

(No Model.)

3 Sheets—Sheet 1.

E. C. GARLICK.
CAR COUPLING.

No. 489,943.

Patented Jan. 17, 1893.

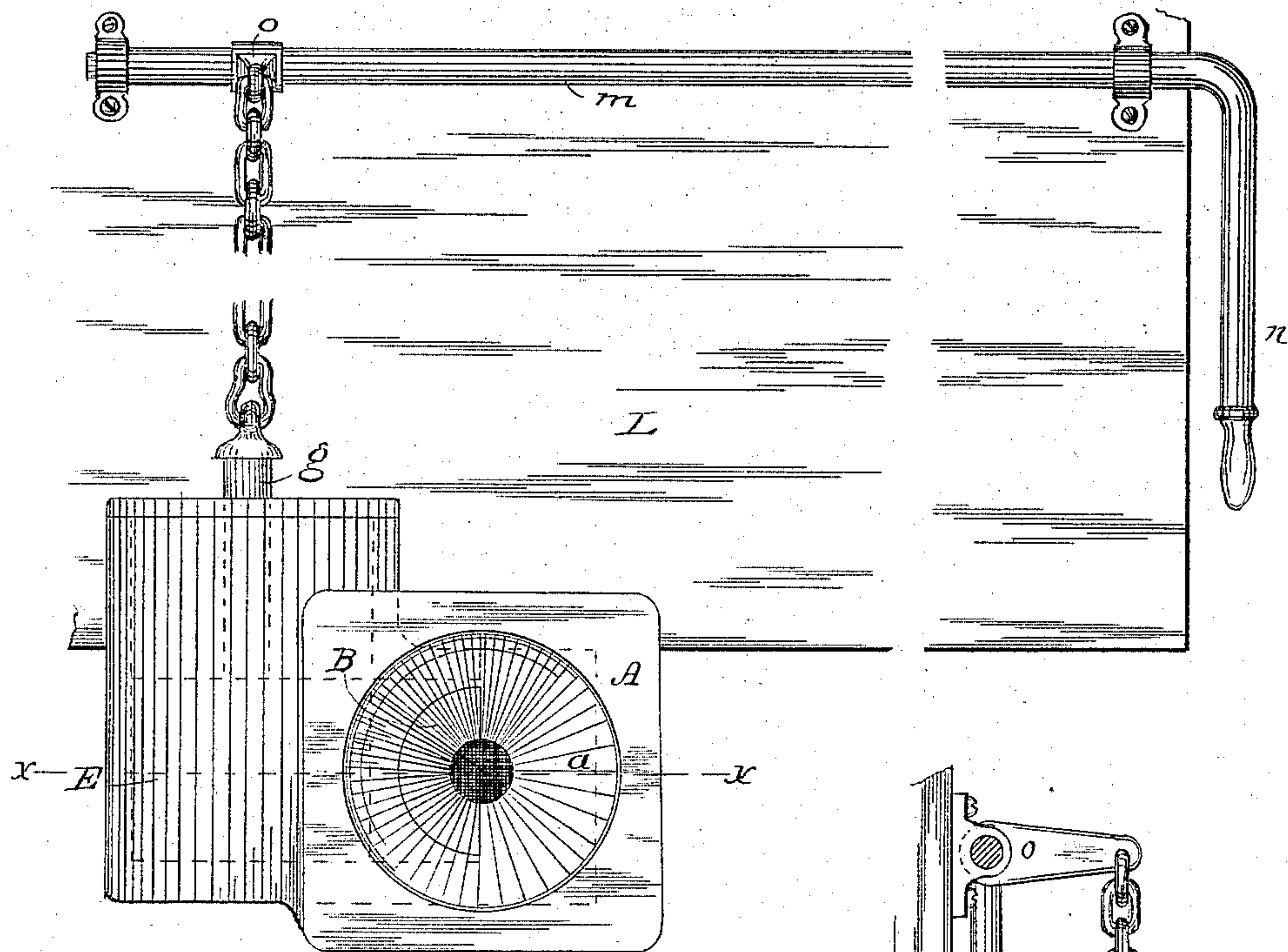


Fig. 1

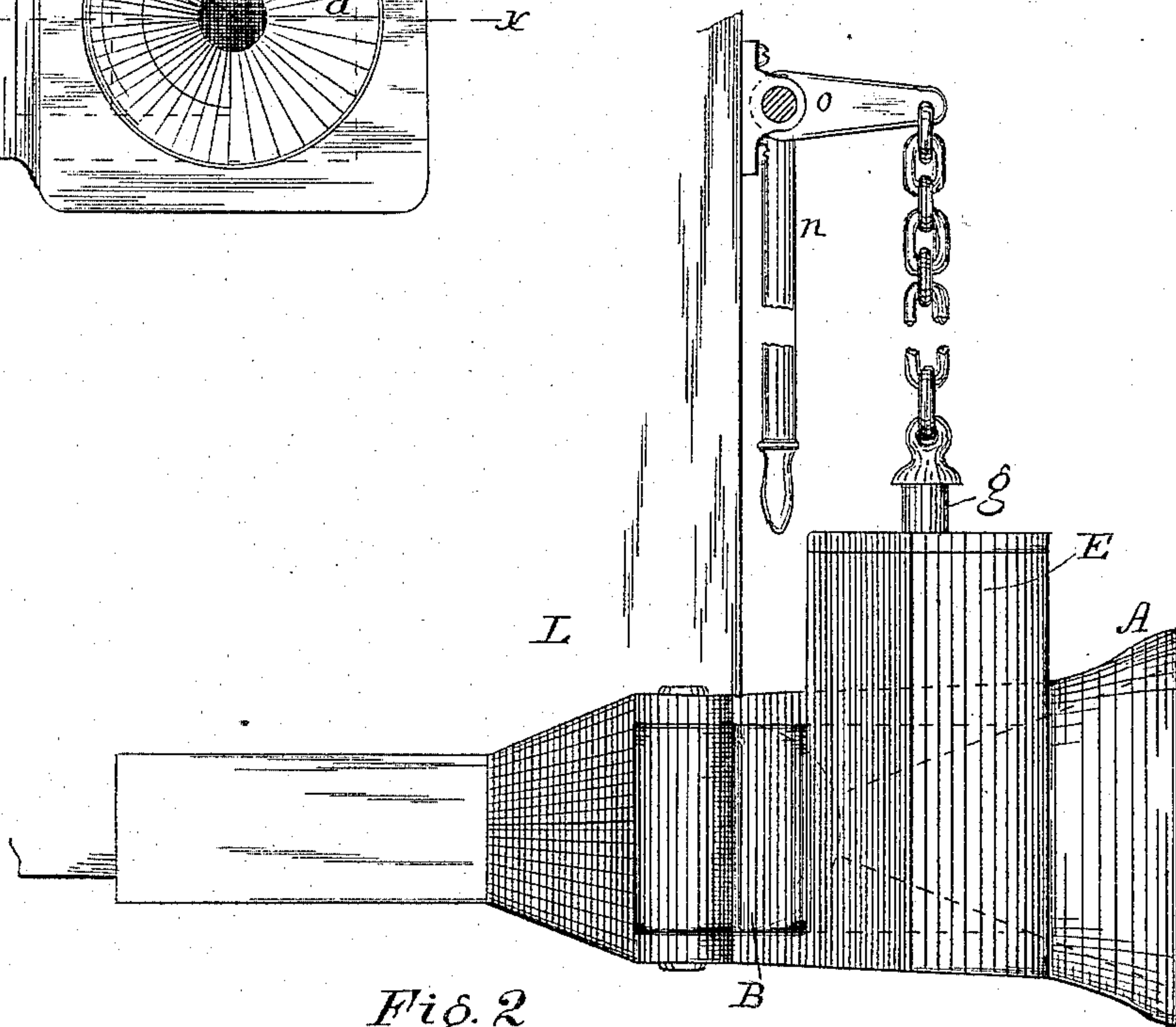


Fig. 2

WITNESSES

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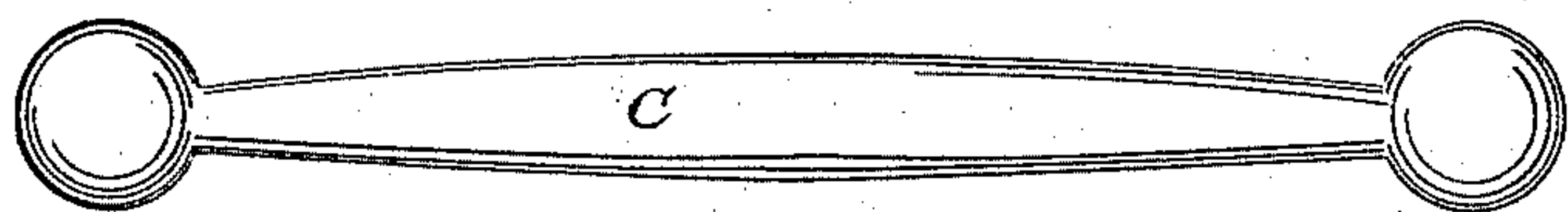


Fig. 3

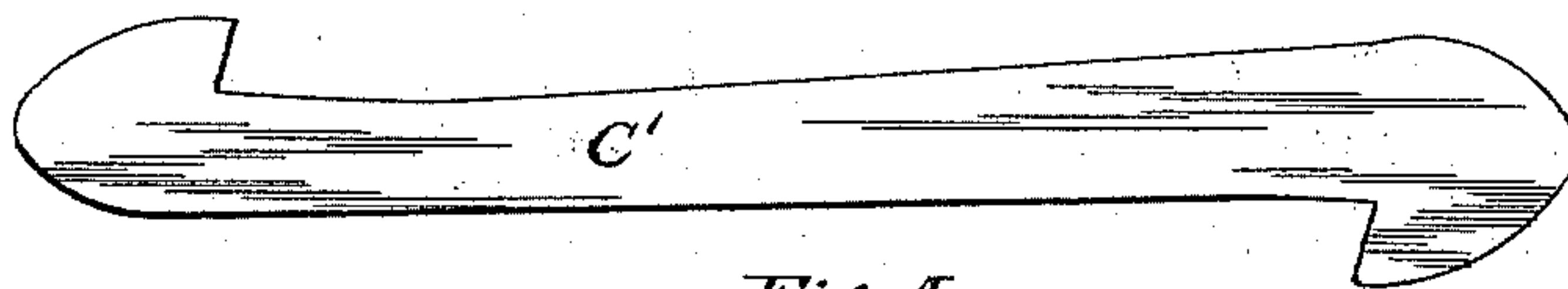


Fig. 4

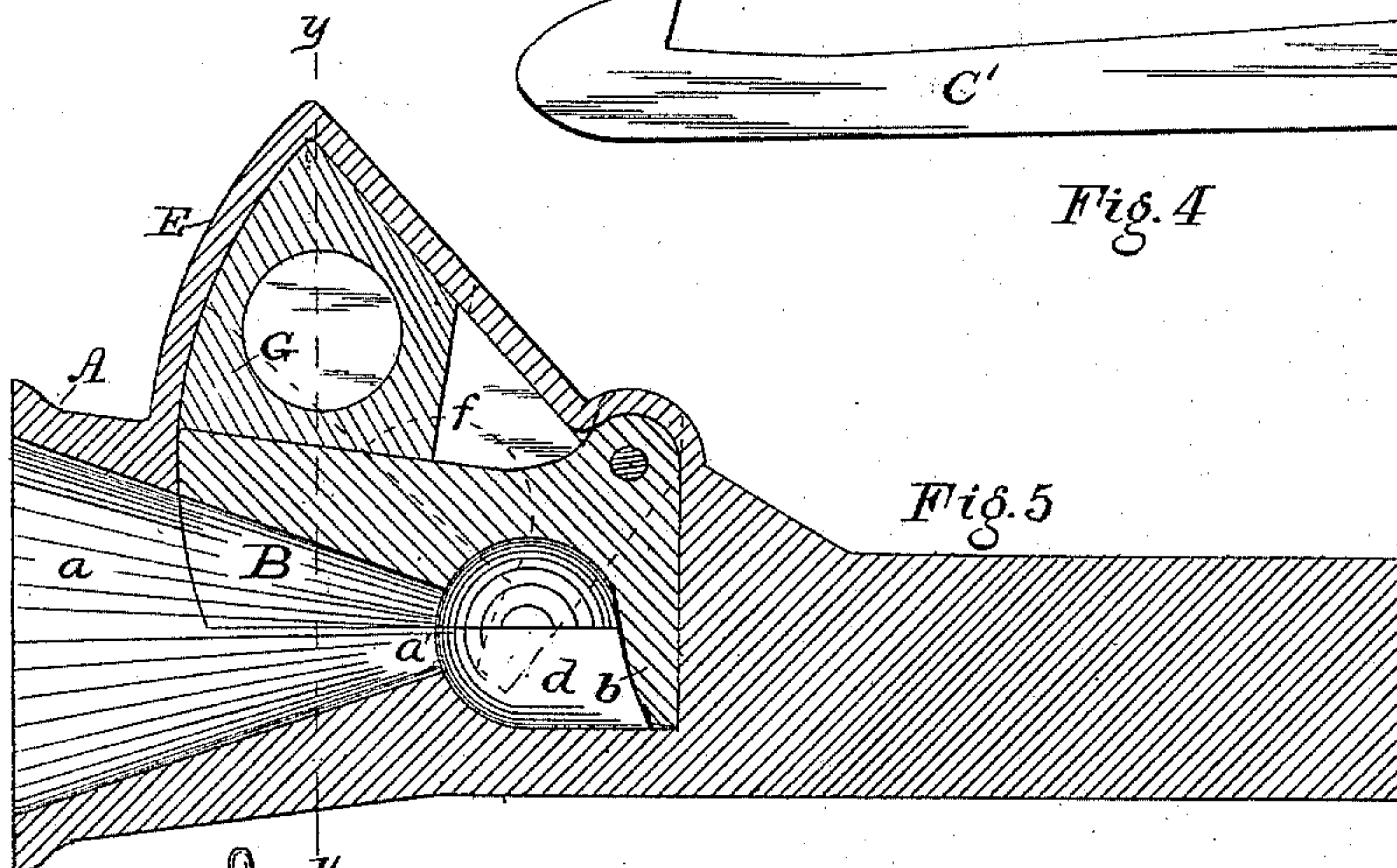


Fig. 5

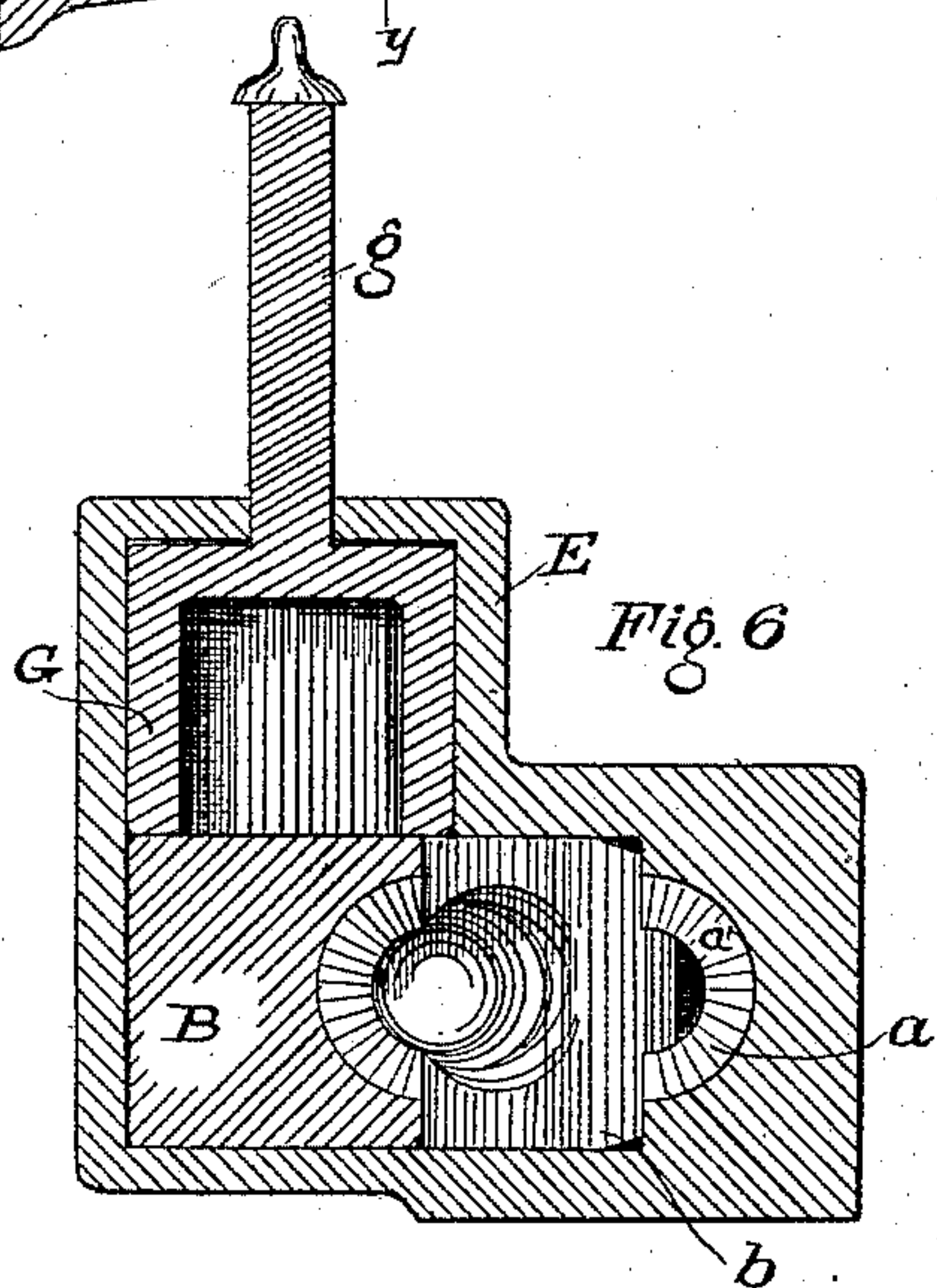


Fig. 6

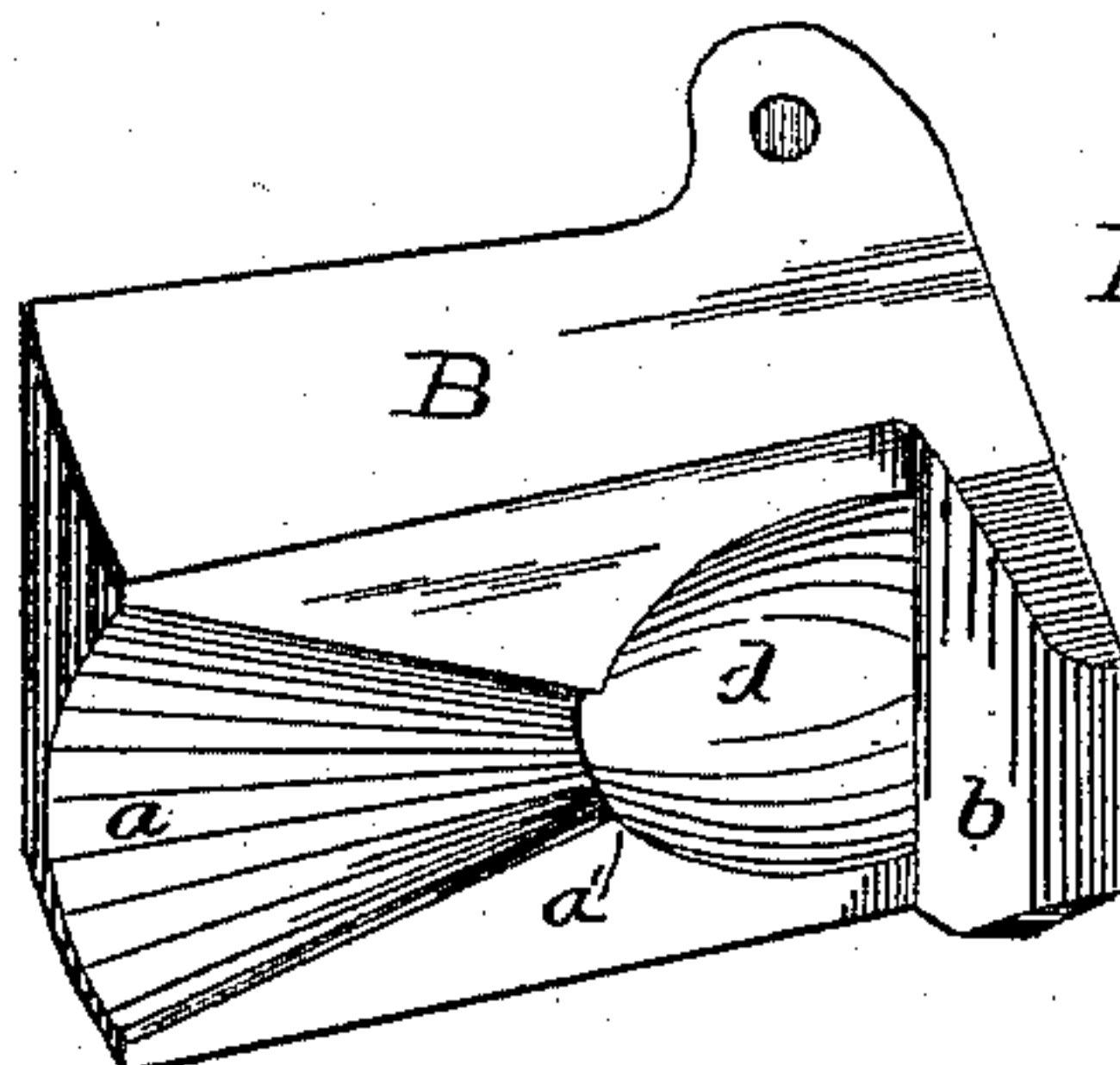


Fig. 7

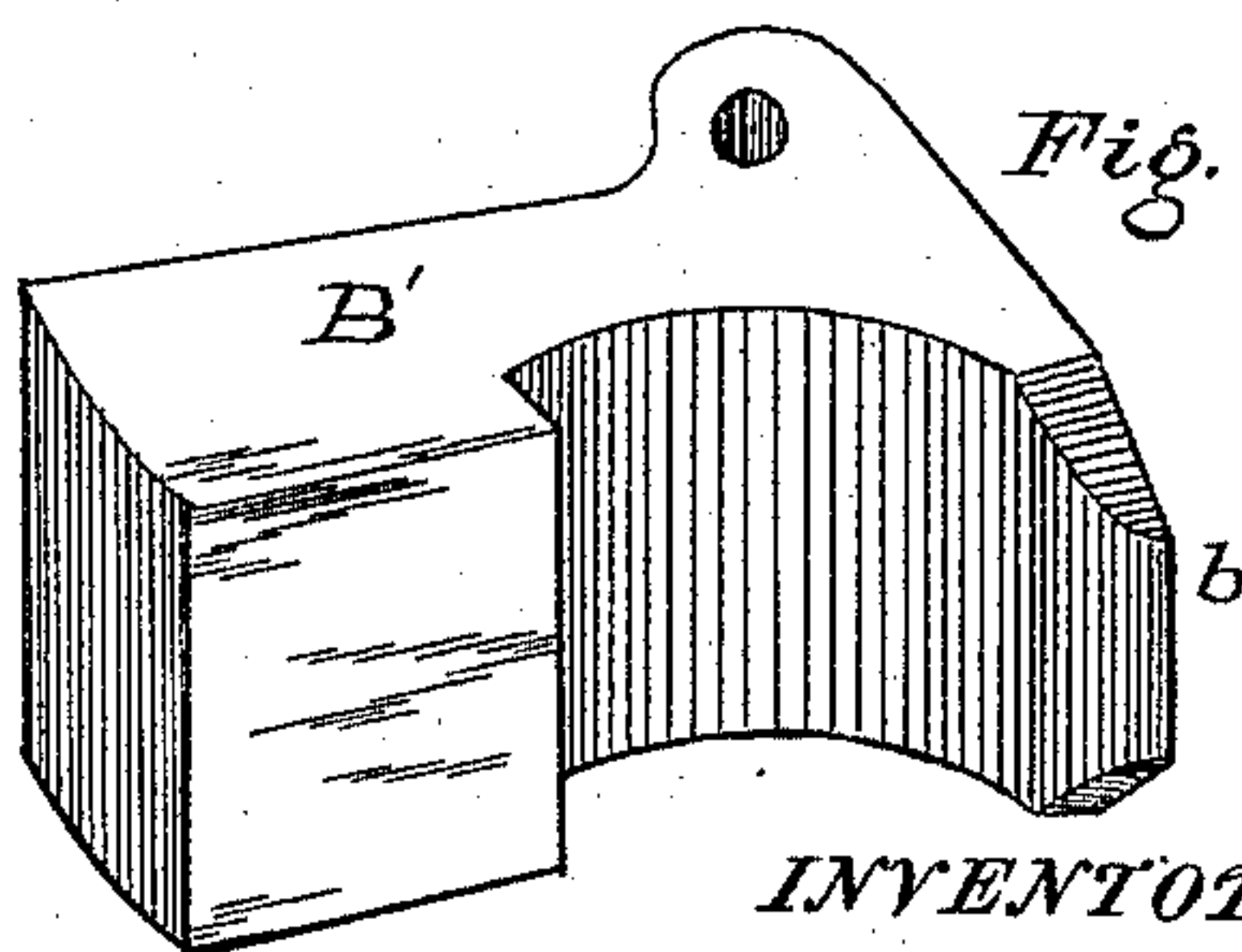


Fig. 8.

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3 Sheets—Sheet 3.

E. C. GARLICK.
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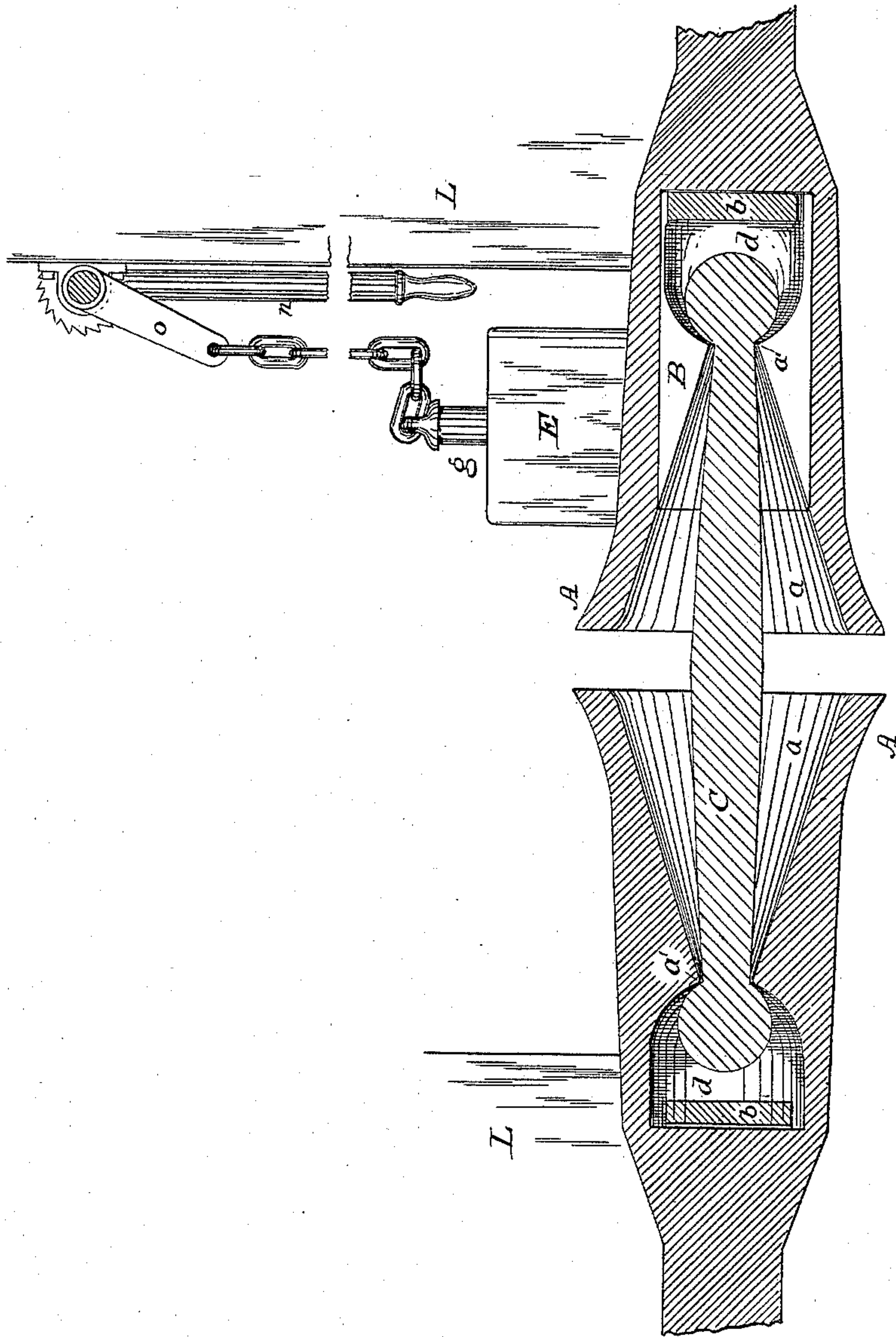


Fig. 9

Witnesses:

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Inventor;

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Att'y.

UNITED STATES PATENT OFFICE.

EDWARD C. GARLICK, OF CLEVELAND, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 489,943, dated January 17, 1893.

Application filed April 25, 1892. Serial No. 430,492. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. GARLICK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, 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.

My invention relates to improvements in car couplers; it has for its object the simplifying of the construction so as to reduce the number of parts, cheapen the manufacture, and combine great strength with certainty of action, and to avoid the liability to breakage or derangement which is common to many automatic couplers, and it consists in the construction, arrangement and combination of parts hereinafter fully described, and of the features of novelty pointed out in the claims.

In the drawings, Figure 1 is a view, in elevation, of my improved device, shown as attached to a freight car; Fig. 2 is a front side elevation thereof; Fig. 3 is a plan view of the headed coupling link or bar; Fig. 4 a like view of a modified construction thereof; Fig. 5 is a sectional view of the device, on the line $x-x$ of Fig. 1, showing the parts in the position they occupy when the car is coupled; Fig. 6 is a sectional view transversely through the device, on the line $y-y$ of Fig. 5; Fig. 7 is a detached view of the coupling jaw B; and Fig. 8 is a like view of a modification of the form thereof. Fig. 9 shows the two drawheads coupled together, in vertical section.

A represents the drawbar head, having a widely expanded flaring conical mouth a , contracting to a throat a' , within which is a recess or space d to receive the head of the coupling link or bar C. On one side of the mouth a is a recess f , occupying about one half of the length of the mouth, within which recess is pivoted a laterally oscillating jaw B, having its inner face conformed to the conical contour of mouth a and forming when closed the inner one half, both laterally and longitudinally, of the conical mouth a , throat a' , and recess d . The jaw B has at its inner end a projecting toe-piece or lug b , extending

nearly across the recess d so as to be struck by the entering head of the headed coupling link C, which will thus throw around the jaw B and close it upon the neck of the link C. A casing E, attached to or forming part of the drawhead, rises from the outer part of the recess f in which the jaw B plays, and in this casing a vertically moving lockpiece G is fitted to slide easily and smoothly, and has a stem g projecting through the top of the casing, to which stem a chain or cord is affixed, for a purpose to be presently described. The recess f is of such width, horizontally, that when the jaw B is opened to its full width therein (the position shown in Fig. 6, and indicated by dotted lines in Fig. 5,) the head of the link or bar C will have room to pass easily between the jaw B and the fixed side of the throat a' . At its outer side the recess f extends to the outer wall of casing E, with the chamber of which it is laterally continuous, and its width is such that when the jaw B is fully closed the back of the jaw is in line with or slightly withdrawn from the inner line of the casing E.

In operation the coupler is opened by lifting the lockpiece G, moving back the jaw B into recess f , and allowing the lock-piece to rest upon the jaw, the chain of the lock-piece being left slack. As the cars come together the headed coupling link carried in the drawhead of the other car enters the flaring mouth a and its spheroidal head is thereby guided into the throat a' , passing laterally partly into the space from which jaw B was moved, until the end of the link strikes against the projecting toe-piece b of the jaw B, which is thereby instantly caused to close upon the bar C, and as the jaw B swings around to close upon C, the lock-piece G, being left unsupported, falls behind the jaw and locks the coupling. When strain is now brought upon the coupler it is transmitted from the head of the bar C against the inner side of throat a' , and that part of the strain which comes upon the side of throat a' which is formed in the jaw B is brought upon the solid metal forming the front of recess f and the side of drawhead A. These parts are usually the strongest and most massive parts of any coup-

ler, and may be given any desired thickness or strength. The lateral thrust of jaw B under the strain of a heavy train is borne by lock-piece G and the walls of casing E, which parts are easily made strong enough without being cumbersome, and as the lateral thrust is small in comparison to what comes upon drawhead A there is no possibility of any breakage or failure to hold. To uncouple it is only necessary to lift the lockpiece G, when the drawing out of bar C will throw back the jaw B into recess *f*, leaving the lock piece to rest upon the jaw and the coupler ready to couple again.

It is a common defect with many automatic couplers that their parts are so arranged that by the jar and shock of the cars, in making up trains &c., the parts which are set ready for coupling are displaced and the coupler fails to act, often being broken instead of coupling when the cars come together. In my device it will be seen that the jaw B, having considerable weight of itself, moves over the floor of recess *f* on which it rests in a direction transverse to the line of motion caused by the shock of cars coming together, and transverse also to the line of gravity; in addition, the lockpiece G resting upon it adds its weight, so that it is not possible by any jar or shock to cause the jaw B to close unless something enters the coupler to strike the toe-piece *b*.

In the operations of switching, making up trains &c., it is often very desirable to allow the cars to come together, to push other cars, or for other purposes, without having them couple. In my device this is easily accomplished by holding the lockpiece G in its elevated position, when the jaw B will play back and forth without coupling; and it is not necessary to remove the coupling bar from other cars to prevent their coupling with it; neither will the coming together of the cars cause any strain on any of the parts, as it does in other couplers when the parts are not set for coupling. By reason of the flaring mouth of the draw head and the form of the coupling bar C, the cars will couple as well when one is higher than the other, or the drawheads out of line laterally, as when the drawheads are in a direct line, also on curves or rough track no strain is brought to bear upon the coupler except the direct pull of the train, as the large flat face of the drawheads keeps them substantially parallel, no matter how oblique may be the position of the bar C, and they act as most efficient buffers. The recess *d* in which the end of the headed link is held allows the body of the link to move freely in all directions in the conical mouth of the drawhead, and thus forms, in effect, a universal joint, and allows to the cars all that desirable freedom of motion of the common link and pin, without its weakness, and is besides ab-

olutely automatic. Telescoping of the cars is impossible with my improved coupler, as the headed link or bar C is ordinarily at least two inches in diameter at the neck, and may be made as much larger as is desired, and the drawheads when coupled stand near together with but little play between them. The drawheads of every car are alike and hence couple together with the same headed links, and by simply providing the common pin and pin-hole in the draw head, my device may be coupled with cars having only the old fashioned pin and link, no matter what may be the difference in height of the two cars.

I prefer to equip the cars with a cranked lever *m* extending across the end of the car L, at a suitable height to be manipulated from the ground, and having at one or both ends a hand lever *n*, and just above the coupler an arm *o*, to which the chain attached to the stem *g* is secured. By this means the brakeman can, by means of the lever *m n* lift the lockpiece and allow the cars to uncouple without going between them. By releasing the lever as soon as the cars uncouple the coupler is left ready set for coupling again. In case it is wished to leave the coupler open so that it will not couple when cars are run together, it is only necessary to fasten the lever in the open position by any of the usual and well known means, as by a pin, or a ratchet and dog suitably placed for that purpose.

I do not confine myself to the precise form of jaw or coupling link or bar above described, as I may form the jaw and bar with a vertical plane hook, as shown in Figs. 4 and 8, without departing from my invention.

What I claim as my invention and desire to secure by Letters Patent is,

1. An automatic car coupler consisting of the drawhead with flaring conical mouth, narrow throat, and recess for the head of the link, the laterally oscillating jaw, and the vertically sliding lockpiece, in combination with the headed link, substantially as described.

2. In a car coupler the combination of the drawhead with flaring conical mouth, the laterally oscillating jaw forming a portion of such conical mouth, the narrow throat formed partly in said jaw and partly in the body of the drawhead, the vertically sliding lockpiece, and the headed link, substantially as described.

3. In a car coupler the combination of a drawhead with flaring mouth, a laterally oscillating jaw within said mouth having a hook or recess to engage the head of a headed link or bar, and a lug or toe piece projecting in the path of such link or bar, a coupling link or bar headed to correspond with such jaw, and a vertically sliding lockpiece, all combined and operating substantially as described.

4. The combination in a car coupler adapted to couple with a headed link, of the drawhead with flaring conical mouth terminating in a throat to engage the neck of the link, 5 the laterally oscillating coupling jaw pivoted in a recess in said drawhead and forming one side of such mouth and throat, the headed link and the lockpiece sliding vertically in

a casing and having a stem projecting above such casing, substantially as described. 10

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

EDWARD C. GARLICK.

Witnesses:

LOREN PRENTISS,
WM. G. TAYLOR.