

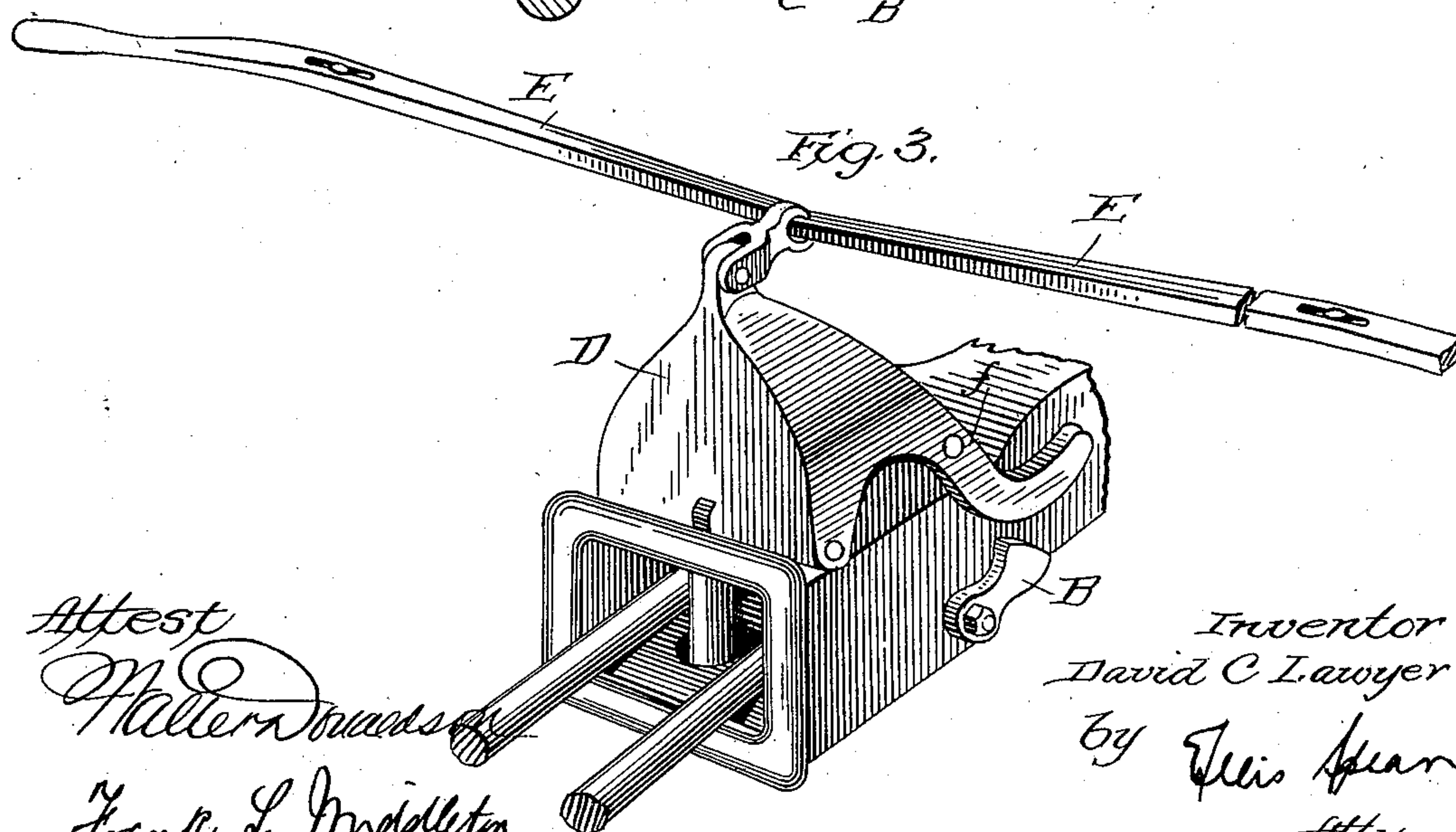
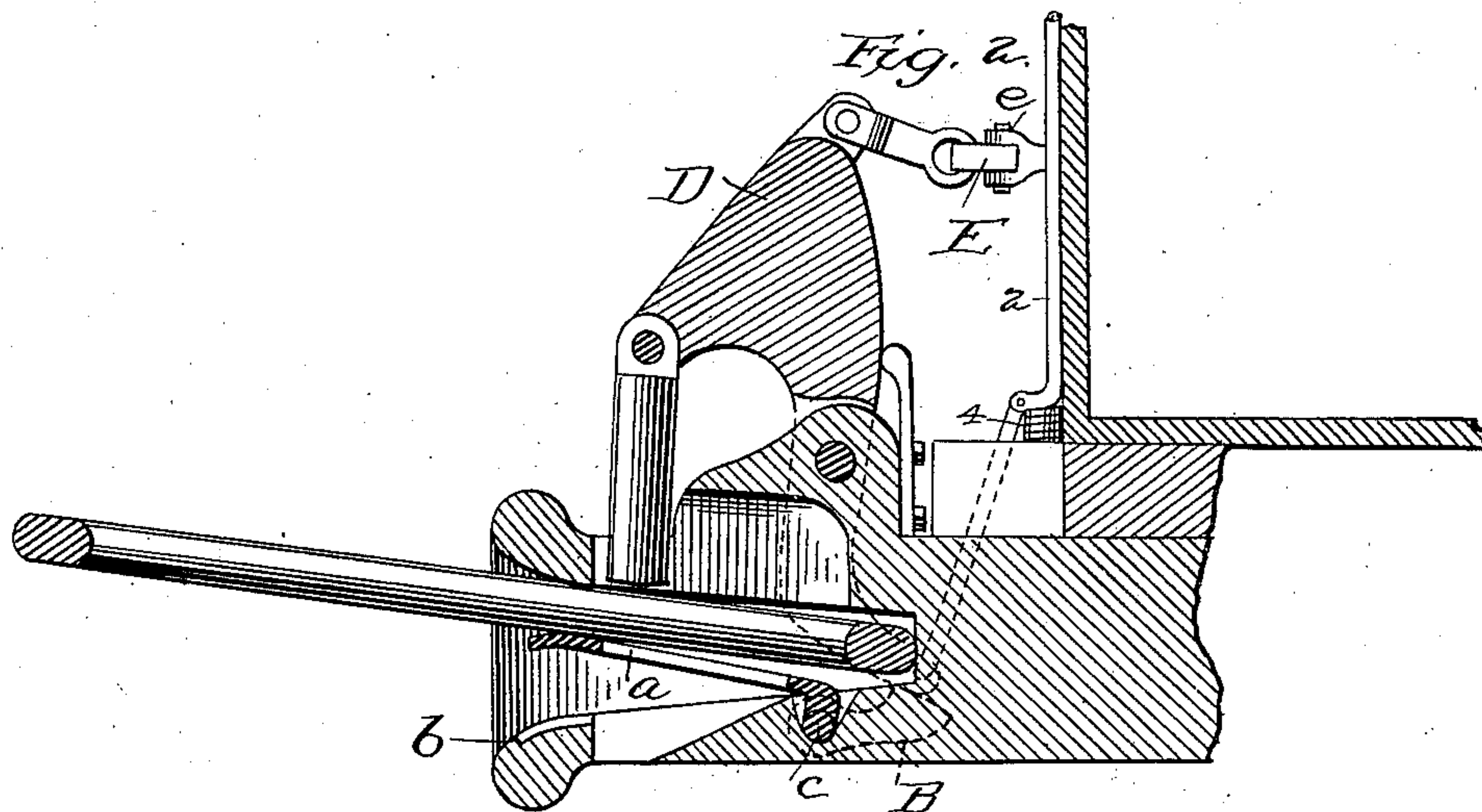
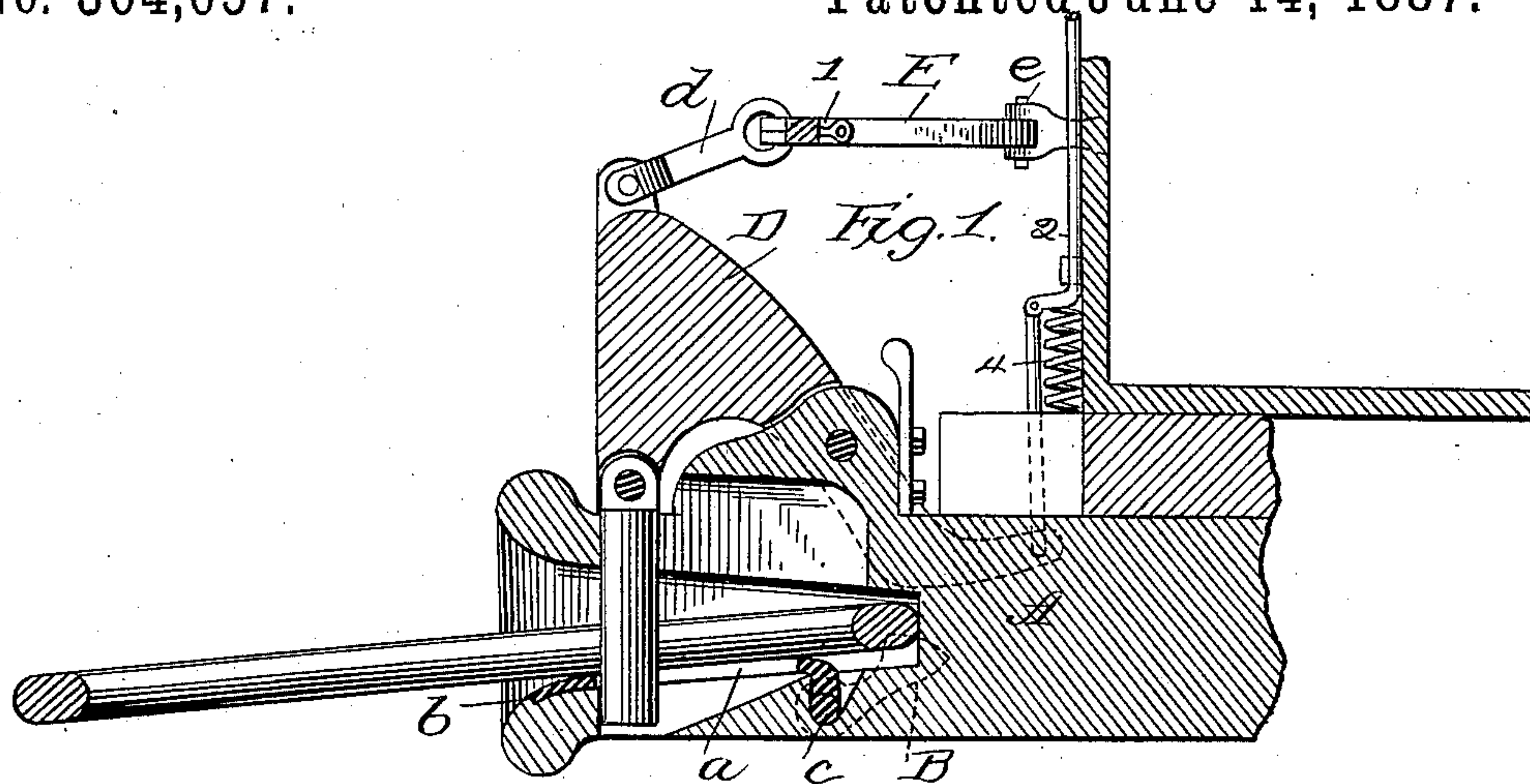
(No Model.)

D. C. LAWYER.

CAR COUPLING.

No. 364,657.

Patented June 14, 1887.



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# UNITED STATES PATENT OFFICE.

DAVID C. LAWYER, OF MINERAL SPRINGS, NEW YORK.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 364,657, dated June 14, 1887.

Application filed March 16, 1887. Serial No. 231,174. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID C. LAWYER, of Mineral Springs, in the county of Schoharie and State of New York, have invented a new and useful Improvement in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to an automatic coupling for railway-cars, and includes in one set of mechanism special means for automatic coupling of the cars and special means for raising the link, both operated through the same system of levers, the object being to provide a mechanism by which the cars may be coupled either from the side or from the top of the car, and in connection with this and incidentally to the mechanism is included also the function of uncoupling from the same positions.

Special constructions which constitute the invention are hereinafter described, and are particularly pointed out in the claims.

In the accompanying drawings, which illustrate the invention, Figure 1 is a longitudinal section through the draw-head, the parts being in normal position. Fig. 2 is a similar view, the pin and link being elevated. Fig. 3 is a perspective view.

In the drawings, A represents the draw-head, of an ordinary construction as far as concerns its external form and the flaring mouth. The cavity adapted to receive the link is countersunk within to receive the tongue *a*, which, when lying in the countersink, has its free edge behind the ridge *b* in the lower part of the mouth, so as to be flush with or a little below the surface of said ridge, so that the link when entering will not strike the front end of the tongue. The tongue is pivoted upon small pivots or trunnions *c*, which extend laterally through the walls of the draw-head, and on the outside are fixed two rearwardly-extending arms, B B. The rear ends of these are beveled downward, and when these arms are depressed the tongue is lifted, the forward end rising against the link, while the rear end of the link is held in the rear and lower part of the mouth of the draw-head. By this means the front end of the link may be lifted for the purpose of entering the mouth of the draw-head of a car which is to be coupled. The tongue may be of sheet iron or steel, and when lying flat on the bottom offers no obstruction

to the entrance of the link. A hole in the tongue registers with a pin-hole in the bottom of the draw-head and is in line with the pin-hole in the top of the draw-head. The hole in the upper part of the draw-head is enlarged in the form of a slot extending rearwardly, and widened from the upper surface down. The hole in the lower part of the draw-head is also slotted to the rear in like manner, so that the pin may be swung back by the link, which pushes the pin as the link enters, the pin being pivoted in the slot, as hereinafter described. The link having passed the end of the pin, the weight of the pin causes it to drop within the link, and when the link is drawn forward it engages with the pin in the manner heretofore known in this class of couplings.

Heretofore, so far as I am aware, swinging pins have either been pivoted in the draw-head itself or in a spring-arm to simplify the construction and to provide means for holding the pin down, and for convenient removal I pivot on the top of the draw-head by its rear edge a block, preferably of cast-iron, marked D. The under surface is shown as curved to fit over the draw-head, and centrally in the front edge is pivoted a pin on a transverse pivot, by means of which it may be swung forward and back in line with the draw-head. When the block is down, with its front edge resting on the draw-head, the pin is in place in the draw-head, and the parts are so arranged that the front surface of the pin will bear against the front surface of the hole in the draw-head, so that the strain will be on the draw-head itself. The upper edge of the block is provided with ears, in which is pivoted a link, *d*, adapted to swing in vertical plane in the block.

The rear end of the link has a horizontal slot, in which are pivoted the inner ends of a pair of levers, E E. These levers are journaled in studs *e e*, the pivoted pins passing through slots in the levers to allow for endwise movement of the levers when the block is thrown forward and backward. The levers extend sufficiently to the outside to allow them to be grasped and moved, and by movement of the levers the block is thrown forward or backward to lift out the pin for uncoupling or for throwing it down in the slot of the draw-head for readiness in coupling. The levers



plainly are for operating the coupling-pins from either side of the car. The cord or chain may be attached to the block or to the levers at 1, and extends to the top of the car, so that the coupling may be operated from the top as well as from the side.

It will be understood that the weight of the block is sufficient to hold the pin down. In the ordinary movements and joltings of the cars it also serves to cover the slot and to prevent any obstruction from lodging therein which would hinder the free operation of the coupling-pins.

The block is pivoted by means of arms *f f*, which extend down on each side of the draw-head. When the block is thrown forward and the pin is in position for coupling, these arms extend behind the arms on the end of the trunnions which carry the tongue; but the ends of the block-arms are formed, as shown, so that when the block is lifted to raise the pin the block-arms move forward over the arms on the tongue-trunnions. The parts are so arranged that the block may be lifted sufficiently to raise the pin without raising the tongue; but a further movement of the block to the rear will cause the block-arm to move forward sufficiently to lift the forward end of the tongue and raise the link in proper position in coupling an opposite car. This construction, it will be observed, therefore allows the levers to be used both to raise the block and to remove the pin, and also to lift the link, thus simplifying the parts, none of which are liable to get out of repair or are expensive to make.

I am aware that various kinds of loops have been used to raise the link for the purpose above described, and I am also aware that laterally-extending levers have been used for the purpose of controlling the coupling and uncoupling from the side of the cars.

Various forms of catch mechanism have been devised, as is well known.

My improved coupling is designed, principally, for freight-cars; but of course I do not limit the use of it to that kind of cars.

Instead of a rope or chain extending to the top of the car, an operating-rod, 2, may be employed having suitable link-connections with the rearward extension of the block-arms. A spring (shown at 4) serves to keep the rod in normal position and takes the weight from the block-arm.

I claim as my invention—

1. In combination with a draw-head, the pivoted block arranged to swing forward over the draw-head, the pin pivoted on its forward edge, and the levers *E*, pivoted on the car and connected to the upper edge of the block by means of a link, said levers having back-and-forth motion by means of slots at their pivoted points, substantially as described.

2. In combination with the block, its pin pivoted in front edge thereof, and a draw-head slotted to receive the pin of arm *f* on the block arranged to engage with the arms of the pivoted tongue, substantially as described.

3. In combination with the draw-head having its countersunk cavity, a ridge on the front lower surface, the tongue *a*, slotted to receive the pin, provided with pivoted trunnions, and rearwardly-extending arms on the lower edge of the trunnions, and the arms *f* on the pivoted block, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID C. LAWYER.

Witnesses:

JOHN B. THOMPSON,  
FRANK L. MIDDLETON.