

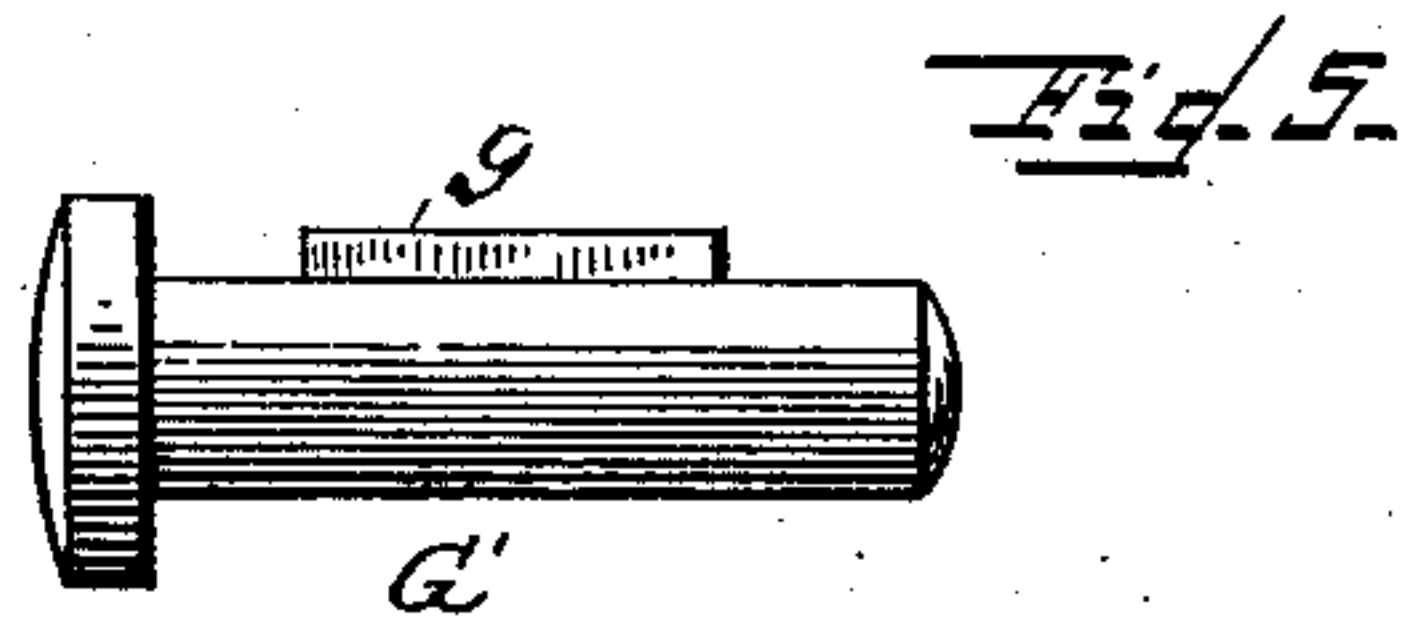
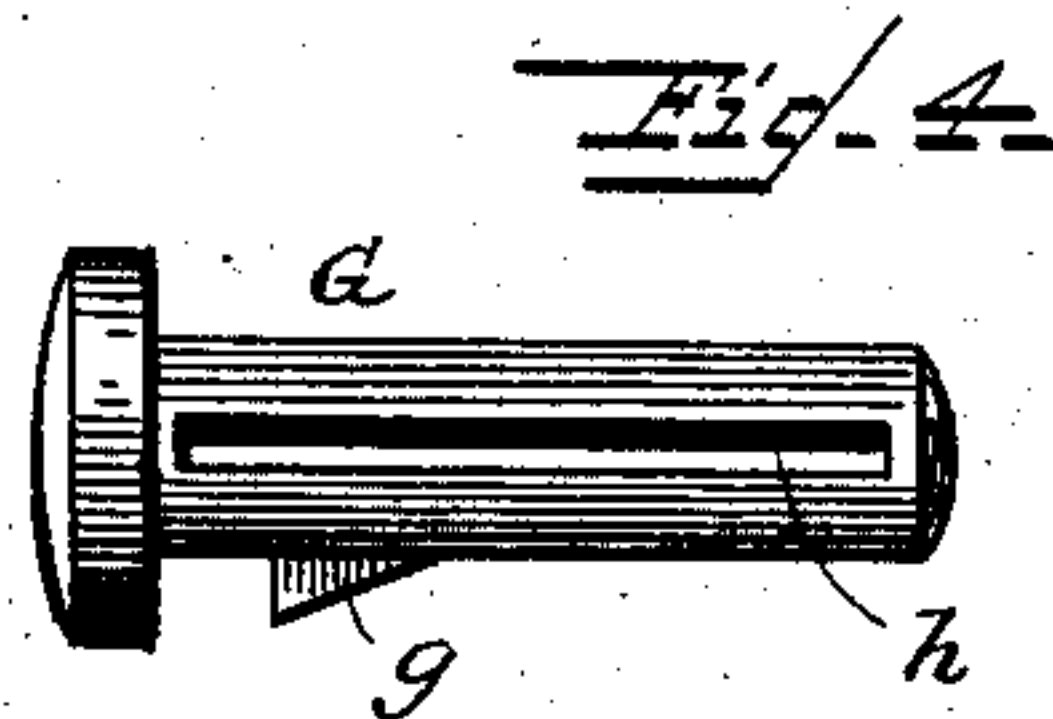
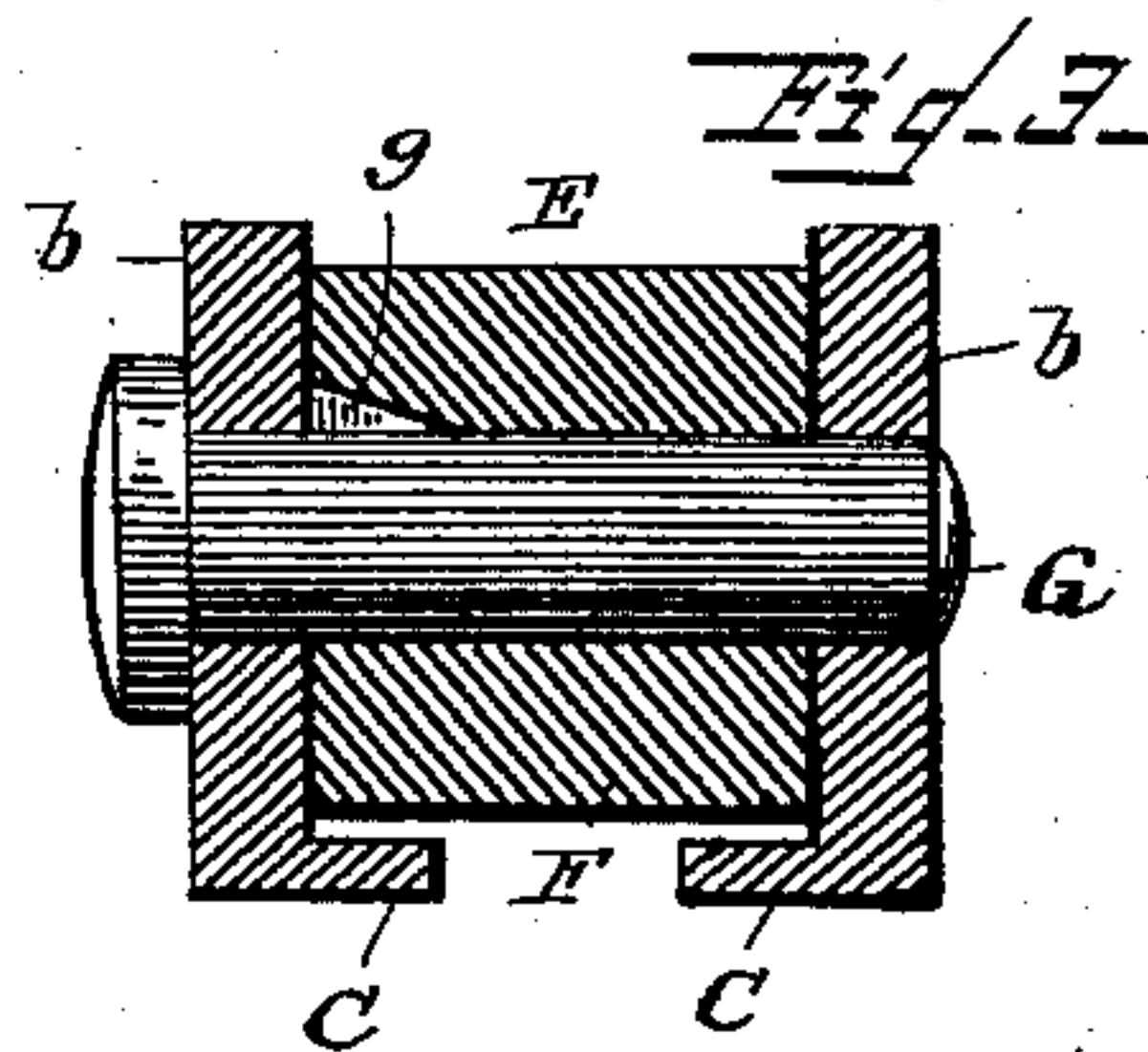
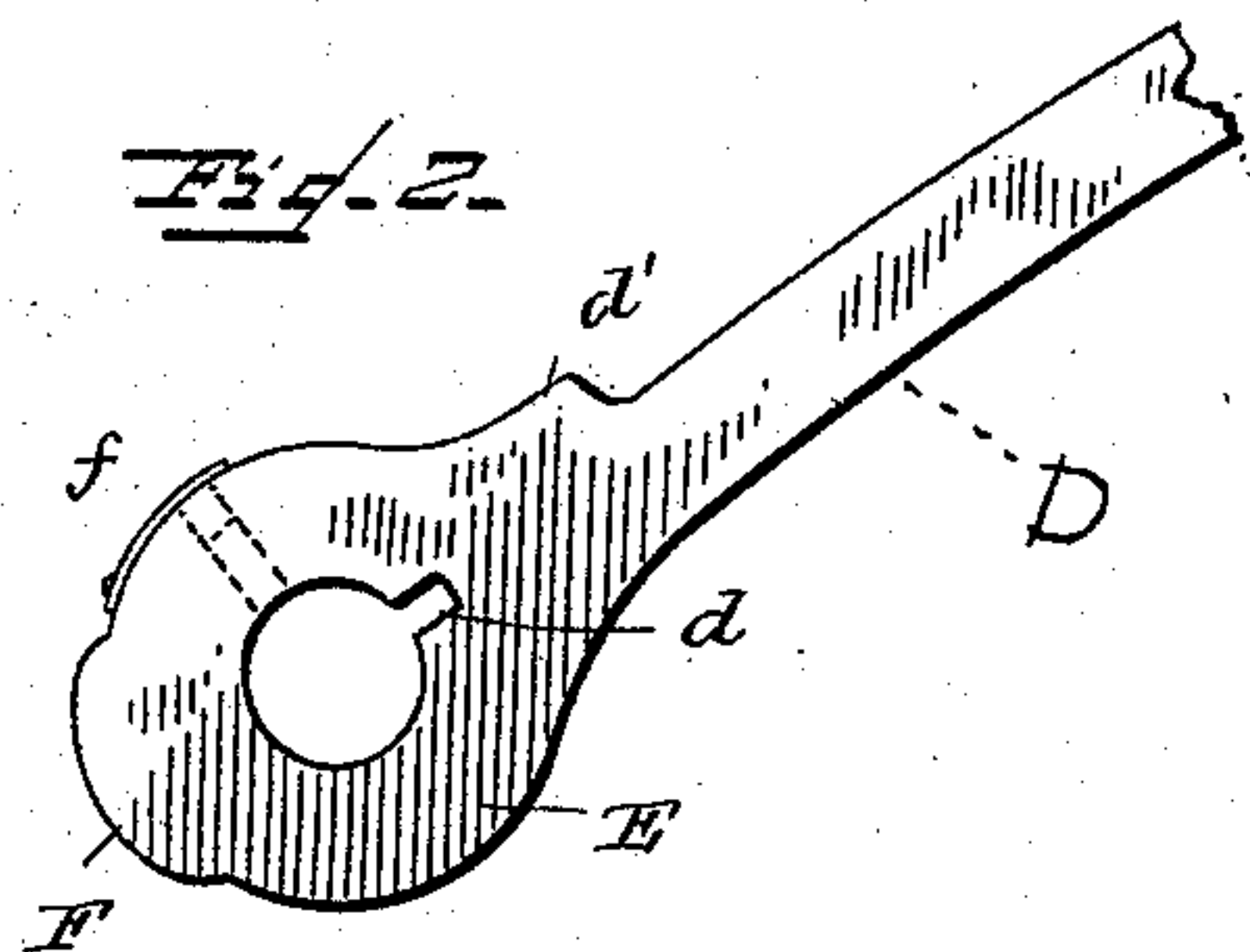
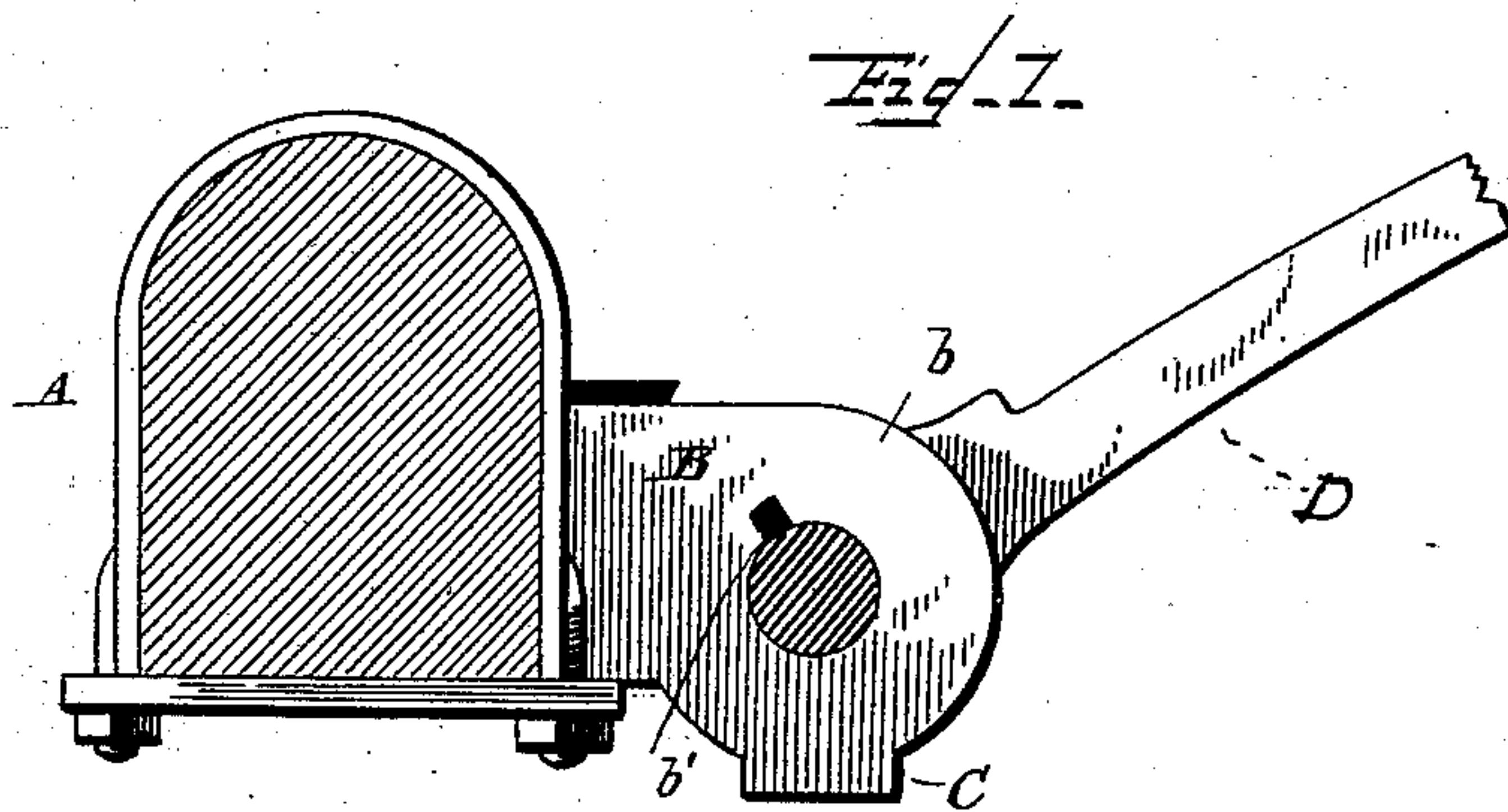
(No Model.)

J. L. CULBERSON.

THILL COUPLING.

No. 389,793.

Patented Sept. 18, 1888.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN L. CULBERSON, OF HENDRYSBURG, OHIO, ASSIGNOR OF ONE-HALF TO  
FLEETWOOD C. JONES, OF SAME PLACE.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 389,793, dated September 18, 1888.

Application filed June 2, 1888. Serial No. 275,810. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. CULBERSON, a citizen of the United States, residing at Hendrysburg, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Thill-Couplings; 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 an improvement in thill-couplings; and it consists in the construction and arrangement of parts, more fully hereinafter described, and pointed out in the claims.

The object of my invention is to provide a simple, efficient, and durable coupling for thills, one which will admit of a quick and easy coupling or uncoupling without the use of tools. I attain this object by the construction illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation. Fig. 2 is a detail view of the thill-iron. Fig. 3 is a transverse vertical section; and Figs. 4 and 5 are detail views of the pintle, the latter being a modified form.

In the drawings, A represents a clip, of the usual form, having arms or side bars, B, extending out therefrom parallel with each other, as is usual in this class of couplings. These arms B have eyes or sockets *b* at their outer ends, registering with each other, their lower sides being extended below the plane of the under side of the arms B, while their upper edges are on the same plane, for purposes hereinafter stated. Formed on the lower inner face of the ends *b* are flanges C, made integral with said ends and extending inward to a point adjacent to each other, having a space between.

A radial groove, *b'*, is formed in the walls of the eye of the outer arm, B, at a point near its upper side, where the metal is re-enforced by its extending out even with the upper side of the rounded end or eye, thereby retaining the equal strength of the eye throughout its entire circumference.

D represents the shaft-iron, which, as shown in Fig. 2, has an eye, E, formed on its end, which has a radial groove, *d*, made in its inner

wall adjacent to the end of the shaft-iron. This groove is made either entirely across the eye or inclined, as shown in Fig. 3, at one side only. To prevent the groove *d* from weakening the eye, a shoulder or brace, *d'*, is formed integrally with the iron at a point directly opposite the groove, which also adds strength to the connection of the shaft-iron and eye. On the rear end of the eye of the shaft-iron, at a point a short distance above the axial center, is a cam projection or curved extension, F, of a width equal to the width of the eye. This projection is of sufficient thickness to occupy the space between the eye and the flanges on the arms, and impinges against the same when the thills are thrown back for uncoupling. An oil-aperture, *f*, is made in the upper side of the eye *d*, which leads into its center openings. This aperture is made dust-proof by having a suitable spring-slide fitted thereon.

G is the pintle, cylindrical in shape, having a head on one of its ends and a spline or feather, *g*, formed longitudinally on its side a distance from the head equal to the thickness of one of the arms B. This spline is formed with a vertical outer edge, and is inclined inwardly on its upper edge, as shown in Fig. 4, its dimension being nearly equal to the inclined groove in the eye and the groove in the arm, so that it passes freely through the latter into the former, and is then retained. In case the groove is made entirely across the eye the spline is made as shown in Fig. 5. A groove or trough, *h*, is cut longitudinally in the upper side of the cylindrical portion of the pintle directly under the oil aperture *f* of the eye *d*, for holding the lubricant and feeding it gradually to the bearings on the arms in which the pintle works.

The operation of the above-described device is as follows: When the shafts are to be coupled, they are thrown up until the grooves in the eyes of the shaft-irons register with the grooves in the arms B. While in this position the cams on the ends of the eyes of the shaft-irons rest on the flanges of the arms, supporting the thills, and holding them in a position to secure a perfect registration of the eyes and grooves, thereby admitting of an easy insertion of the pintle



without its binding. When the shafts are lowered, the pintle is locked in place by the spline being in the groove in the shaft-iron, the movement of the shaft forcing the grooves out of alignment, thus preventing the withdrawal of the pintle. As the shafts are lowered, the cams on the eyes of the shaft-irons are carried up from the flanges on the arms, and the shaft is held and carried by the pintle. The advantages thus derived are that the thill may be readily coupled or uncoupled without the use of hammer, wrench, or other tool, and as the pintles are extracted the thills are held in place and prevented from falling by their resting on the flanges. As will be readily seen, when the shafts are thrown up the cams coming in contact with the flanges raises them and releases the pintle of the weight of the shaft.

A suitable rubber cushion may be placed between the ends of the thill-irons and the clip to prevent rattling.

In this construction of pintle I wholly overcome the necessity of bolts or nuts.

I am aware that many minor changes in the construction and arrangement of parts of my improvement can be made and substituted for those shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a thill-coupling, the combination, with the parallel arms having eyes on their ends and inwardly-extending flanges on the bottom of said eyes, one of said eyes having a radial groove formed therein, a thill-iron provided with an eye having a radial groove adapted to register with said other groove when the thill is to be coupled, a cam on the end of the said thill-iron, and a pintle having a spline arranged to fit in said grooves, substantially as described.

2. In a thill-coupling, the combination, with the parallel bars, eyes formed thereon, inwardly-extending flanges formed on the lower inner face of said eyes, a shaft-iron having an eye on its end, a cam on said eye, said eyes having radial grooves formed in their inner walls, and said thill-iron having an oil-aperture formed therein, a pintle having an oil-groove on its upper side, and a spline which is adapted to fit in said radial grooves when the thill is coupled, substantially as described.

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

JOHN L. CULBERSON.

Witnesses:

O. L. TAYLOR,

W. H. JONES.