

L. R. BLACKMORE.

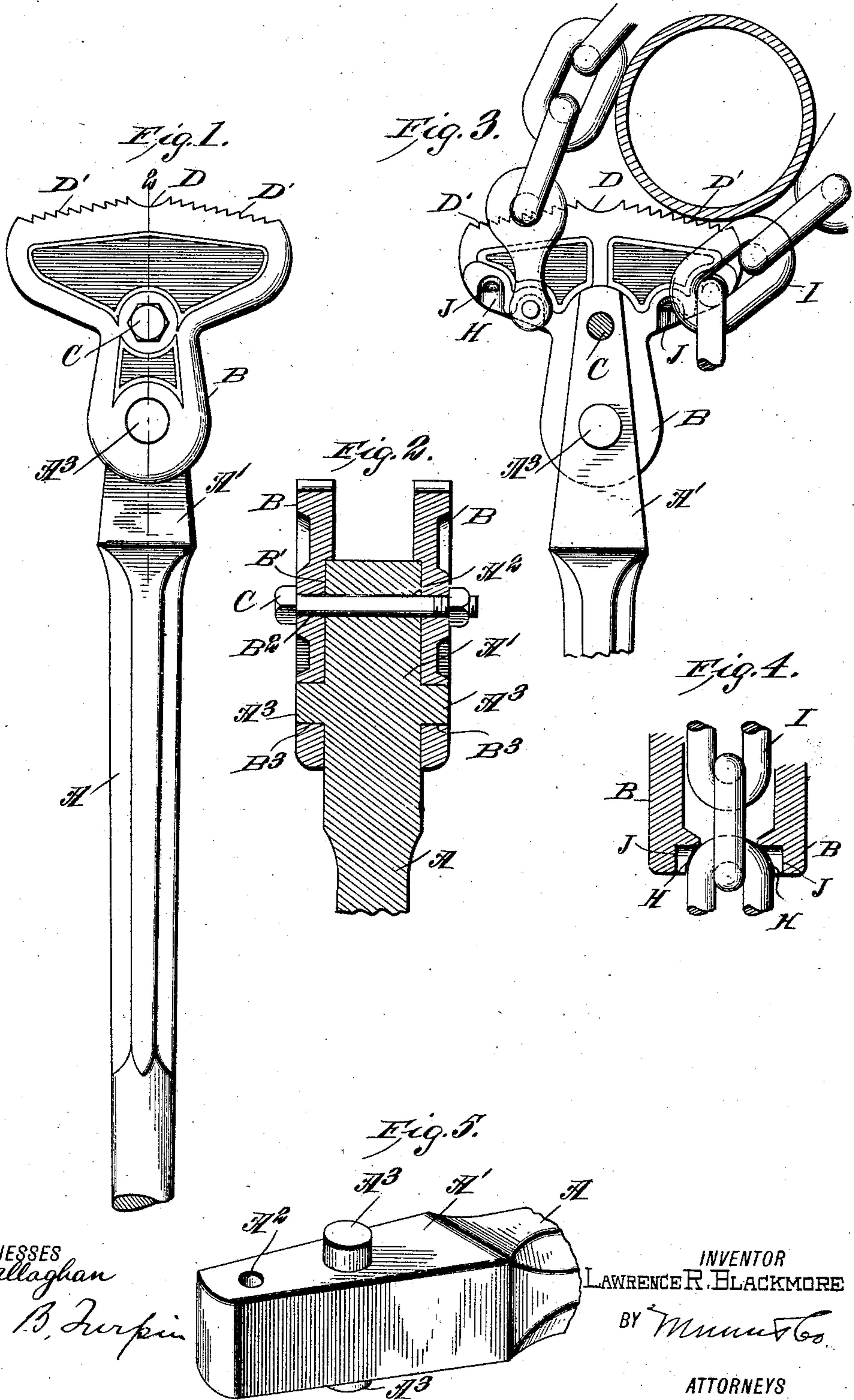
PIPE WRENCH.

APPLICATION FILED JUNE 5, 1909.

974,019.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 1.



WITNESSES
E. M. Callaghan
Perry B. Surpin

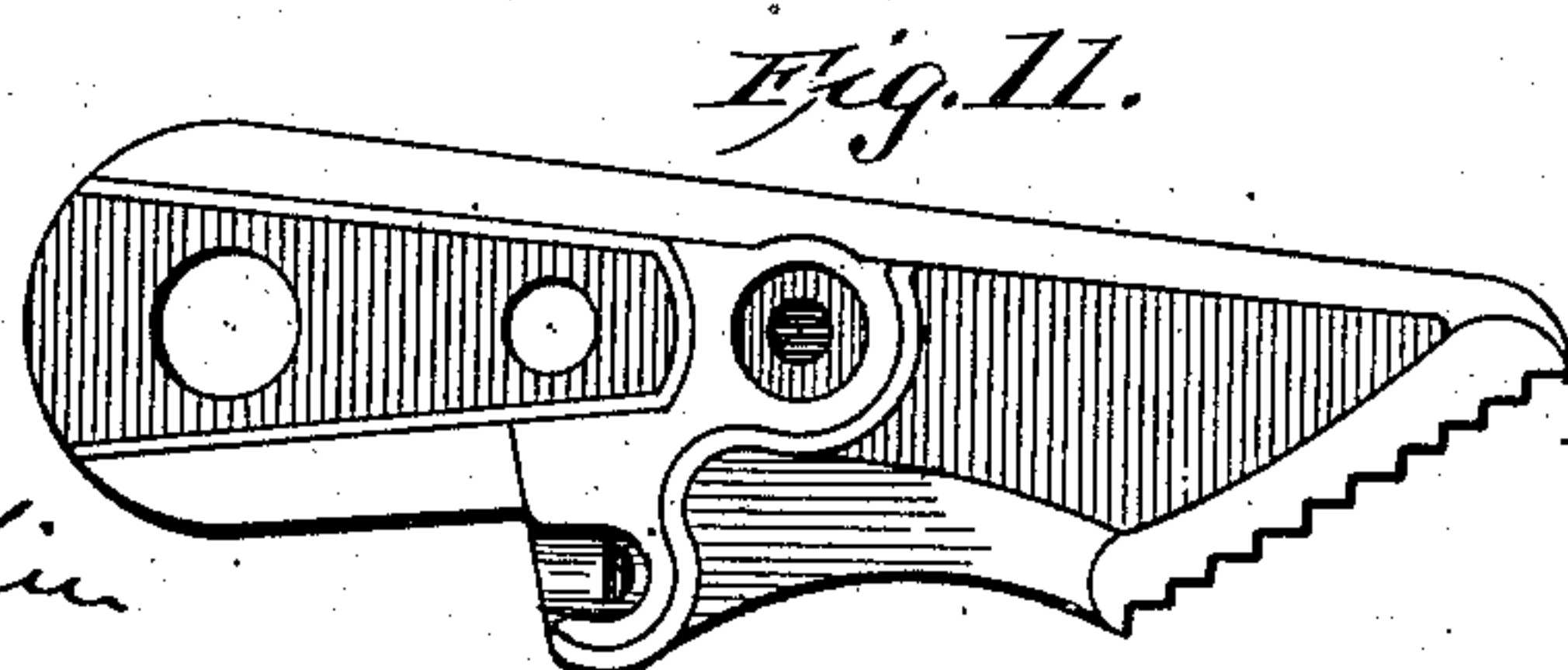
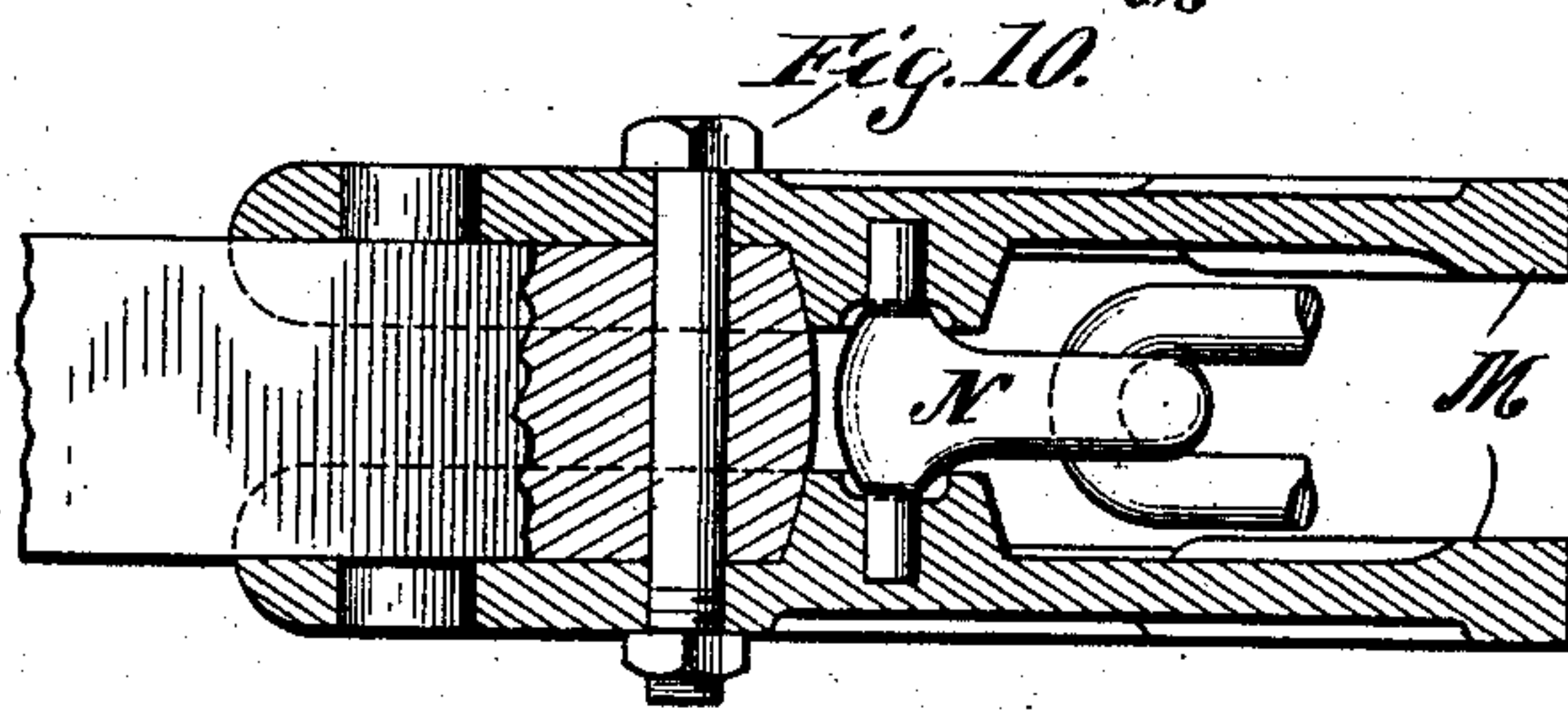
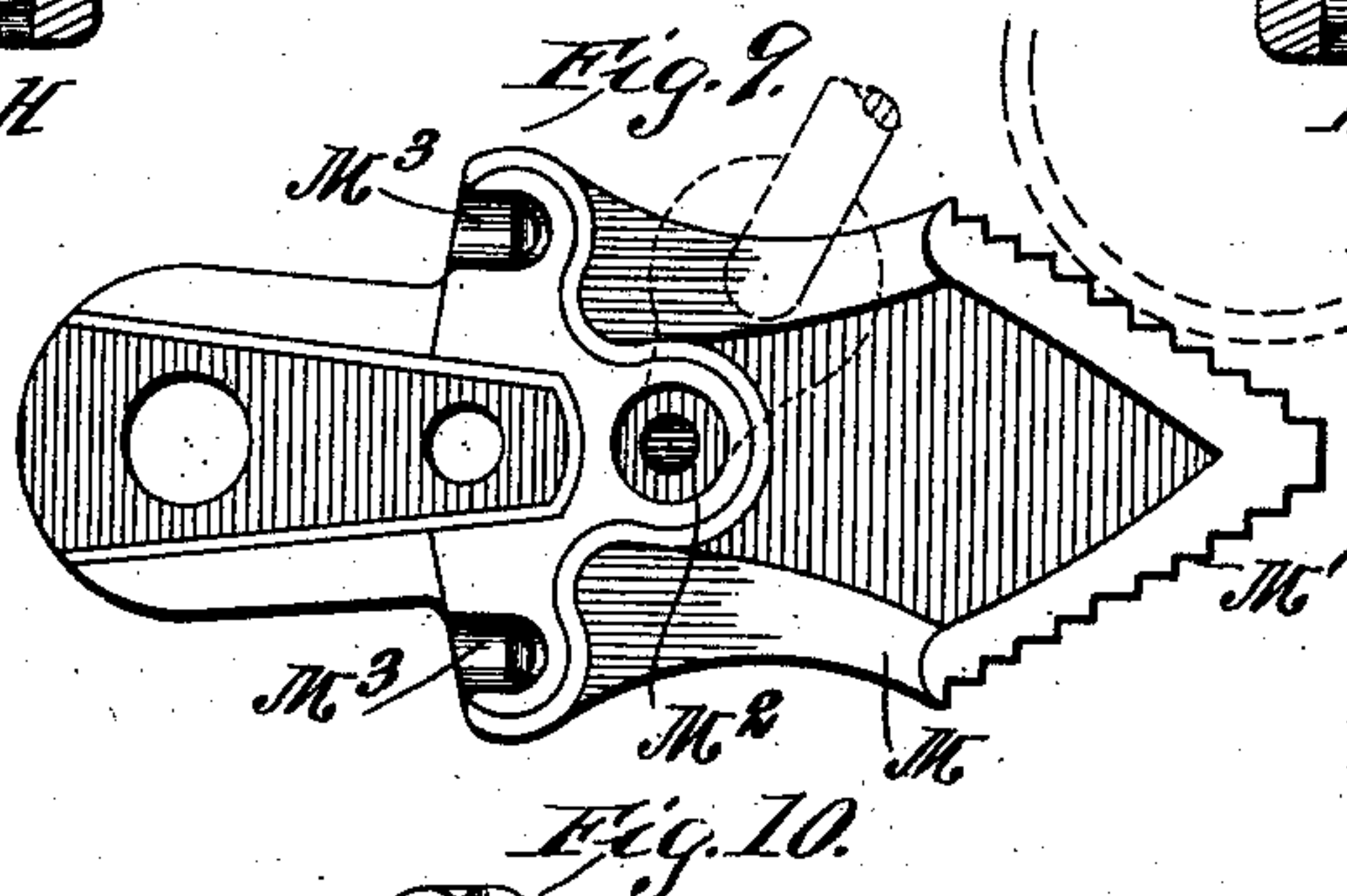
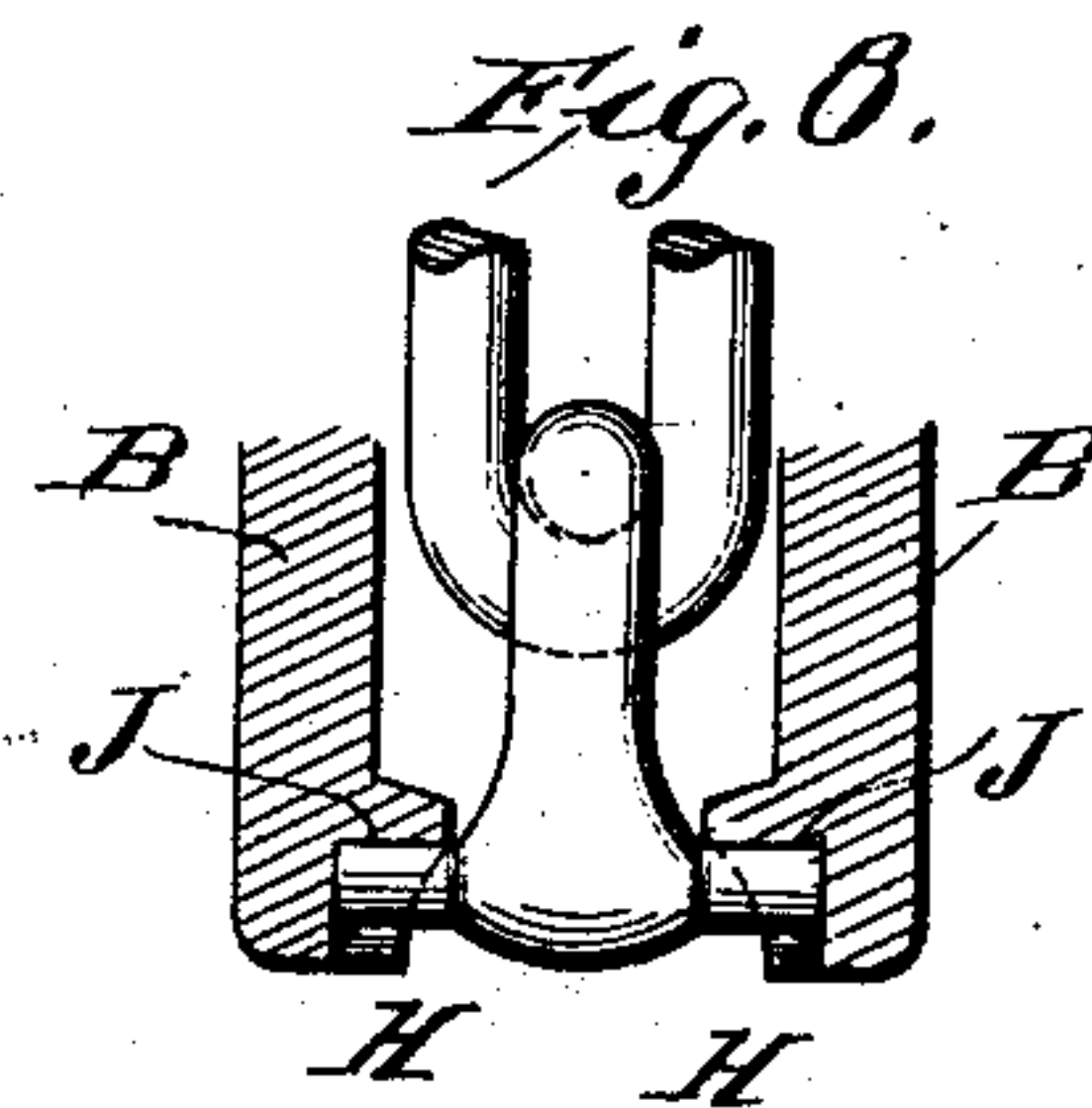
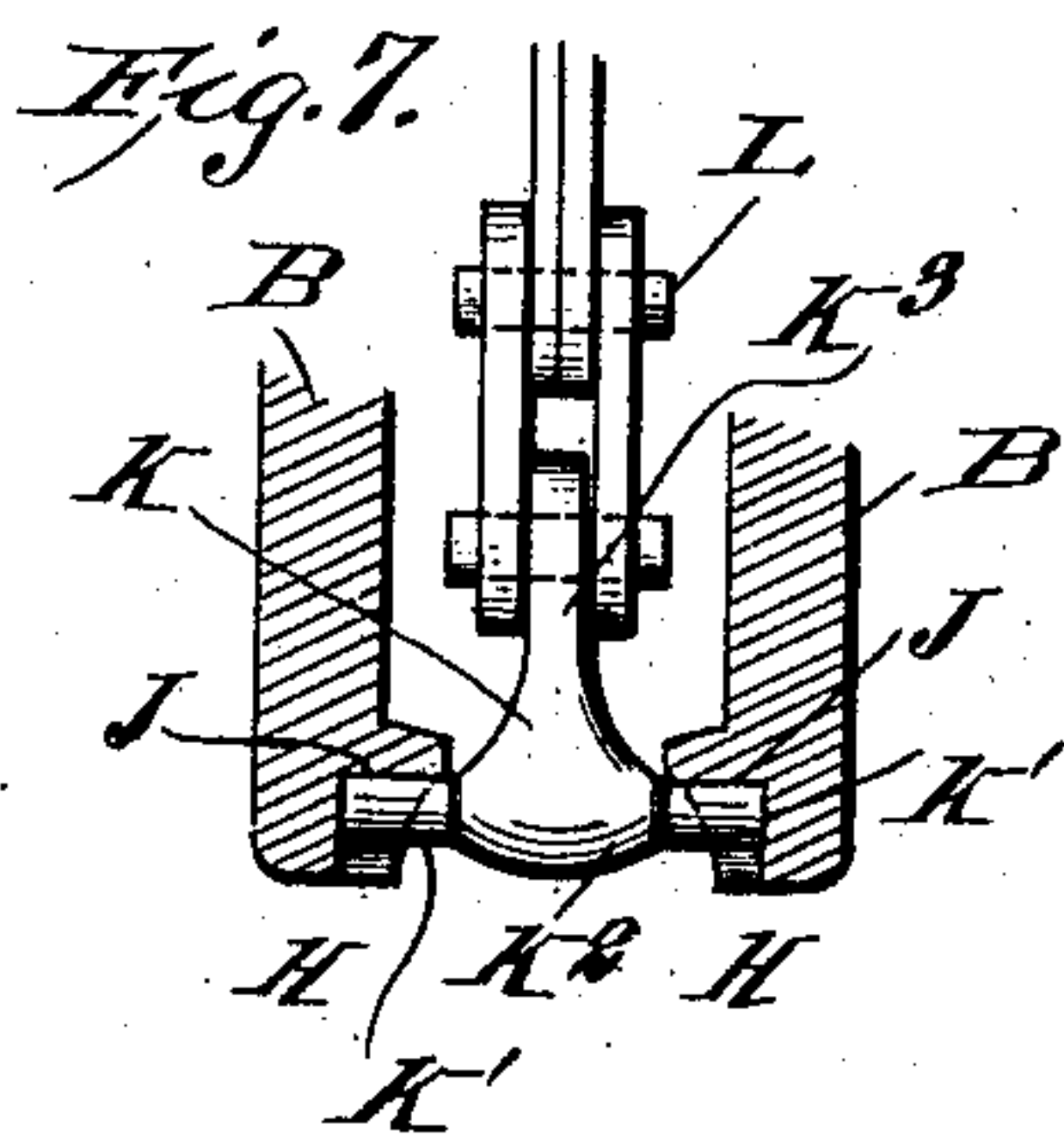
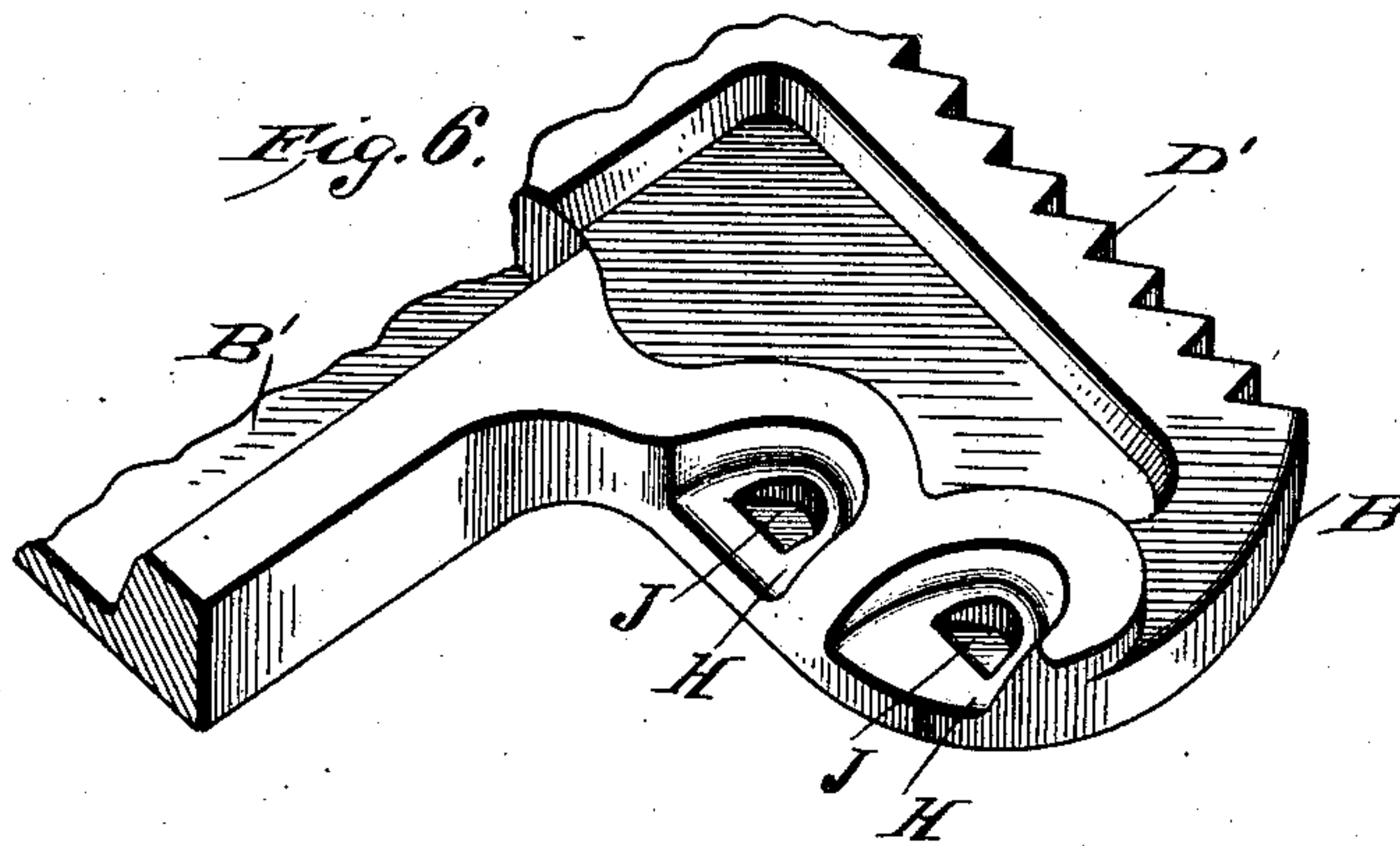
INVENTOR
LAWRENCE R. BLACKMORE
BY *Munn & Co.*
ATTORNEYS

L. R. BLACKMORE.
PIPE WRENCH.
APPLICATION FILED JUNE 5, 1909.

974,019.

Patented Oct. 25, 1910.

2 SHEETS—SHEET 2.



WITNESSES
Wm. Gallagher
Perry B. Durpin

INVENTOR
LAWRENCE R. BLACKMORE
BY *Munroe*
ATTORNEYS

UNITED STATES PATENT OFFICE.

LAWRENCE R. BLACKMORE, OF McKEESPORT, PENNSYLVANIA.

PIPE-WRENCH.

974,019.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed June 5, 1909. Serial No. 500,328.

To all whom it may concern:

Be it known that I, LAWRENCE R. BLACKMORE, a citizen of the United States, and a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have made certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

This invention is an improvement in pipe wrenches and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is a side view of a wrench embodying my invention. Fig. 2 is a detail longitudinal section on about line 2—2 of Fig. 1. Fig. 3 is a side view of the wrench, one of the jaws being removed and the fastening bolt being shown in section. Fig. 4 is a detail section illustrating the surfaces for engagement by the chain links. Fig. 5 is a detail perspective view of the head end of the handle bar. Fig. 6 is a detail enlarged perspective view of a portion of one of the jaws shown in Fig. 3, and illustrating the seats for engagement by the chain links. Figs. 7 and 8 are sectional views partly broken away, illustrating the connecting link engaging with the jaws together with different forms of chain links. Fig. 9 is an elevation of the inner face of a different form of jaw from that shown in Figs. 1, 2 and 3. Fig. 10 is a longitudinal section, partly broken away, illustrating the jaw shown in Fig. 9, applied to the wrench head illustrated in Figs. 1, 2, 3 and 5, and Fig. 11 illustrates a modified form of the jaw shown in Fig. 9.

The handle A is formed at one end with a head A' preferably tapering toward its extremity as shown in Figs. 3 and 5, and provided near its said extremity with a transverse bolt hole A², in line with and beyond laterally extending studs A³, on opposite sides of the head A', and extending in a direction parallel to the axis of the opening A². This tapering form facilitates a tightfitting of the jaw sections B to the wrench head and the said jaw sections are recessed in their opposite faces at B' to fit the head A' and are provided with openings B², and B³, registering respectively, with the opening A² and the studs A³ when the parts are applied as shown in Fig. 2, so that the studs A³

project into the openings B³, and the bolt C may be passed through the openings A² and B² and secured to hold the jaw sections firmly upon the head A', the studs A³ increasing the strength of the connection as will be understood from Figs. 1, 2 and 3 of the drawings.

The jaw sections shown in Figs. 1, 3 and 6 are provided with the central curved seat D and with the serrated faces D' sloping down therefrom, and in the inner faces of the jaws at their lower edges I provide the transversely curved seats H adapted to receive the links I of the chain shown in Figs. 3, 4 and 10, and these curved seats H are provided with notches J, see Figs. 3, 4, 6, 7 and 8, which notches J are adapted to receive the studs K' on the connecting link K shown in Fig. 7, or the lateral studs L on the sprocket form of chain shown in Fig. 7, as will be understood from the drawings. It will be noticed that the connecting link K has the lateral studs K', and is also provided with a rounded body K², and with a shank K³ connecting it with the sprocket form of link as shown in Fig. 7, or with the open link as shown in Fig. 8 of the drawings.

In Fig. 9 I show a somewhat different form of jaw from that shown in Figs. 1, 3 and 6, the jaw M shown in Figs. 9 and 10 having the toothed faces M' at an acute angle and being provided with openings for the studs A³, and the bolt C, and also provided in their inner faces in alinement with the said openings with sockets at M² for the studs of the connecting link N. The jaw sections M being also provided at M³ with studs for engagement by the chain links in the operation of the invention.

In Fig. 11 I show a jaw somewhat similar to that shown in Figs. 9 and 10 except that in Fig. 11, I employ only one toothed face, this jaw shown in Fig. 11, being single instead of duplex as shown in Fig. 9.

I claim—

The improvement in wrenches herein described comprising a handle having a head tapering toward its extremity and provided with a transverse bolt hole, and at its opposite sides with projecting studs extending in a direction parallel to the axis of the bolt hole, jaw sections recessed in their inner faces to fit said tapered head, and provided

with openings to receive the lateral studs thereof, and with bolt holes registering, when the parts are applied, with the bolt hole of the head, the said jaw sections having jaw faces and provided in their inner edges with curved seats adapted to receive the rounded ends of open links, and having

in said seats notches adapted to receive lateral studs, and a chain cooperating with the said jaws, substantially as set forth.

LAWRENCE R. BLACKMORE.

Witnesses:

GEORGE C. BLACKMORE,
WM. M. NOBLE.