

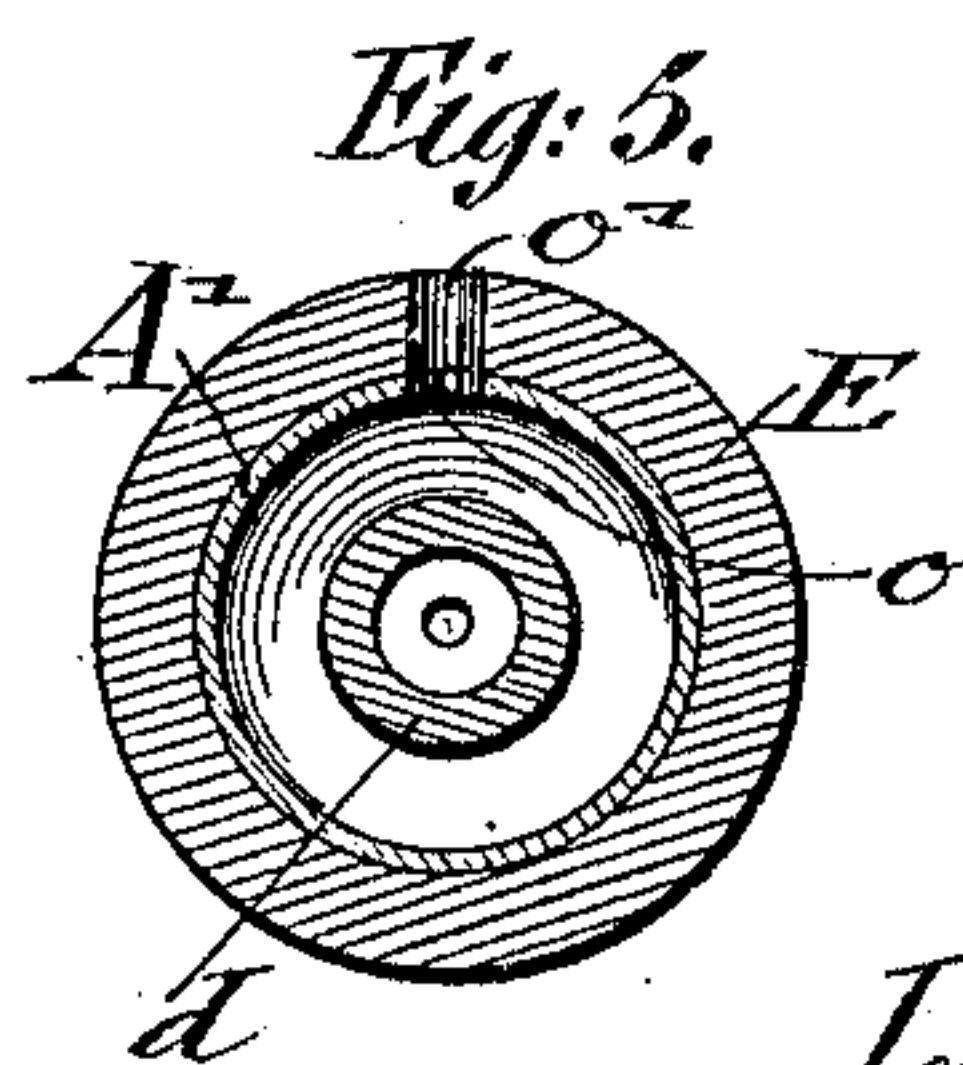
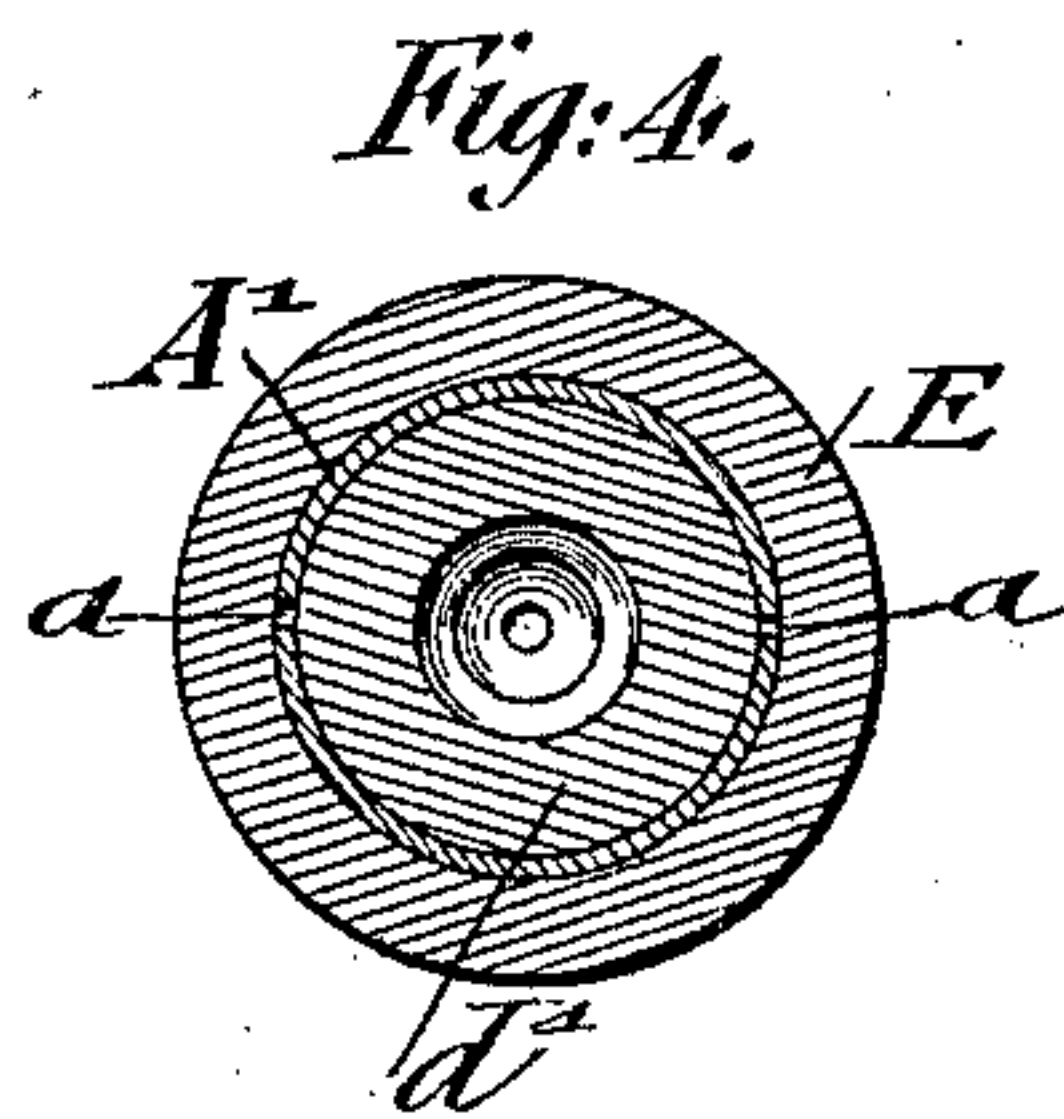
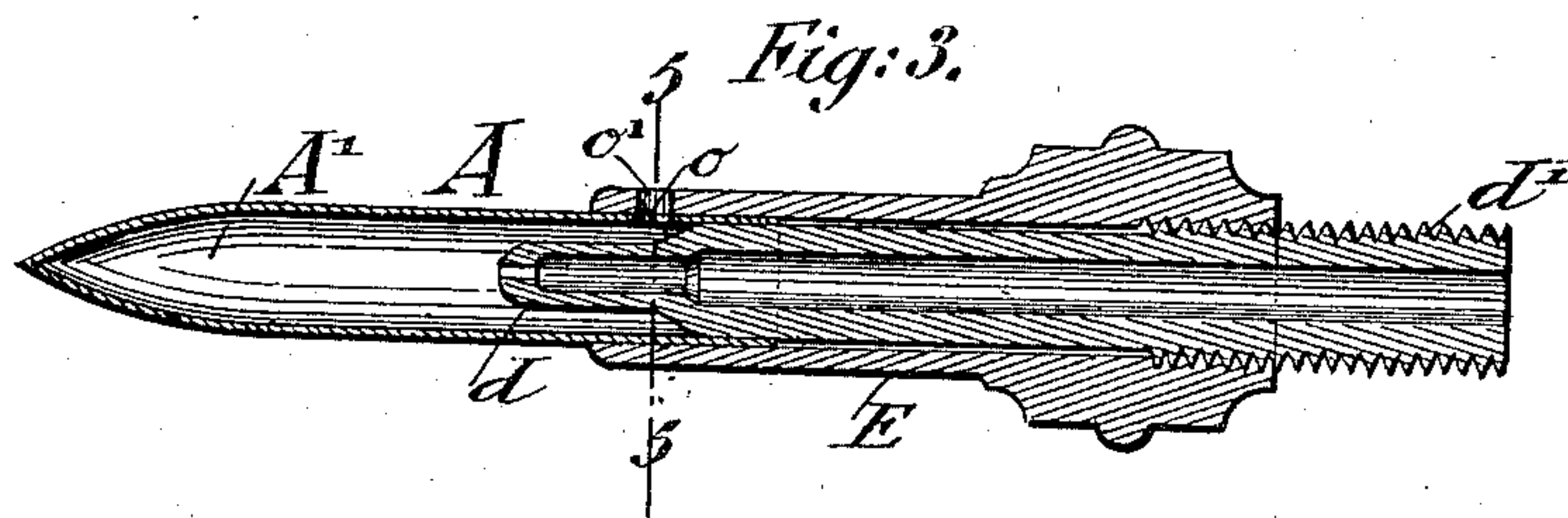
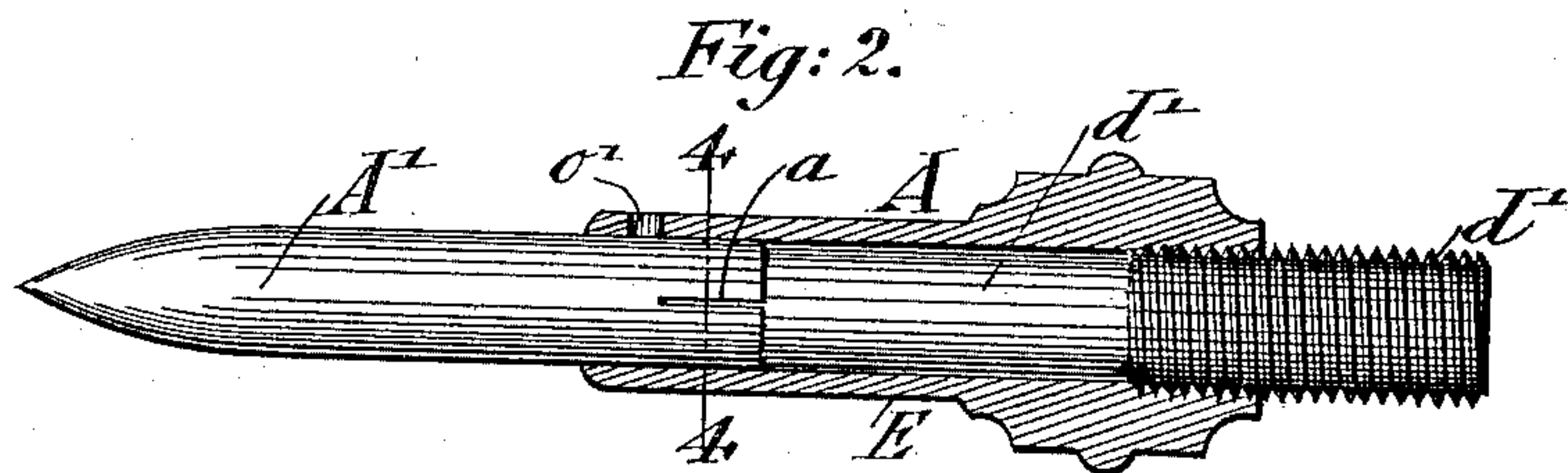
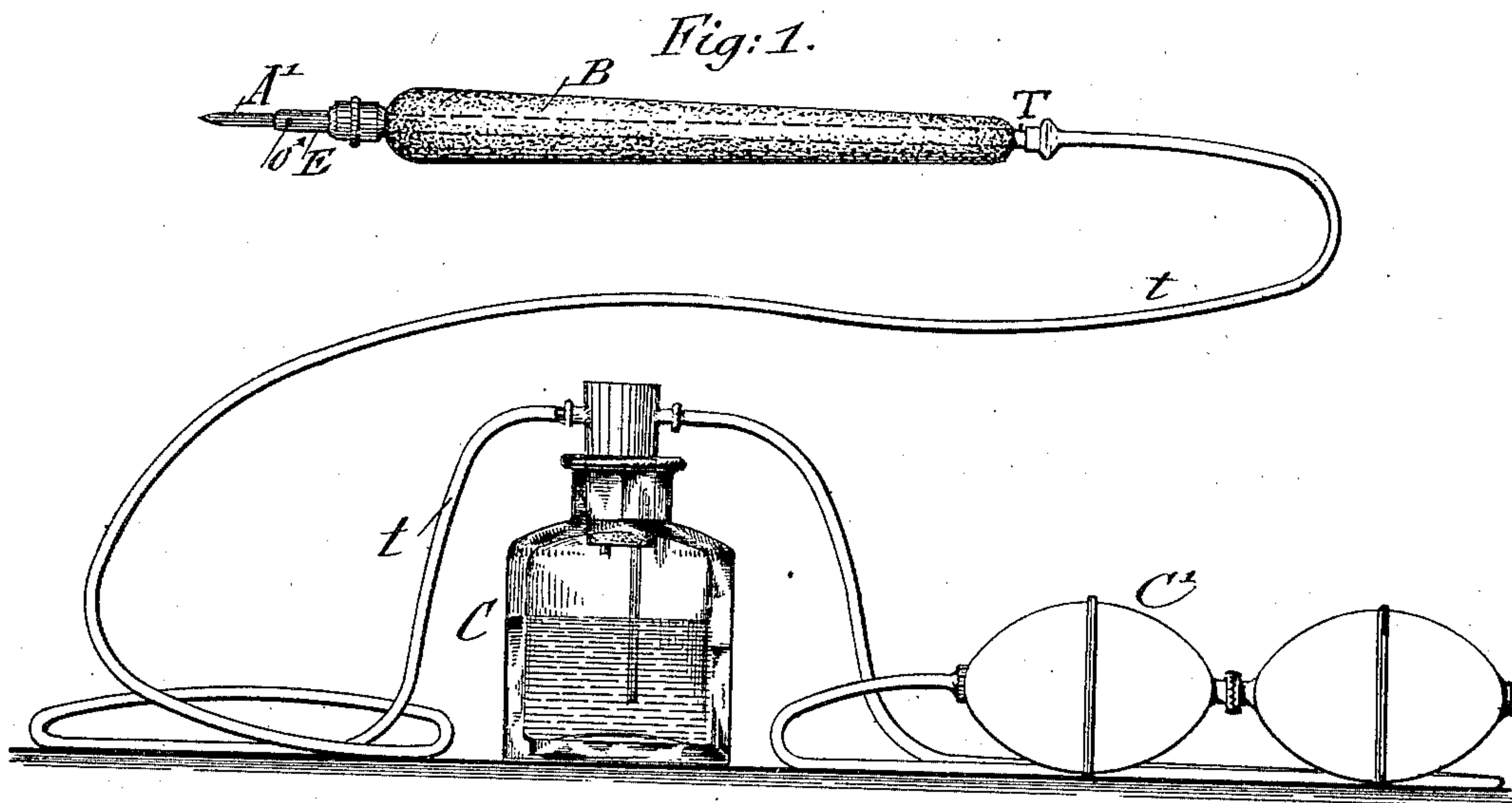
No. 695,884.

Patented Mar. 18, 1902.

J. P. MÜLLER.
CHARRING TOOL FOR ORNAMENTING WOOD.

(Application filed June 21, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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CHARRING-TOOL FOR ORNAMENTING WOOD.

SPECIFICATION forming part of Letters Patent No. 695,884, dated March 18, 1902.

Application filed June 21, 1901. Serial No. 65,408. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. MÜLLER, a citizen of Germany, residing in New York, borough of Manhattan, in the State of New York, have invented certain new and useful Improvements in Charring-Tools for Ornamenting Wood, of which the following is a specification.

This invention relates to an improved charring or pyrographic tool for ornamenting wood, leather, and other materials and in which is used a platinum point or stylus heated to incandescence by a suitable supply of hydrocarbon vapors, that are supplied to the interior of the stylus and burned in the same.

The invention consists of a charring-tool comprising a tubular socket having a perforation in its wall, a supply-tube inserted in said socket and having a reduced forward end, a nozzle of smaller diameter than said end projecting forwardly from the same beyond said perforation, and a tubular stylus closed at its forward end and inserted at its open rear end between said socket and supply-tube, said stylus covering the inner surface of the socket forward of the supply-tube and having a perforation registering with the perforation of said socket.

In the accompanying drawings, Figure 1 is a side elevation of my improved charring-tool, showing the same and the means for producing the mixture of the air and the hydrocarbon vapors. Fig. 2 is an enlarged side elevation, partly in section, through the socket of my improved charring-tool. Fig. 3 is a central longitudinal section of the same; and Figs. 4 and 5 are respectively enlarged vertical transverse sections on line 4 4, Fig. 2, and 5 5, Fig. 3.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents my improved charring-tool, which is arranged at the end of a hollow handle B, through which passes the supply-tube T for the combustible gas-and-air mixture. The supply-pipe T is connected by a flexible tube *t* with a vessel C containing benzin or other liquid hydrocarbon, said vessel being in turn connected with the usual elastic air-forcing bulb C' for forcing air through the vessel C and producing

thereby the evaporation of the hydrocarbon liquid in the vessel. The gas-and-air mixture is forced through the connecting-tube and supply-tube to the charring-tool A, which is constructed of a tubular stylus A', that is provided with a pointed or other-shaped end and preferably made of platinum and open at the inner end, the open end being provided with slits *a*, so as to fit tightly over the slightly-reduced end of the supply-tube. The tubular charring-stylus A' is inserted into the socket E, as shown in Figs. 2 and 3. The socket is provided with an opening *o'*, which registers with a corresponding opening *o* in the stylus, so as to permit the escape of the products of combustion from the space at the interior of the stylus. The supply-tube T is provided at its end with a nozzle *d* of smaller size than the portion of the tubular stylus, into which it extends, said nozzle supplying the mixture of air and combustible vapors to the interior of the stylus, so as to produce the burning of the same by contact with the incandescent stylus. The nozzle *d* has a tubular portion *d'*, which is screw-threaded and is screwed into the end of the supply-pipe T. As the end of the tubular charring-stylus is fitted into the end of the socket E and the end of the tubular portion *d'* fitted securely into the open end of the stylus, a tight closure and firm connection are produced between the parts, so that escape of the combustible gas-and-air mixture from the interior of the stylus is prevented except through the registering openings of the socket and stylus. This tight closing of the parts is produced by the slitted end of the charring-stylus, which "gives" sufficiently so as to produce a tight connection between the socket and the tubular portion *d'*, connected with the supply-tube, as shown in Fig. 4.

When the charring-tool is to be used, the stylus is first heated to incandescence by means of an alcohol flame or other suitable source of heat. As soon as the stylus is heated sufficiently the elastic bulb or pump is worked so that air is forced through the vessel containing the hydrocarbon liquid, so that the same is evaporated, the air carrying along sufficient of the vapors through the supply-tube into the stylus so as to be burned

by contact with the interior walls of the same and keep up thereby the incandescence of the charring-stylus. The heat may be increased or diminished by a greater or less quantity of the combustible gas-and-air mixture by the quicker or slower working of the bulb, so that thereby the charring capacity of the same is regulated according to the work required. The products of combustion pass through the annular space formed between the nozzle and the charring-stylus and through the registering openings to the outside, a new supply of vapors taking the place of the vapors burned and keeping up thereby the incandescence of the charring-stylus. In this manner the incandescence of the charring-stylus is kept up by the feed of the combustible gas-and-air mixture, which is gradually consumed, the supply being kept up by the pumping action of the bulb.

The stylus covers the inner surface of the socket forward of the supply-tube, and the outgoing products of combustion do not come in contact with the socket. The stylus thereby protects the forward end of the socket against oxidation or other destructive action by the products of combustion and against deposit of soot on the same, soot when formed being retained within the stylus and removed therewith when the stylus is removed from the socket.

My improved charring-tool has the advan-

tages of great durability and simplicity, as it utilizes the direct heating action of the combustible gas-and-air mixture without requiring the use of special mechanisms heretofore employed for this purpose. It keeps up more effectively the incandescence of the stylus by the gradual combustion of the vapors fed to the stylus.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A charring-tool, consisting of a tubular socket, having a perforation in its wall, a supply-tube inserted in said socket and having a reduced forward end, a nozzle of smaller diameter than said end projecting forwardly from the same beyond said perforation, and a tubular stylus closed at its forward end and inserted at its open rear end between said socket and supply-tube, said stylus covering the inner surface of the socket, forward of the supply-tube, and having a perforation registering with the perforation of said socket, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN P. MÜLLER.

Witnesses:

PAUL GOEPEL,
GEORGE GEIBEL.