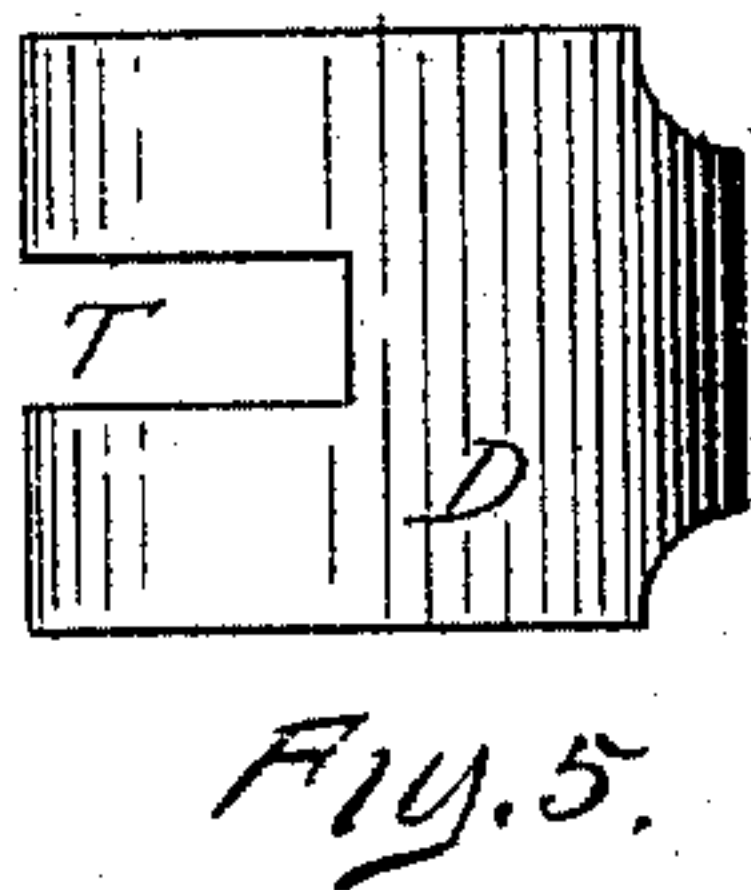
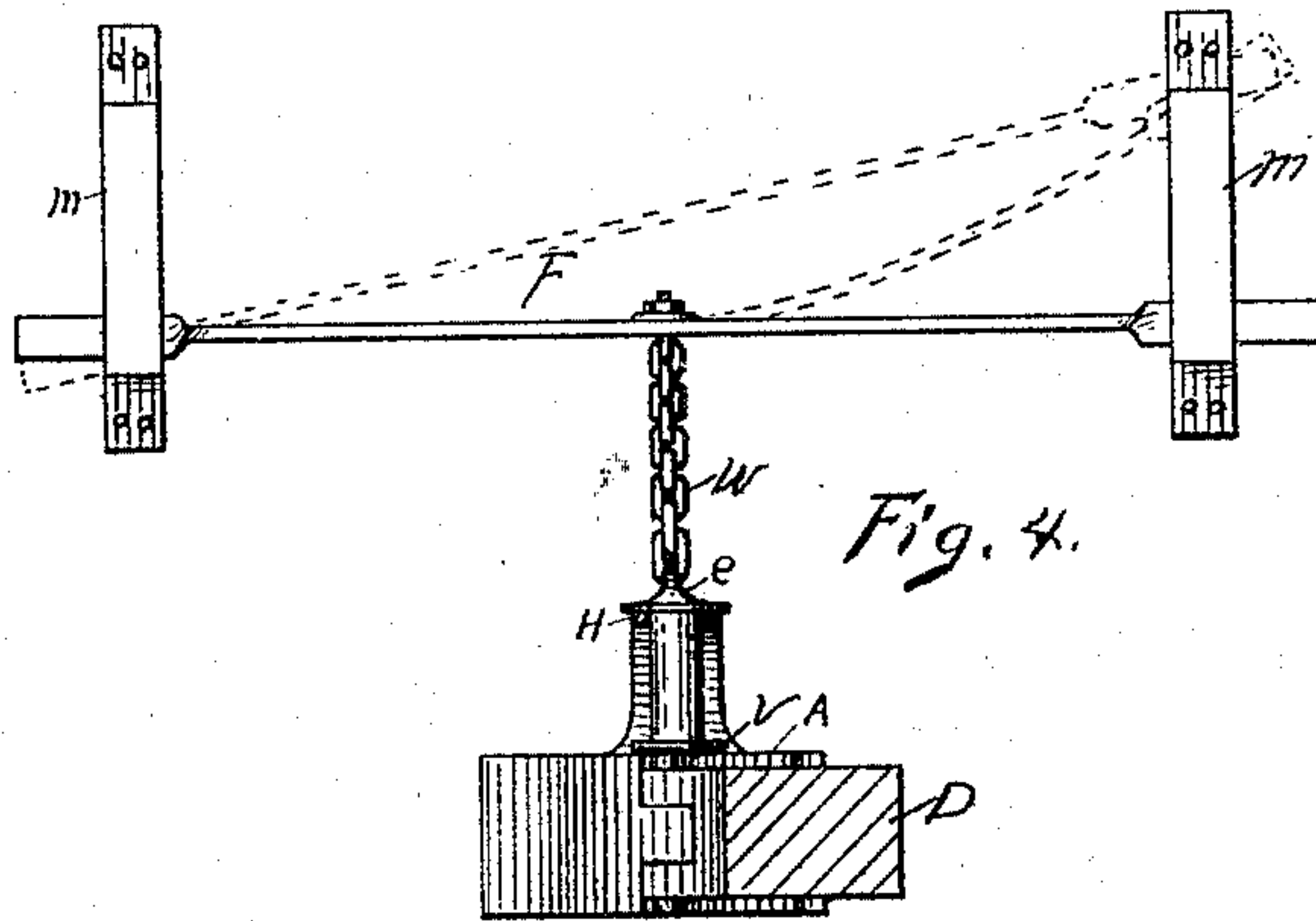
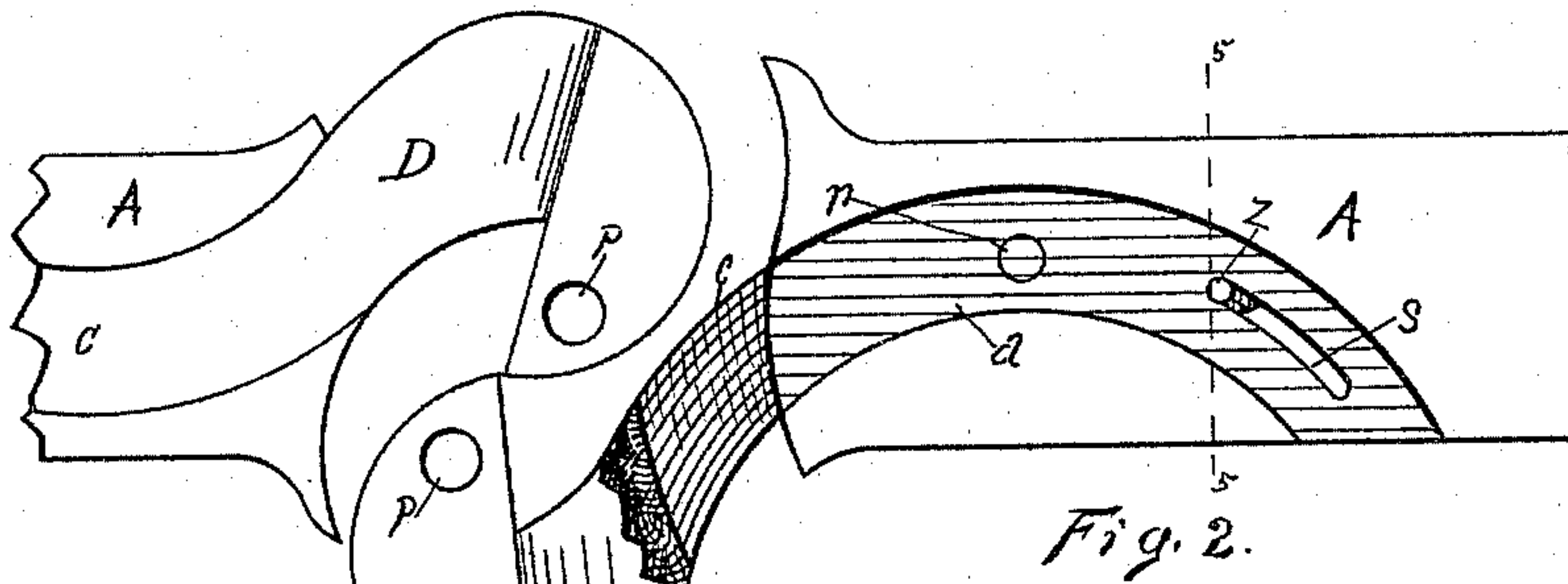
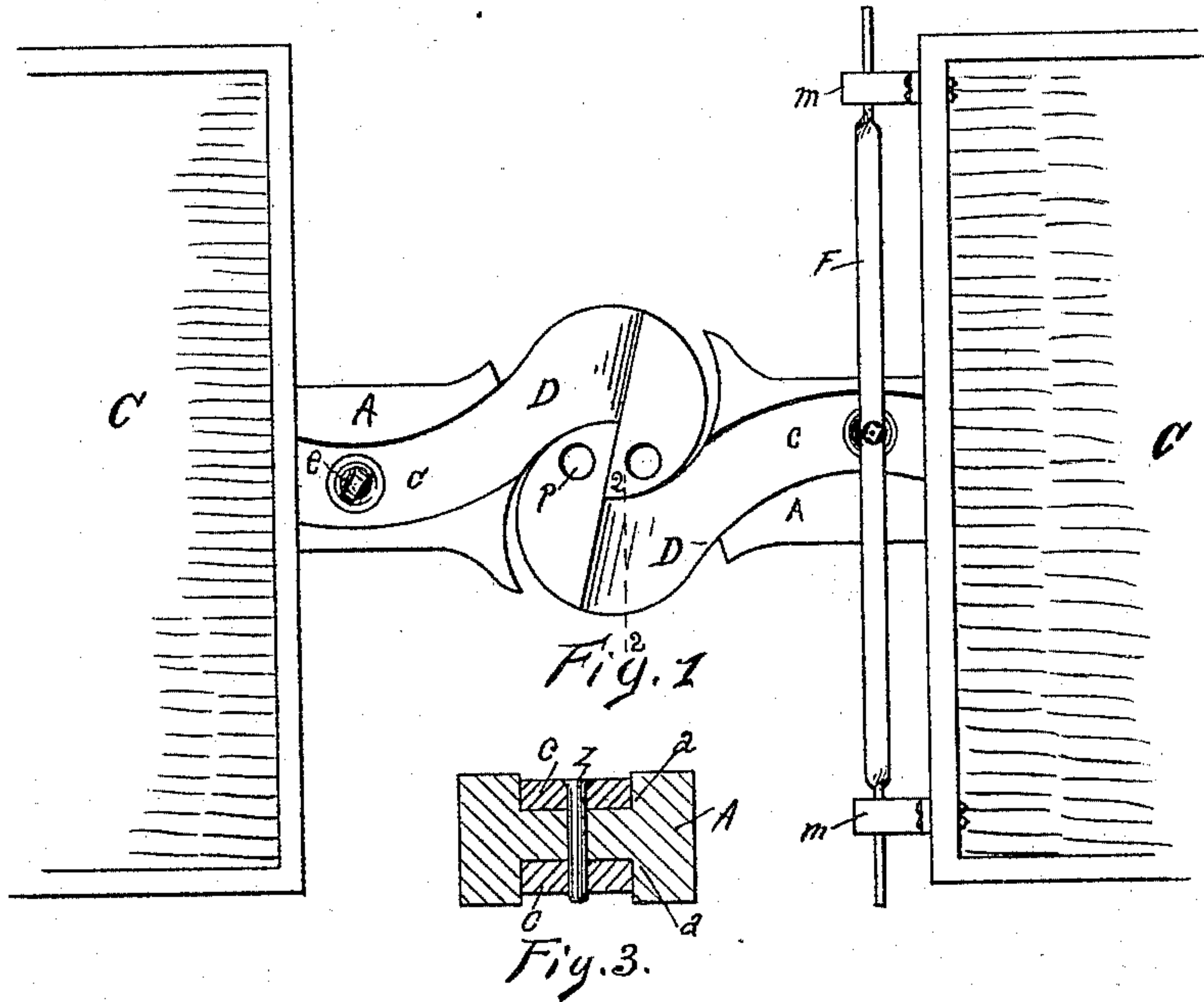


(No Model.)

T. WELCH.
CAR COUPLING.

No. 488,159.

Patented Dec. 13, 1892.



Witnesses
Clas. A. Williams,
Nicholas A. Vayne

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By Attorney Lucius C. West.

UNITED STATES PATENT OFFICE.

THOMAS WELCH, OF PAW PAW, MICHIGAN, ASSIGNOR OF ONE-HALF TO
GEORGE E. BRECK, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 488,159, dated December 13, 1892.

Application filed April 25, 1892. Serial No. 430,550. (No model.)

To all whom it may concern:

Be it known that I, THOMAS WELCH, a citizen of the United States, residing at Paw Paw, county of Van Buren, and State of Michigan, have invented a new and useful Car-Coupler, of which the following is a specification.

This invention relates to that class of car-couplers in which locking-hooks are employed attached to the draw-bars of the cars; and it has for its object the below described and claimed construction, designed to greatly simplify and increase the utility and facilitate the operation.

So simple is the invention that its general construction consists only of a draw-bar and hook having a sliding attachment thereto in a manner to move forward and back and laterally in locking and unlocking and a pin for holding the hook in its locked position.

In the drawings forming a part of this specification, Figure 1 is a plan view; Fig. 2, enlarged letter details from Fig. 1, showing the operation; Fig. 3, a cross-section on line 5 5 in Fig. 2, looking from a point at the left; Fig. 4, an enlarged section on line 2 2 in Fig. 1, looking from a point at the left; and Fig. 5 is an end of one of the hooks when looking against the end of the car.

Referring to the lettered parts of the drawings, A illustrates the draw-bars of the cars C. The upper and lower sides of these draw-bars A are provided with longitudinally-curved grooves *a*, in which grooves the rear forked ends of the hooks D have sliding bearings, as shown in Figs. 1 and 2 and more clearly in Fig. 3, the upper member of the forked end of the right-hand hook in Fig. 2 being broken away to show the upper groove *a* in the draw-bar A, said forked ends *c* of course having a curvature corresponding to that of the grooves *a*. By this means when the hooks D are drawn forward and back their forward ends will move laterally at the same time, which will be more clearly explained in the description of the operation.

The draw-bar A and the hook D at the end of one car are duplicated at the contiguous ends of the neighboring car which is to be coupled to the first-named car, and said hooks are so formed that they will lock with each other, as shown in Fig. 1, something in the

manner of locking the fingers of one hand with those of the other.

When the hooks D are in position, as when locked together, Fig. 1, said hooks are locked to the draw-bars A by pins *e e*, which pins pass down into holes *n*, through the forked members *c* of the hooks D, and through the draw-bars A, Fig. 4.

The movement of the forked ends *c* of the hooks D in the grooves *a* may be limited by any suitable means, a good way being illustrated in Figs. 2 and 3, which consists of the curved slot S, through the draw-bar A, through which is loosely passed a pin *z*, which pin is carried by the forked portions *c* of the hook. Thus when the hook is drawn out to its farthest limit the pin *z* will be in the forward end of the slot S, as in Fig. 2, and when the hook is pushed in to its farthest limit in the other direction the pin *z* will be in the other end of the slot S.

When coupling and uncoupling, the pins *e* may be drawn out of the holes *n* and inserted therein by any suitable means, a convenient means being illustrated in Figs. 1 and 4, consisting of an elastic bar F, transversely of the car and held in position by loops *m*, attached to the end of the car, and a chain *w*, (or a jointedly-connected rod,) attached to said bar F, and pin *e*, the action of which will be explained in the description of the operation.

While I have described the ends of the hooks D, which are in the grooves *a*, as being forked, these ends may be solid—that is, single, not forked—and have sliding bearings in a single curved groove or hole in the draw-bar A. However, I prefer the construction as here shown.

That part of the hook D which plays in the groove *a* should be thinner than the depth of said groove, as clearly shown in Fig. 3, so as not to have any frictional contact with the under side of the car and with any loops or straps which may be employed to hold up the draw-bars, no loops or straps being here shown. The holes *n* through the hooks are made through the thickened-up portion H on the upper side of the hook, through two opposite sides of which slots are formed, into which is loosely passed a pin *v* transversely to the pin *e*, and to which pin *e* the pin *v* is

rigidly attached, the object of which is to prevent the pin *e* from being drawn entirely out of the hole *n*.

At *P* are shown vertical holes through the ends of the hooks *D* and at *T* an open horizontal slot, the object of which is to provide for the use of an ordinary link and pin in coupling a car provided with a hook *D* to a car provided with the old-style draw-bar with which links and pins are employed in coupling.

In the operation, referring to Fig. 1, the cars are uncoupled by raising the pin *e* in one of the draw-bars *A* sufficiently far to free the hook *D*. Then as the cars are drawn apart said hook will be drawn sufficiently far out of the grooves *a* (at which time the hook moves laterally by virtue of its curved bearings) to disengage said hook from the hook of the other car, Fig. 2. During this action the lower end of the pin *e* rests on the draw-bar *A* in the bottom of the groove *a*. When coupling the cars, they are moved toward each other and the end of the drawn-out hook comes in contact with the end of the draw-bar of the other car, which action forces the drawn-out hook back into its groove *a* and laterally in the other direction, causing the hooks to lock, as in Fig. 1, at which time the pin-hole *n* of the hook will again register with the pin-hole *n* of the draw-bar and the pin *e* will automatically fall to place, as in Fig. 4. Thus the action of the cars in drawing apart and approaching each other operates the hooks and accomplishes the coupling, all the manual action necessary simply being to draw the pin *e*, as stated, when desiring to uncouple. The pin can be drawn by raising either end of the bar *F*, according to which ever side of the car the operator happens to be on. The object of making the bars *F* elastic is so that the bar will bend, as indicated by dotted lines in Fig. 4, when one end of said bar is raised and when the cars are drawing on the hooks with such a tension that the pins *e* cannot be raised until the cars are slackened, by which means the operator can run from one car to another and raise the

end of the bar *F*, catching it over a projection or ratchet on the inner face of the loop *m*, said projections not being here shown. By this means as soon as the cars slacken the pin *e* will be released and the bar *F* will straighten from its elasticity and draw said pin, thus making it unnecessary for the operator to wait at each car until they slacken.

I have described the grooves and the ends of the draw-bars in said grooves as being curved; but these cam connections may be in other forms or angles so long as the hooks have the longitudinal and lateral movements.

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

1. A car-coupler comprising draw-bars provided with longitudinal curved grooves in their upper and lower sides, hooks having longitudinal curved forked ends which have sliding bearings in said curved grooves, and pins for locking said hooks to the draw-bars when the cars are coupled, substantially as set forth.

2. The combination of the draw-bars having the longitudinal curved grooves, the hooks having the longitudinally-curved ends in the curved grooves, pins for locking said hooks to the draw-bars when the hooks are locked together, the elastic bar attached to the end of the car, and a chain or the like attaching said bar and pin, substantially as set forth.

3. The combination of the draw-bars of cars, automatic coupling devices attached to said draw-bars, means for locking said coupling devices, and springs connecting with said locking devices and with the cars, whereby the recoil of said springs releases said locks when the cars are slackened, substantially as set forth.

In testimony to the foregoing I have hereto subscribed my name in the presence of two witnesses.

THOMAS WELCH.

Witnesses:

N. G. LESLIE,
JOHN GALLIGAN.