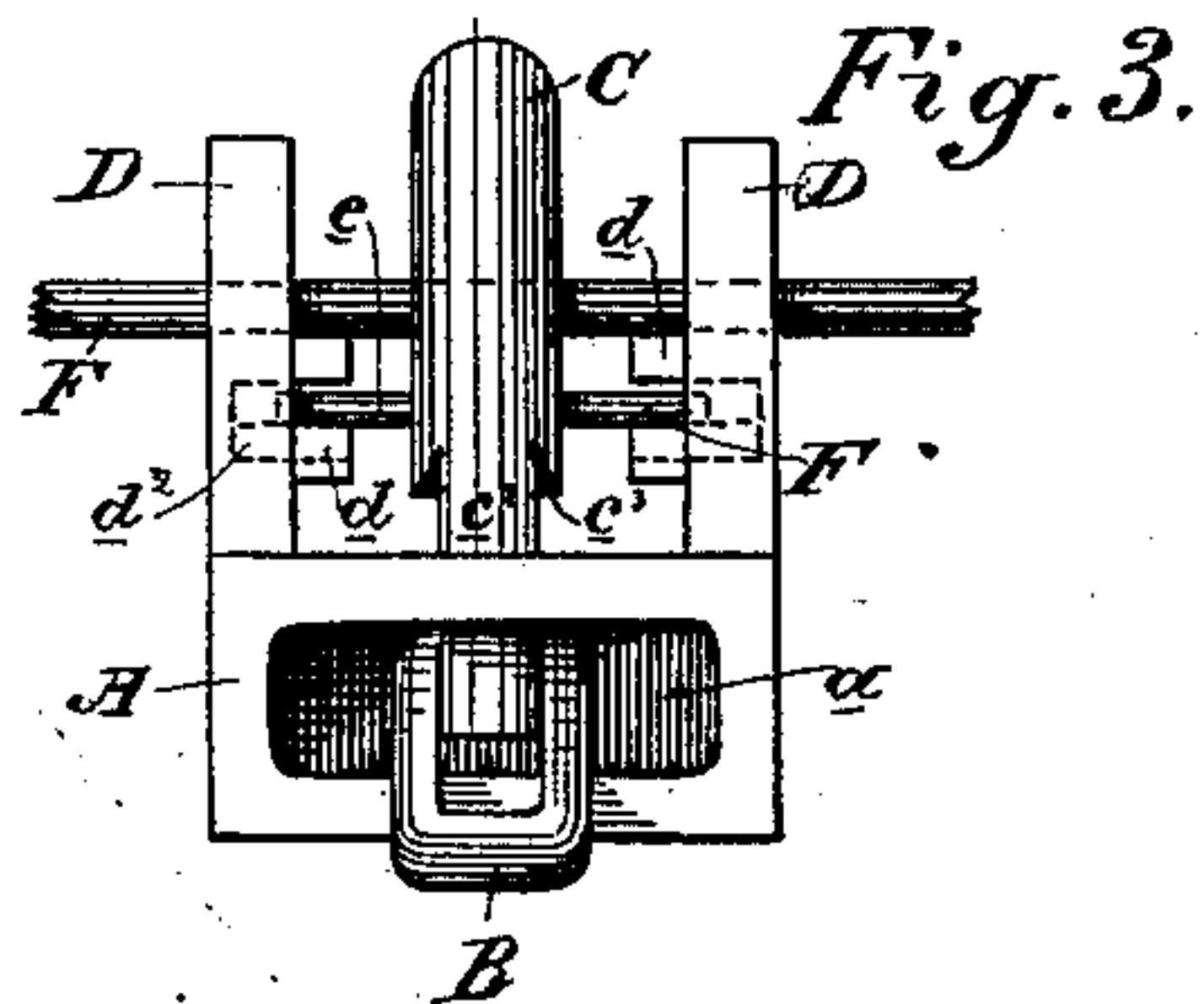
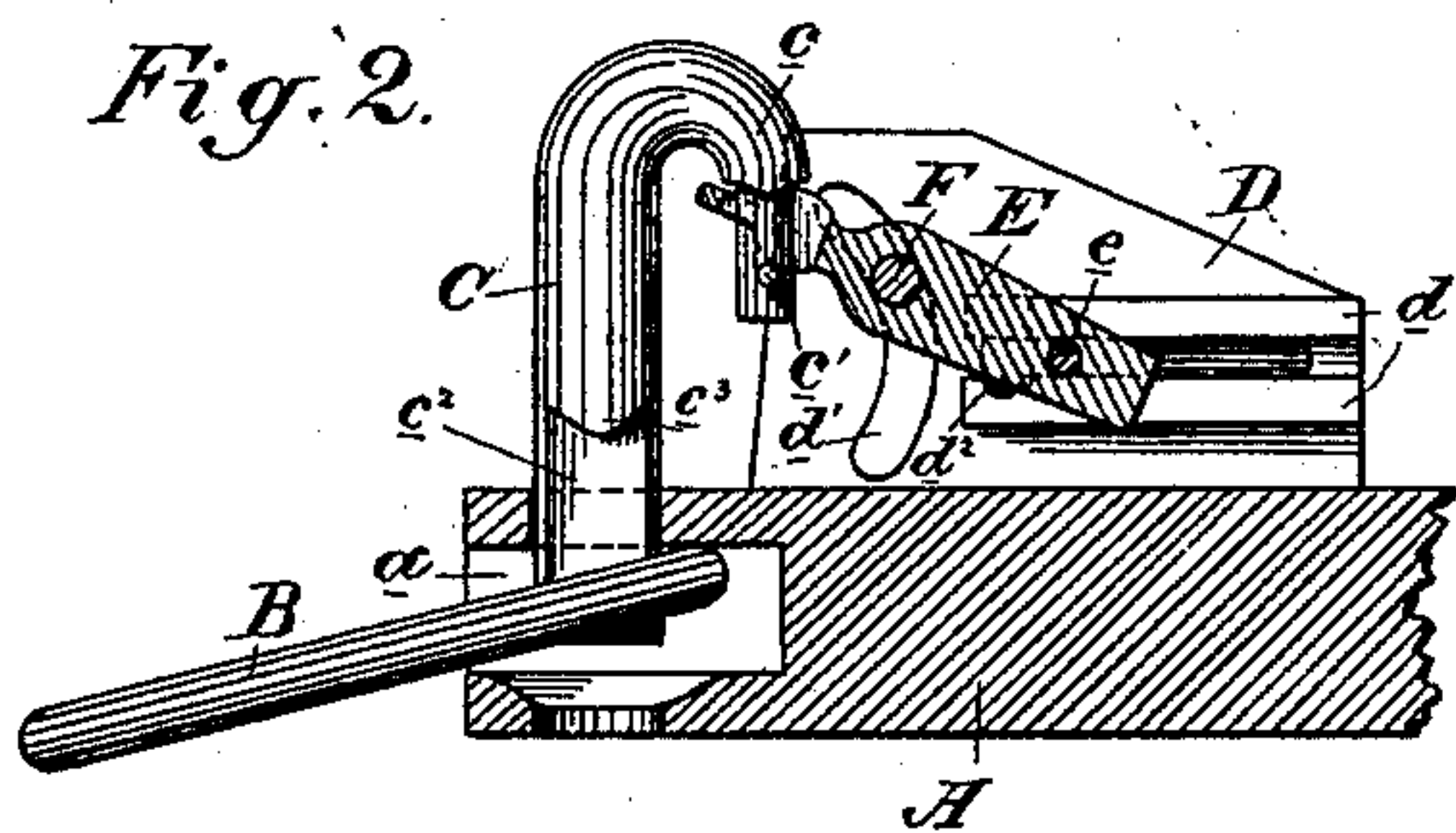
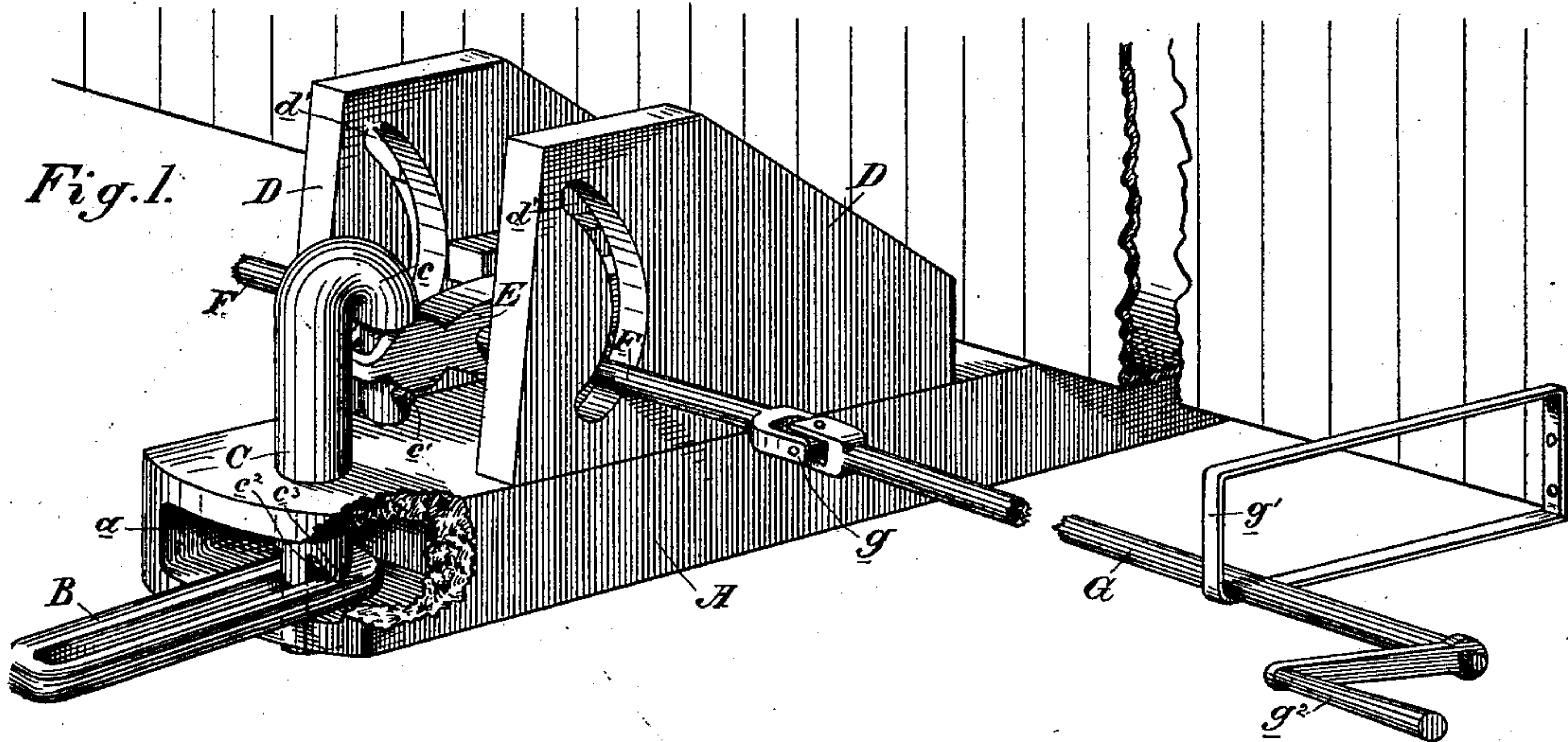


(No Model.)

W. S. DOAN.
CAR COUPLING.

No. 358,190.

Patented Feb. 22, 1887.



Witnesses,
Geo. H. Strong.
J. H. Strong.

Inventor
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attys

UNITED STATES PATENT OFFICE.

WILLIAM S. DOAN, OF SACRAMENTO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO WALLACE DOAN, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 358,190, dated February 22, 1887.

Application filed July 26, 1886. Serial No. 209,171. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. DOAN, of the city and county of Sacramento, and State of California, have invented an Improvement in Car-Couplings; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-couplings; and my invention consists in the novel mechanism for guiding the link to its position in the opposing draw-head and for controlling the insertion and removal of the coupling-pin, as I shall hereinafter fully describe.

The object of my invention is to provide a simple and practicable means by which the coupling and uncoupling of the cars may be effected without having to handle the links and pins directly, thereby avoiding the necessity of going between the cars.

Referring to the accompanying drawings, Figure 1 is a perspective view of my car-coupling. Fig. 2 is a vertical longitudinal section of same. Fig. 3 is a front elevation. Fig. 4 is a plan.

A is the draw-head, of the usual character, which is attached to the car in the customary manner, said draw-head having a chamber, *a*, in which the link B is fitted.

C is the coupling-pin, which passes down through the draw-head and couples the link therein. These parts are practically those of the ordinary couplings now in use.

Upon the draw-head are vertical standards or flanges D, to the rear inner surfaces of which are secured or formed slotted horizontal guides *d*, in which a cross pin or bolt, *e*, of a lever, E, is mounted and adapted to operate. The forward end of the lever E is slotted, and the coupling-pin C is formed with a backwardly and downwardly bent end, *c*, which passes through the slot of the lever, and is secured therein by a cross-pin, *c'*.

F is a bar or rod passing transversely through and secured in the lever E. It passes, also, through curved slots *d'* in the standards or flanges D. To the ends of this bar or rod are secured levers G by means of a double pivot-joint, (shown at *g*,) whereby said levers are adapted to have a play which will enable them to be sustained by their guide-staples *g'* on the

end of the car, independent of the movement of the spring-mounted draw-head.

The ends of the levers G are provided with handles *g*², whereby they may be pushed in or out or oscillated. These handles are at the side of the car and within convenient reach of the brakeman. The pin or bolt *e*, at the rear end of the lever E, is shorter than the distance between the flanges or standards D, whereby it may be moved longitudinally, thus allowing the lever E to move sidewise between the flanges or standards, and the slotted guides *d*, in which the cross pin or bolt is mounted, are long enough to permit said bolt to move back and forth therein in the direction of their length, so that the lever E may be raised up and down about said bolt or pin as a pivotal center. The coupling-pin C has its lower portion, as shown at *c*², somewhat squared in form, and is provided with beveled shoulders *c*³, so that when it passes through the coupling-link and rests its shoulders thereon, and is then oscillated and raised or lowered, it will vibrate said link in a horizontal and a vertical plane. At the forward ends of the slotted guides are made depressions *d*², into which the cross-pin *e*, when moved to its forward limit, is adapted to drop, whereby the lever E is held in a raised position.

The operation of my coupling is as follows: By turning the handle *g*² on the end of the lever G the rod F is turned axially, so as to raise the lever E about its bolt or pin *e* as a center, thereby lifting the coupling-pin C out of its socket and freeing the coupling-link. This movement of the coupling-pin is perfectly vertical, for the reason that the lever E, in rising, draws forward its pin or bolt *e* in the slotted guides *d*, while the rod F moves upward in its curved guide-slots *d'* in the flanges or standards D. The pin is held elevated by reason of the dropping of the cross pin or bolt *e* in the depressions *d*² in the forward ends of the slotted guides *d*. The link B may now be inserted in the draw-head, and when in place under the pin the handle *g*² is turned back again, whereby the cross pin or bolt *e* is forced back out of its depression *d*² and the lever E is allowed to fall to a horizontal position, thus allowing the pin to move

down and engage the coupling-link by passing through it.

In order to properly guide and direct the link as it approaches the opposing draw-head, the brakeman has only to push the lever G longitudinally in either direction and slightly turn it at the same time, by which movements the rod F is moved back and forth through its curved guides and turned axially, thus moving the lever E sidewise and vertically, its pivot pin or bolt e being short enough and having a travel for this purpose, and the coupling-pin C is thereby oscillated slightly and raised or lowered. This oscillation and vertical movement of the pin produces a horizontal and vertical vibration of the coupling-link, which enables it to be accurately guided into the opposing draw-head.

For permitting the vertical vibration of the link to take place easily, the rear of the floor of the draw-head chamber is hollowed out, so that the beveled shoulders of the pin C may effect the perfect rocking of the link.

The connection of the upper end of the coupling-pin with the slotted forward end of the lever E is of sufficient length or depth to hold the pin well in position and prevent any undue side motion, so that its lower end passes down accurately to its engagement with the link.

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

1. In a car-coupling, and in combination with the coupling-link, a coupling-pin having a squared lower portion engaging the link, whereby the oscillation of the pin effects the vibration of the link in order to direct it into the opposing draw-head, and a connection comprising a longitudinally-sliding rod extending from between the cars to the outside for effecting the oscillation of the pin, substantially as described.

2. In a car-coupling, and in combination with the coupling-link, a vertically-adjustable coupling-pin having a squared portion, e^2 , entering the link, and beveled shoulders e^3 , resting thereon, and a connection comprising a longitudinally-sliding rod engaging the pin, by which said pin is oscillated and vertically moved for vibrating the link and properly directing it, substantially as described.

3. In a car-coupling, the coupling-link B and the pin C, engaging said link and adapted by its oscillation to vibrate it, for the purpose described, in combination with a longitudinally-sliding rod connected with the pin and extending from between the cars, whereby the pin is oscillated, substantially as described.

4. In a car-coupling, the coupling-link B and the coupling-pin C, having a squared portion, e^2 , engaging the link, whereby its oscillation vibrates said link, in combination with a laterally-moving and adjustably-pivoted lever connected with the pin, and a rod connected with the lever, whereby the pin may be oscillated, substantially as described.

5. In a car-coupling, the draw-head A and the link B, seated therein loosely, so as to have a vertical rocking movement, in combination with the vertically-adjustable coupling-pin C, having beveled shoulders e^3 , resting on the link, the adjustably-pivoted lever E, pivoted to the pin C and the rod F, and lever G, for operating the lever to adjust the pin and rock the link, substantially as described.

6. In a car-coupling, the vertically-moving coupling-pin C, in combination with a lever connected with said pin and having a longitudinally-sliding pivot, and a rod secured to said lever, whereby it may be raised on its pivot to elevate the coupling-pin, substantially as described.

7. In a car-coupling, the vertically-moving coupling-pin C, in combination with the lever E, connected with said pin, the pivot bolt or pin e in said lever, mounted and adapted to slide in its bearings, the rod F, secured to the lever E, and the lever G, secured to the rod F, substantially as described.

8. In a car-coupling, the draw-head A, having the side flanges or standards, D, provided with curved slots d' and with horizontal slotted guides d , and the vertically-moving coupling-pin C in said draw-head, in combination with the lever E, secured to said pin at its forward end and having the cross pin or bolt e at its rear end, mounted and adapted to slide in the slotted guides d , the rod F, secured to said lever E and passing through the curved slots d' of the standards, and the levers G, pivoted to said rod and guided along the end of the car, substantially as described.

9. In a car-coupling, the draw-head A, the standards D, having curved slots d' and slotted guides d , with depressions d'' at the forward ends, and the vertically-adjustable coupling-pin C, in combination with the lever E, connected with said pin and having the cross pin or bolt e at its rear end, adjustable longitudinally in the slotted guides and adapted to move forward and back into and out of the depressions therein, the rod F, secured to lever E, and passing through the curved slots d' , and the lever G, pivoted to rod F, substantially as described.

10. In a car-coupling, the coupling-link B and the vertically-adjustable coupling-pin C, having a squared portion, e^2 , engaging said link, and beveled shoulders e^3 , resting therein, whereby the link may be vibrated, as described, in combination with the laterally and vertically moving lever E, adjustably pivoted at its rear end and connected at its forward end with the coupling-pin, the rod F, and the levers G, by which the lever E is operated for the oscillation and elevation of the pin, substantially as described.

11. In a car-coupling, the draw-head A, having the flanges or standards D, with curved slots d' and horizontal slotted guides d , provided at their forward ends with depressions d'' , the coupling-link B, and the coupling-pin C, having the square portion e^2 , engaging the

link, and beveled shoulders c^3 , resting therein,
and a bent upper end, c , in combination with
the lever E, having a slotted forward end with
which the bent end of the pin is connected,
5 and a cross-pin, e , at its rear end, mounted
and adapted to slide forward and back and end-
wise in the slotted guides d , the rod F, secured
to said lever and passing through the curved
slots of the standards D, and the lever G, piv-

oted to the rod F and having handles g^2 at 10
the sides of the car, all arranged and adapted
to operate substantially as described.

In witness whereof I have hereunto set my
hand.

WILLIAM S. DOAN.

Witnesses:

S. H. NOURSE,

H. C. LEE.