

(No Model.)

2 Sheets—Sheet 1.

C. E. HUDSON.

TOOL FOR FASTENING HOSE TO COUPLINGS.

No. 445,834.

Patented Feb. 3, 1891.

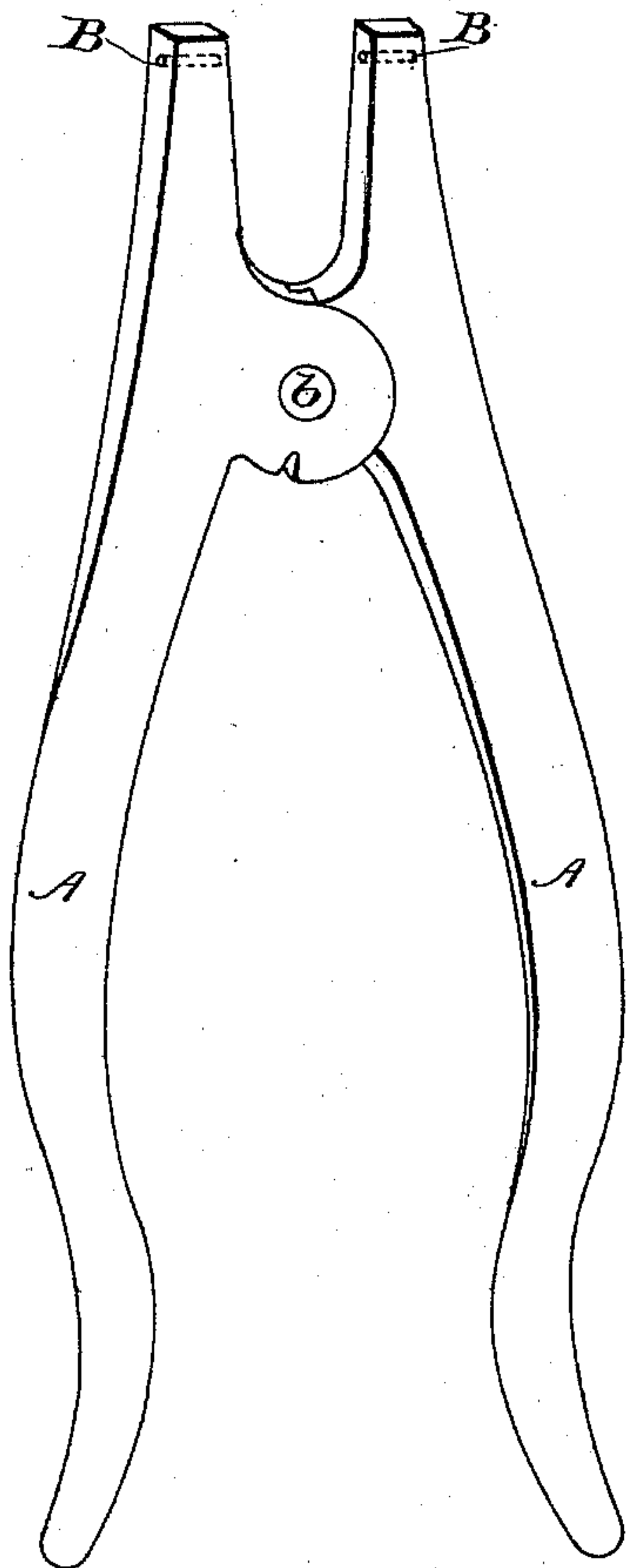


Fig. 1.

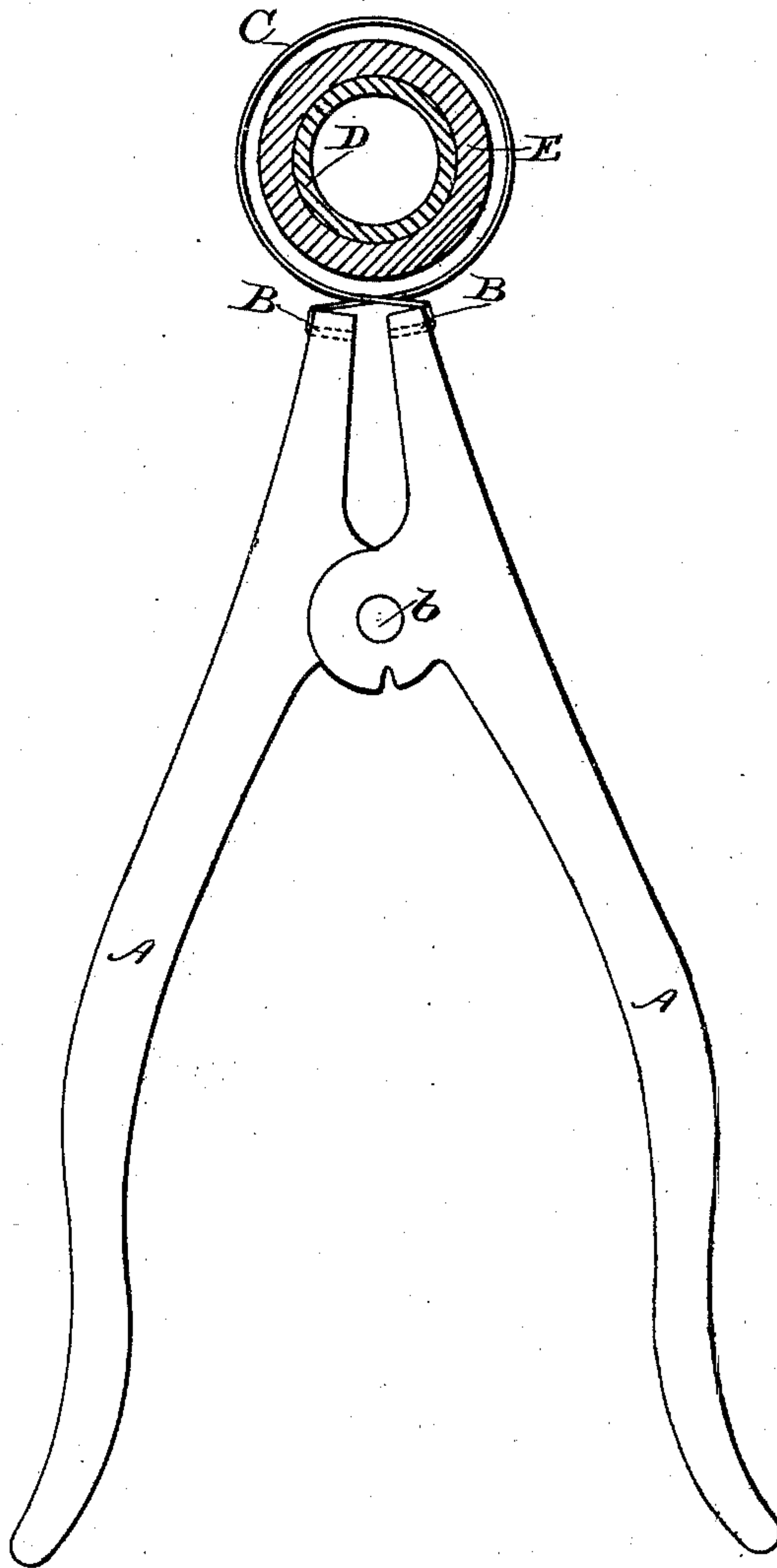


Fig. 2.

WITNESSES:

Chas. H. Swan
Marland C. Hobbs

INVENTOR:

Chas. E. Hudson
by Chas. F. Perkins
his attorney

(No Model.)

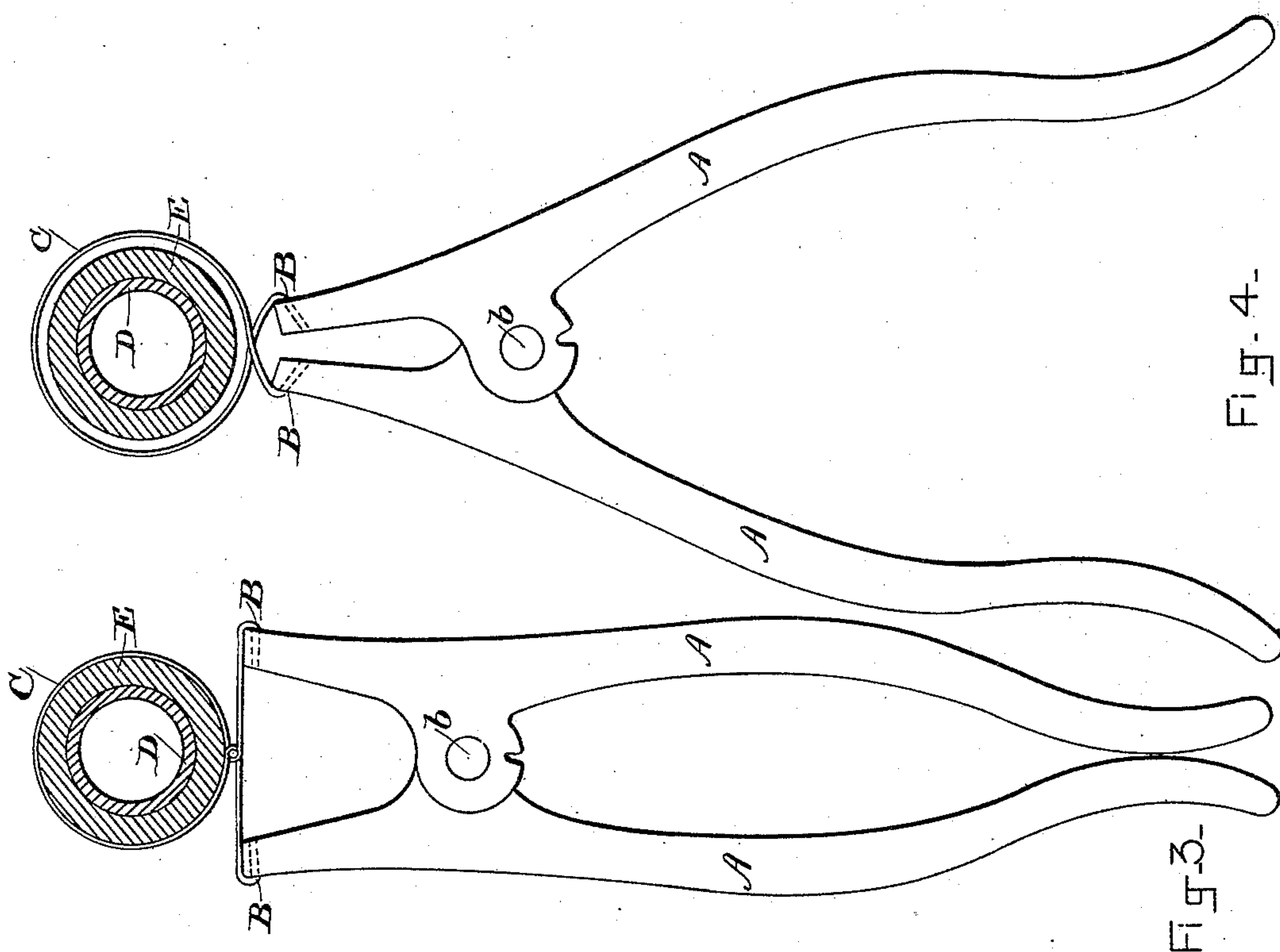
2 Sheets—Sheet 2.

C. E. HUDSON.

TOOL FOR FASTENING HOSE TO COUPLINGS.

No. 445,834.

Patented Feb. 3, 1891.



WITNESSES

Chas. H. Swan
Marland C. Hobbs

INVENTOR

Chas. E. Hudson
by Chas. F. Perkins
his attorney

UNITED STATES PATENT OFFICE.

CHARLES E. HUDSON, OF LEOMINSTER, MASSACHUSETTS.

TOOL FOR FASTENING HOSE TO COUPLINGS.

SPECIFICATION forming part of Letters Patent No. 445,834, dated February 3, 1891.

Application filed December 19, 1888. Serial No. 294,089. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HUDSON, a citizen of the United States, residing at Leominster, in the county of Worcester, in the State of Massachusetts, have invented certain new and useful Improvements in Tools for Fastening Hose to Couplings, of which the following is a specification.

The object of the invention is to provide a tool that will securely hold the ends of wire bands while they are being applied, which can also be conveniently manipulated; and it consists in the construction hereinafter described, and particularly pointed out in the claim.

Figure 1 is a perspective view of my pliers adapted for the hose-strap described and shown in my patent, No. 402,673. Fig. 2 is a side view of the pliers engaged with a tie-band encircling a section of hose preparatory to fastening the hose to its coupling. Fig. 3 is similar to Fig. 2, except that the tie-band is represented as having been tightened and twisted by the pliers. Fig. 4 is a modification showing the wire-receiving holes inclined to the general direction of the plier-levers.

A A are bent levers pivoted together at *b* in such manner that when the handles are compressed the pliers are opened.

B B are holes drilled or made in the extremities of the shorter arms. The diameter of these holes is just sufficient to admit the ends of the wire or tie band C. The wire or tie band C is made of brass or other ductile wire, so that it will bend sharply over the edges of the holes B B.

D is a metal or non-compressible core secured to a coupling.

E is a rubber hose in which the core D is inserted. To fasten the hose to the core of the coupling, the band C, which is bent into the form of a ring with its ends crossing each other, is slipped over the hose, as shown, and the short arms of the pliers are then closed and inserted between the terminal hooks of the wire band, and the handles of the pliers are then slightly pressed together, so that the hooks will enter the holes B B, which having been effected they are more forcibly pressed and closed with the effect to open the short arms widely and stretch the wire band C

tightly around the hose. When that operation begins, the ductility of the band causes it to make sharp bends over the edges of the holes B B, by which bends or clinches the retention of the ends of the band C in the holes B B is insured. This is an important feature in the operation described.

I prefer to have the holes B B drilled substantially in line with each other, as shown in Fig. 1, and to use them with a wire band having terminal hooks, as shown in Fig. 2; but good results may be obtained by drilling the holes diagonally, as shown in Fig. 4, the outer ends of the holes being as close as practicable to the end of the pliers. It is, however, important that the ends of the wire bands be bent and held in the tool in a transverse direction to the line of movement of the ends of the pliers and at an angle to the wire forming the band, which prevents the ends of the band from pulling or slipping out of the holes while it is being tightened or twisted, and it is also important that the two parts of the pliers shall be so pivoted that they can be operated to open the short arms by closing the hand.

I am aware that tools having open slots to engage the enlarged ends of a band, instead of perforations, have been employed for fastening hose; but in the use of such tools there is a liability that the ends of the band will slip when it is being applied, and it is also necessary to employ a tie band or strap having an enlarged head. By the use of my invention plain wire without heads may be used and all liability of slipping is avoided; and, further, it is characteristic of my tool that the holes in the jaws or levers are placed within a distance from the end not exceeding two diameters of the wires used, otherwise in operation the hooks of the wires will be straightened and the band will slip from the tool. It is essential that the hooks be bent sharply over the ends of the plier-levers to prevent slip, and these ends must be free from slots and grooves that favor the withdrawal of the wires from the closed tool, as is the case with an implement heretofore employed for wiring bottles, and, as before in effect stated, the space between each hole and the end or edge of the tool-levers must not ordinarily be more

than about twice the diameter of the wire, or
about three-sixteenths of an inch. This pro-
portion may be somewhat increased if large
wire is employed. No implement having these
5 characteristics is known to me or is capable of
successful use in the manner herein specified.

What I claim as my invention is—

The pliers for fastening hose to couplings,
consisting of the levers having the hinge *b* in
10 their adjacent sides, whereby the lever-jaws
are spread apart by the closing together of

the handles, said jaws each being provided
with a hole located within a distance from its
end not exceeding two diameters of ordinary
wire, or about three-sixteenths of an inch, for 15
the purpose of insuring a sharp bend in the
wire near its ends and securely holding the
same until released by spreading the handles.

CHARLES E. HUDSON.

Witnesses:

ROBERT S. CARTER,
CHAUNCEY W. CARTER.