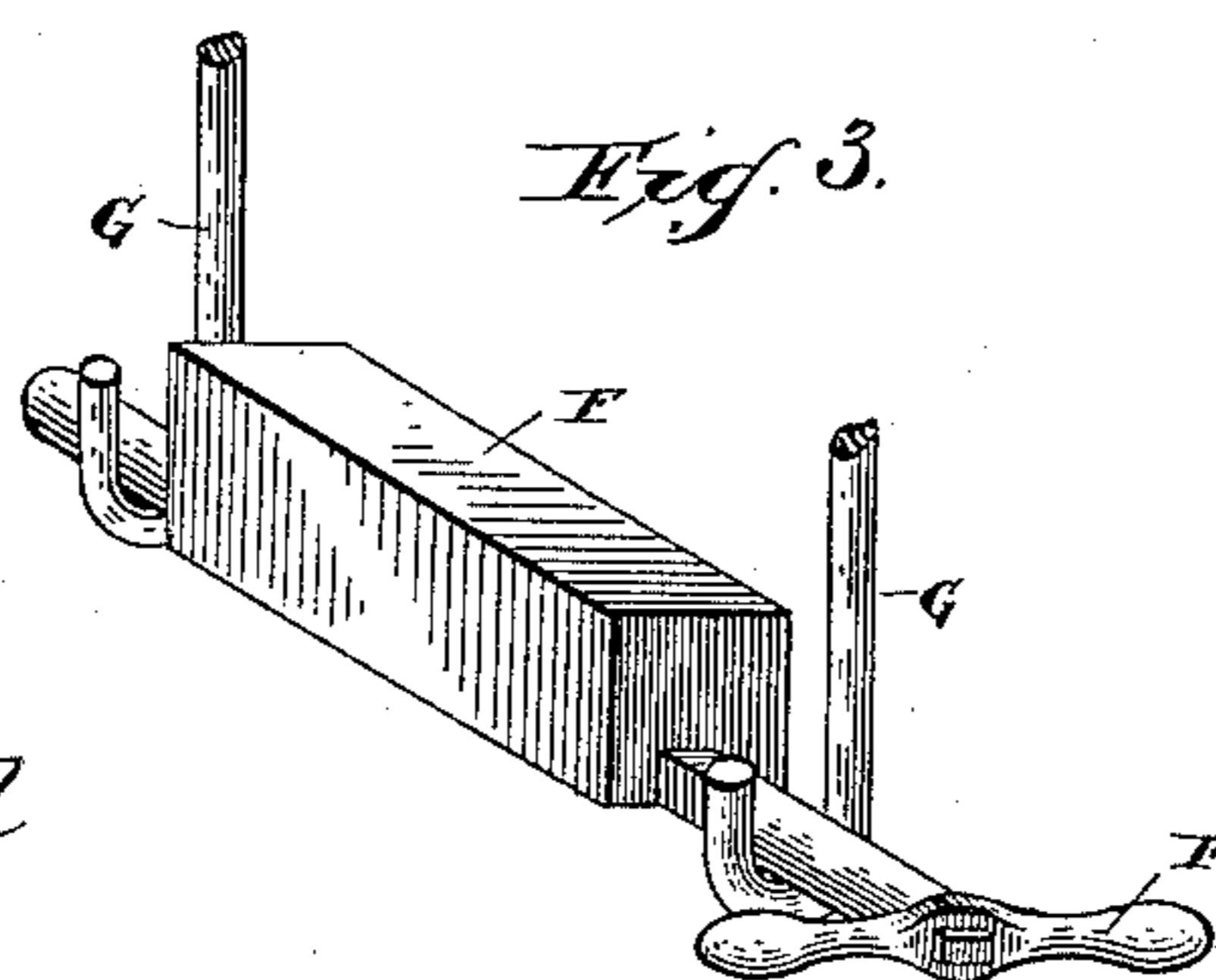
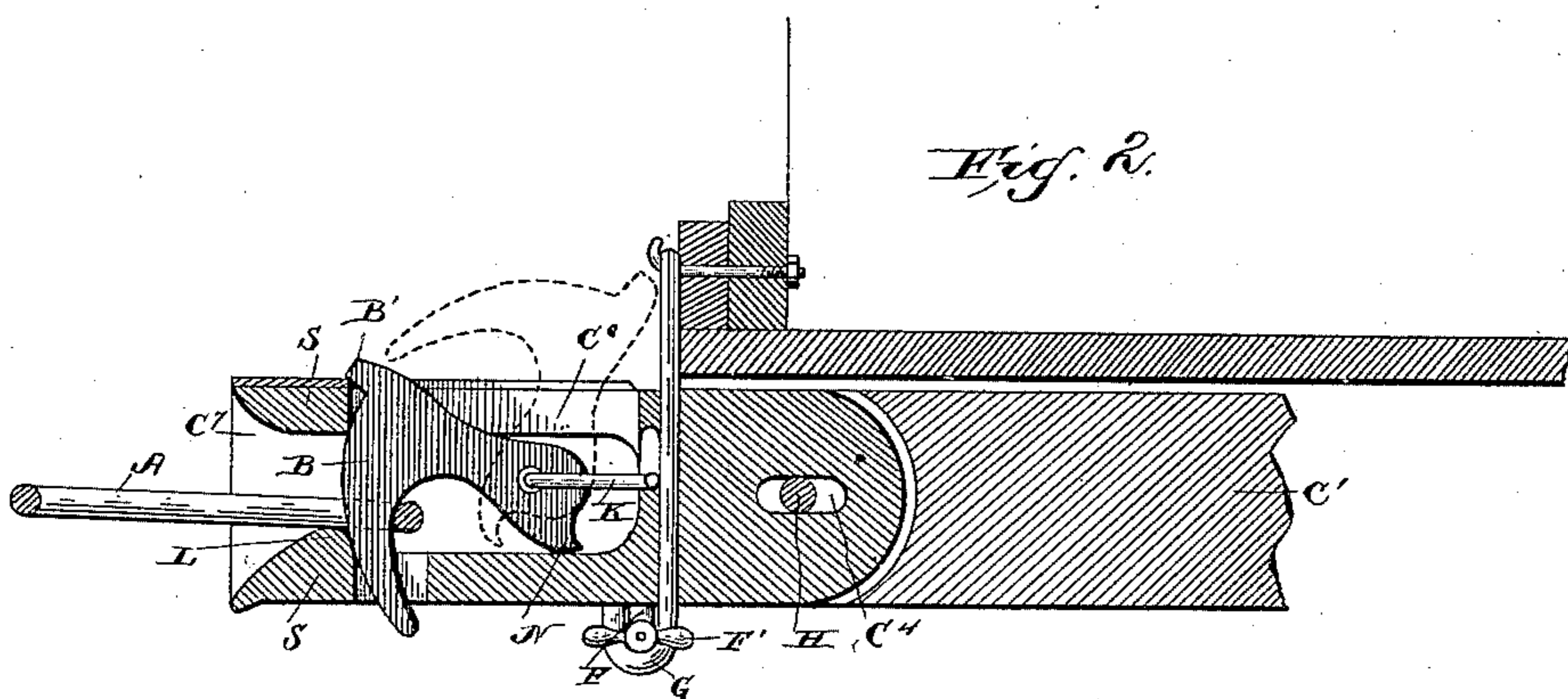
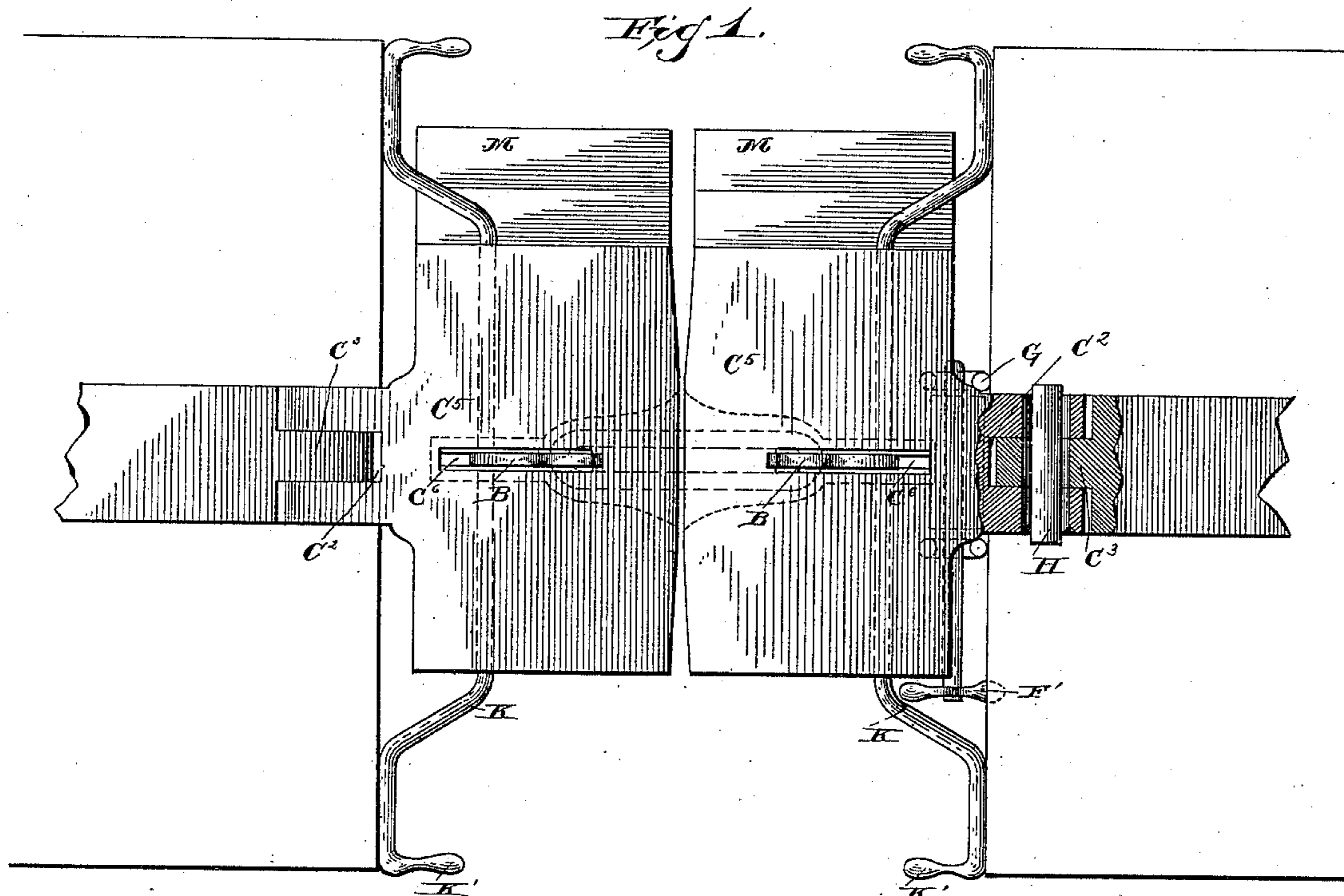


(No Model.)

J. HAISH.
CAR COUPLING.

No. 378,676.

Patented Feb. 28, 1888.



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UNITED STATES PATENT OFFICE.

JACOB HAISH, OF DE KALB, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 378,676, dated February 28, 1888.

Application filed December 7, 1887. Serial No. 257,252. (No model.)

To all whom it may concern:

Be it known that I, JACOB HAISH, a citizen of the United States, residing at De Kalb, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to certain improvements in car-couplers and embodies the following characteristics, to wit: first, mechanism by means of which such coupling may be accomplished automatically; second, means for elevating or depressing the outer end of the draw-bar, so as to adapt the same to the varying altitude of the draw-bars of the adjacent car; third, means for elevating or depressing the coupling-link to adapt the same to be engaged in the adjacent draw-bar, though the latter may be of a different altitude; fourth, means for providing additional play in the draw-bar, so as to insure any desired slack in the train.

The object of my invention is to provide mechanism by which the cars may be coupled and uncoupled without the operator hazarding his personal safety by going between the cars, and as the trains are largely made up of cars of different constructions, having platforms and coupling mechanism of different altitudes, there is involved in the successful introduction of any new mode of coupling the capacity of being attached to cars having platforms of varied heights, and also, for the reason that such introduction will be gradual, mechanism adapted for use with the link-and-pin coupling now substantially in universal use.

In my invention the coupling will be effected automatically, and, although the pivot-pin will be required to be thrown back by hand in order to be set for engagement, this will be accomplished by the use of the bars extending to the side of the cars; and, further, as the pin may be set at any time before the cars have approached each other closely, there

will be no danger from this portion of the operation. The moment of danger, and when injury is very frequently received by the operator, is when the cars come into actual contact, and in my invention there will be no necessity for the operator, ordinarily, to do anything at this particular time.

In the drawings, Figure 1 is a partial plan of the adjacent ends of two cars provided with my invention. Fig. 2 is a vertical section of my invention as applied to one end of the car. Fig. 3 is a detail of the transverse shaft which supports the draw-head or outer end of the draw-bar, and affords means, by being rotated on its own axis, for varying the altitude of said draw-head.

C is the head or outer end of the draw-bar, which is adjustably connected to that portion of the draw-bar, C', which is rigidly fastened in any suitable mode to the frame of the car. A vertical slot, C², is formed centrally in the inner end of the head C, and a tongue or tenon, C³, is formed on the outer end of the fixed portion C' of said draw-bar and adapted to loosely enter the aforesaid slot C². A horizontal slot, C⁴, is formed transversely through the engaging portions C² and C³, through which is transversely inserted the pin H, which does not fill said slot laterally, and there is therefore permitted a relative movement between the parts C and C' of the draw-bar. The pin H also fits the slot sufficiently loosely to permit the vertical adjustment to the end or head C, as hereinafter described.

C⁵ is the platform, attached, in any suitable way, to the end of the car.

K is the rock-shaft, suitably journaled under the platform C⁵ at each side of the draw-head C, and, extending laterally through the latter, forms at its journal-bearings a pivotal seat for the coupling-pin B. The latter is seated in a vertical slot, C⁶, formed in the draw-head C, and is adapted to make about a quarter-revolution—from the horizontal to a vertical position. The pin B is formed in a hook shape and has its shank rigidly seated on the transverse shaft K. The latter extends each way to about the outer edge of the car, and is there provided with handles or lateral crooks K', by bearing down upon which the pin B is thrown in a vertical position, as shown in dot-

ted lines in Fig. 2. The shaft K may be straight, if preferred.

In the outer end of the draw-head C is formed the usual outwardly-diverging hole, C', for the insertion of the usual coupling-link A. On the lower end of the shank of the pin B, and beyond its pivotal seat, is formed the extension N, and the coupling of the cars is effected by turning the pin B in a vertical position, (shown in the dotted lines in Fig. 2,) when the projection N will extend below and in front of the pivotal seat of said pin, in which position, when the link A in its insertion into the head C is thrust against said projection N, it thereby rocks the pin B forward and down through said coupling-link in the position exhibited in Fig. 2. The pin B is shown perpendicular to the pivot, and when it is in the vertical position shown in the dotted lines in Fig. 2 its center of gravity will be slightly within its pivotal seat which enables said pin to remain in a vertical position until thrown forward by the concussion of the link A, as aforesaid. As the pin B is thrown forward and down, it enters and engages the link A, and the coupling is effected.

In the upper corner of the pin B is formed a vertical rest, B', which, when the pin is in the position of engagement with the link A, rests upon the top of the outer wall of the vertical slot C' in the draw-head C and sustains the pin in the position of engagement. The outer walls, S S, of the vertical slot C' above and below the outer opening, C', are so formed in relation to the outer end of the pin B when the latter is in position of engagement with the link A that said outer end of the pin B abuts against said walls S S above and below the link A, whereby the draft of said link is upon the walls of the draw-head C rather than upon the pivotal seat K of said pin. This I deem of great importance, as it necessitates only sufficient strength for the required draft to be furnished in the vertical portion of the pin B when the latter is in engagement and renders unnecessary any substantial amount of strength in the shank of said pin B or in its pivotal seat. In other words, the draft through the medium of the link A is applied to the pin B in substantially the same mode that is usually applied to the common round vertical coupling-pin.

Coupling-pins of a hooked shape and for which no exterior support is furnished, and in which, therefore, the draft is upon and across the shank of such hooks, are likely to prove insufficient in strength for the purpose intended. Coupling-pins of hook shape, having their engaging movements toward the car, are also objectionable, in that, falling toward the end of the link, the sudden withdrawal of the latter is likely to cause the hook to strike upon the top or beyond the end of said link, in which event the coupling would not be effected; but in my invention it will be perceived that the pin B falls outward into engagement with the link A at the moment that

said link has projected sufficiently within the opening in the end of the draw-bar to strike the projection N on the lower end of the shank of said pin, and said pin therefore falls so far toward the central portion of said link and into the opening thereof as to enter said opening before there has been time for the casual withdrawing of said link by the ordinary recoil of the cars. The engaging end of pin B is made sufficiently long to preclude being jarred above link A.

The description thus far has been of the operation in that car to which the free and extended end of the link A has to be attached in order to accomplish the coupling, it being understood that the link A previous to the operation of coupling has been suitably coupled at its other end to the adjacent car.

Referring, now, to the advantages of my invention in holding the link A in such adjacent end for the purpose of effecting the coupling, the position of the parts will be substantially as shown in Fig. 2. On the lower side of the opening C' is formed a transverse rib, L, on which, near its inner end, the link A is supported with its outer end elevated slightly above the horizontal, and is held in this position by its short end being engaged and held down by the pin B. Should the draw-bar C' or the adjacent draw-bar, into which it is intended to thrust the link A, be slightly lower than the draw-head in which the link is carried, as aforesaid, a slight downward pressure on the crank K' will slightly raise the vertical front of the pin B and permit the outer end of the link A to be depressed by its own gravity, its center of gravity being outside of the rib L. As the outer end of the link A is so far removed from its center of movement, L, a very slight elevation of the inner end of said link will result in a very considerable depression of the outer end thereof, and thereby a coupling can be effected with a car whose draw bar is much below the plane of that to which said link is attached, as shown. The slight upward elevation of the outer end of the link A when in its normal position is intended to facilitate the entrance of said link into a draw-bar slightly above that in which said link is carried, as aforesaid; but should it be occasionally necessary to attach to a car having a draw-bar so much higher than that in which the link A shall be carried that the latter will not automatically enter therein, it may be necessary, as now, to slightly raise the outer end of said link; but when a uniform height of draw-bars shall be established the link A will be inserted and received by my coupling without any manual assistance.

The draw-head C is supported in a duplex vertical stirrup, G, suitably attached to the end of the car by means of the transverse bar F, provided with a handle, F', upon one of its extremities, and interposed between the loop on the lower end of the stirrup G and the bottom of the draw-head C. There are four supporting-surfaces to the transverse bar F within

its journal-bearings, all of which are at different distances from the axis of rotation of said bar. The bar F is adapted to be rotated laterally in the stirrup G by means of the handle F', and by turning the different sides of the bar F upward to form the seat of the head C the latter is supported at different altitudes, and thereby means afforded for adjusting in some degree the elevation of the outer end of the head C, to adapt it for junction with the draw-heads of varied altitudes in adjacent cars.

The advantages of my invention are that the operator, in reference to the car in which the link is to be inserted, can set the coupling-pin B in the vertical position, in which it will effect its own coupling when the link A is inserted, and in reference to the car in which the coupling-link is carried for insertion, the operator, by means of the rock-shaft K, can depress instantly the outer and engaging end of the link A, and both of these operations can be accomplished without the operator exposing himself to injury by going between the cars. The adjustment provided by the bar F is secondary and is intended to be utilized on occasions when the range of elevation or depression of the outer end of the link A is not otherwise sufficient. This adjustment by means of the bar F can be made previous to the operation of the coupling, and when, therefore, there is no personal danger.

Further advantages of my invention consist in the fact that the pin B, while in the form of a hook in its operative position, when inserted in the link A is utilized for the purpose of draft precisely as is the old well-known coupling-pin, and that as my invention involves the use of the usual coupling-link, A, it is adapted to be used in conjunction with cars which thus far have been provided only with the usual link-coupling. It results, therefore, that my coupling can be used in every instance where and under the same conditions in which the ordinary link-and-pin coupling can be

used, with the additional advantage of a vertical adjustment to the draw-head C, the automatic accomplishment of the coupling, and the guidance afforded to the link A in the draw-head in which such link is carried during the process of coupling. The usual crooked link can be used in cases requiring it, as at present.

M M are steps for convenience in mounting and alighting from the platforms C^s.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the rock-shaft K, provided with end cranks on handles K', the draw-head C, provided with cross-rib L, the pin B, rigidly seated on said shaft within said draw-head, and the link A, whereby the elevation and depression of the outer end of said link can be controlled from and by said handles K', substantially as shown, and for the purpose described.

2. The combination of the stirrup G, suitably attached at one end of the car, the draw-head C, pivotally seated at its inner end, and the bar F, provided with supporting sides parallel with and at variant distances respectively from its axis of rotation and adapted to be interposed between said draw-head and stirrup and rotate on the latter, and support said draw-head at variant heights, substantially as shown, and for the purpose described.

3. The combination of the draw-bar C', projected within the inner end of the draw-head C and provided transversely with the slot C^t, the draw-head C, provided with corresponding slot C^t, and the pin H, adapted to enter but not laterally fill said slot, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB HAISH.

Witnesses:

CHARLES A. SALISBURY,
SAML. P. BRADSHAW.