

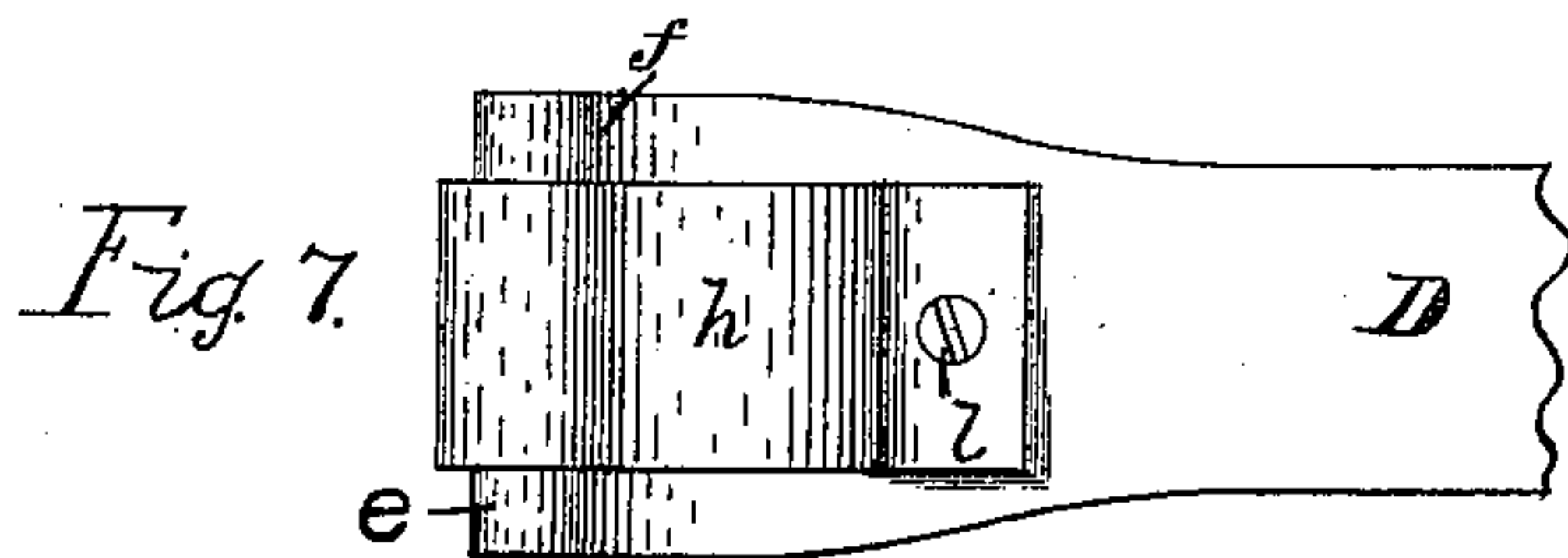
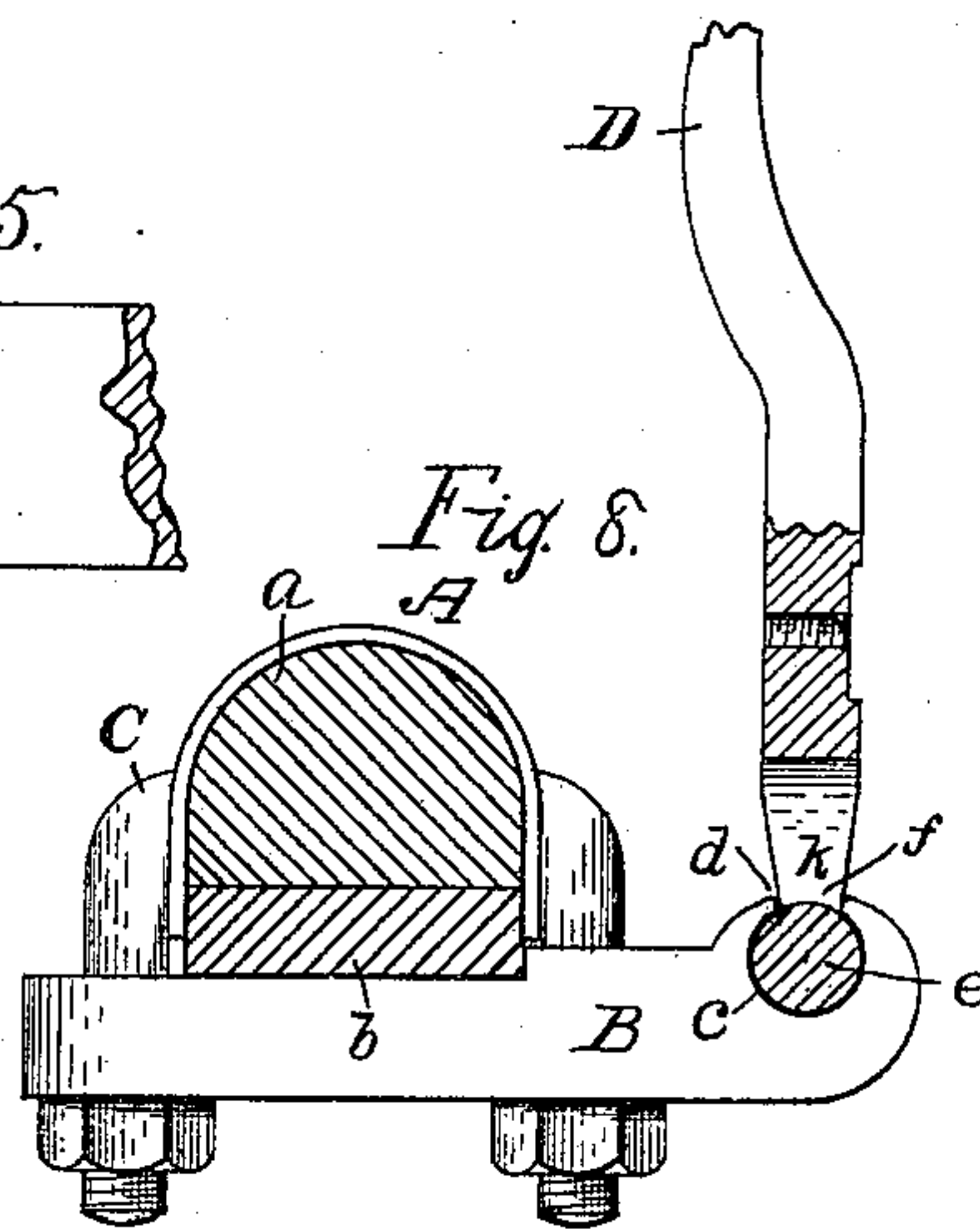
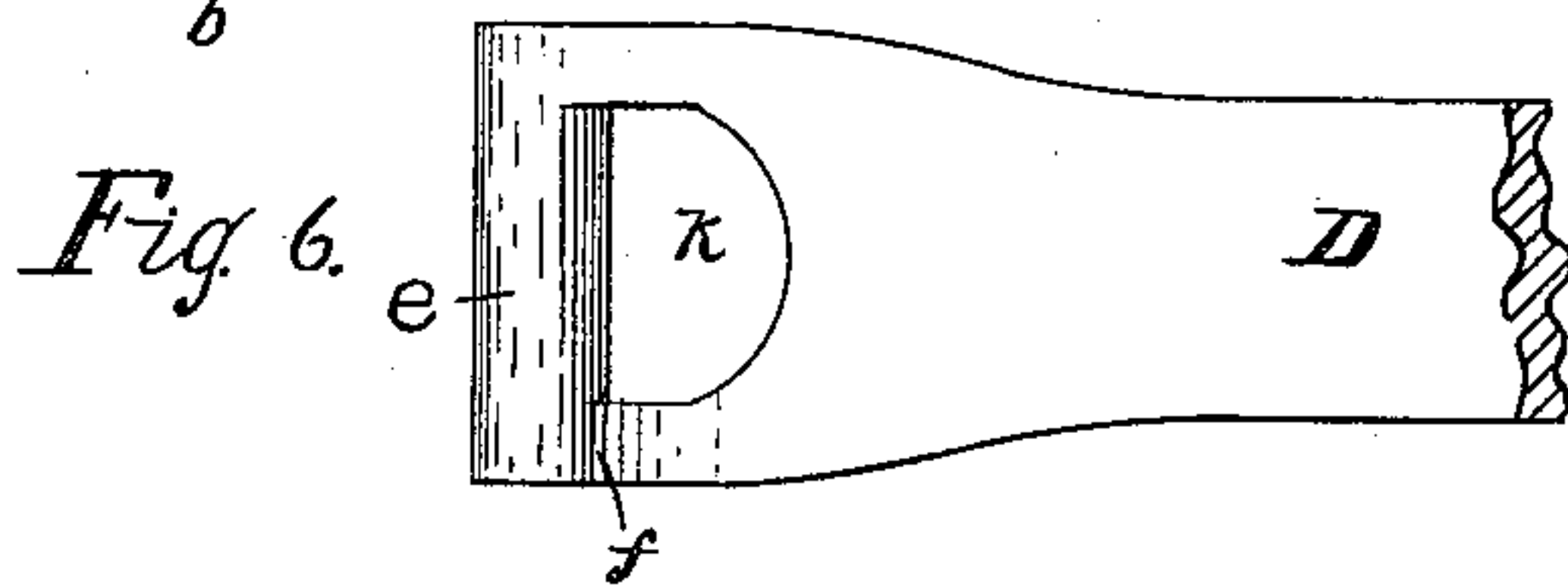
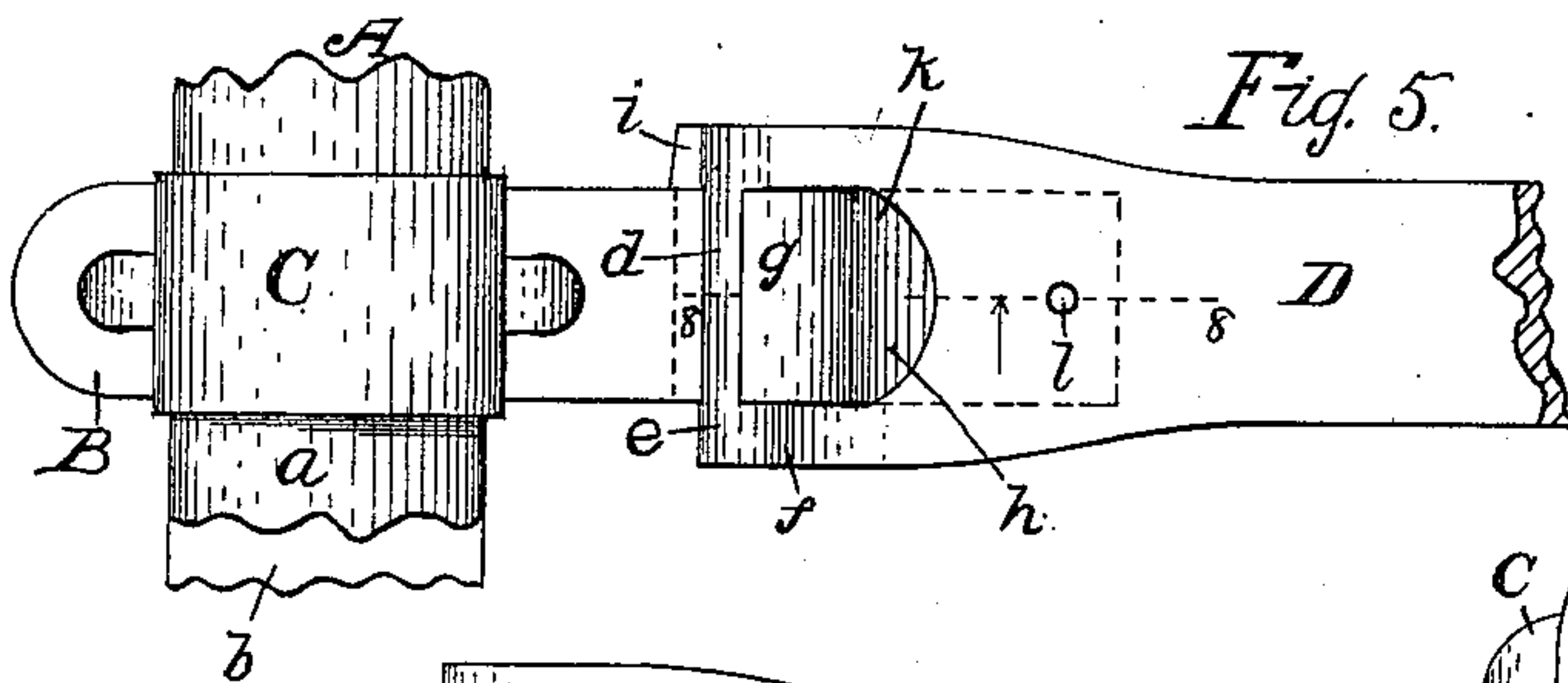
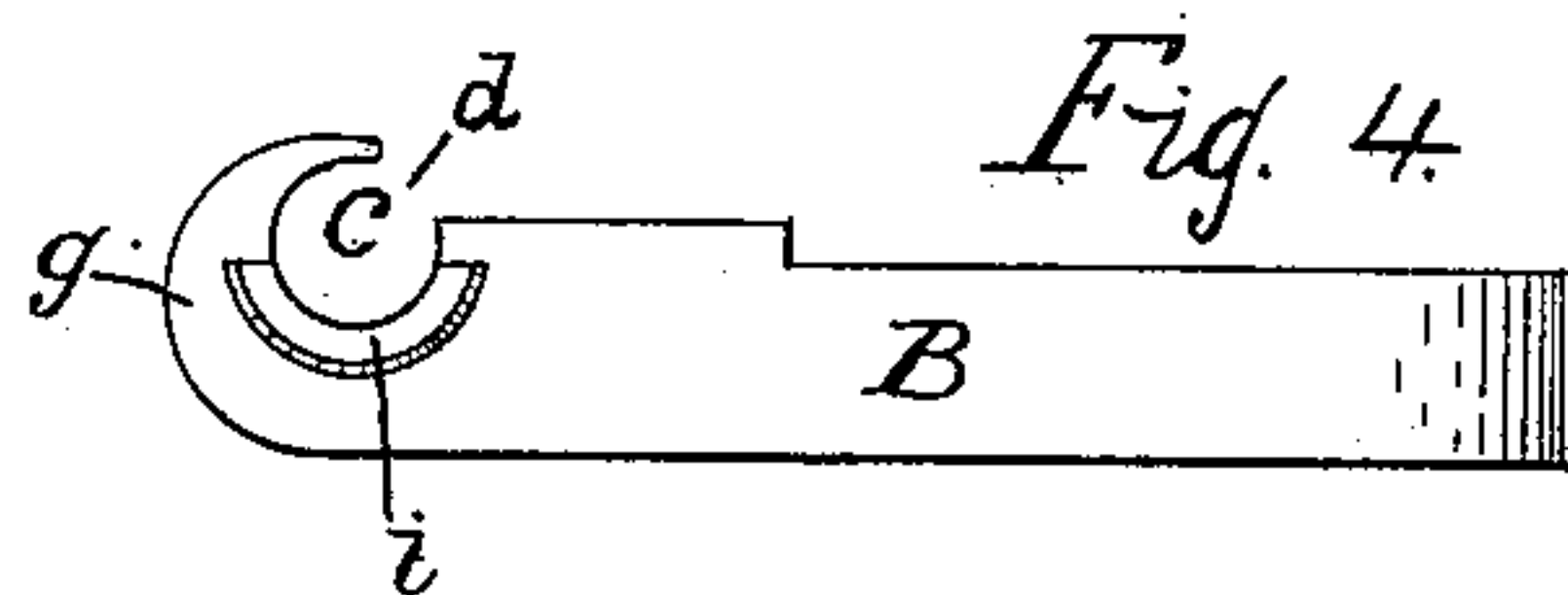
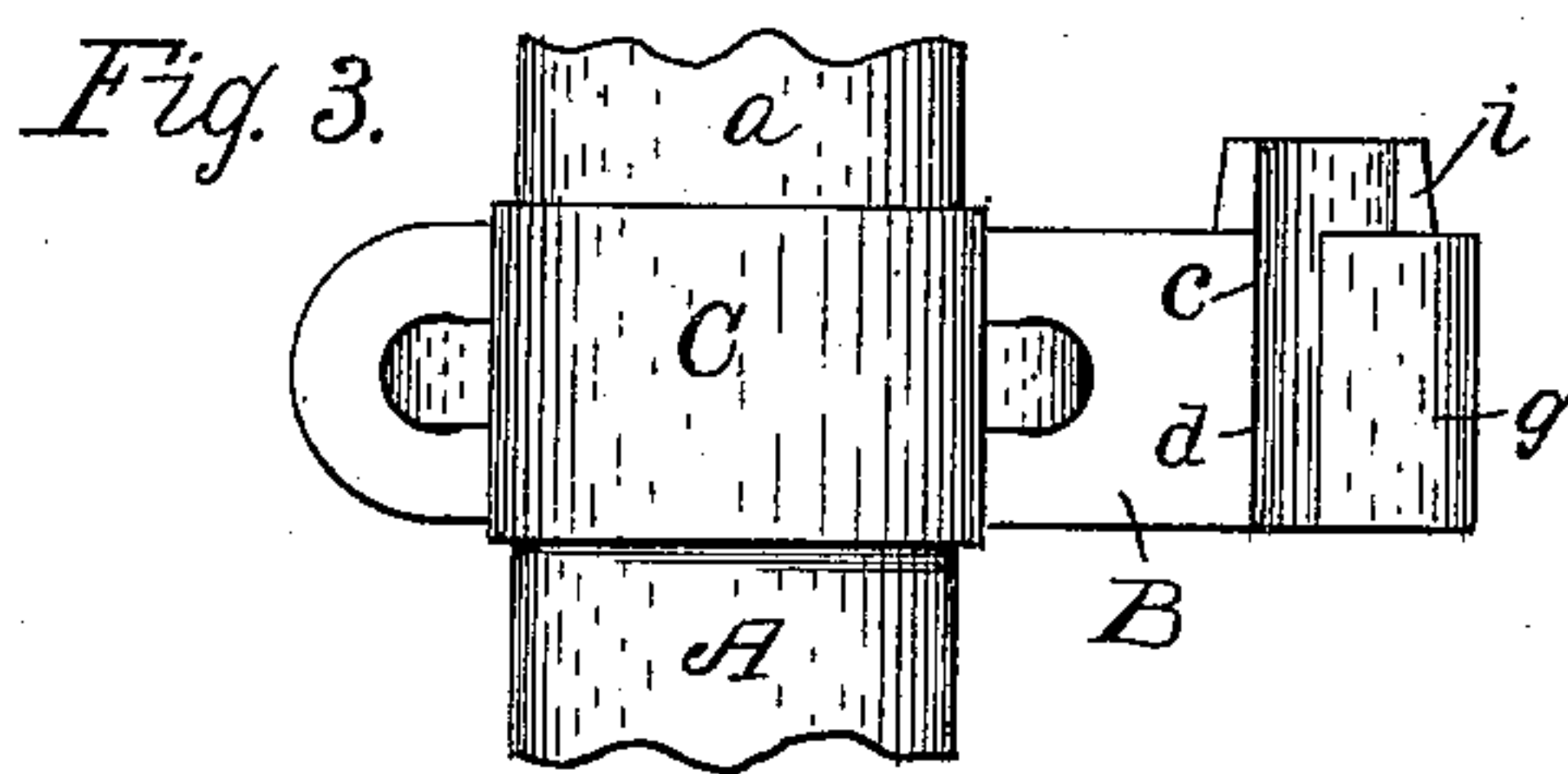
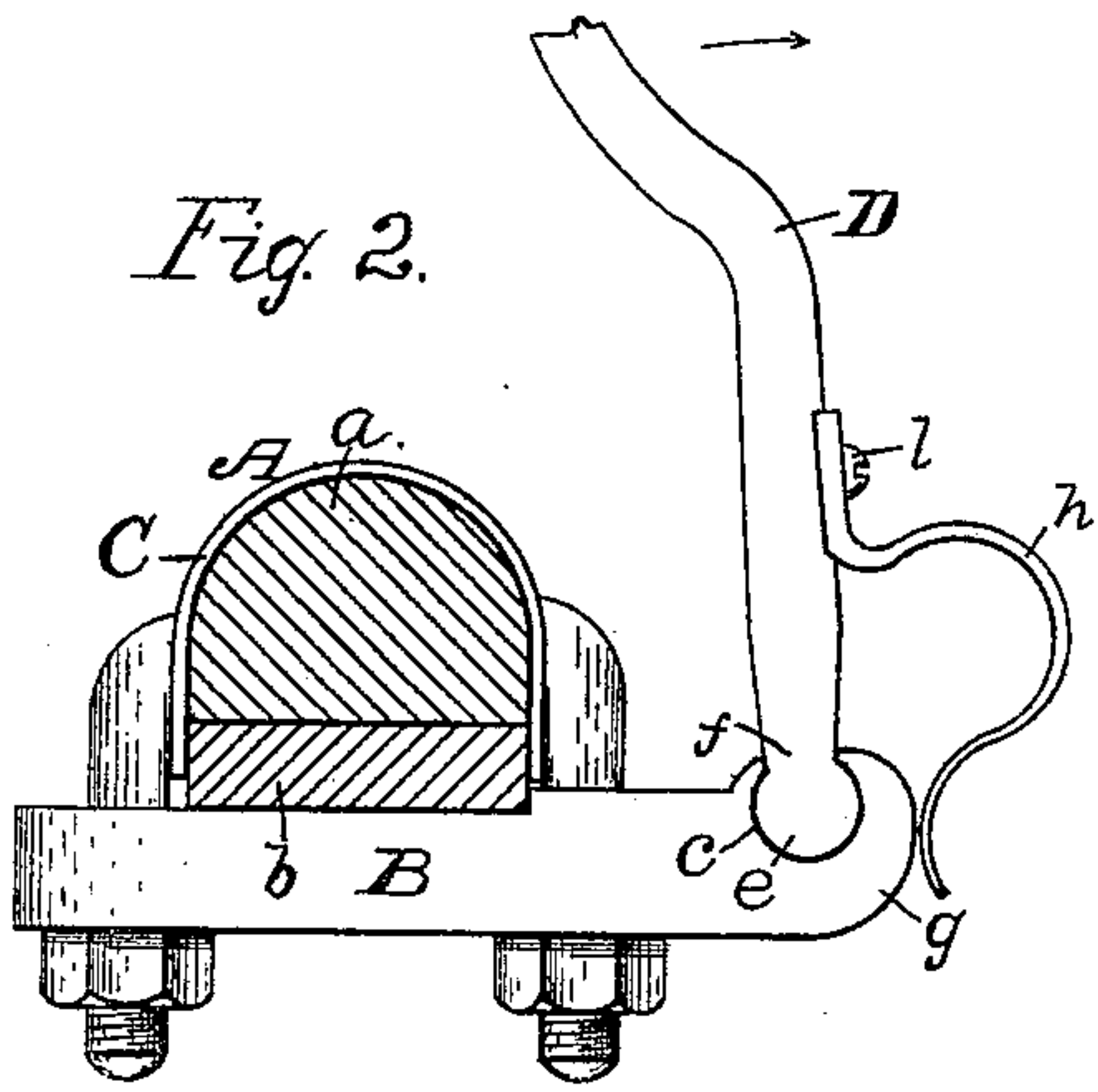
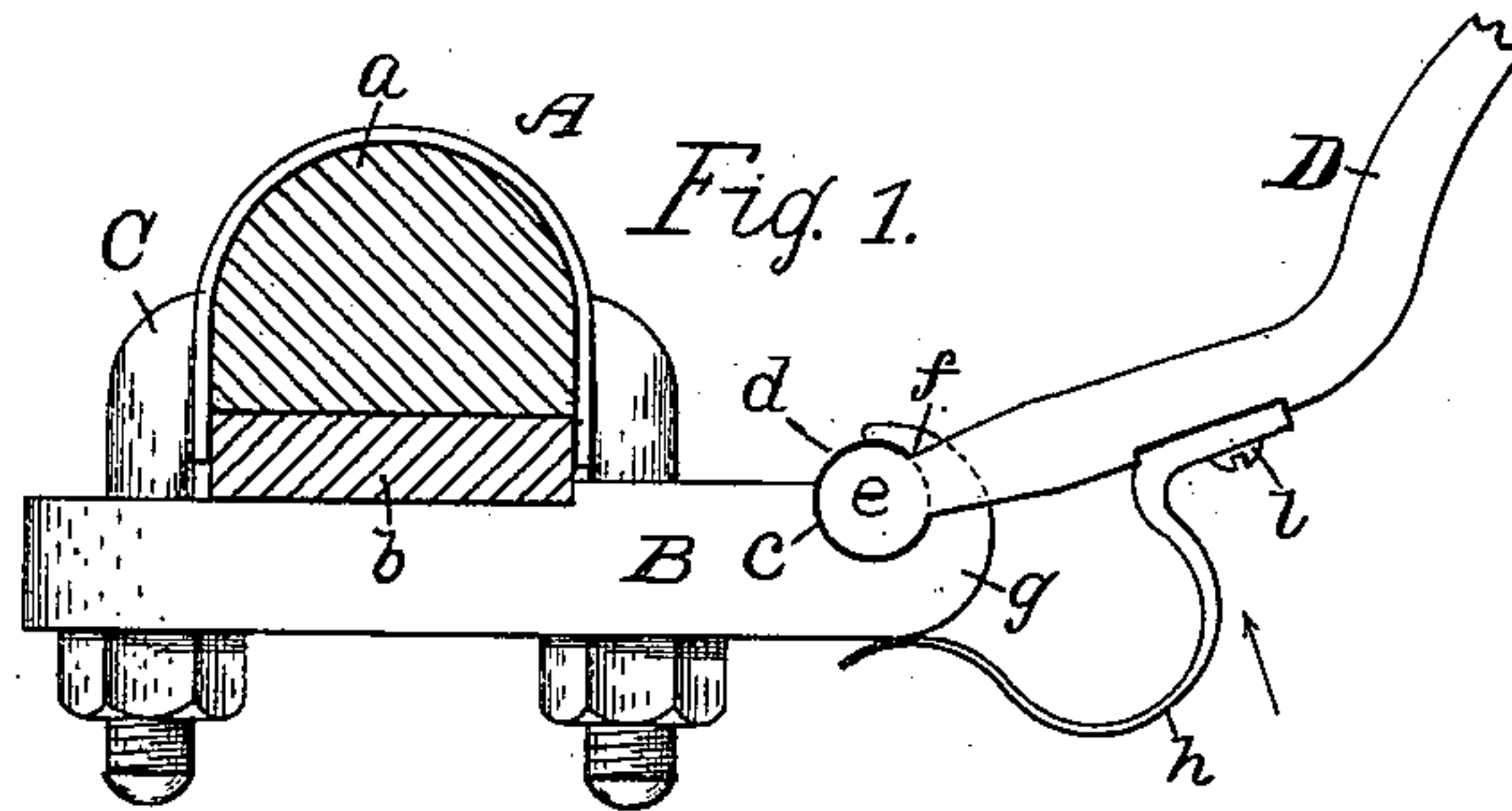
No. 618,437.

Patented Jan. 31, 1899.

A. ROSS.
THILL COUPLING.

(Application filed July 28, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ALEXANDER ROSS, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF
TO FRED H. BEACH, OF SAME PLACE.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 618,437, dated January 31, 1899.

Application filed July 28, 1898. Serial No. 687,122. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER ROSS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Thill-Couplings, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention is an improved thill-coupling belonging to the class commonly known and understood as "antirattling" couplers.

The object of the invention is to produce a simple coupling for the thills of a vehicle of that class formed of few parts and so constructed that the thills may be attached to the vehicle or detached therefrom by a simple lateral movement and without removing and replacing or loosening or disturbing any parts of the device. In using this device when connecting the thills with the axle the former are merely elevated and slipped horizontally into place, and when disconnected they are similarly slipped out of their bearings. Springs rigid with the thill-irons serve to hold the parts snugly against their respective bearings, so that no jarring or rattling can occur while the vehicle is in use.

The invention is hereinafter fully described and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of the coupling and associated parts when in use, the axle being transversely sectioned. Fig. 2 is a similar elevation showing the device as when attaching or detaching the thills. Fig. 3 is a plan of a portion of the axle and the main coupling-iron. Fig. 4 is a reverse side elevation of the main coupling-iron. Fig. 5 is a plan of the device with the thill-iron in place. Fig. 6 is a plan of a portion of the thill-iron detached. Fig. 7 is a view of the under surface of the thill-iron, seen as indicated by arrow in Fig. 1, showing the tension-spring. Fig. 8 is a side elevation of the device, the thill-iron being longitudinally sectioned, as on the dotted line 8 8 in Fig. 5.

Referring to the parts shown in the draw-

ings, A is an axle of ordinary kind, consisting of a wooden stock *a* and iron axle *b*.

B is the main iron or body of the coupling device, held to the axle by an ordinary clip C in the usual manner.

D is the thill-iron. The main coupling-iron B projects some distance forward of the axle and is formed near its outer enlarged end with a horizontal cylindrical cavity or opening *c*, Figs. 3 and 4, parallel with the axle and having a narrow longitudinal slit *d*, opening out at one side, as shown. The thill-iron D is formed with a transverse cylindrical head *e*, adapted to fit and fill the cavity *c*, as shown in Figs. 1, 2, and 5. The thill-iron is reduced in thickness adjacent to the head *e* or formed into a neck *f*, narrow enough to enter the slit *d*, so that when the thills are turned up to the position indicated in Fig. 2 the head *e* may be slipped laterally into the cavity or seat *c* in the main iron B.

The head *g* of the main iron B is transversely curved or made substantially cylindrical as to its exterior surface, this cylindrical surface being eccentric with the cavity *c*, as appears in Figs. 1, 2, and 4. The thill-iron is provided with a spring *h* on its under surface, with its free end in position to bear against the convex surface of this head *g*, as appears in Fig. 1, when the thills are in position for use; but on account of the eccentricity of the head *g* the spring clears the head *g* entirely, as shown in Fig. 2, when the thills are turned up for the purpose of either coupling or uncoupling them, as already described. The slit or opening *d* is narrower than the diameter of the head *e* of the thill-iron, so that the latter can escape from the seat *c* only by sliding out laterally, the width of said slit being sufficient, however, to receive the neck *f* of the thill-iron. Two of these couplings are employed on the axle, one opposite each thill, and in the act of coupling or uncoupling the thills the heads *e* are slipped sidewise into their seats, the springs not interfering with either process.

To assist in readily guiding the heads *e* into their seats, the bodies B are formed with projecting ledges *i*, Figs. 3 and 4, adjacent to

and forming in part lateral continuations of the rests *c*. When attaching the thills to the vehicle, the heads of the two thill-irons are placed in the respective open rests or guides
5 *i*, the thills being held up, as above described.

Each thill-iron is wider than the associated body *B*, as shown in Fig. 5, and formed with an opening *k*, Figs. 6 and 8, adjacent to the head *e*, in which to receive the head *g* of the
10 part *B*. The tension-spring *h* is preferably made about the width of the head *g* and bowed or curved, substantially as shown. In attaching the spring to the thill-iron it is preferably set into a shallow recess or seat,
15 as shown in Figs. 1 and 2, and may be held by a simple fastener *l*. When in position, the spring practically covers on the under side the opening *k*. In this construction of the coupling there are no loose or separate
20 parts—such as bolts, nuts, washers, &c.—to be removed and replaced and no parts to be disturbed. The bearings of the thill-irons upon the bodies *B* are broad and continuous, being the whole breadth of each body *B*, to-
25 gether with that of the ledges *i*.

When the thills are turned up for the purpose of coupling or uncoupling, the heads *g* pass out of the respective openings *k* and do not interfere with the lateral motions of the
30 thills to carry them into or out of their seats. When the thills are in substantially horizontal positions, as while in use, the heads *g* occupy the openings *k* and prevent the thills from sliding out of place.

35 It is not essential whether the slit *d* is formed directly at the top of the cavity *c*, as shown in Figs. 2 and 8, or a little at one side, as shown in the other figures, this being a matter of judgment or convenience. It is
40 only necessary that the slit should be so formed that in removing the thills they will need to be raised to a position higher than

they can ever assume while in use or attached to the horse.

What I claim as my invention is—

45 1. A device of the kind described, having a main part or body adapted to be secured to the axle, formed with a cylindrical cavity, and a slit narrower than the diameter of the cavity opening out at one side thereof, and a
50 ledge or guiding-piece projecting at one side of said main part or body both laterally and longitudinally beyond the end of the cavity, adjacent to said cavity and constituting an extension or continuation of the latter, in com-
55 bination with a thill-iron formed with a cylindrical head adapted to occupy said cavity, and a reduced part or neck adjacent to said head adapted to pass into said slit or opening in the side of the cavity, substantially as set
60 forth.

2. The combination with the main part having cylindrical cavity with contracted opening therefrom, rests, head and semicircular ledge projecting beyond and forming a con-
65 tinuation of the said rests, of the thill-iron having transverse cylindrical head and reduced in thickness adjacent to the said head forming a neck to enter the said contracted opening the thill-iron being wider than the
70 main part and having an opening adjacent to the head, and a flat spring secured at one end to the under side of the thill-iron and its free end curved and bearing directly against and
75 riding on the convex end of the main part and extended across said opening, all substantially as and for the purpose specified.

In witness whereof I have hereunto set my hand, this 26th day of July, 1898, in the presence of two subscribing witnesses.

ALEXANDER ROSS.

Witnesses:

ENOS B. WHITMORE,
M. L. WINSTON.