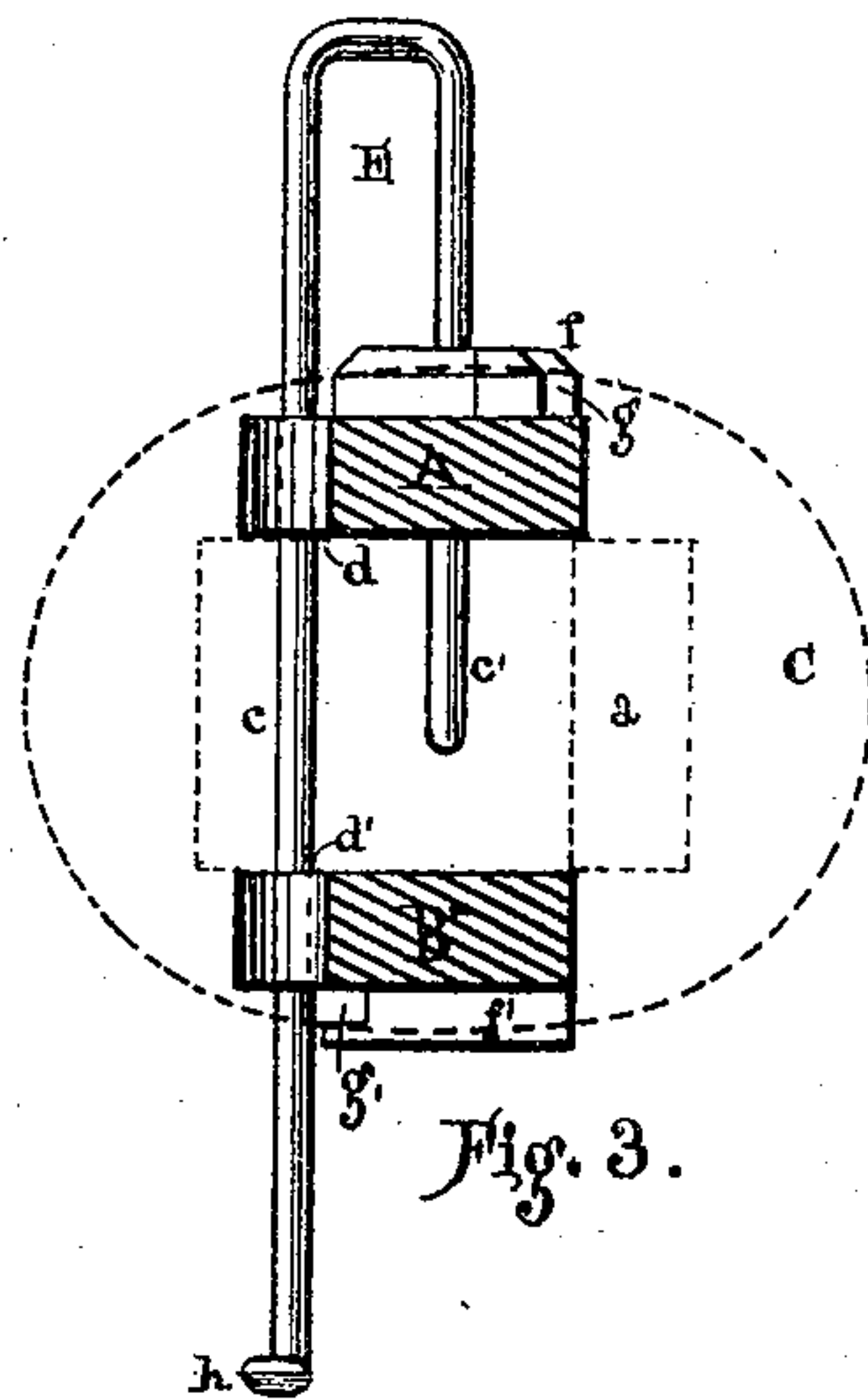
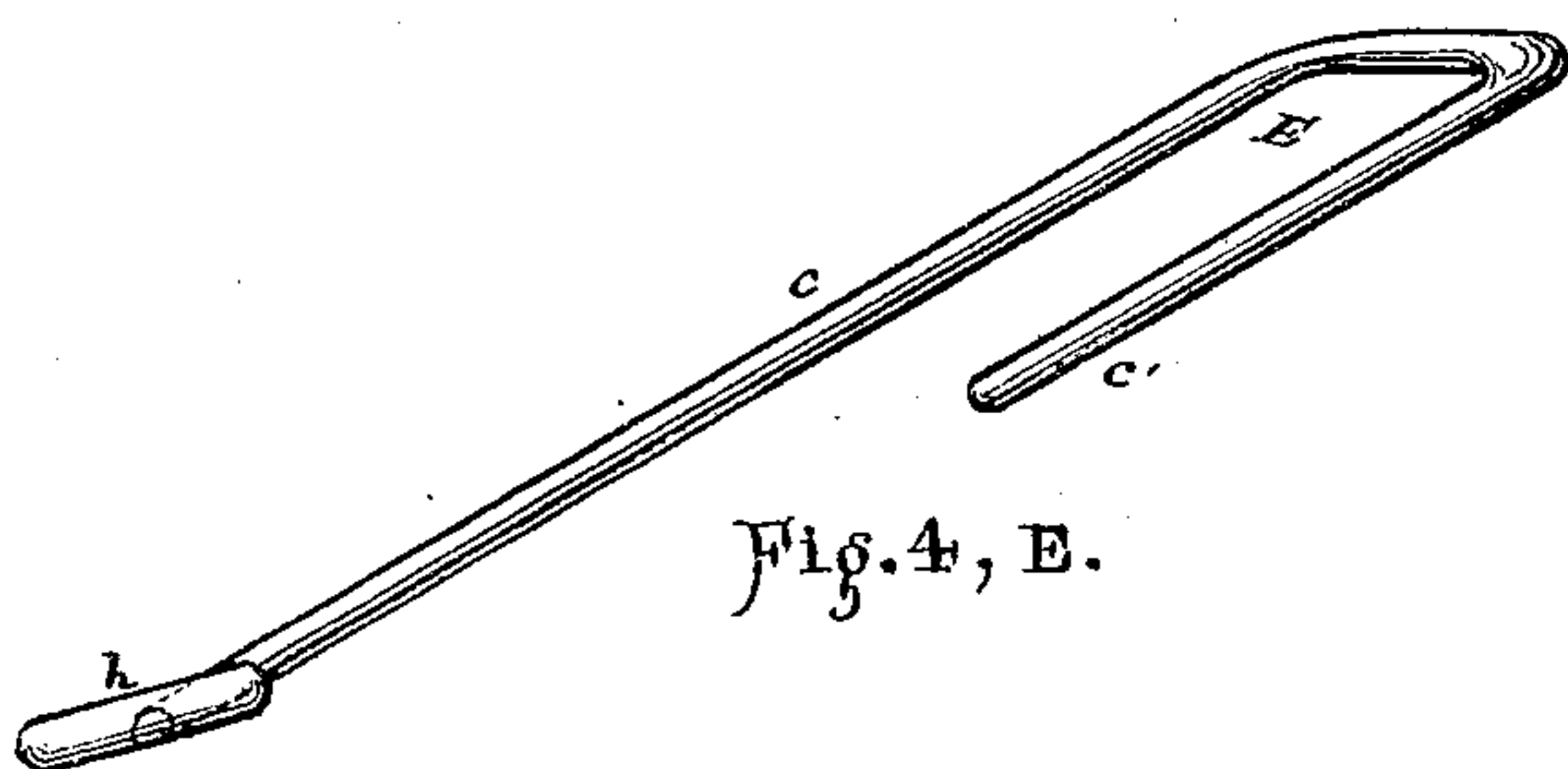
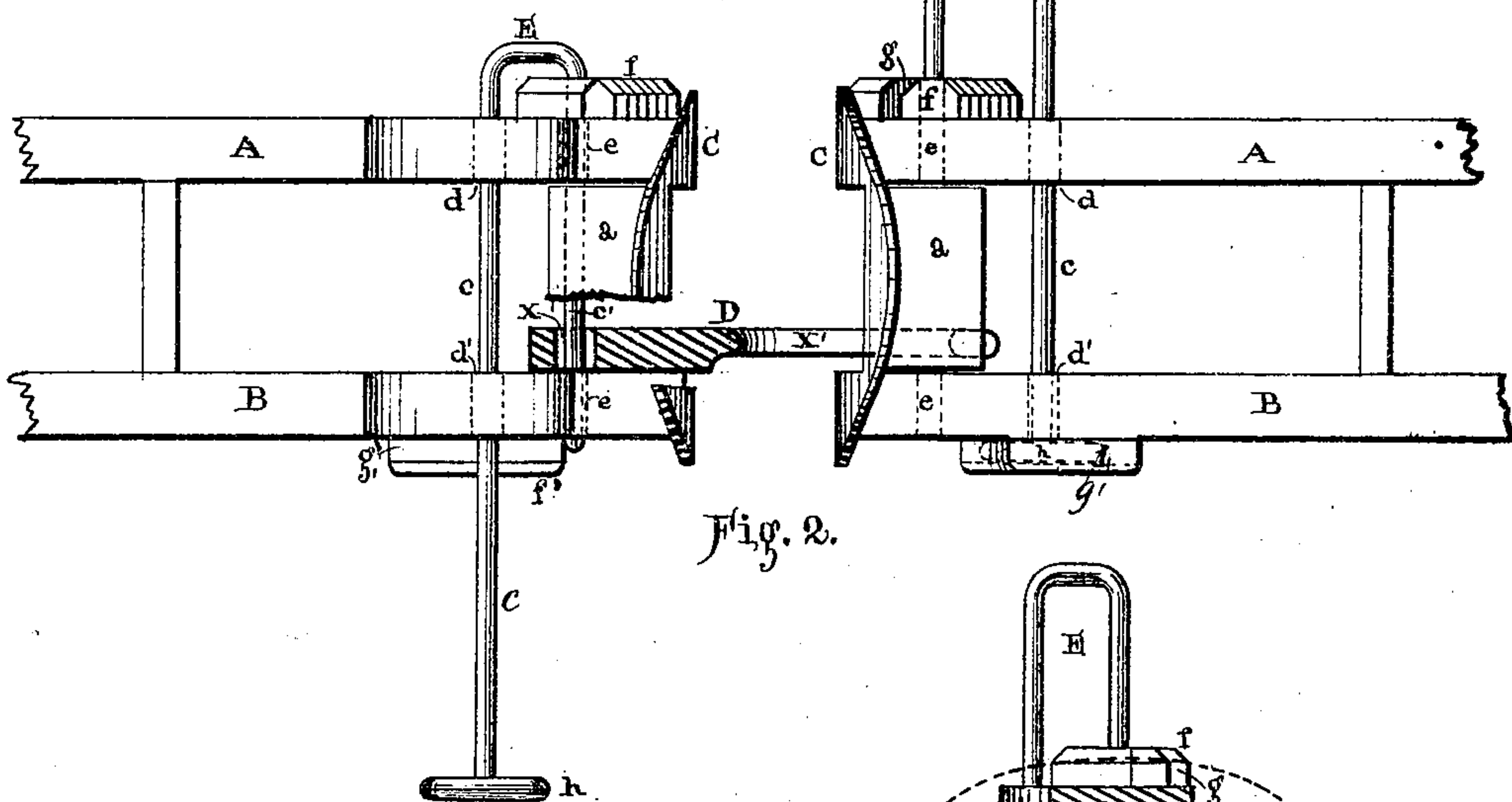
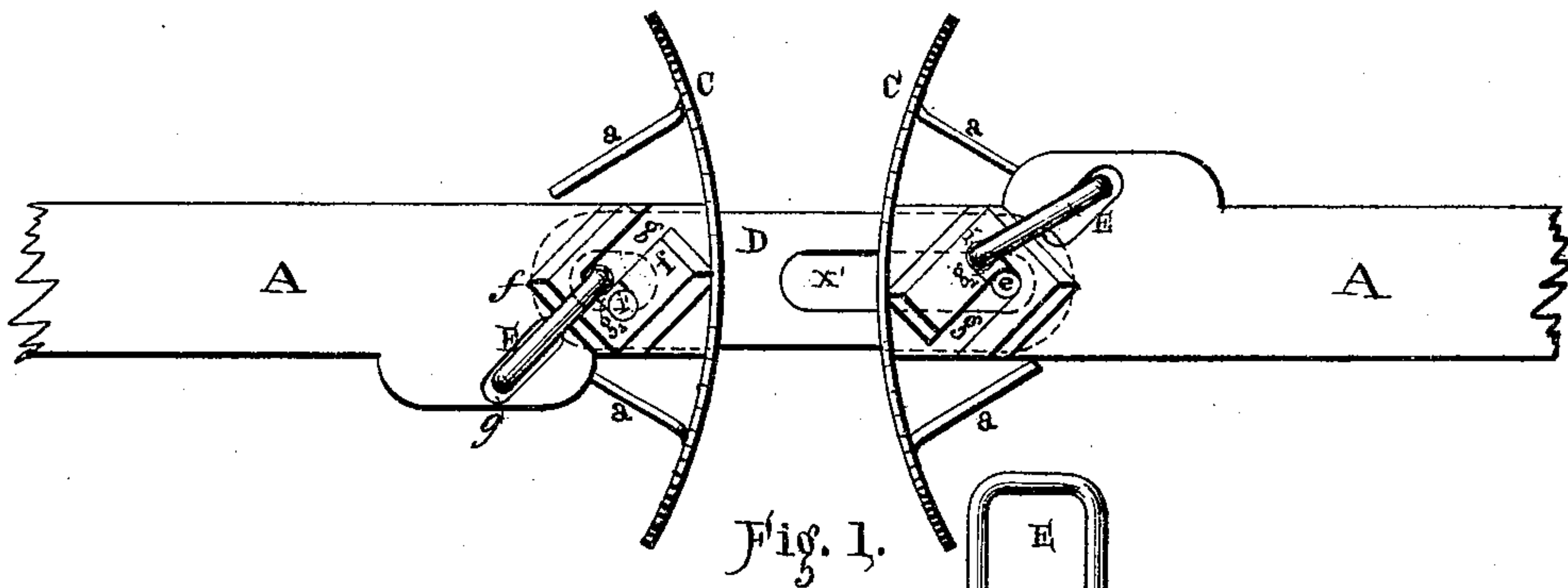


H. MILLARD.
Car-Couplings.

No. 138,912.

Patented May 13, 1873.



Witnesses.

Thomas J. Dewley
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UNITED STATES PATENT OFFICE.

HIRAM MILLARD, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 138,912, dated May 13, 1873; application filed November 1, 1872.

To all whom it may concern:

Be it known that I, HIRAM MILLARD, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Car-Couplings, of which the following is a specification.

My invention relates to the combination of a bifurcated bolt, having one prong longer than the other, and a foot on said longer prong with the upper and lower plates of a draw-bar—the plates having inclined vertical slots, which receive the longer prong, and vertical holes for the reception of the shorter prong, and the upper plate having a cross-groove connected with its inclined slot for the shorter prong to rest in when the bolt is in its elevated position; and the lower plate a side groove for the insertion of the foot of the longer prong when the bolt is in said position—the slots and grooves being so arranged that the outer end of the connecting link of the contiguous end of the next car shall, in passing into the mouth of the draw-bar, being guided by inclined wings of the same, strike the longer prong and remove its foot from the above-mentioned groove in the side of the draw-bar, and thereby remove the end of the shorter prong from the groove in the top plate, and thus cause the bolt to drop, so that the shorter prong shall drop into the opening in the end of the coupling-link, and thus couple the cars. The invention further relates to the connection of inclined wings to the bumper-plates of ordinary draw-bars so as to form a socket, as hereinafter described.

Figure 1 is a plan view of the improved coupling. Fig. 2 is a side elevation of the same. Fig. 3 is an end view of one of the cross-bars and parts in connection therewith. Fig. 4 is an isometrical view of one of the bifurcated bolts E.

Like letters in all the figures indicate the same parts.

I have represented two draw-bars in the position to be coupled together, which are of the same construction. A represents the top plate, and B the bottom plate, of each bar. C C are ordinary bumper-plates provided with wings *a a*, riveted thereto to form inclines for conducting the outer end of the coupling link D into the right position to be coupled. E is a

bifurcated coupling-bolt, shown in detail in Fig. 4. It has a foot *h* on its longer prong *c* for the purpose hereinafter described. The longer prong *c* of each bolt works in the vertical and angular slots *d* and *d'* in the bottom and top plates of the draw-bar, and the shorter prong *c'* in the vertical holes *e e*. One of the shorter prongs *c'* also passes through the short slot *x* in the inner end of the link D, and the shorter prong of the other bolt through the slot *x'* in the outer end of the link. On the top of each draw-bar there is a lug *f*, provided with a groove *g*, into which the end of the short prong *c'* is transferred from the vertical hole *e* in the top of the draw-bar when the bolt is to be brought into a proper position for coupling; and there is a groove *g'* in one side of the lug *f* on the under-side of the draw-bar, as seen in figures 2 and 3, into which the foot *h* of the coupling-bolt is placed when it is in its elevated position. At right angles to the groove *g*, in lug *f*, there is a short groove *g²*, into which the end of the short prong *c'* of the bolt is placed when the cars are uncoupled when it is desired to prevent them being coupled automatically if brought together. In order to keep the prong securely in this position the groove is provided at its bottom with a slight depression *i*, into which the end of the prong is inserted.

The operation is as follows:

One end of the link D is connected with one draw-bar, as seen in Figs. 1 2—the short prong *c'* of the bolt E being dropped through the slot *x* of the link—the link being connected with the highest of the two draw-bars to be coupled, if there should be any difference in their height, so that there shall be no difficulty in the projecting end of the link entering the draw-bar of the contiguous car. In order to effect this arrangement the draw-bars and connecting-bolts are all made alike, so that the inner ends of the link may be transferred from one draw-bar to the other, with which it is to be coupled. The coupling-bolt E, in connection with the other draw-bar, having been brought into its elevated position, as seen in Fig. 2, with the end of the short prong *c'* resting in the groove *g*, in the top of the draw-bar and the foot *h*, of the long prong *c*, resting in the groove *g'* at the bottom side of the draw-bar,

when two cars are brought together the outer end of the link D, being guided by either of the inclined wings *a a*, as the case may be, until its rounded end is brought against the long prong *c* of the bolt, as shown in Fig. 1; then the pressure of the link on the prong causes it to slide backwards in the inclined slots *d* and *d'* of the draw-bar, and thus to draw the short prong *c'* out of the groove *g* into the vertical hole *e*, in the top plate of the draw-bar, and to drop through the slot *x'*, in the outer end of the link D, and the lower hole *e* of the draw-bar, and thus to couple two bars together.

The ordinary draw-bars may readily be altered for the connection of the improved coupling by connecting the side lugs *j j*, top lug *f*, and bottom lug *f'*, provided with the slots and

grooves above described and connecting-wings *a a*, in the bumper plate C C.

I claim as my invention—

1. The coupling-bolt E, having a foot *h*, in combination with a draw-bar, having in its upper plate A a slot *d*, hole *e*, and grooves *g g'*, and in the lower plate B a slot *d'*, hole *e*, and groove *g'*, substantially in the manner and for the purpose set forth.

2. The combination of the inclined wings *a a*, with ordinary bumper-plates C, for guiding the outer end of the link D into the right position for coupling, substantially as described.

HIRAM MILLARD.

Witnesses:

STEPHEN USTICK,

THOMAS J. BEWLEY.