

(No Model.)

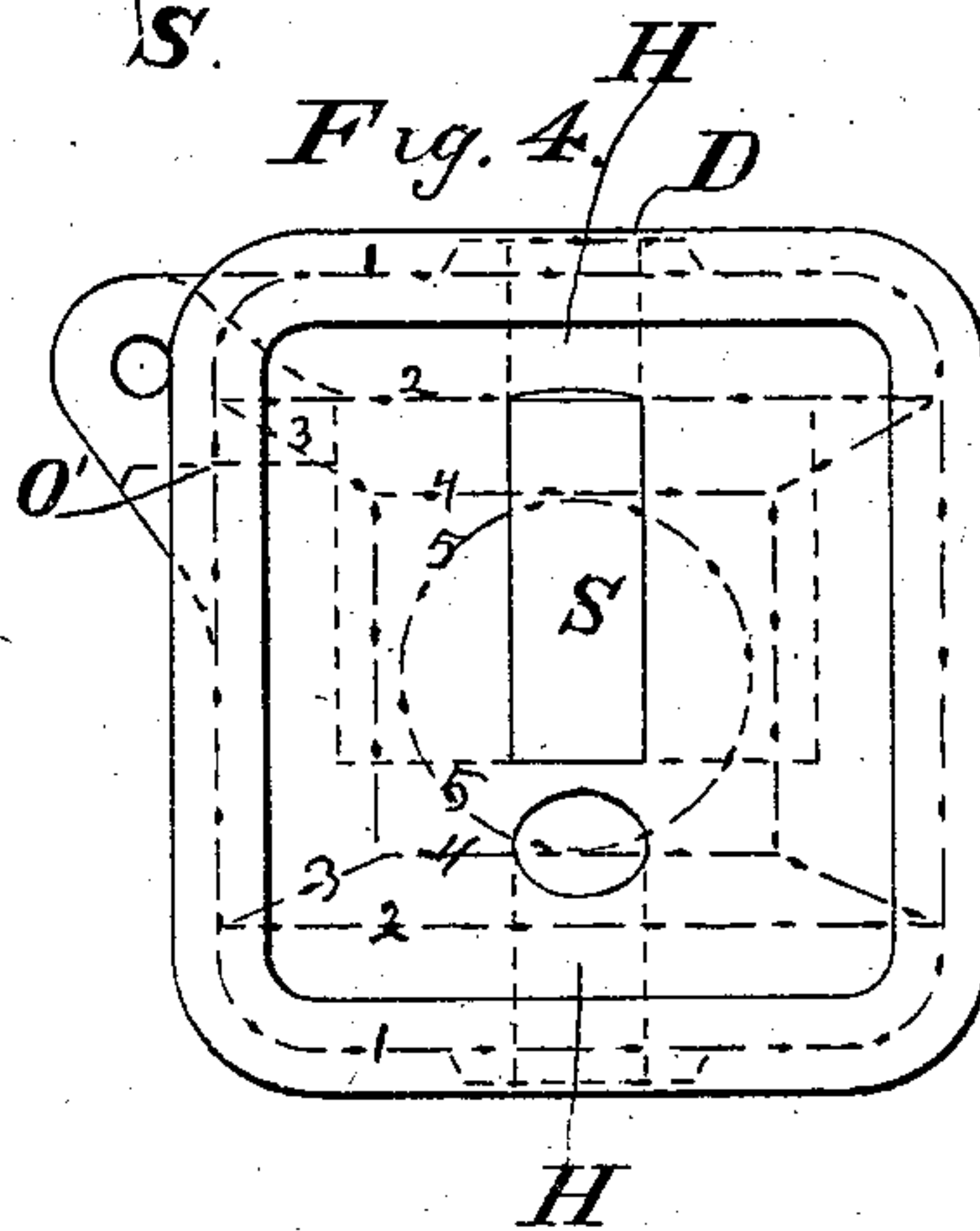
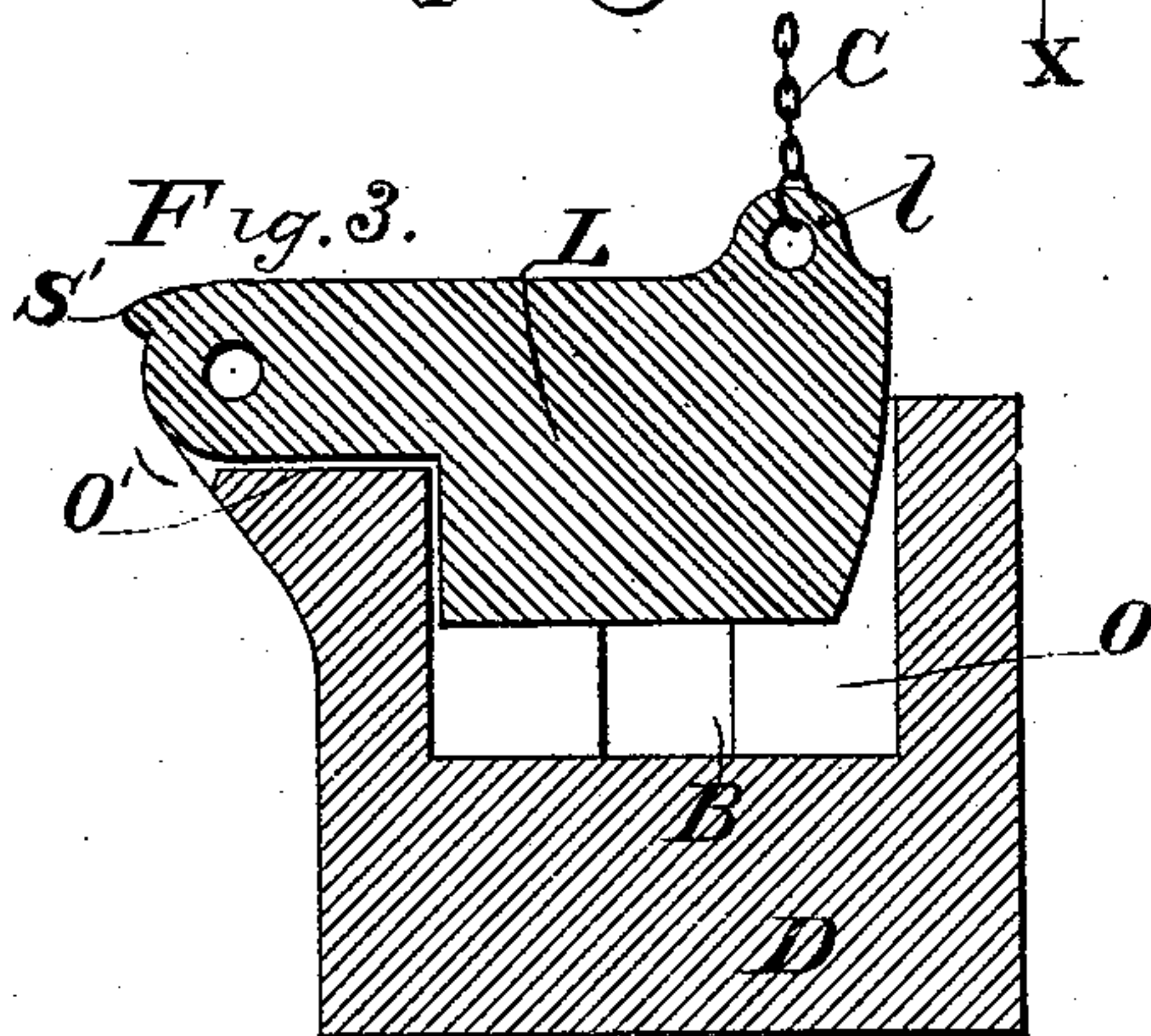
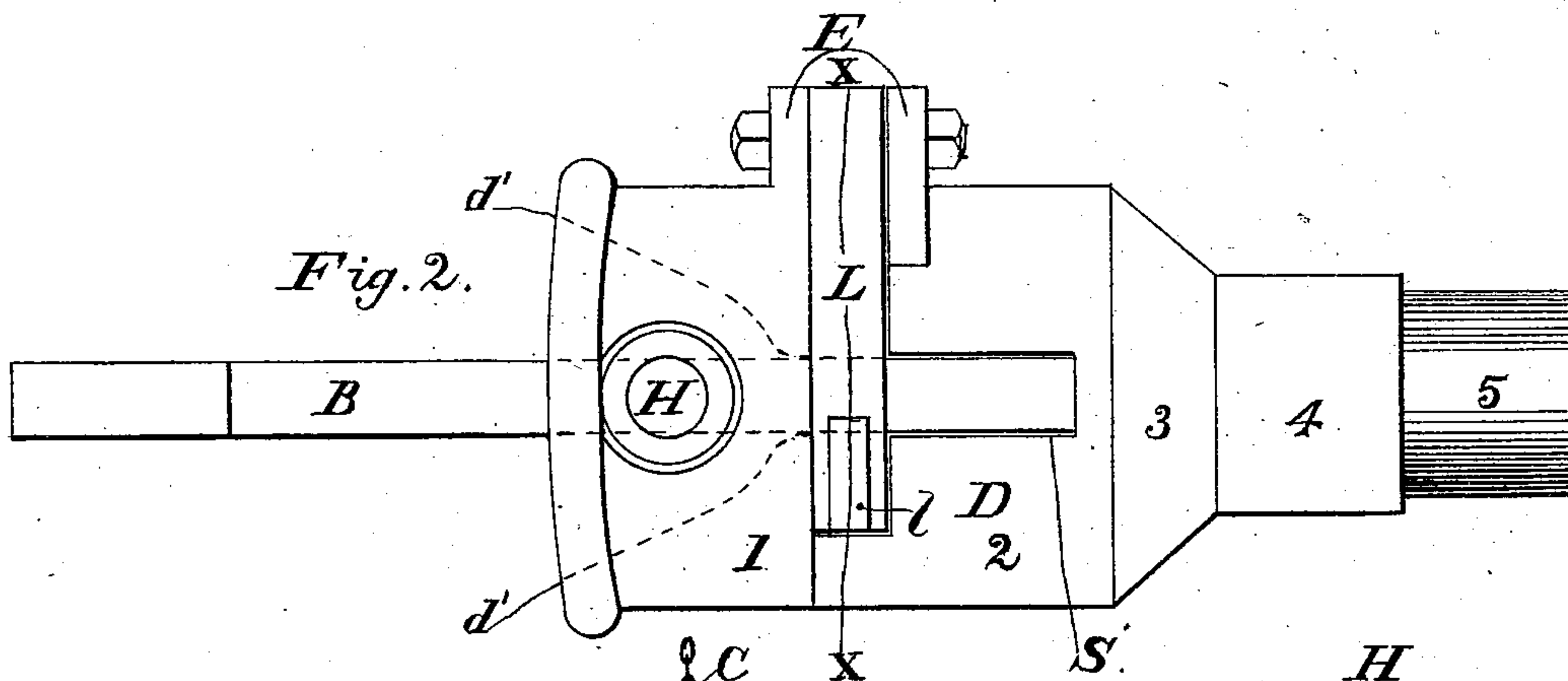
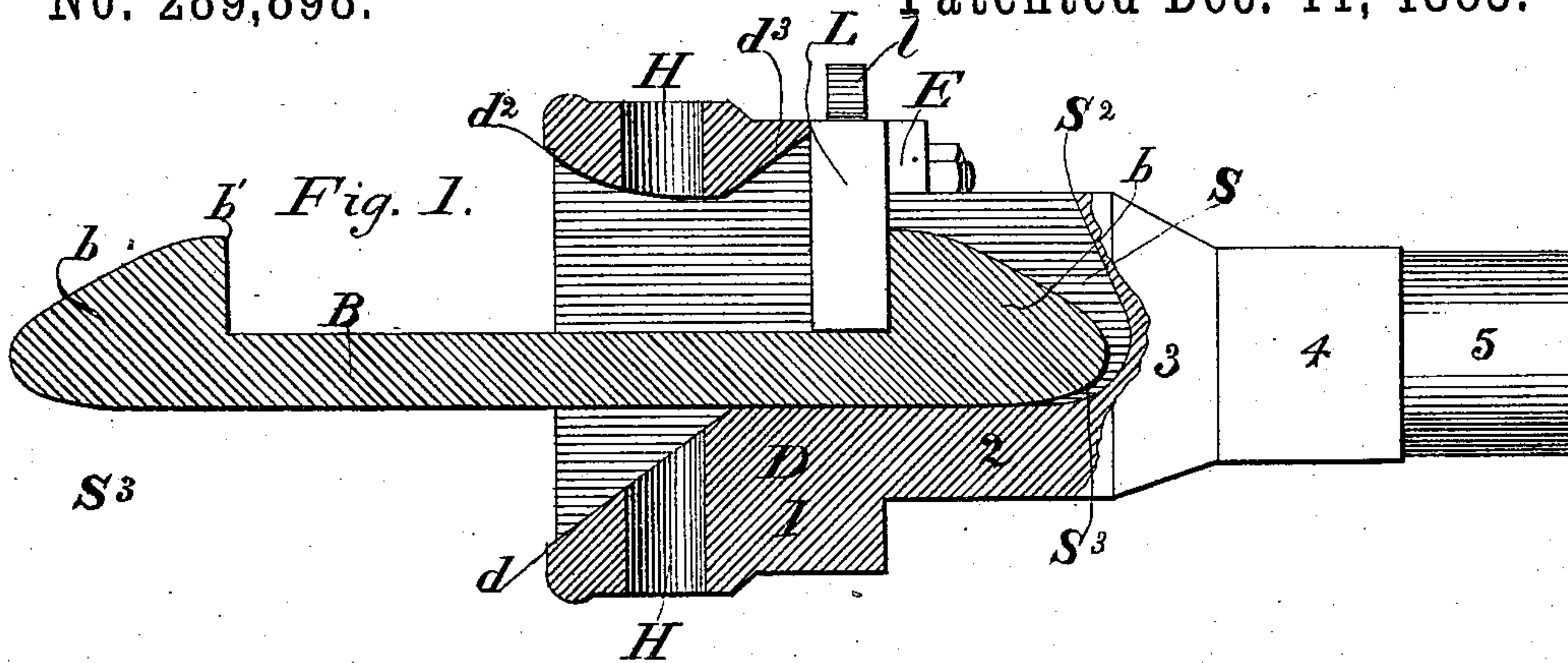
2 Sheets—Sheet 1.

J. T. DALTON.

CAR COUPLING.

No. 289,898.

Patented Dec. 11, 1883.



Witnesses.

*John F. Lonsdale*  
*Chas. C. Gardner.*

Inventor.

*James T. Dalton*  
*per Welton A. Greene*  
Attorney.

(No Model.)

2 Sheets—Sheet 2.

J. T. DALTON.

CAR COUPLING.

No. 289,898.

Patented Dec. 11, 1883.

Fig. 5.

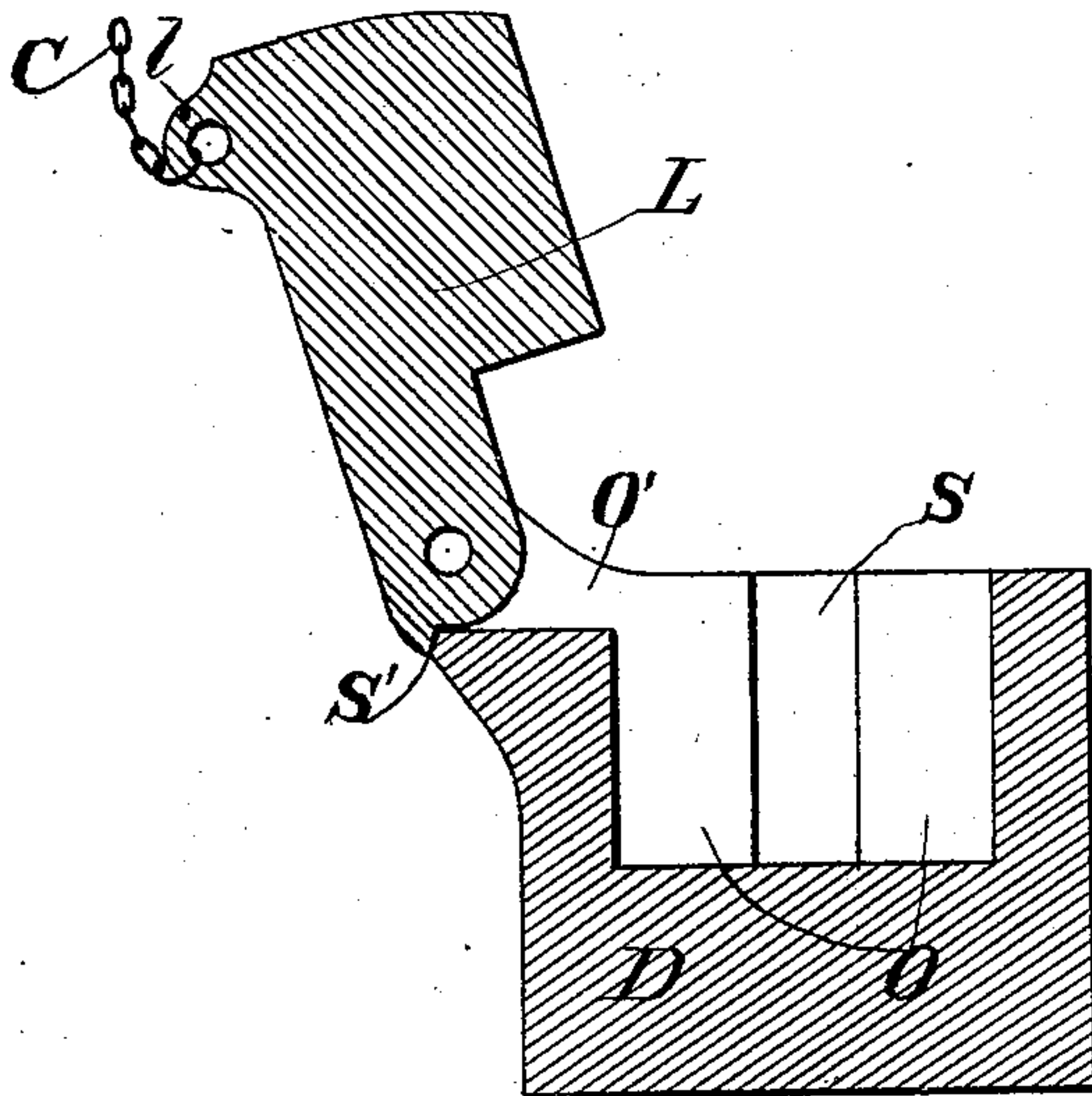


Fig. 6.

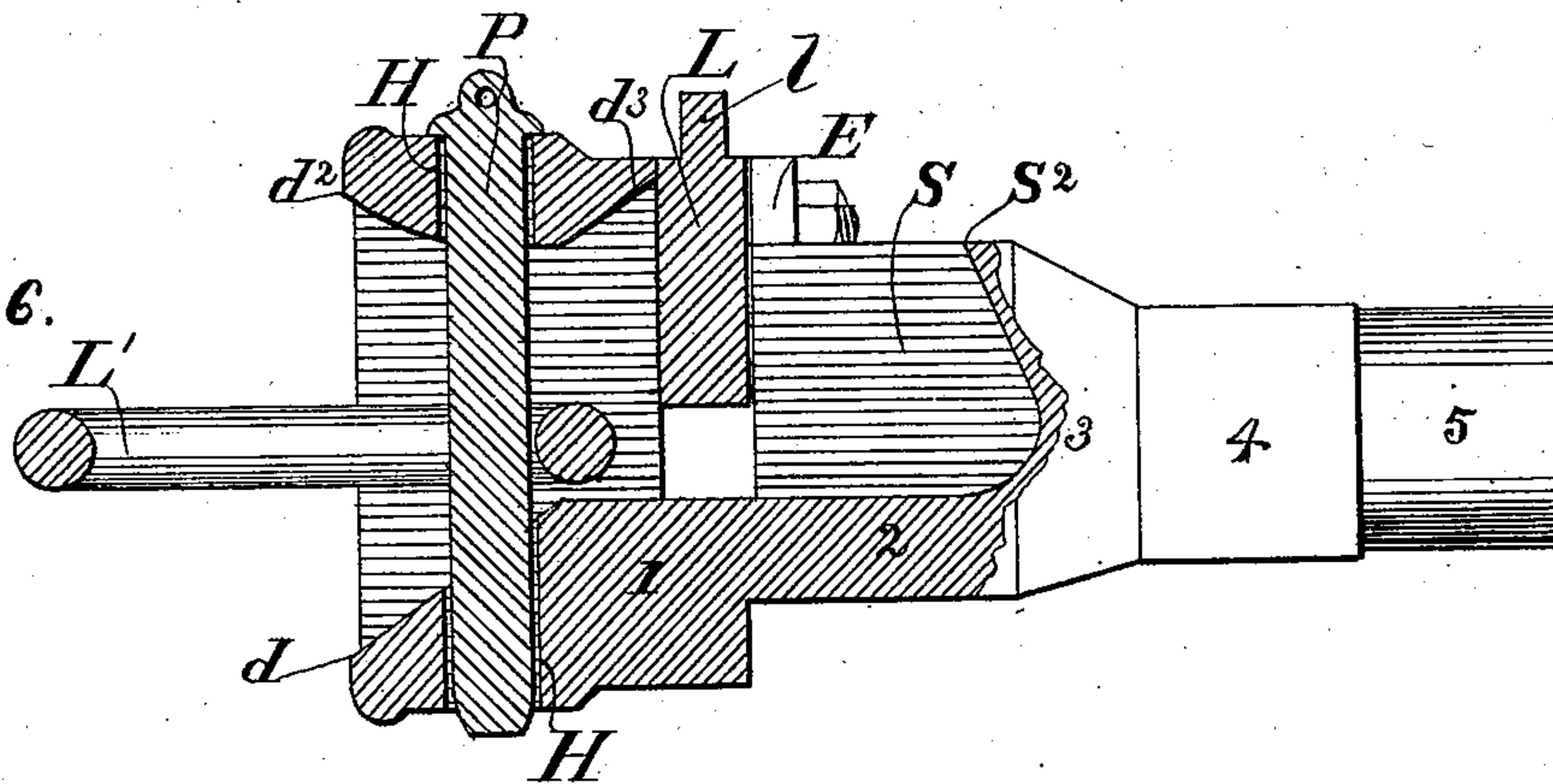
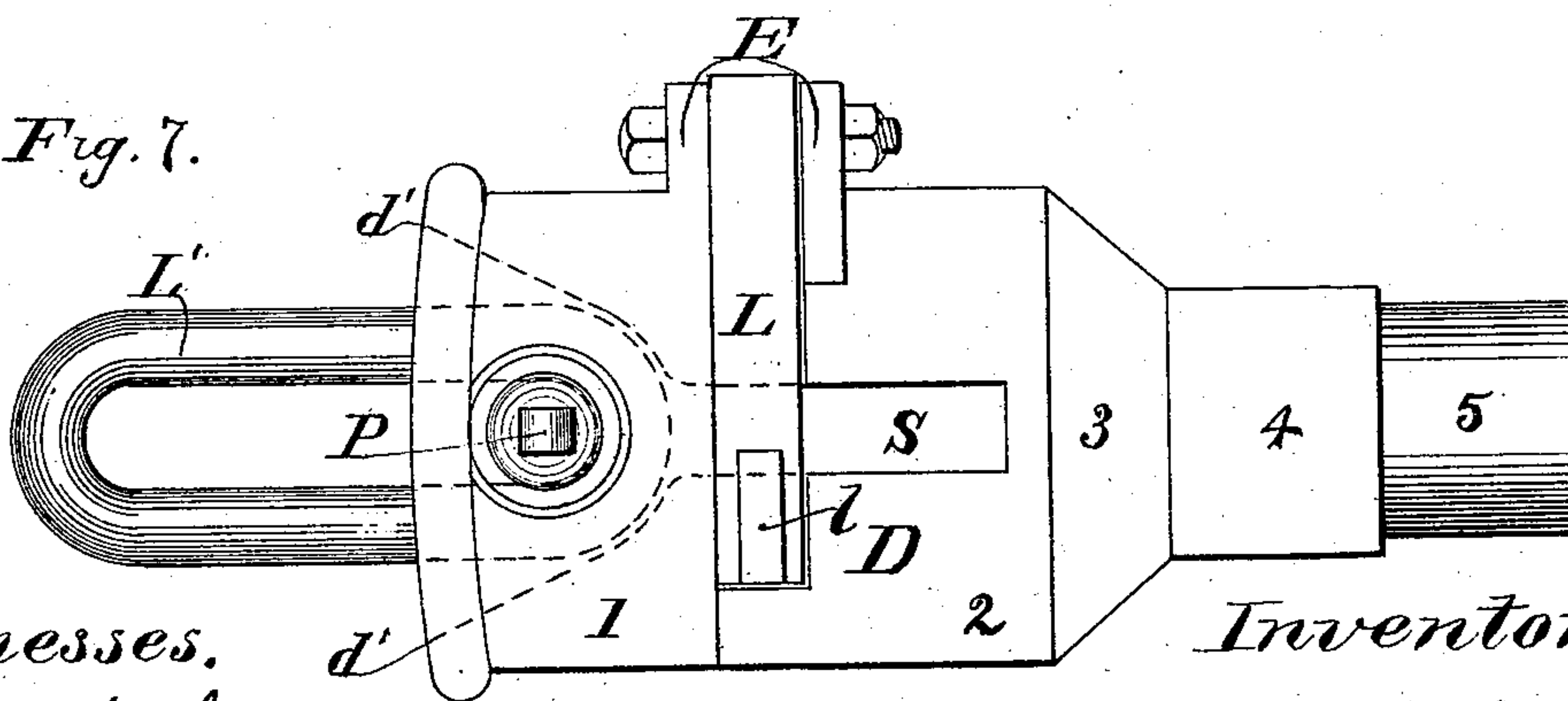


Fig. 7.



Witnesses.

*John F. Lonadale*  
*Chas. C. Gardner*

Inventor.

*James T. Dalton*  
per *Welcome A. Greene*  
Attorney.



# UNITED STATES PATENT OFFICE.

JAMES T. DALTON, OF CENTRAL FALLS, RHODE ISLAND.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 289,898, dated December 11, 1883.

Application filed October 3, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES T. DALTON, a citizen of the United States, residing at Central Falls, in the town of Lincoln, in the county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to that class of car-couplings which are so designed as to avoid the necessity of having at the time of coupling an attendant between the cars to be coupled.

The object of my invention is to provide a simple and efficient coupling arrangement by which the cars, without regard to the variations in height ordinarily found in freight-cars, can be made to couple themselves automatically, and can be readily uncoupled from the top of the car—one which does not require to be adjusted or set previously to coupling of the cars, that cannot be easily deranged nor its parts broken, and can be used with the link to connect with cars fitted for that style of coupling only; and my method of doing this is by constructing the interior of the draw-head in such a manner that, by means of beveled surfaces in the opening into the same, a coupling-bar of my invention is guided at whatever part such opening it strikes into a slot made for its reception, and in its passage into and along such slot the end of the coupling-bar (specially formed for that purpose) lifts a latch, drop-bolt, or equivalent device in a slot or guideway made in the draw-head for its reception, and holds it up till the end of the coupling-bar has passed into its proper slot past a shoulder or barb on the same, when the latch drops behind the shoulder and holds the bar firmly and rigidly in place.

The coupling-bar is a bar with rounded ends, and on each end a barb, with the face of rear of barb preferably straight and at right angles to the main line of the bar.

Combined with the arrangement above described I have a hole running perpendicularly through the draw-head, and a pin to pass through it so arranged as to allow of a link-coupling being substituted and used instead of my described coupling-bar, when desired.

To uncouple the car, the latch is lifted till

it clears the barb, when the coupling-bar draws out of the draw-head, the latch then drops back into its place, ready to repeat its action on the next entering coupling-bar.

One method in which my invention may be put in operation I have illustrated in the accompanying drawings, in the different figures of which similar letters refer to similar parts.

Figure 1 is a vertical projection of a coupling-bar, latch, and draw-head of my invention shown in section, and connected therewith a portion of a draw-bar shown in elevation. Fig. 2 is a top view of coupling-bar, draw-head, latch, and portion of draw-bar shown in elevation, and showing in dotted lines the portion of the coupling-bar hidden by the top of the draw-head, and also indicating in dotted lines the bevel of inner surface of sides of draw-head from the face of the same to the slot which receives and holds the coupling-bar. Fig. 3 is a sectional view of Fig. 2 through line *xx*. Fig. 4 is a front view of the draw-head of my invention, showing at the left hand an ear supporting the fulcrum on which, in this form of my invention, the latch turns. The slot which receives the coupling-bar is marked in heavy lines. The course of the pin-holes through the solid metal of draw-head is indicated by dotted lines. The guide-slot into which the latch falls is indicated by dotted lines, and the broken lines, marked 1, 2, 3, 4, and 5, indicate the relative positions of surfaces marked 1, 2, 3, 4, and 5, respectively, in Figs. 1 and 2. Fig. 5 shows a section across the draw-bar through the guiding-slot in which the latch rests in coupling, with the latch thrown open and resting in the position desired, as hereinafter explained, when the cars are to be used in "bunting" or pushing each other without being coupled, the rear part of the slot into which the coupling-bar enters being shown at S. Fig. 6 shows the device as applied to the use of the link-coupling, being the same view as Fig. 1, except that the coupling-bar is removed and a link-pin inserted, and a sufficient portion of a link represented to show the mode of its insertion. Fig. 7 is a view the same as Fig. 2, excepting that the coupling-bar is removed and a link-pin and link inserted. The position of the



link where hidden by the top of the draw-head is indicated by dotted lines.

B is the coupling-bar, made, preferably, with rounded ends, as shown in Fig. 1.

5 *b* is the barb, one at either end, and *b'* is the shoulder in rear of barb, which may be at any angle with linear line of the coupling-bar, which will allow of its being caught and held in place by the latch, though I prefer the angle of ninety degrees.

10 D is the draw-head with the bevel *d* running from bottom of opening into face of draw-head to bottom of slot S, which receives and holds the end of coupling-bar, as shown in section in Fig. 1.

15 *d'* is the bevel from sides of said opening to the sides of said slot, as shown in dotted lines in Fig. 2. This bevel at the sides is made sufficiently open, as shown in Fig. 7, to afford room for a link to pass behind the pin P when the latter is in place, as hereinafter described, without striking such beveled sides, and the upper bevel of interior of draw-head formed of two parts, one marked *d''*, (Figs. 1 and 6,) and the other being a retreating bevel, *d'''*, Figs. 1 and 6.

E is the ear on the draw-head which furnishes the support on which the latch L fulcrums.

30 O is the opening or slot into which the latch L falls, being prevented from falling below a certain level (preferably at or slightly above the level of the top of main rod of bar B when the latter is resting on bottom of slot S) by the shoulder O'. The latch L, when in rear of shoulder *b'* of barb, catches or engages with the same, as shown in Fig. 1.

40 The latch L may have a lug or ear, *l*, preferably attached to the top, as shown in Figs. 1, 2, 3, 5, 6, and 7, and to which a chain or equivalent, C, (which may lead to the top of the car,) is attached, by which in uncoupling cars the latch is lifted till it clears the top of shoulder *b'* of barb *b*, when the coupling-bar B draws out of the slot S, thus uncoupling the cars.

50 The latch L may have attached to it a spur or stop, S', so placed that when the latch is thrown over its fulcrum point, so that its center of gravity is back of a perpendicular line drawn through such point, said spur *s'* will come in contact with the outside of the draw-head and stop the farther backward movement of the latch, as shown in Fig. 5. This spur performs three functions, first, it prevents the latch when drawn up too violently from turning on its fulcrum beyond a certain point; second, if, in uncoupling cars, the latch is drawn up with great force, the spur strikes the draw-head and the elasticity of the metal will cause the latch to spring back into its guiding-slot O ready for coupling; third, if it be desired to throw the coupling arrangement out of action, so that cars can be pressed against each other and one used to bunt or push the other without their being coupled, (a thing

often necessary in the management and use of freight-cars,) by gently drawing on chain C, the latch L may be drawn over its fulcrum till the center of gravity is in rear thereof, and if the chain is then released, the latch will drop in rear of fulcrum till stopped by the spur in the position shown in Fig. 5. The cars can then be used to bunt each other without their coupling together. When it is desired to resume the coupling action, a pull on the chain throws the latch over its fulcrum and it falls into slot O, ready for coupling.

80 The slot S, which receives the coupling-bar, is, in rear of guide-slot O, made open at the top of the draw-head, and may be open to its full length, though I prefer to make it as shown in Figs. 1 and 6—viz., partially covered in at top, and the rear part of the slot formed of the two slopes *S''* and *S'''*, meeting each other about the middle of height of slot. The effect of this formation is that in coupling cars of different heights the end of the coupling-bar will strike one or the other of these two slopes a glancing blow, thus lessening the shock of contact.

90 The rear part of slot S may be made slightly wider than the coupling-bar, sufficiently so in connection with the lateral motion of the draw-head and draw-bar, consequent upon their mode of construction and connection with the car, to allow of the end of the coupling-bar working in and with the draw-head obtaining the necessary side motion in coupling cars whose respective draw-heads are not in the same linear line, (cars coupling on a curve, for instance,) and also to accommodate the working of the coupling-bar when coupled cars are passing round curves or are in other situations which give rise to side motions in such cars, while the position of the coupling-bar will always be in a straight line with the car when not acted on by such accidental causes.

105 The object of the reverse bevel *d'''* in the upper part of the draw-head is to allow the barb of a coupling-bar coming from a lower car and ascending bevel *d* to freely pass upward till it has passed under latch L without the shoulder *b'* of barb striking the top of inside of draw-head. The hole H is to receive the pin P in case it is necessary to use the old-fashioned link-coupling to fasten the car to one fitted with that mode of coupling only, in which case my special coupling-bar B is taken out and a link-coupling used instead. The link L' is shown partially in Fig. 6 and shown or indicated fully in Fig. 7.

115 The action of the device is as follows: Suppose the cars fitted with my invention, the pin-link and coupling-bar being all out of the draw-head. The end of a coupling-bar is placed in the opening in face of the draw-head and pressed against the draw-head. Guided by whichever bevel it strikes, it passes into slot S in its passage, lifting and engaging with latch L. It is then in position shown in Fig. 1. If this car be pressed against another with draw-head of same height on a straight



line of track, the projecting end of the coupling-bar (the end of coupling-bar in the draw-head being prevented by rear end of slot S from farther entrance into the same) is thrust  
 5 into slot S in the draw-head of second car, passes under latch L in said last-named draw-head, lifting and engaging with the same, and the cars are coupled. If the first car be pressed  
 10 against a car with a lower draw-head, the projecting end of the coupling-bar strikes on the bevel  $d'$  of the draw-head of the second car, and is driven down said bevel and into the slot S (the end of the coupling-bar already secured in draw-head of first car lifting in the  
 15 upper open part of slot S, carrying the latch L with it, but not disengaging itself therefrom) till the end of the coupling-bar passes under the latch L in such lower draw-head and engages with it, thus coupling the cars.  
 20 If the first car be pressed against a car with a higher draw-head, the projecting end of the coupling-bar strikes the bevel  $d$  in such higher draw-head, slides up the same into slot S, and its barbed end passes under and engages with  
 25 latch L, the end of coupling-bar in draw-head of first car lifting, but not disengaging itself, from latch L in such draw-head as it moves under the different strains brought on it in the operation. It is believed that by this  
 30 system most cars in use can be conveniently coupled with a straight coupling-bar; but should cars be found with two great a difference in height of draw-bar to be conveniently so coupled, it is easy to substitute for the  
 35 straight coupling-bar a "bent" one—viz., a bar having two bends, one vertical and one horizontal—in that part of the bar that remains between the draw-heads, and by making the vertical portion between the bends of  
 40 sufficient length draw-heads with any variance of height can be readily coupled. Such bent coupling-bars can be carried on the engine till needed in the same way that it is now common to carry bent links for the same pur-  
 45 pose.

If two cars meet upon a curve, the projecting end of the coupling-bar from the one strikes on bevel  $d'$  and is guided to slot S of the draw-head of the other, the coupling-bar  
 50 working in and with the draw-bars, as hereinabove described, to give the requisite side motion.

To uncouple the cars, the latch may be lifted in any way (as by a pull on chain C)  
 55 till it clears the shoulder  $b'$ , when the coupling-bar, disengaged, draws out of the draw-head.

The cars, by throwing the latch over its fulcrum, can be fitted for use in bunting, as hereinabove described.

If it be necessary to use the device with a link-coupling, the bar B is taken out and a

link inserted, as shown in Fig. 7, and the pin P passed through the hole H, thus giving a link-coupling which is used as ordinary link-  
 65 couplings are—viz., guided by hand into opening of draw-head of approaching car, and when in place pin P, passed through hole H in such draw-head, passing through the link.

I do not claim as new the link-coupling feature of the device; but the combination of the link-coupling device with the automatic coupling device, giving a coupling that can at  
 70 will be used in either way, is what I claim as new.

It is evident that many changes may be made in the specific forms here shown—as, for instance, the barbs may be at the side instead of on top of bar B, and the latch slide up  
 75 an inclined face of same instead of as shown; the ends of bar B may be double-barbed or arrow-head shaped; the form of slot S may be varied, as may that of latch L, or the latter may be substituted by a bolt, and other changes  
 80 be made without departing substantially from my invention.

This device is especially applicable to use on freight-cars; but it may be applied to passenger-cars, to the coupling of poles of horse-cars, to such cars, and to many other pur-  
 85 poses.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a railroad-car draw-head, the combination of the latch or gravity-catch L, provided with the spur or stop  $S'$ , and attached  
 95 at or near one end of the cross-slot O, said slot O being open at the top of said draw-head and closed at the sides of the same, with the shoulder  $O'$ , and with the receiving-slot S, opening from said slot O, and having its bottom horizontal and continuous with the bottom of slot O to the commencement of curve  $S^3$ , and having its top partially open through  
 100 the top of said draw-head, substantially as and for the purposes herein described.

2. In a railroad-car draw-head, the latch or gravity-catch L, provided with the spur or stop  $S'$ , and attached at or near one end of the cross-slot O, said slot O being open at the top  
 110 of said draw-head and closed at the sides of the same, and crossing and entering into the receiving-slot S, substantially as herein described.

3. In a car-coupling, the latch L, provided with the spur  $S'$ , arranged, as herein described, in connection with the draw-head, to control the movements of the latch, as herein described.

JAMES T. DALTON.

Witnesses:

THOS. H. MURPHY,  
 LOUIS L. ANGELL.