

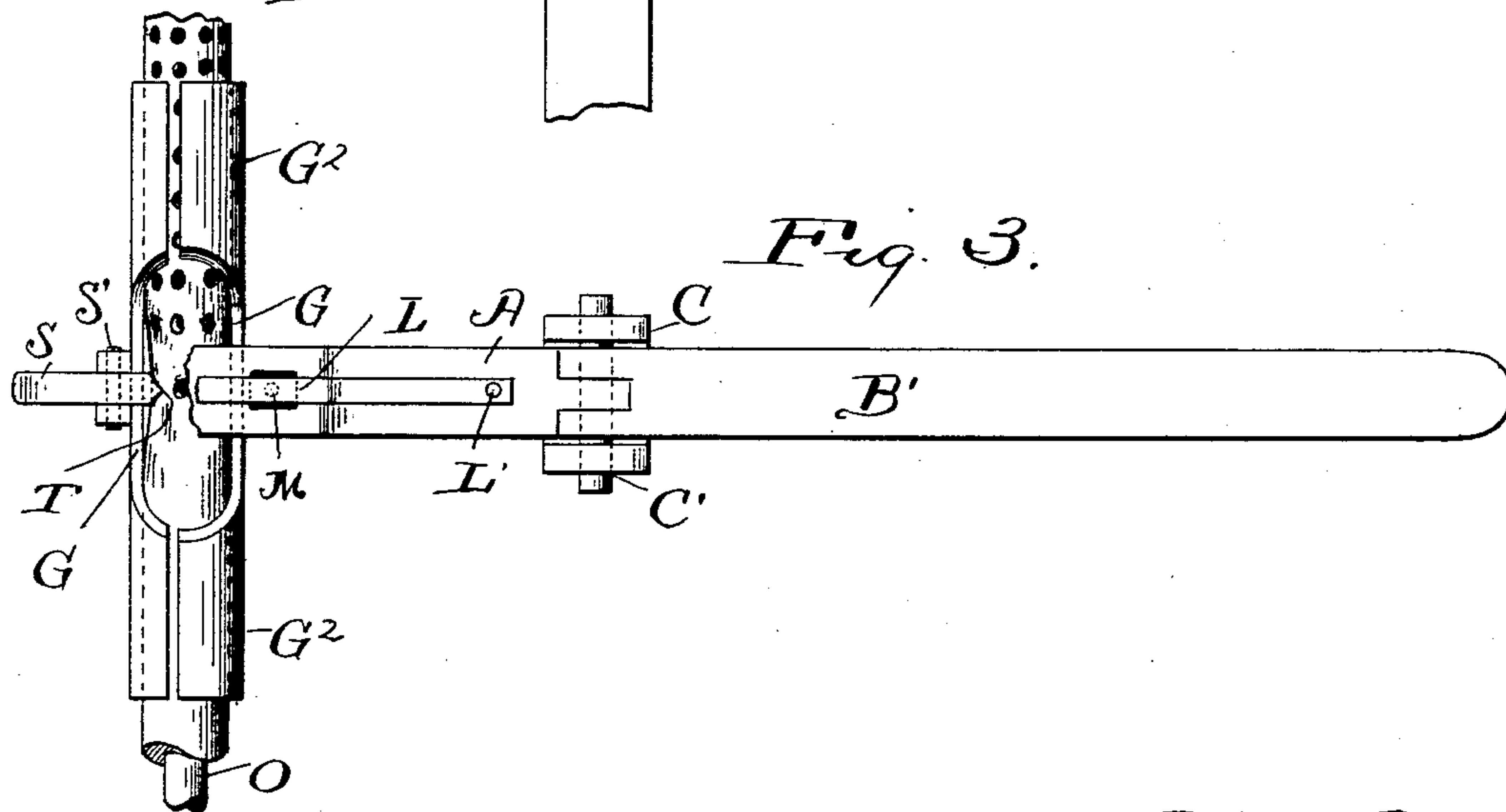
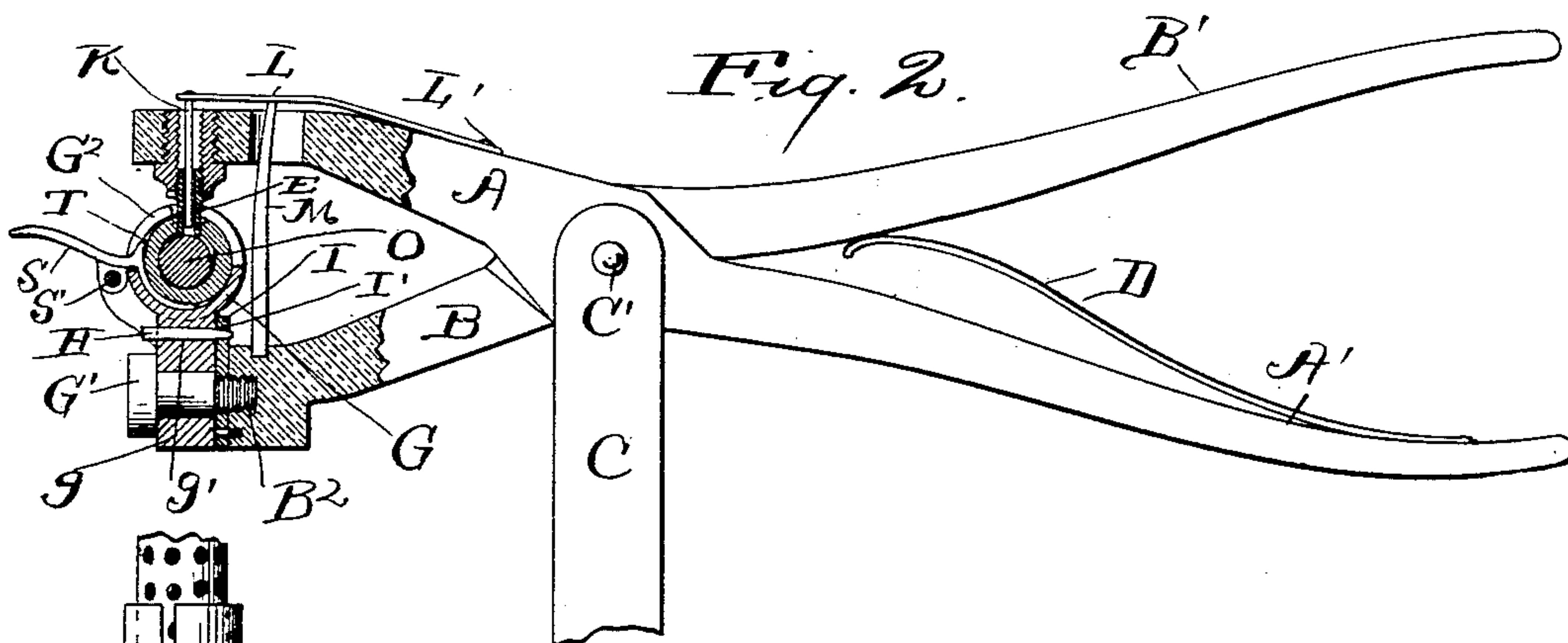
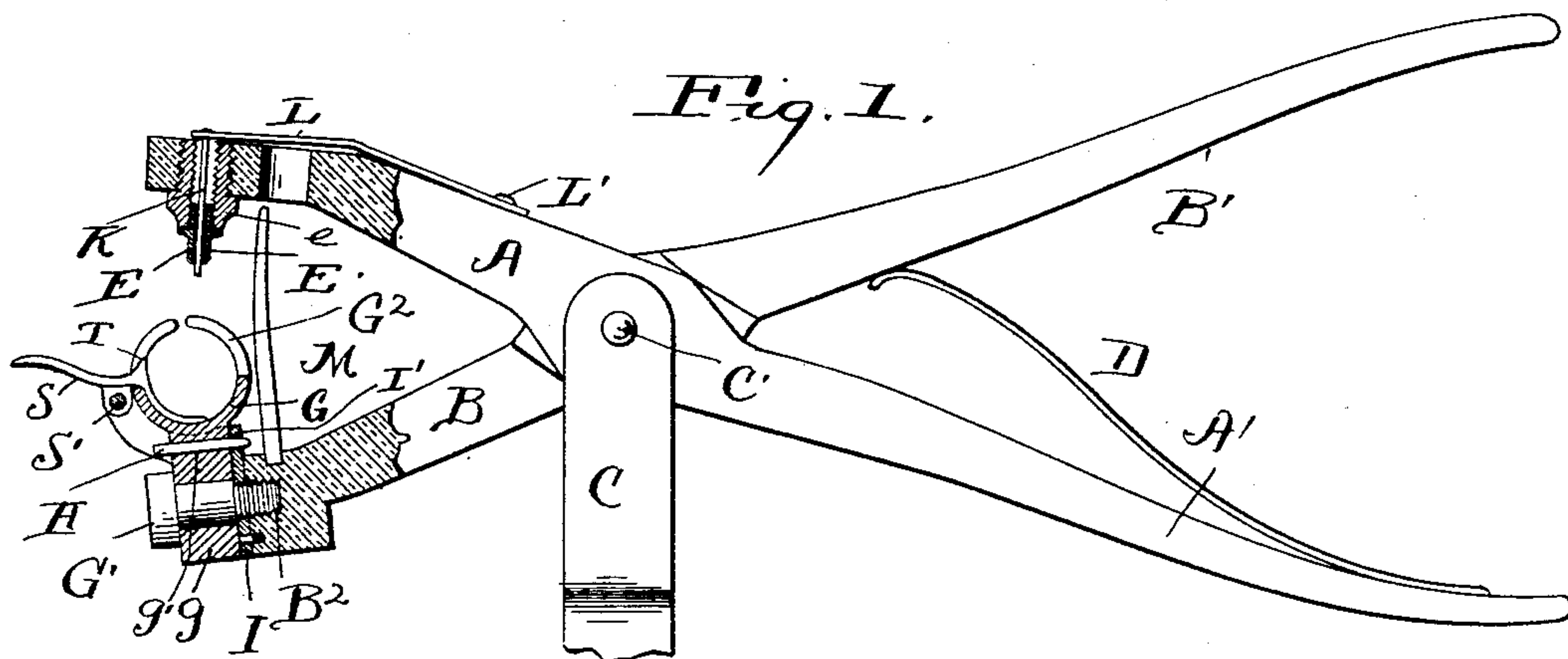
(No Model.)

2 Sheets—Sheet 1.

A. G. P. EBERT.
PERFORATING TOOL OR MACHINE.

No. 541,199.

Patented June 18, 1895.



Witnessed,
E. B. Gilchrist.
Crowder

Inventor.
Adolf G. P. Ebert
By M. D. Leggett & Co.
his attorneys.

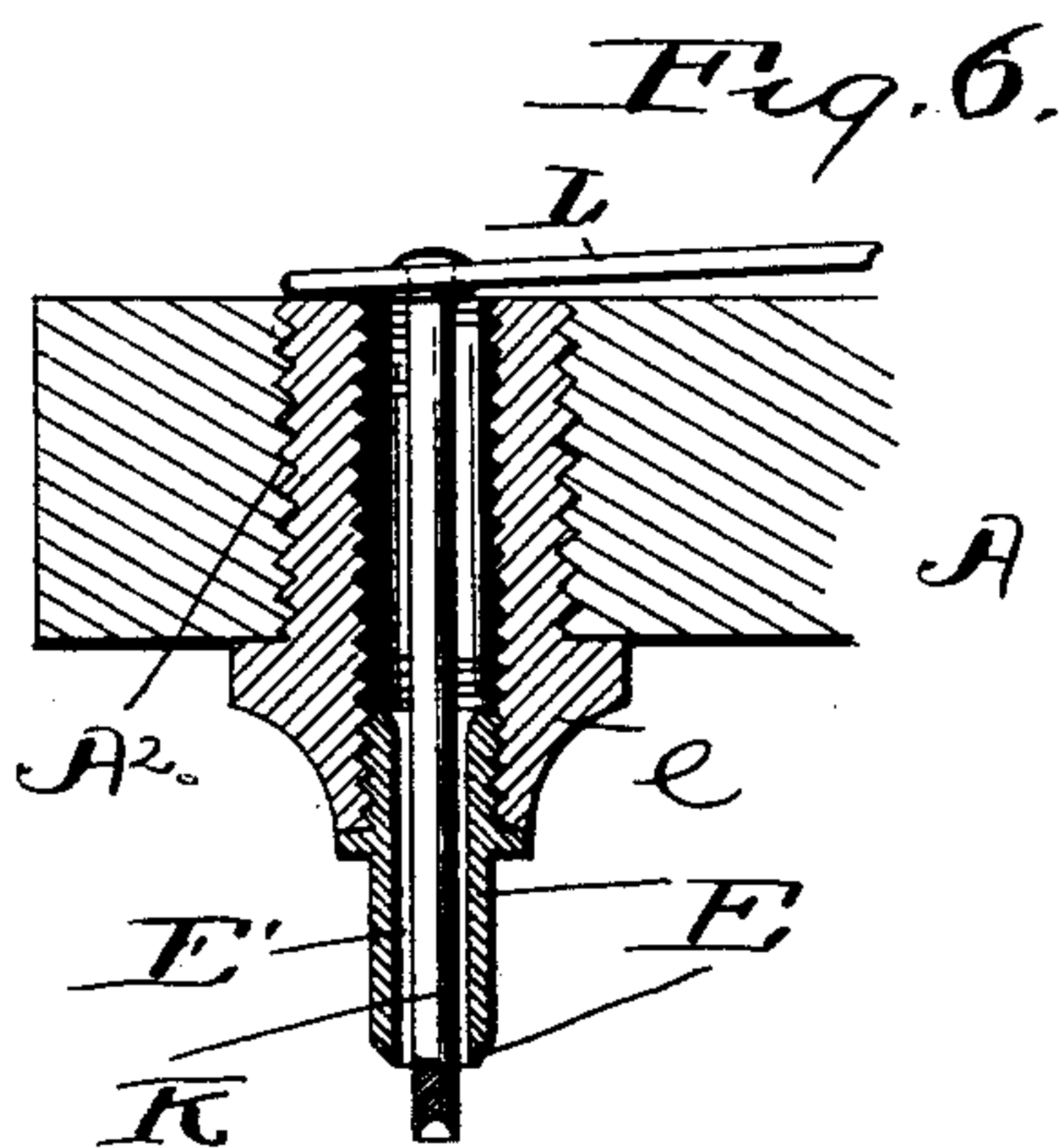
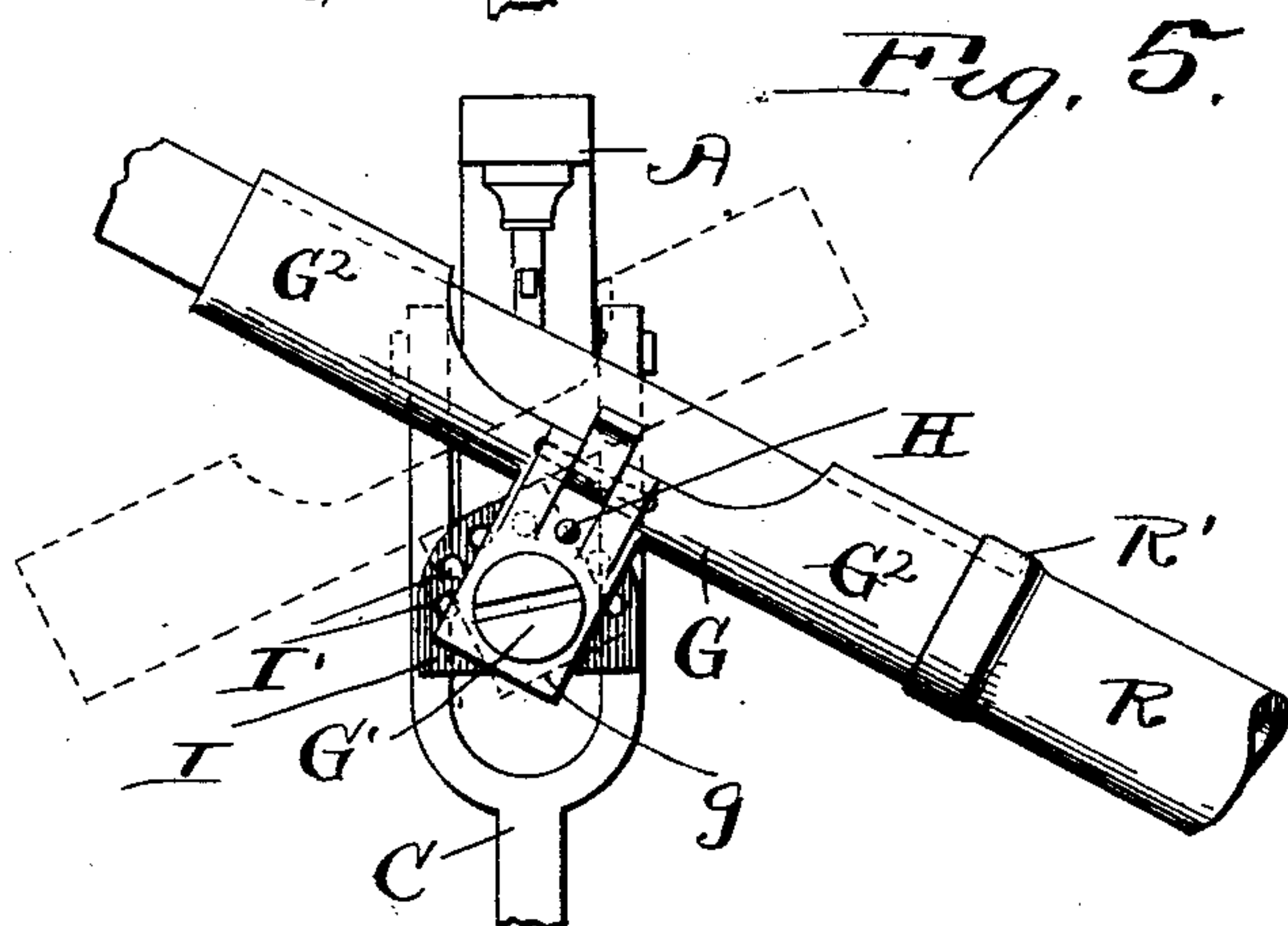
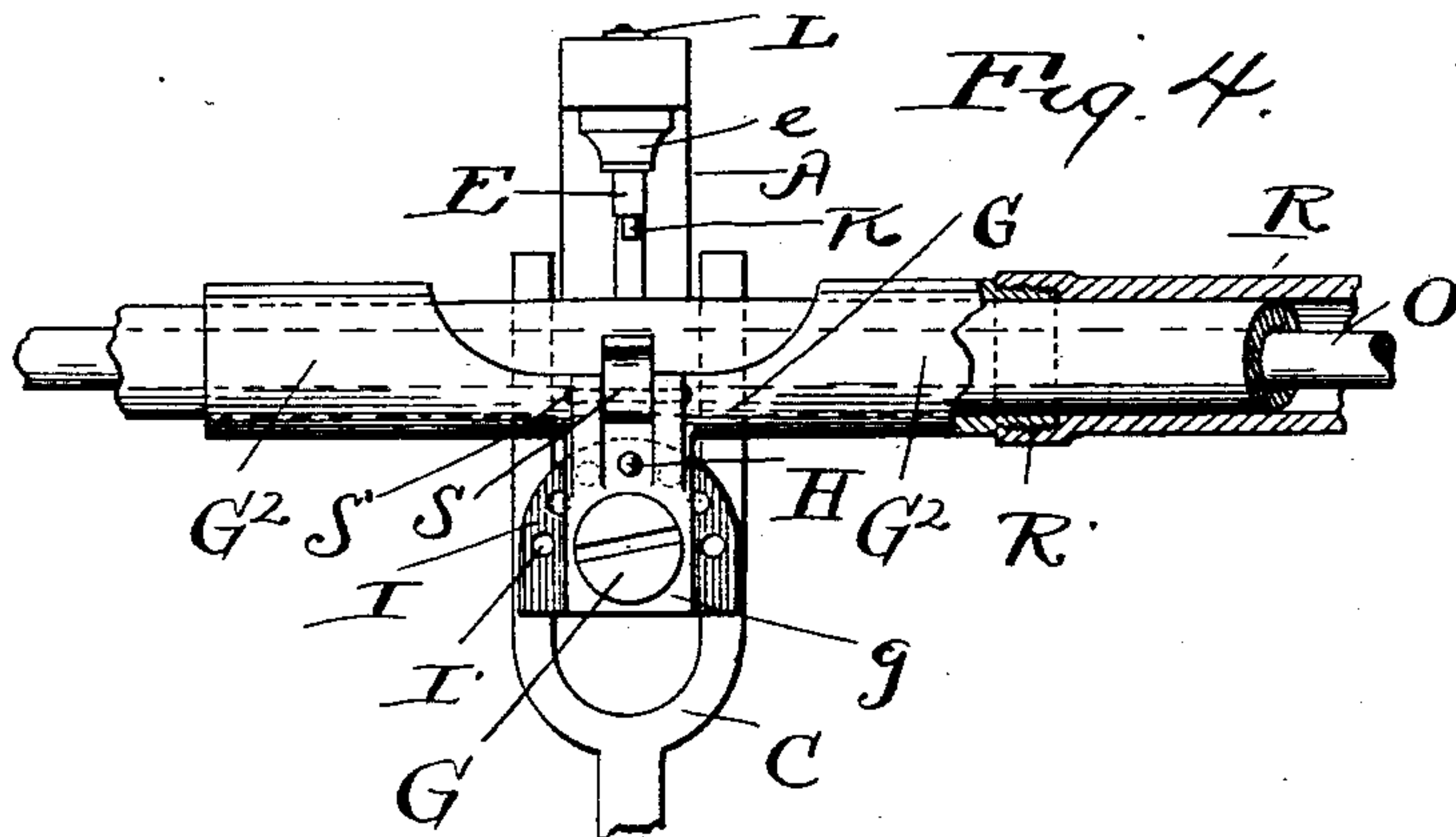
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UNITED STATES PATENT OFFICE.

ADOLF G. P. EBERT, OF CLEVELAND, OHIO.

PERFORATING TOOL OR MACHINE.

SPECIFICATION forming part of Letters Patent No. 541,199, dated June 18, 1895.

Application filed July 20, 1894. Serial No. 518,088. (No model.)

To all whom it may concern:

Be it known that I, ADOLF G. P. EBERT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Perforating Tools or Machines; 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 pertains to make and use the same.

My invention relates to improvements in tools or machines for perforating rubber or flexible hose or pipes; and it consists in certain features of construction, and in combinations of parts, hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation, partly in central longitudinal section, of a tool or machine embodying my invention. Fig. 2 is a side elevation, partly in longitudinal section, showing the tool or machine in the act of perforating. Fig. 3 is a top plan, portions being broken away and in section to more clearly show the construction. Fig. 4 is an end elevation, partly in section, showing the hose or pipe holding saddle in position at right angles to the perforator. Fig. 5 is an elevation showing the saddle arranged obliquely to the perforator. Fig. 6 is a side elevation in detail, the same being partly in section.

My improved tool comprises two jaws or arms A and B, pivotally supported, at C', from an upright standard C, and terminating, at one end in handles, A' B', respectively. A spring D, that, at one end is secured to the inner side of one of the handles, and, at its other and free end, engages the inner side of the other handle, acts in the direction to hold the working extremities of jaws or arms of the tool apart or in their normal position. The one jaw or arm A is provided with a perforator E, and the other jaw or arm B, upon its inner side, is provided with a saddle G designed to receive the hose, tube or pipe to be perforated. Said perforator and saddle are preferably removably secured to the respective jaw, the perforator, for instance, being externally screw-threaded and screwed into a block e that is also shown externally screw-threaded and screwed into a corre-

spondingly-threaded hole A² in the jaw or arm A, and the saddle being preferably removably secured in position by means of a screw G' that extends through the supporting-post g of the saddle and engages a correspondingly threaded hole B² in jaw or arm B.

The perforator is tubular or hollow, as at E', and, at its outer or free end, terminates in the cutting edge. The perforator is preferably exactly cylindrical so as to make a hole in the hose or tube as perfectly round as is practicable. The saddle, at or near its ends, is preferably enlarged, as at G², to almost completely embrace the hose or tube to be perforated, and thereby form guides adapted to properly hold and guide the hose or tube, in its movement in the saddle, the distance between the perforation last made and the point at which the next succeeding perforation is to be located. The saddle is capable of being tilted upon its axis to present the hose or pipe obliquely to the perforator and cause the same to be perforated obliquely. The saddle might be secured in the desired adjustment by tightening the screw and pivot G', but is preferably and positively secured in its adjustment by means of a removable pin H that engages a lateral hole g' in the saddle-post and is adapted to engage any one of a series of holes I' in a plate I that is rigidly secured to the saddle-bearing jaw or arm B, the series of holes I' being arranged concentric with pivot G' and the saddle being susceptible of as many adjustments as there are holes I' in plate I.

A pin K extends easily through the perforator and through a hole in the perforator-bearing jaw or arm, said pin being secured to the free end of a spring, L, that, at its other end, is secured, as at L', to the perforator-bearing jaw or arm of the machine, said spring acting in the direction to retain pin K in its normal position, and the arrangement of parts being such that, in the normal position of parts, pin K shall extend through the perforator and some distance beyond the outer or working-end of the perforator.

A pin M is suitably secured to the saddle-bearing-member of the tool, and is adapted to engage the inner side of spring L and elevate the latter and consequently pin L borne

thereby into a position to bring said pin K a suitable distance inside of the perforator, as shown in Fig. 2, the arrangement of parts being such that when members A and B of the tool or machine are actuated toward each other, pin K will engage the hose or tube to be perforated before the latter is engaged by the perforator, and as soon as the perforator comes into engagement with the hose or tube pin K shall, by means of lifting member M, have commenced to be elevated or actuated against the actuation of the supporting-spring.

By the construction just described, the bit of material cut out of the hose, tube or pipe during the perforating operation is, by means of pin K, prevented from passing outside of the perforation made, but instead falls into the hose, tube or pipe.

A stop acting in the direction to limit the distance which the perforator can enter the tube, hose or pipe being perforated, and thereby prevent the perforation of opposite sides of the hose, tube or pipe, is provided, and it consists preferably of a solid strip O of yielding material, such as leather, placed within the hose or tube to be perforated.

A tubular guide R is preferably removably connected with one end of saddle G, said tubular guide, at its inner end, being preferably screw-threaded internally and screwed onto the correspondingly externally threaded end of the saddle, as shown at R' in Fig. 4, and being adapted to receive and guide the hose, tube or pipe in its passage to the saddle.

Suitable means for lifting the hose, pipe or tube to be perforated in the direction of the perforator during the perforating operation is preferably provided, especially in view of the fact that the hose, tube or pipe is supposed to be capable of passing easily through the saddle and that if the hose, tube or pipe were too loose in the saddle it would be liable to be displaced laterally in the perforating operation. A lifting-lever S is, therefore, preferably provided, said lever, at one end, being adapted to engage the under side of the hose, tube or pipe, and being fulcrumed, as at S', preferably to and between a pair of lugs or ears on the saddle-post. By means of said lever the hose, tube or pipe requiring perforation is, preparatory to the perforating operation, lifted in the direction of the perforator and against the upper portion of the enlargements G² of the saddle, thereby positively preventing any lateral displacement of the hose, tube or pipe, during the perforating operation.

A pointer or finger T is preferably employed to indicate the place at which the perforator performs its function, said pointer being borne, for instance, by lifting-lever, S, as shown. Said pointer, in the case illustrated, is shown rigid with the lifting-lever, and is shown capable of performing its function only when the hose, tube or pipe requir-

ing perforation is held in a plane at right angles to the plane in which the perforator operates. It is, therefore, obvious that if said pointer were desired to be used in providing the hose, tube or pipe with oblique perforations, it would have to be pivoted to its supporting-member so as to render it capable of adjustment into the oblique position of the pipe or hose-supporting-saddle.

What I claim is—

1. A perforating-tool or machine comprising two co-operating jaws the one whereof is provided with a perforator and a yieldingly-supported pin extending through the perforator, and the other jaw being provided with means for actuating the aforesaid pin outwardly, substantially as shown, for the purpose specified.

2. A tool or machine for perforating a piece of hose, tube or pipe, comprising two jaws A and B, the opposing faces of the jaws being provided, the one with a perforator E, and the other with a saddle G; a yieldingly-supported pin extending through the perforator and perforator-bearing-jaw, and suitable means borne by the saddle-bearing-jaw for actuating said pin outwardly, substantially as shown, for the purpose specified.

3. In a tool or machine for perforating a piece of hose, tube or pipe, the combination of a saddle or seat for holding the hose, tube or pipe and a perforator for puncturing the pipe tube or hose, the aforesaid saddle or seat being capable of being tilted so as to present the hose, tube or pipe to be perforated obliquely to the perforator, and suitable means for securing the saddle or seat in the desired adjustment, all arranged and operating substantially as set forth.

4. A tool or machine for perforating a piece of hose, tube or pipe, comprising two jaws A and B, the one whereof is provided with a perforator and the other jaw being provided with a saddle and a lever for lifting the hose, tube or pipe toward the perforator, all arranged and operating substantially as shown, for the purpose specified.

5. In a tool or machine for perforating a piece of hose, tube or pipe, the combination of two co-operating jaws or arms, the one whereof bears a saddle for holding the hose, tube or pipe and the other jaw or arm being provided with a perforator for puncturing the pipe, tube or hose, and a tubular guide R suitably connected with one end of the saddle, substantially as and for the purpose set forth.

6. In a tool or machine for perforating a piece of hose, tube or pipe, the combination of two co-operating jaws or arms, the one whereof bears a perforator and the other jaw or arm being adapted to engage the pipe, hose or tube at a point diametrically opposite the point at which the perforation is made, the perforator being tubular or hollow substantially as indicated, a pin extending through

the perforator and through the perforator-bearing-arm, a spring for holding said pin in its normal position, and a pin or member on the saddle-bearing-arm for engaging said
5 spring and actuating the spring-actuated-pin outwardly against the action of the spring, the arrangement of parts being substantially as shown, for the purpose specified.

In testimony whereof I sign this specification, in the presence of two witnesses, this 10
12th day of July, 1894.

ADOLF G. P. EBERT.

Witnesses:

C. H. DORER,
WARD HOOVER.