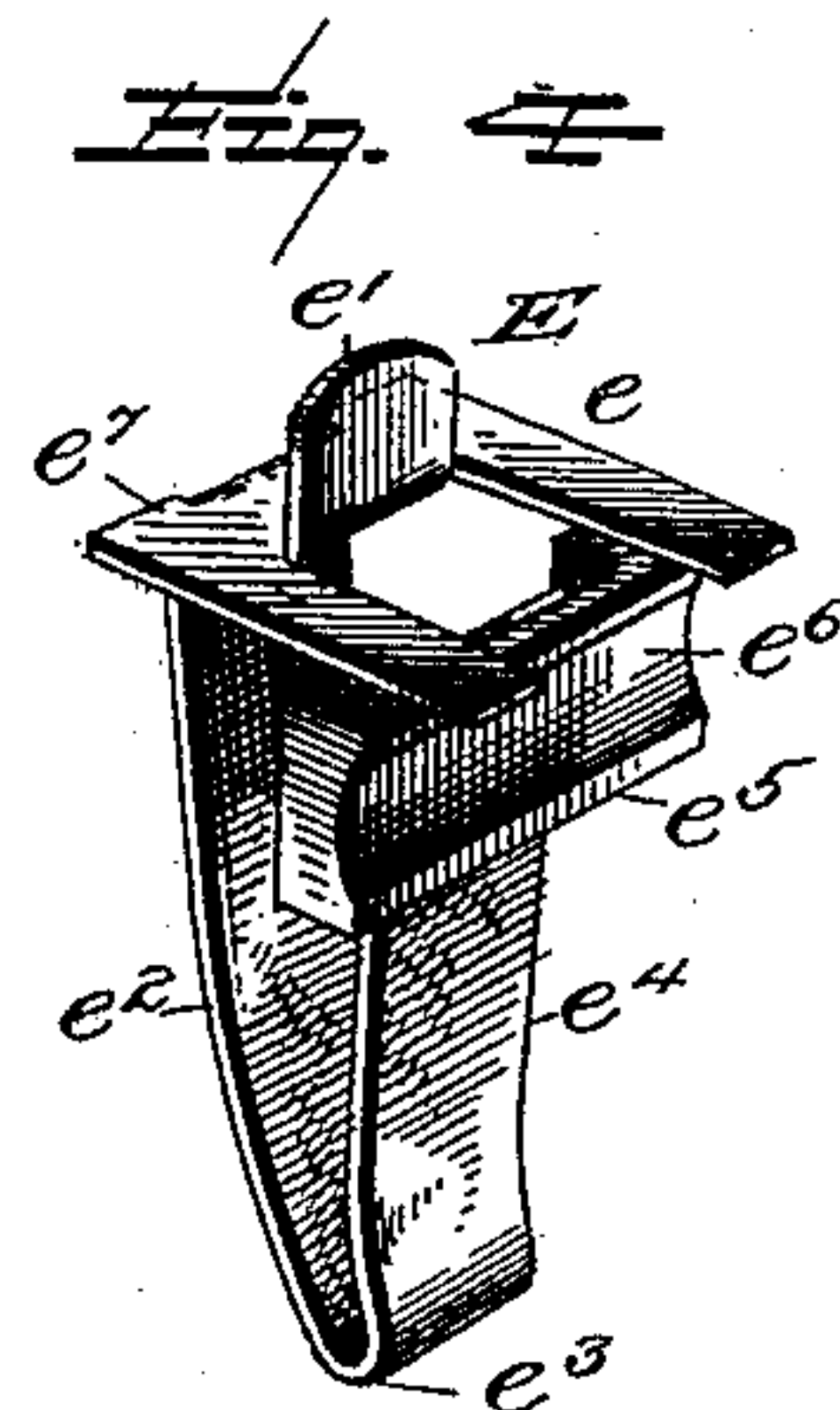
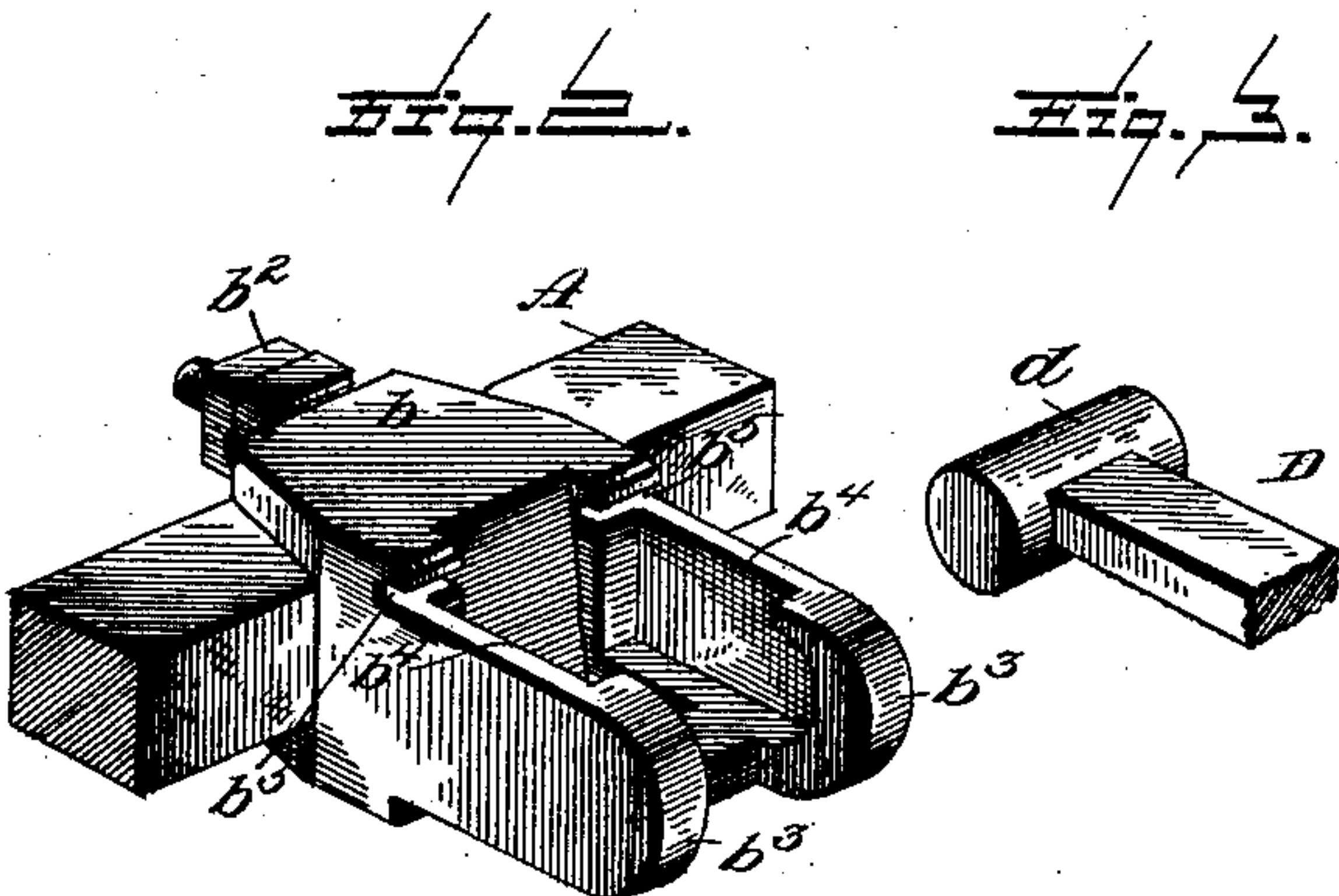
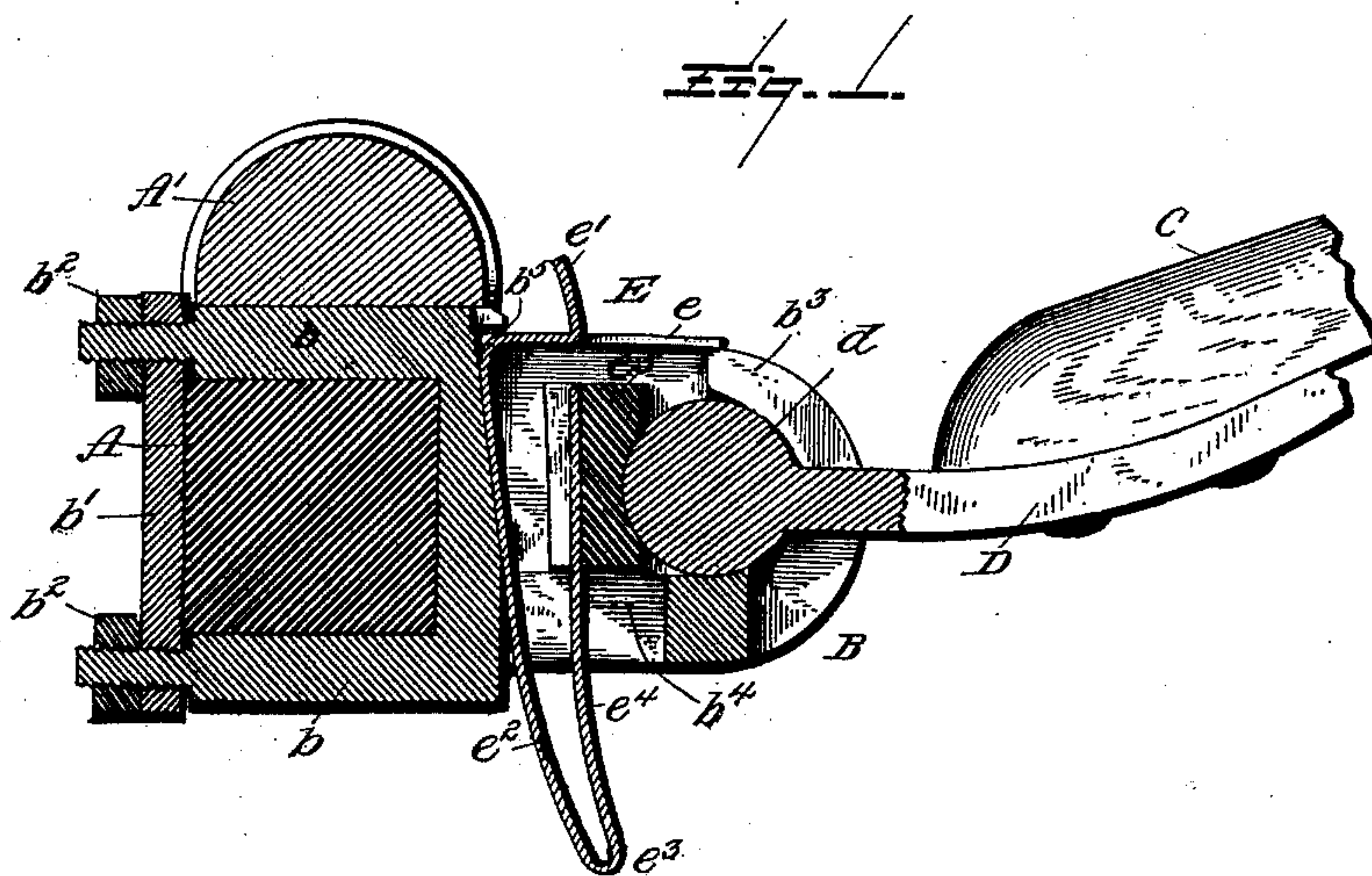


(No Model.)

F. J. MILLER.
THILL COUPLING.

No. 411,044.

Patented Sept. 17, 1889.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANCIS J. MILLER, OF CARROLLTON, KENTUCKY.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 411,044, dated September 17, 1889.

Application filed January 9, 1889. Serial No. 295,821. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. MILLER, a citizen of the United States, residing at Carrollton, in the county of Carroll, State of Kentucky, have invented certain new and useful Improvements in Thill-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to thill-couplings, and among the objects in view are to provide a coupling which by its peculiar novel construction is adapted to receive, retain, and permit of an easy removal of the shaft or shank-iron when occasion requires, and which is also adapted for the reception of an anti-rattling device designed to aid in the retention of the shank-iron, which device is also readily inserted to position and removed therefrom, the entire coupling and anti-rattler being simply constructed and easily applied.

Other objects and advantages of the invention will hereinafter appear, and the novel features will be particularly pointed out in the claim.

Referring to the drawings, Figure 1 is a transverse section of an axle provided with a thill-coupling and anti-rattler constructed in accordance with my invention. Fig. 2 is a perspective of the coupling, the anti-rattler and shaft or shank-iron being removed. Fig. 3 is a detail in perspective of the end of the shaft or shank-iron, and Fig. 4 is a similar view of the anti-rattler.

Like letters of reference indicate like parts in all the figures of the drawings.

A represents the usual metal axle, upon which is secured in the usual manner the wooden strip A'.

B represents the thill-coupling; C, the thill or shaft, to which is secured the shank or thill-iron D.

The thill-clip B consists of the upper and lower axle, embracing plates *b*, terminating in screw-threaded bolt ends connected at the rear of the axle with the usual connecting-plate *b'*, bound in position by bolts *b²*, applied to the terminals *b*. From the front face of the embracing-plate there project opposite thill-iron receiving ears or lugs *b³*, which are recessed upon their inner faces, as at *b⁴*, the

forward walls of said recesses being semicircular, and the upper edges of said recesses being open for the introduction of the thill-iron hereinafter described.

Bolted to the thill C in the usual manner is the thill or shank-iron D, which is of the usual construction, with the exception that, in lieu of having the ordinary perforated eye at its rear end, it terminates in a T-head *d* of a length coincident with the space between the opposite ears *b³*, the measurement occurring at the recessed portion therein. The T-head is introduced in the recesses *b⁴*, and is cylindrical to correspond with the curved or semicircular end walls of said recesses, so as to partially rotate therein with the motion of the horse, also being capable of being supported vertically when not in use.

E represents an anti-rattler, and the same comprises a bifurcated or recessed plate *e*, the opposite sides thereof being designed to rest upon the upper surfaces of the opposite ears *b³*. That metal partially removed to form the recess is bent upwardly, as at *e'*, to form a thumb plate or lug. The plate *e* is preferably formed of spring metal, and is provided with a depending spring-tongue *e²*, which is bent upon itself vertically, as at *e⁴*, and terminates directly below the forward end of the plate *e*. To the terminal of this spring there is connected a metal or other bearing plate *e⁵*, formed with a curved bearing-surface *e⁶*, adapted to be pressed snugly against the cylindrical surface of the T-head, and thereby prevent the same from moving within the recesses *b⁴*. The spring *e²* may be either formed as a part of the plate *e* or secured thereto, as desired; but I prefer to form the same integral therewith, as shown.

For the purpose of securing the anti-rattler in position and prevent the same from being worked upwardly by the motion of the shafts or thills, I form rearwardly-extending shoulders *e⁷* at the rear end of the plate *e*, which shoulders are adapted to be sprung under transverse recesses *b⁵*, formed in the front face of the thill-coupling immediately above the opposite lugs *b³*.

The parts are all clearly shown as assembled in Fig. 1 of the drawings, and to remove the thill or shaft it is only necessary to press

the lug e' to the front to disengage the shoulders e' from the recesses b^5 and withdraw the anti-rattler, whereupon by bringing the T-head e opposite the openings in the upper
5 walls of the recesses b^4 said T-head may be withdrawn from the thill.

Having described my invention and its operation, what I claim is—

The thill-coupling E, consisting of the embracing-plates b , connected by the plate b'
10 and bound in position by the nuts b^2 , and of the forwardly-projecting opposite ears b^3 , recessed as at b^4 and having the transverse recesses b^5 , in combination with the thill C, having
15 the thill-iron D, terminating in the T-head

d , mounted in the recesses b^3 , and with the spring e^2 , bent as at e^3 and projected as at e^4 , provided with the block e^5 at one end and with the supporting-plate e at the opposite
end, which plate is formed with the thumb- 20 lug e' and rearwardly-projecting shoulders e' , adapted to take into the recesses b^5 , substantially as specified.

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

FRANCIS J. MILLER.

Witnesses:

B. H. MEYER,

F. BERNER.