

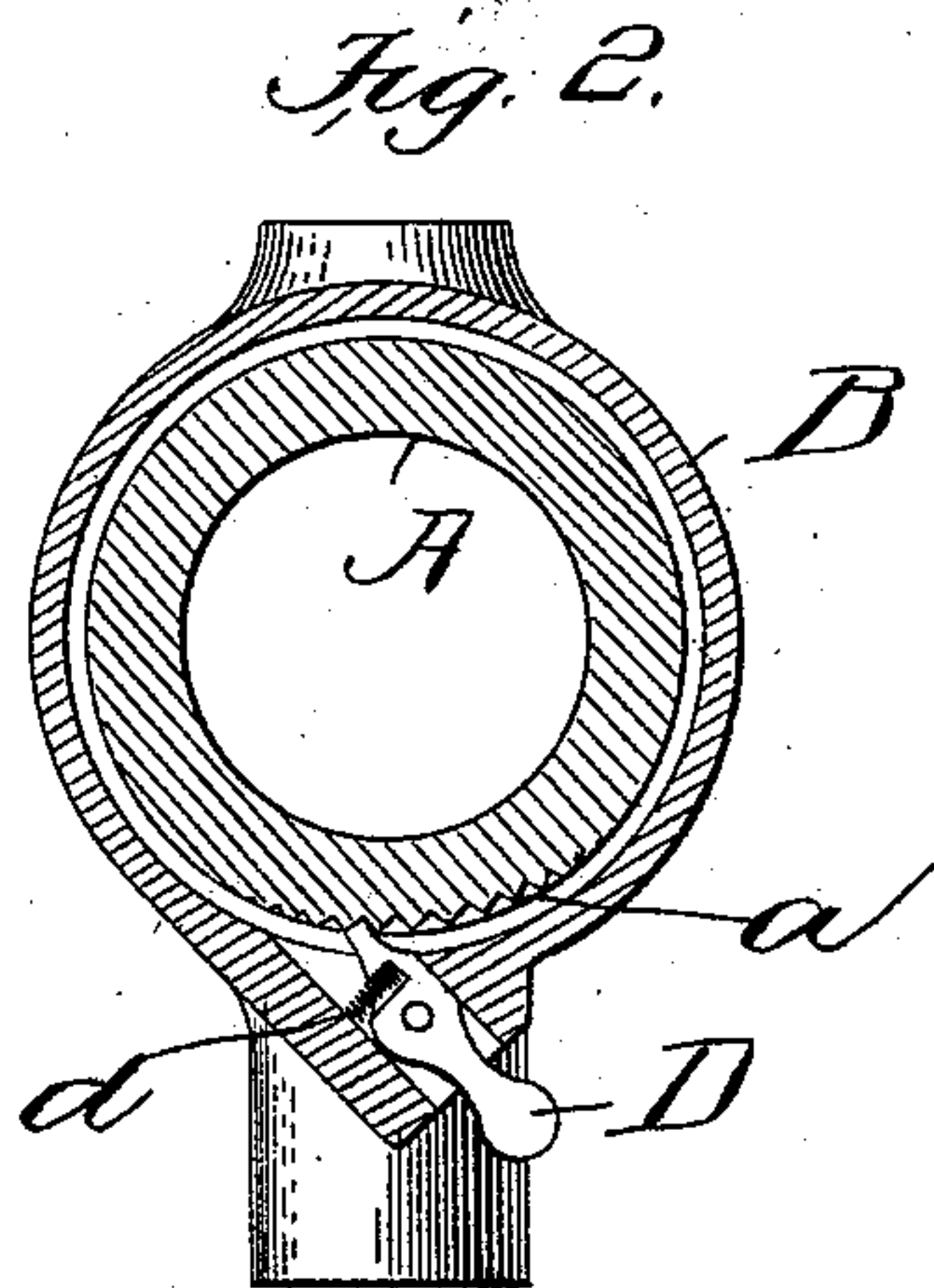
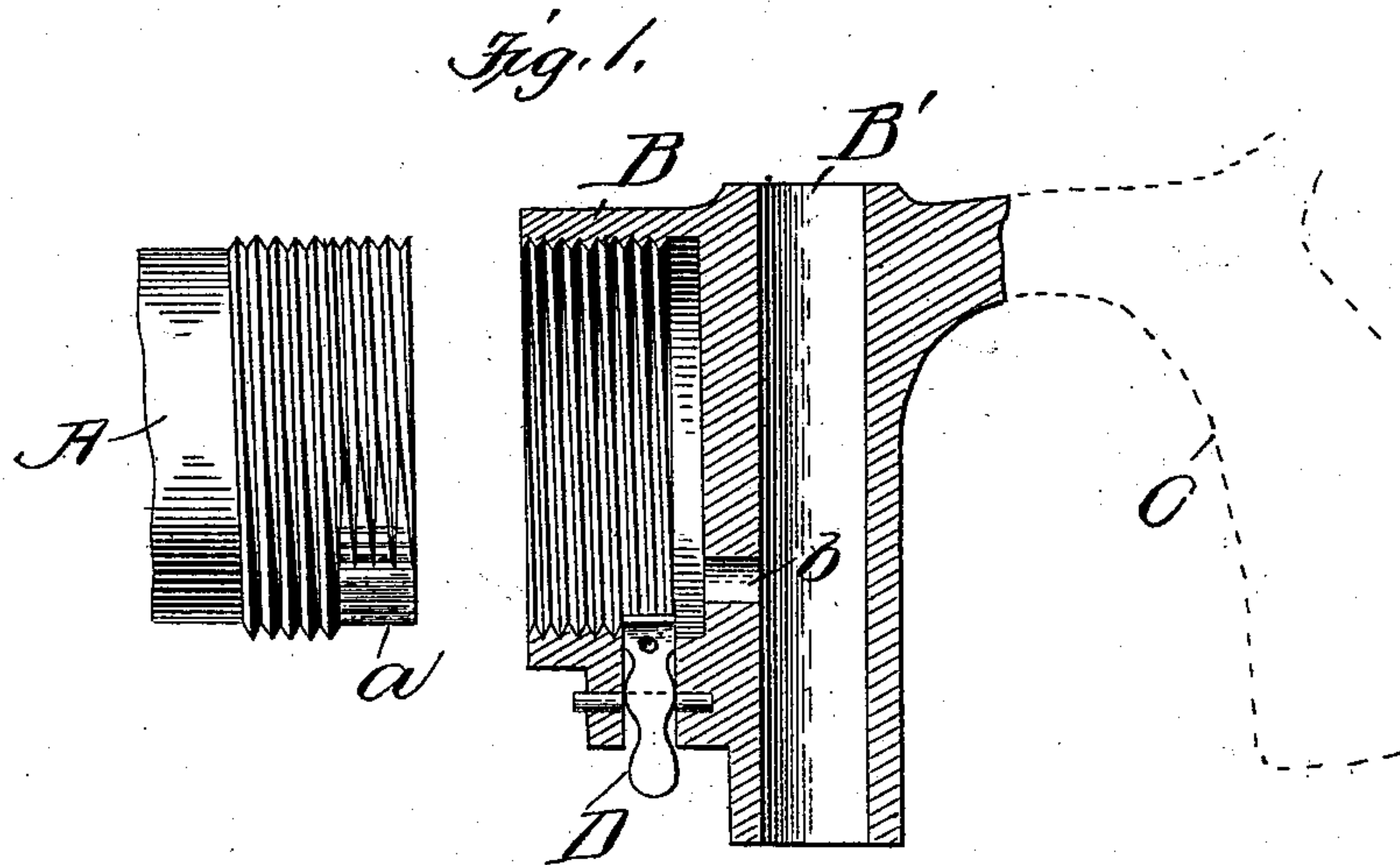
(No Model.)

W. F. SCHMIDT.

MEANS FOR LOCKING HEADS TO ENGINE CYLINDERS.

No. 532,589.

Patented Jan. 15, 1895.



Witnesses
J. N. Cornwall
Hugh K. Wagner.

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UNITED STATES PATENT OFFICE.

WILLIAM F. SCHMIDT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO PIERRE
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MEANS FOR LOCKING HEADS TO ENGINE-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 532,569, dated January 15, 1895.

Application filed May 1, 1894. Serial No. 509,649. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. SCHMIDT, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Means for Locking Heads to Engine Cylinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a detailed sectional view of the head in the form of a handle base and the end of the cylinder. Fig. 2 is a cross sectional view through the assembled parts showing the locking device in operative position.

This invention relates to a new and useful improvement in a locking device for locking a cylinder head in the form of the base of a handle to an engine cylinder, the essential features residing in introducing in the threaded connection between the parts, a spring dog and toothed connection, said dog being preferably arranged at a tangent so as to present a rigid obstruction to a back movement between the parts, and at the same time be in a position for ready operation in assembling the handle and cylinder. By arranging the dog at a tangent, it is only necessary to press down on its projecting handle to disengage its inner end with the teeth, when the head can easily be removed from the cylinder.

The objects of this invention are to produce a simple and inexpensive lock for the cylinder head of an engine, one which is easily operated, and a lock which will effectually prevent displacement between the parts.

The style of engine to which my invention is particularly applicable, is shown in United States Letters Patent No. 434,976, of August 26, 1890, and No. 519,147, of May 1, 1894, said engines being designed for use in connection with a chisel or like cutting tool, which is inserted in the front end of the cylinder and receives the impacting blow delivered by the hammer head of the piston. In the operation of engines of this class, the blow of the piston on the cutting tool transmits a shock or jar to the cylinder and its connected parts, and the speed of the piston strokes being so rapid (it is estimated that the piston makes

thousands of strokes a minute) the shock or jar communicated to the cylinder and its connected parts, amounts to vibration. This condition existing, it will readily be seen that the cylinder head, being screw-threaded on to the cylinder, will quickly become loose and permit the escape of the motive fluid, to the detriment of the successful operation of the engine, if a lock is not introduced between the parts to prevent this loosening tendency.

This present invention has been devised to be applied between the head and the cylinder, to prevent the backturning of the head, thus remedying this objection.

Referring to the drawings:—A indicates the cylinder which is threaded on its end, said threaded portion being cut away or the cylinder being otherwise formed with teeth *a*.

B indicates the cylinder head, said head being formed with a depending threaded flange which co-operates with the threads on cylinder A, to seat the head B in position. This head in the form of a handle base is bored transversely at B' for the reception of a suitable controlling valve, which controls the passage of the motive fluid through the inlet port *b*. Mounted upon this base or cylinder head, so as to project thereinto beyond the line of its thread, is a pivoted dog D whose outer end extends beyond the base B, preferably at a tangent, whereby the dog may be operated to disengage its inner end from the teeth *a*, which is necessary in unscrewing the handle. In a suitable recess formed in the dog is received a spring *d* which tends to normally hold the dog to its work.

When the threaded end of the cylinder A is introduced into the base B, and screwed home, the inner end of the dog D will ride upon the cylinder until it reaches the teeth *a*, which are so located, relative to the dog, that they will register therewith when the parts are firmly seated, and the dog falling behind the teeth will prevent a backward movement of the parts. When it is desired to unscrew the parts, it is only necessary to depress the outer end of the dog, when the inner end will release the teeth and permit movement between the handle base and cylinder for the purpose of disjoining the parts.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

5 The combination with the cylinder, having male threads on its end and having a mutilated section formed with a series of longitudinally arranged teeth thereon, of the cylinder-head having the flange B formed with female threads and having a projection formed with an inclined opening therein, a
10 dog D pivoted in the opening and projecting outwardly beyond the same and the projection, and its inner end arranged to engage the

longitudinal teeth on the cylinder and reduced to have free movement in the opening, and a spring in the opening engaging and 15 normally pressing the inner end of the dog against the teeth, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 25th day of April, 1894.

WILLIAM F. SCHMIDT.

Witnesses:

F. R. CORNWALL,
HUGH K. WAGNER.