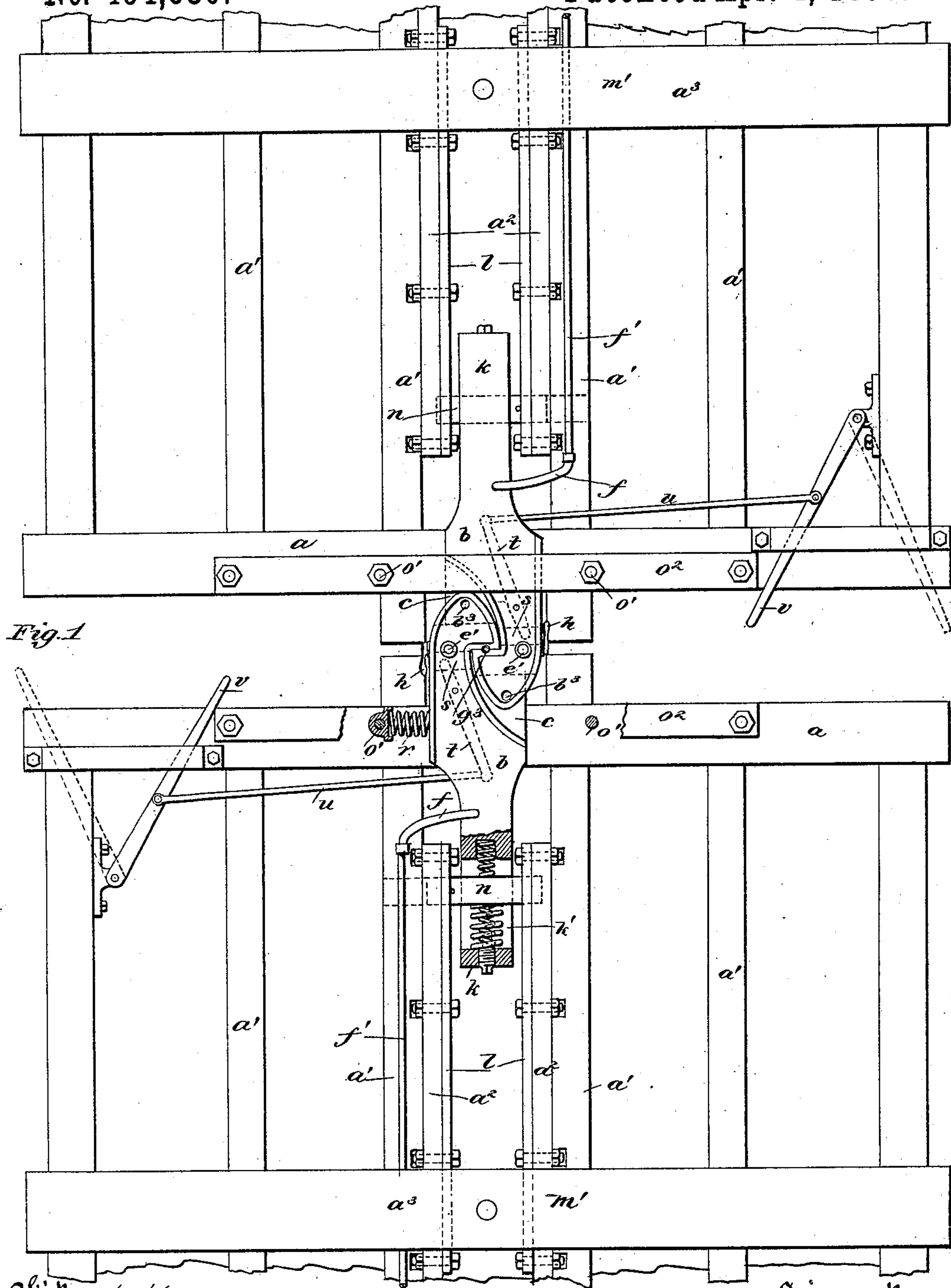


R. N. ERVIN.  
CAR COUPLING.

No. 494,630.

Patented Apr. 4, 1893.



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Fig. 2

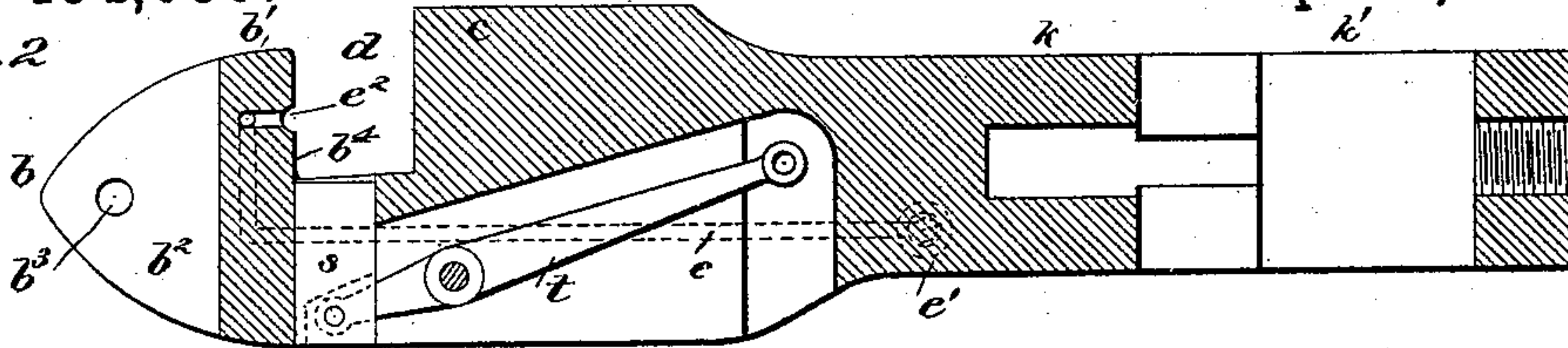


Fig. 3

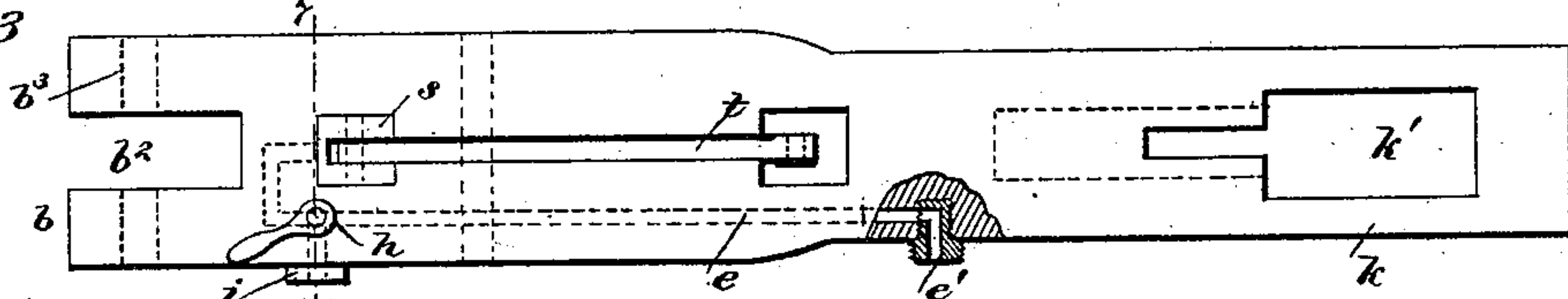


Fig. 4

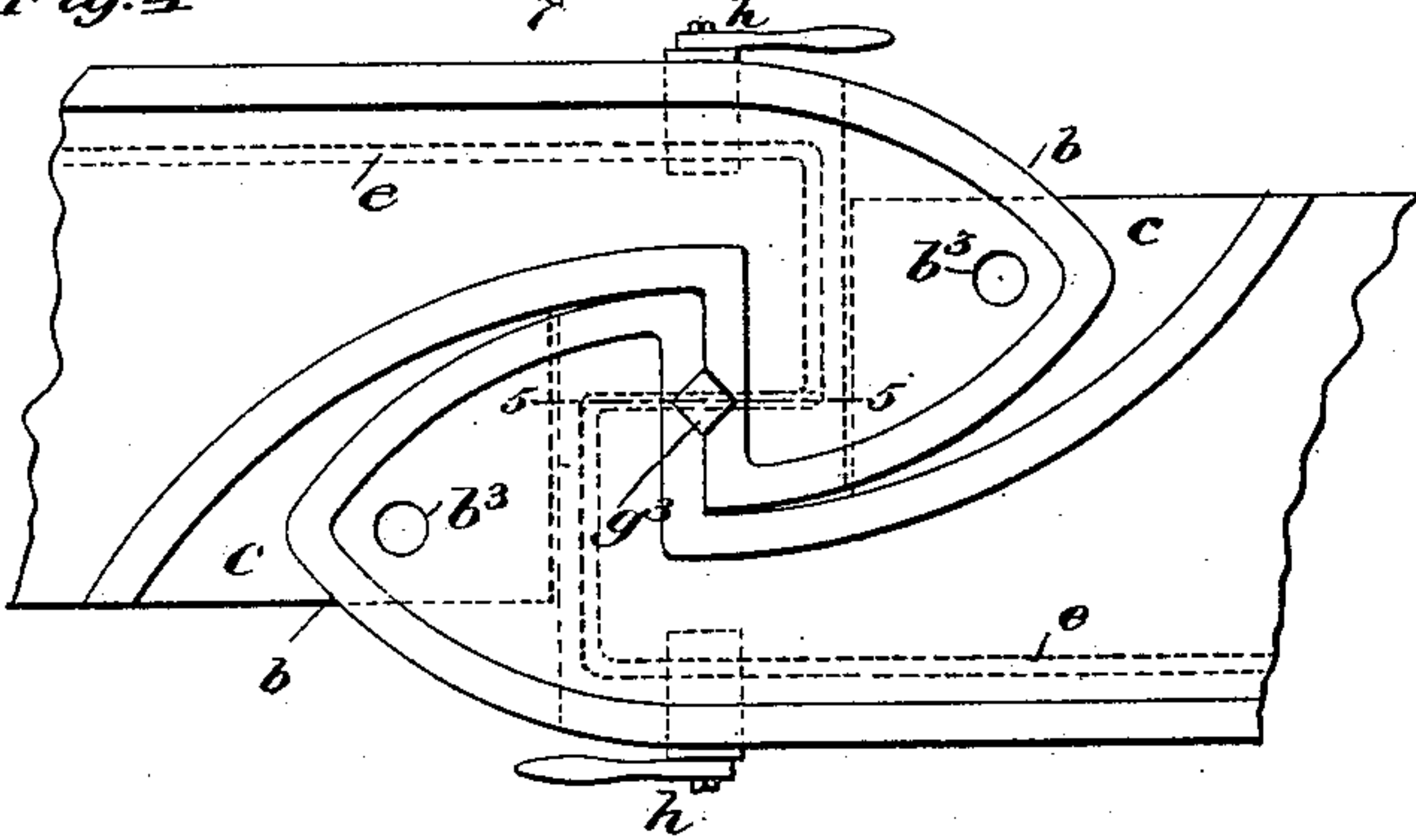


Fig. 5

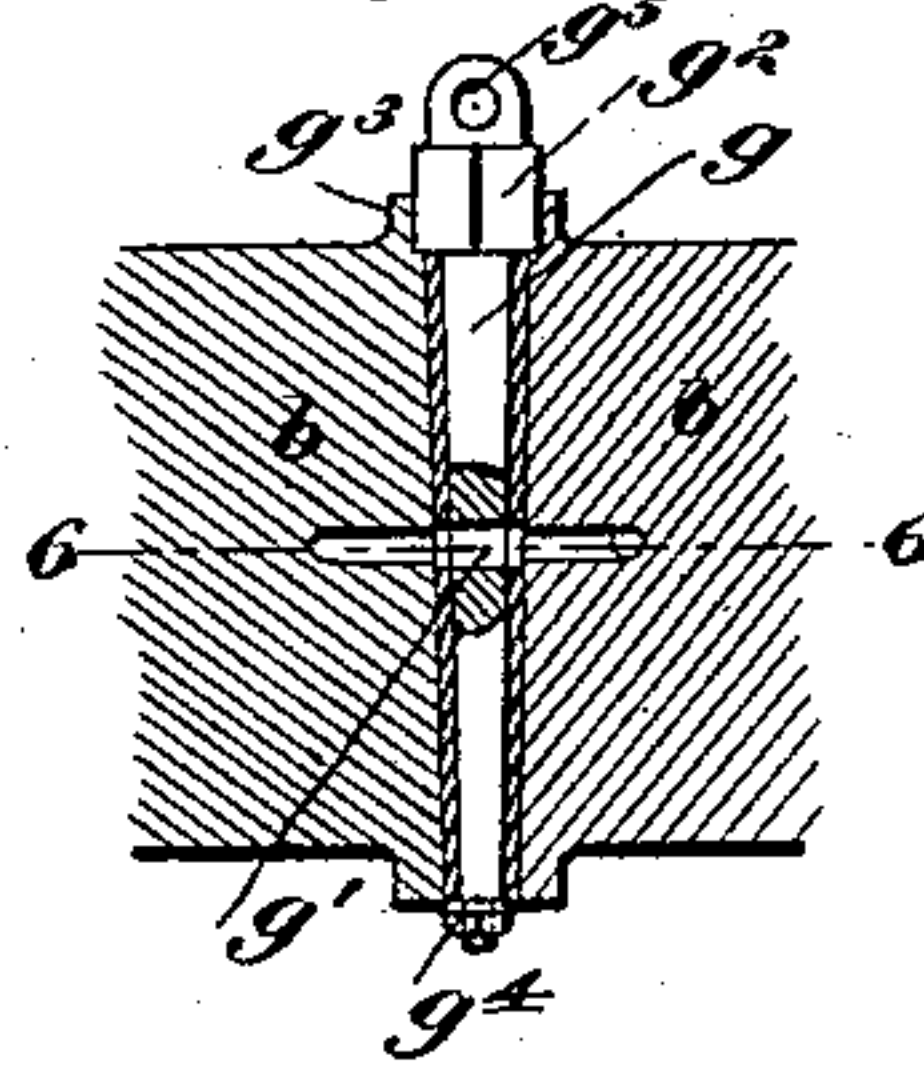


Fig. 6

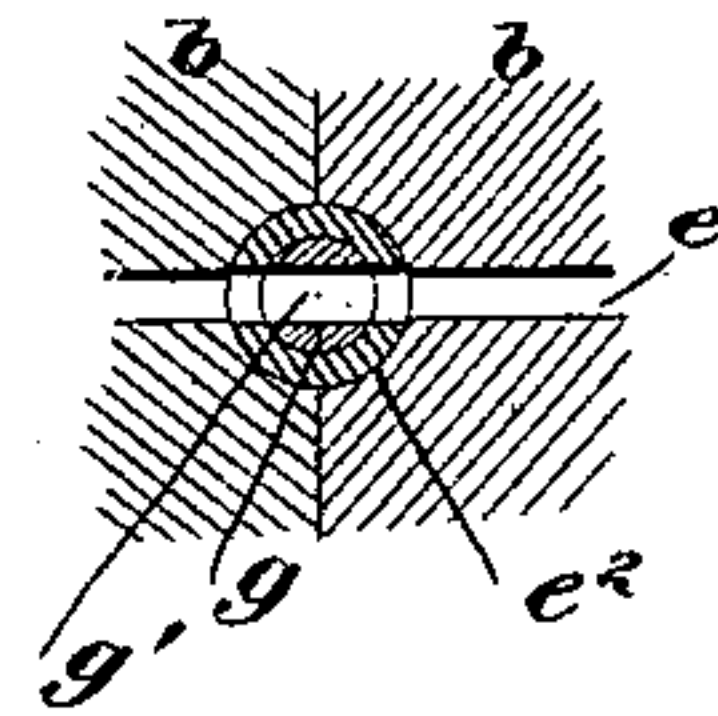


Fig. 7

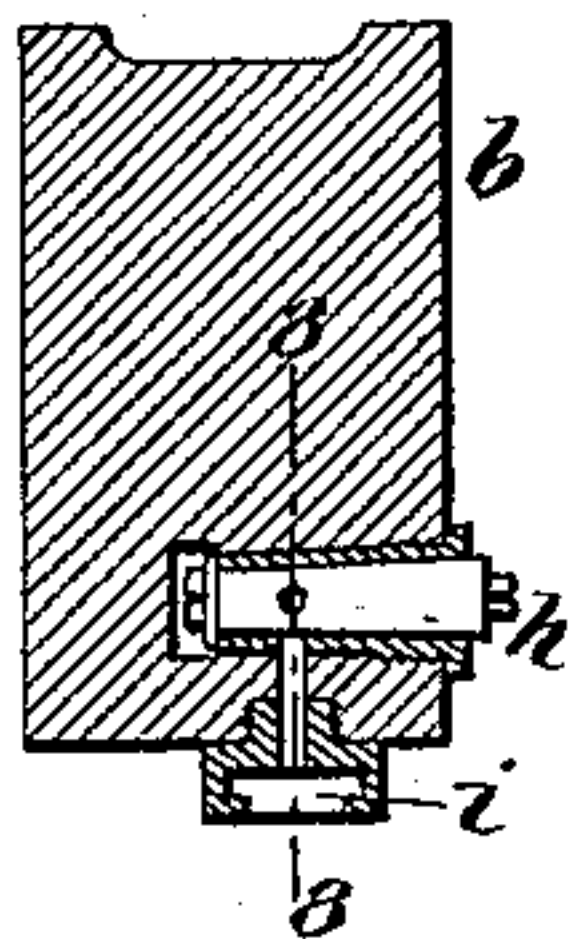


Fig. 8

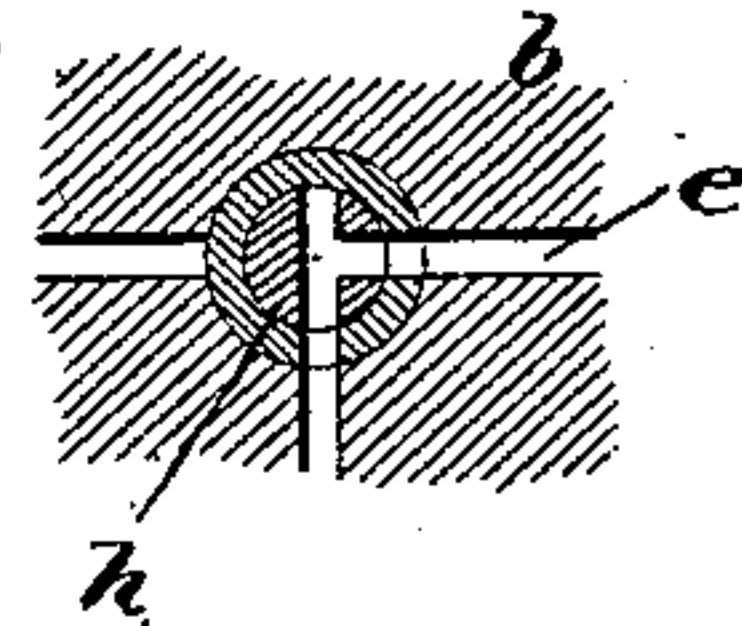


Fig. 9

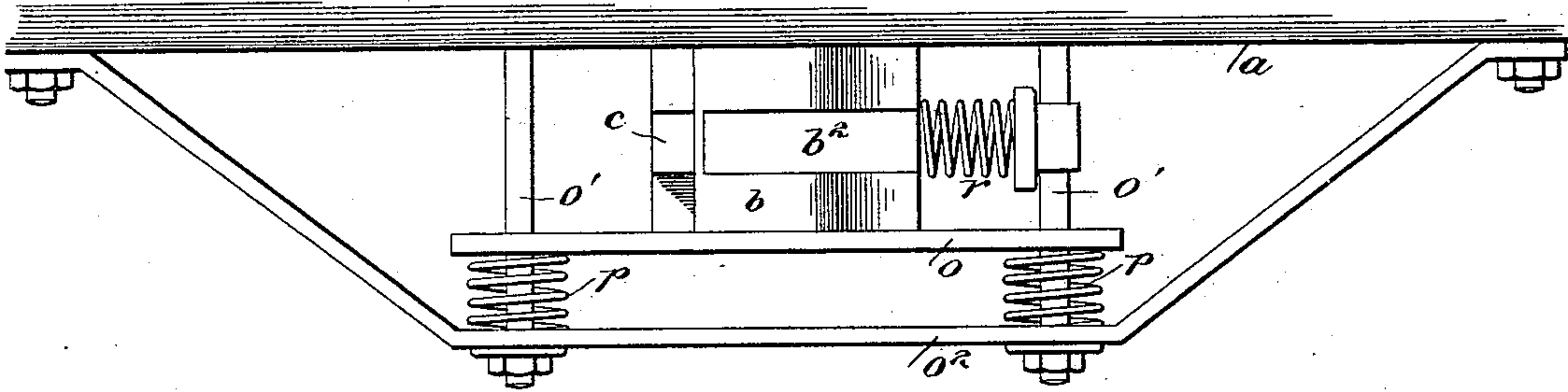
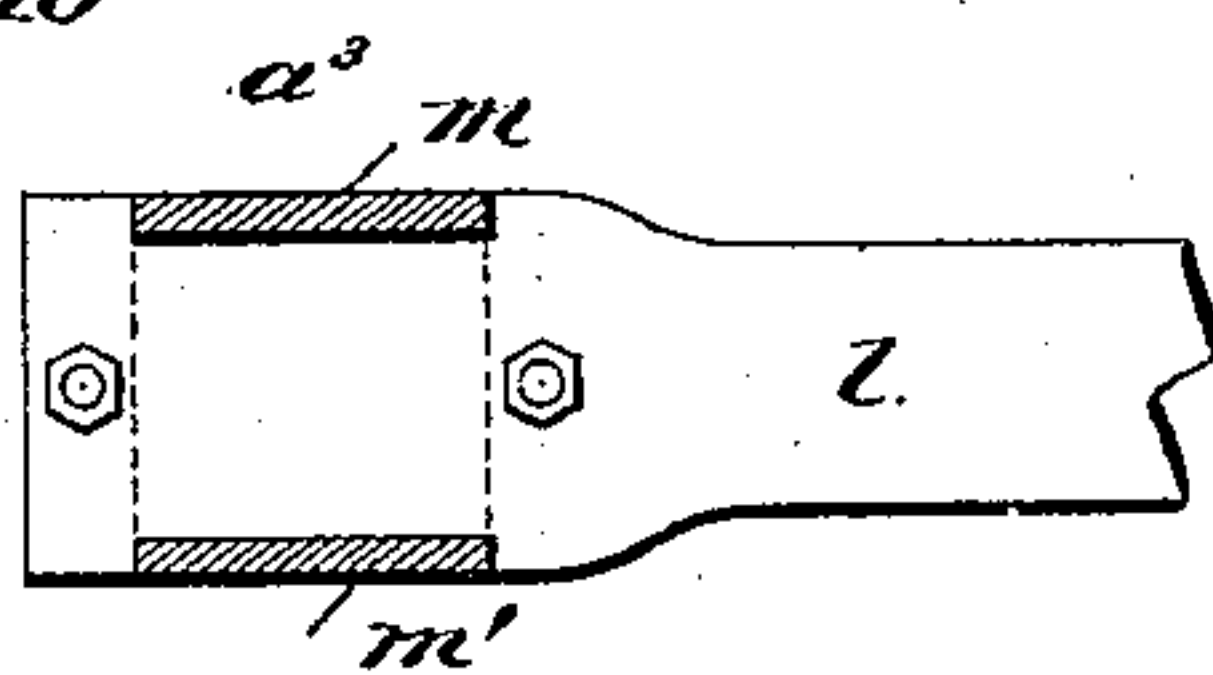


Fig. 10



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# UNITED STATES PATENT OFFICE.

ROBERT N. ERVIN, OF TEMPLE, TEXAS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 494,630, dated April 4, 1893.

Application filed October 28, 1892. Serial No. 450,198. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT N. ERVIN, a citizen of the United States, residing at Temple, in the county of Bell and State of Texas, have invented a certain new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

This invention relates to the construction of a car-coupling of the form known as vertical hook couplings, and more particularly to such couplings which also constitute the connections between cars for the train pipes of air-brakes.

In my invention the drawheads are provided with interlocking tongues to prevent the disconnection of the drawheads by vertical movement; the interlocking faces of the drawheads are provided with sockets to receive a plug for completing the air passage for the train pipes; the drawheads are provided with means for receiving the ordinary hose-coupling on cars not provided with my drawhead, and finally, other features of my invention are the means for securing the drawhead to the car and for uncoupling.

I have thus stated briefly the principle of my invention, and will proceed now to describe it in detail, setting forth the best mode in which I have contemplated applying that principle, and then will particularly point out and distinctly claim the part, improvement or combination which I claim as my invention.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a bottom plan view of the meeting ends of two cars coupled. Fig. 2 is a horizontal section, and Fig. 3 a side elevation of a drawhead. Fig. 4 is a plan view on a larger scale, of the hooks coupled, the push-pieces of Figs. 2 and 3, which may or may not be employed being omitted from this figure. Fig. 5 is a section taken in the plane of line 5—5 of Fig. 4. Fig. 6 is a horizontal section taken in the plane of line 6—6 of Fig. 5, and on a larger scale. Fig. 7 is a section taken in the plane of line 7—7 of Fig. 3. Fig. 8 is a horizontal section taken in the plane of line 8—8 of Fig. 7, and on a larger scale. Fig. 9 is a front elevation. Fig. 10 is a sectional elevation show-

ing the manner of connecting the side-bars with the body-bolster.

The end sill  $a$ , body sills  $a'$ , draw-timbers  $a^2$ , when employed, and body-bolster  $a^3$  may be of usual construction and arrangement. Each drawhead  $b$  is made with the hook  $b'$ , which has its nose recessed transversely at  $b^2$  for the purposes of receiving the tongue  $c$  of an adjacent coupling to prevent vertical displacement of the drawheads and of receiving the link of an ordinary link and pin coupling, a hole  $b^3$  being provided for the pin, and furthermore, the bottoms of these recesses serve to arrest the lengthwise movement of the couplings and so prevent their longitudinal displacement. The notch  $d$  is provided between the tongue  $c$  and the face  $b^4$  of the drawhead to receive the hook of an adjacent coupling.

As shown in Fig. 4, the hooks of adjacent drawheads when coupled interlock to hold the parts endwise, and the respective tongues enter the recesses  $b^2$  and so prevent the vertical separation of the drawheads, and thereby overcome a difficulty and avoid an objection that are present in ordinary couplings.

The drawhead is provided with a hole  $e$ , one end of which is supplied with a nipple  $e'$  to receive any suitable coupling device  $f$  of the train-pipe  $f'$  (see Fig. 1) of an ordinary air-brake system; and the other end of this hole opens into a vertical tapering socket  $e^2$  in the interlocking face  $b^4$  of the hook. When the hooks are interlocked the sockets  $e^2$  of the adjacent faces complete a seat for a plug  $g$ , having a straight-way port  $g'$  to make the holes  $e$  continuous from car to car. The preferred form of plug consists of a metal core having a surrounding jacket or rubber or other suitable packing, and in order to prevent the plug from turning, it may have an angular head  $g^2$  to fit a corresponding socket  $g^3$  formed in the adjacent parts of the hooks. The packing may be held to the core from endwise movement by a nut and washer, as shown at  $g^4$  Fig. 5. The plug may have an eye  $g^5$  by which it may be chained to the car. Each drawhead is provided with a suitable three-way plug, cock or valve  $h$  arranged in the air-passage  $e$  and serving to open and close



such passage and to communicate with a coupling *i*, of any approved construction, by means of which a car not supplied with my apparatus but containing the ordinary hose coupling may be coupled up with my system. These details are shown in Figs. 7 and 8.

The shank or drawbar *k* is shorter than usual and is provided with a transverse slot *k'*. Side-bars *l* having notched ends to receive the upper and lower members *m* and *m'* of the ordinary body bolster (see Fig. 10) extend from such bolster between the sills or draw-timbers forward to the shank and are connected with such shank by a cross-pin or key *n*. These side-bars may be bolted to the draw-timbers or sills, as shown in Fig. 1, or held in place in other suitable manner. In order to secure the necessary play of the drawhead it is secured loosely between the side-bars, and springs are interposed on either side of the pin or key, substantially as shown in Fig. 1.

It will be observed from Fig. 1, that the drawheads are close up to the dead-blocks or bumpers, and hence the force of approaching cars is largely removed from the drawheads, and expended upon the dead-blocks or bumpers.

The drawhead is supported on the front sill by a movable or floating plate *o*, rods or bolts *o'* and a bracket *o''*, the latter being bolted to the front sill, as clearly shown in Fig. 9. Springs *p*, *p*, are interposed between the plate *o* and the bracket to allow the requisite vertical yield to the drawhead and to render plate *o* movable or floating. A side spring *r* is applied to the back of the drawhead to force it toward its mate when coupled.

For uncoupling purposes, the drawhead is supplied with a transverse cavity opposite the notch *d*, in which is arranged a push-piece or block *s*, and this push-piece is jointed to a lever *t* which is fulcrumed in a longitudinal recess in the drawhead so that by vibrating it the push-piece is moved into and out of the notch *d*. By arranging the push-piece *s* and its lever *t* within the drawhead, I avoid their exposure to damage. The lever *t* is connected by a rod *u* with a hand-lever *v* at the side of the car so as to provide for its ready operation. Any suitable means may be used to lock the lever *v*, and consequently the push-piece, in any given position, as, for example, to project the push-piece so as to prevent cars from coupling. It will be observed that when the hooks of opposite cars are interlocked, and if it is desired to release them, it is necessary only to project the push-piece of one or the other coupling, and it acting forcibly against the opposite coupling will disconnect the hooks.

I do not limit my invention in car-couplings proper to the combination therewith of the air-brake features; neither do I restrict my

invention to the means used for securing the drawhead to the car. With these reservations, I will proceed to state certain advantages or results following the use of my invention: The drawhead applied as shown will not pull out, and hence one source of wrecks and collisions by parts of broken trains coming together is overcome. It is safe for the trainmen in coupling and uncoupling. It is impossible for the coupling to part by one car dropping lower than the other. There is a great reduction in the number of parts over the ordinary coupling and draw-rigging, and consequent strengthening, simplification and economy of the construction, and finally, by combining the air hose with the car-coupling the dangers incident to the bursting and loss of ordinary couplings and their expense are avoided.

What I claim is—

1. In a car coupling, the drawhead having a hook provided with a recessed nose and a tongue back of the hooks, the tongues of adjacent drawheads being adapted to enter the recessed noses of the hook of the drawheads to prevent vertical displacement, and having a limited longitudinal movement to prevent displacement lengthwise of the coupling, substantially as described.

2. In a car-coupling, the drawhead provided with a hook and passages for continuing the train-pipe of the air-brake system from one car to another, and having a recess in the face of such hook to receive a removable plug between two similar and connected drawheads to complete such air-passage from one drawhead to another, substantially as described.

3. In a car coupling, the drawhead provided with a hook and passages for continuing the train-pipe of the air-brake system from one car to another, and having a recess in the face of such hook to receive a removable plug between two similar and connected drawheads to complete such air passage from one drawhead to another, combined with the cock or valve *h* for opening and closing such air-passages, substantially as described.

4. In a car-coupling which is provided with air-passages for coupling the train-pipes of an air-brake system, the half hose-coupling *i* to receive the other half of a hose-coupling of ordinary construction, substantially as described.

5. In a car-coupling of the vertical hook variety, a sliding push-piece *s* arranged in a transverse cavity in the drawhead and in line with the notch of the hook, and a lever arranged in a longitudinal recess in said drawhead and connected with such push-piece to move said push-piece to uncouple the drawheads, substantially as described.

6. In a car coupling, the drawhead, combined with the movable or floating hanger-plate *o*, rods or bolts *o'*, springs *p* arranged



on said rods and beneath the hanger-plate, and the bracket  $o^2$  secured to the front sill and engaging the rods and supporting the springs, substantially as described.

5 7. In a car coupling, the drawhead having a transversely recessed or slotted drawbar or shank, combined with side-bars  $l, l$ , rigidly secured to the car-timbers and the body bolster and pinned to said drawbar to permit

the necessary movement of said drawbar, substantially as described.

In testimony whereof I have hereunto set my hand this 1st day of October, A. D. 1892.

ROBERT N. ERVIN.

Witnesses:

WM. H. FINCKEL,  
E. A. FINCKEL.