

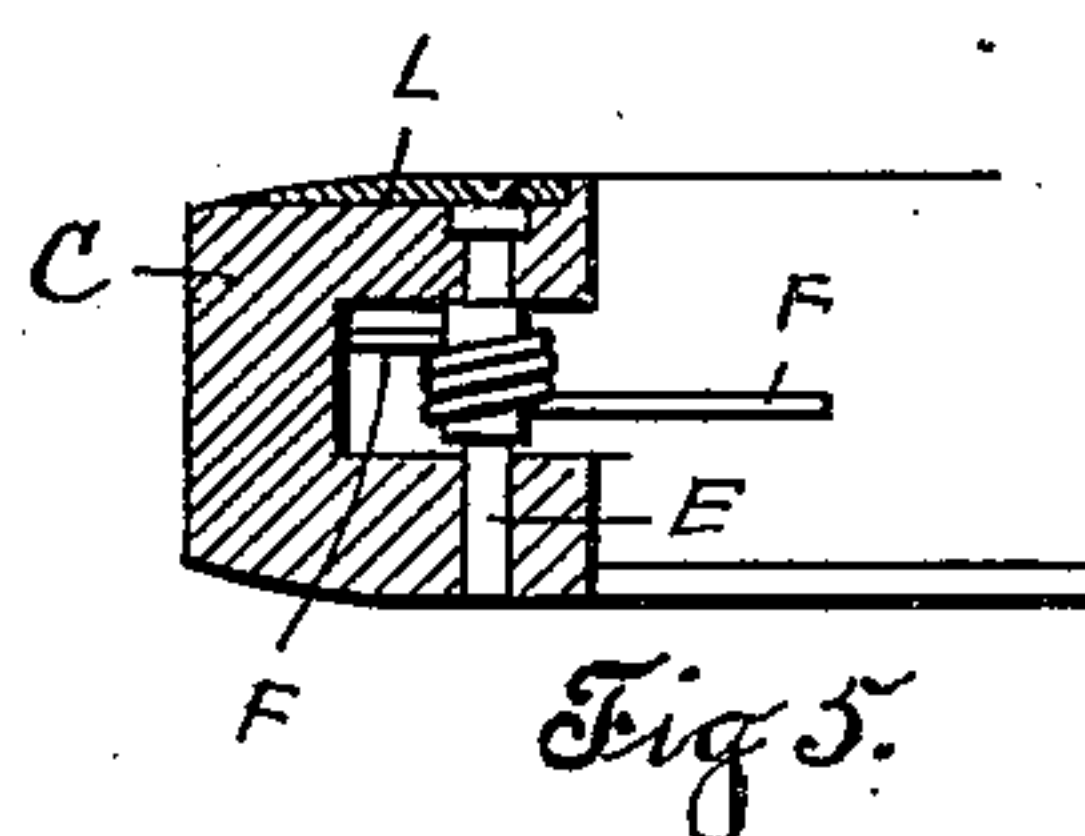
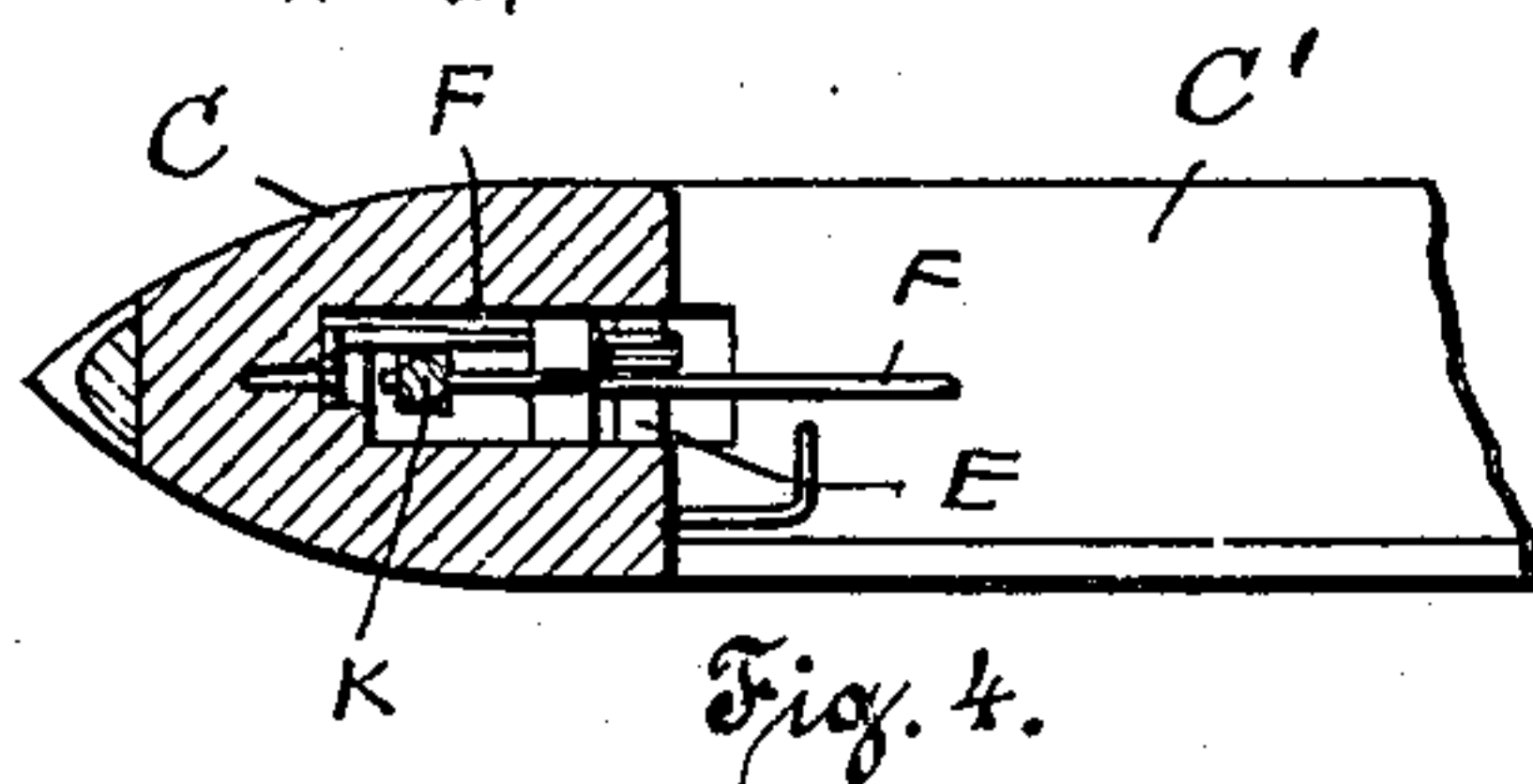
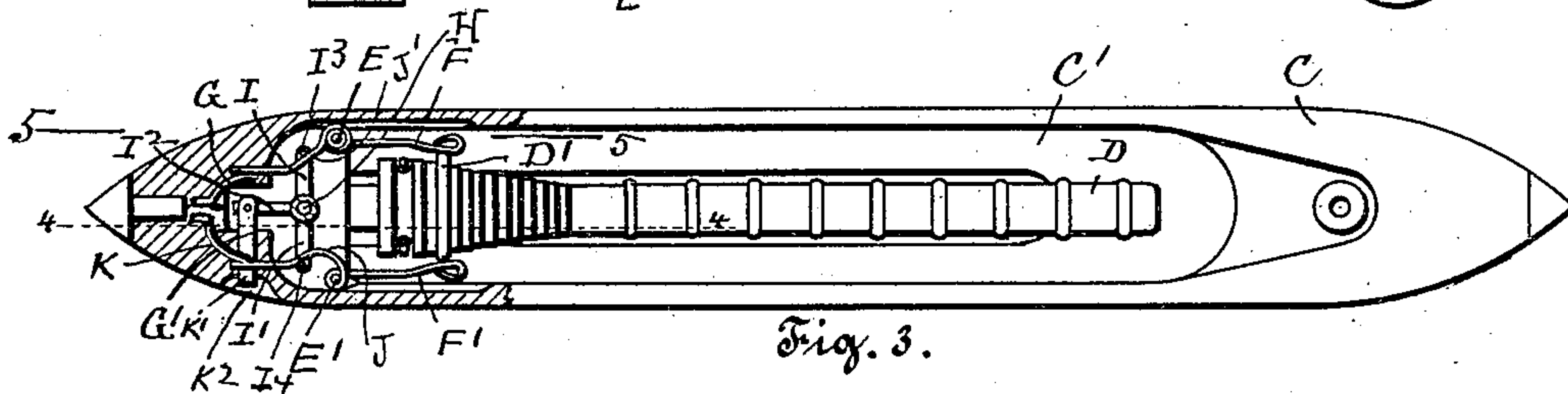
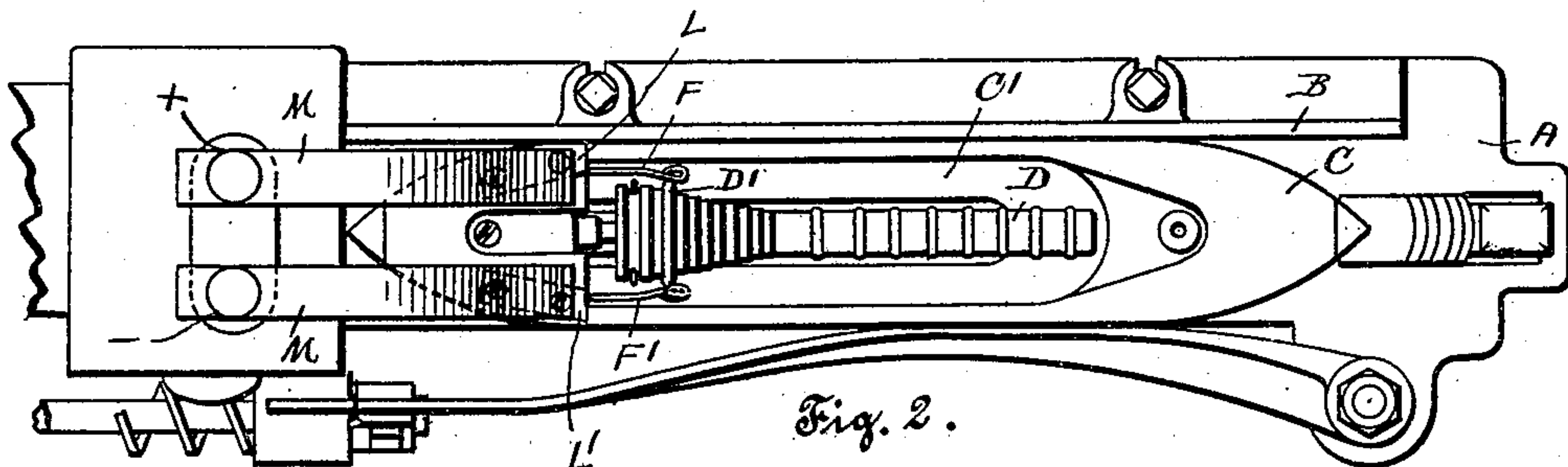
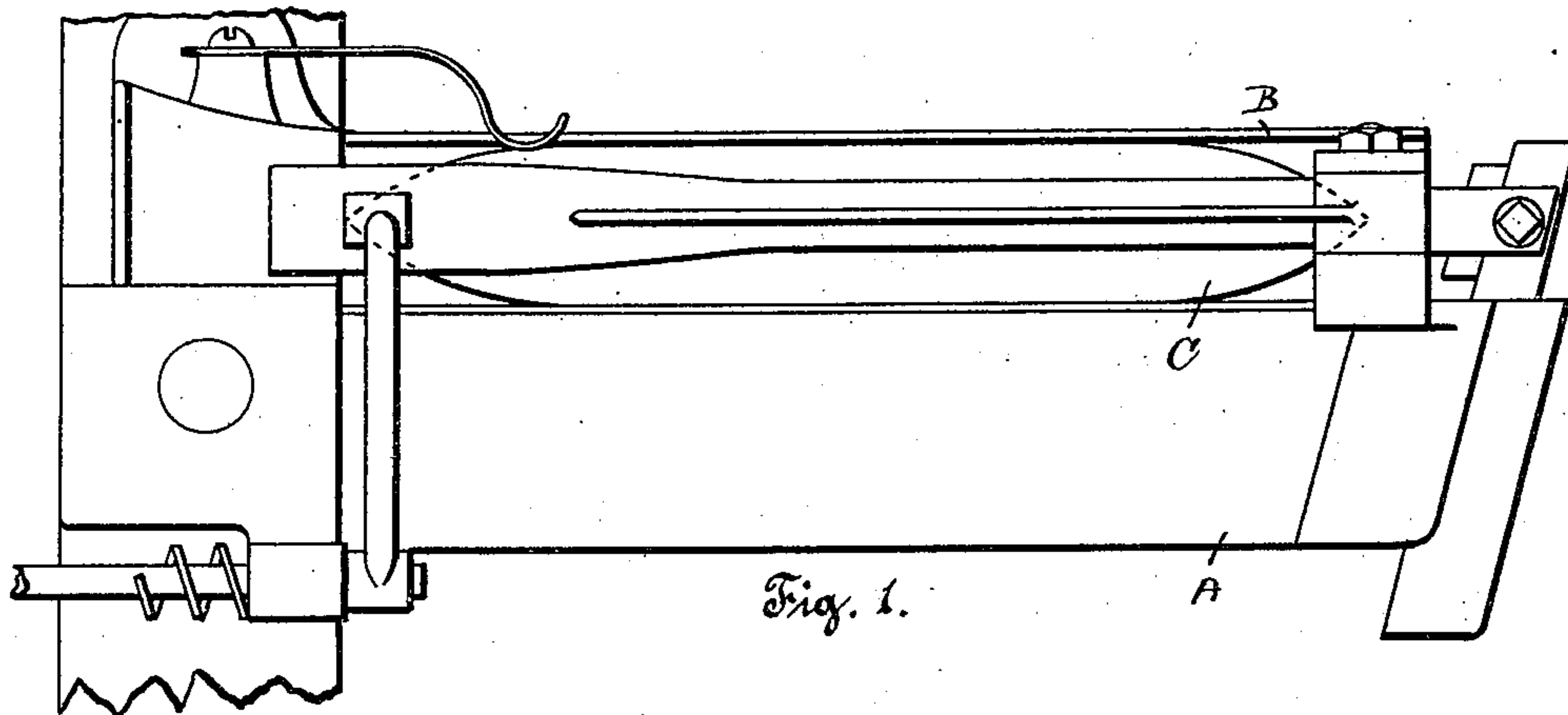
No. 692,928.

Patented Feb. 11, 1902.

H. W. SMITH.
ELECTRIC CIRCUIT CLOSER FOR LOOMS.

(Application filed Feb. 16, 1900.)

(No Model.)



Witnesses;

Herman F. Klingele,
Ava T. Murphy.

Inventor;

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UNITED STATES PATENT OFFICE.

HARRY W. SMITH, OF WORCESTER, MASSACHUSETTS.

ELECTRIC-CIRCUIT CLOSER FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 692,928, dated February 11, 1902.

Application filed February 16, 1900. Serial No. 5,415. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. SMITH, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Electric-Circuit Closers for Looms, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a portion of a loom-lathe with a shuttle-box mounted thereon. Fig. 2 is a top view of the shuttle-box, showing a shuttle contained therein. Fig. 3 is a top view of the shuttle with a portion shown in sectional view; and Fig. 4 represents a portion of the shuttle shown in sectional view on line 4 4, Fig. 3. Fig. 5 represents a portion of the shuttle on line 5 5, Fig. 3.

Similar reference letters refer to similar parts in the different views.

The object of my present invention is to provide a circuit-closer controlled by the withdrawal of the weft from the shuttle and adapted for use in that class of looms in which an auxiliary mechanism—such, for example, as a stop-motion or weft-replenishing means—is set in operation by the energizing of an electromagnet; and my invention consists in the construction and arrangement of parts, as hereinafter described, and set forth in the annexed claims.

Referring to the drawings, A denotes a portion of a loom-lathe, B a shuttle-box mounted thereon, and C a shuttle contained therein and provided with a bobbin-chamber C', in which is held a bobbin D by any of the well-known means now in use for that purpose. The bobbin D is provided, preferably near one end of its weft-supporting surface, with a circumferential metallic band D', having its periphery slightly raised above the adjacent weft-supporting surface of the bobbin.

Pivoted on studs E E', which are properly insulated in the shuttle, are feelers F F', extending into the bobbin-chamber, preferably upon opposite sides of the bobbin, with their free ends arranged to come in contact with the periphery of the metallic band D' when the bobbin is in position in the bobbin-chamber. Springs G G' are applied to the opposite ends of the feelers to rock them on the studs E E' and bring them into contact with

the metallic band D'. Pivoted upon the stud H, between the feelers F F', is a three-armed lever provided with arms I, I', and I². The arms I I' carry pins I³ I⁴, which extend upwardly and are in contact with the oblique sections J J' of the feelers. The pins I³ I⁴ may be insulated in the arms I I' or they may be made of hard rubber, so they will not form an electrical connection with the feelers. The arm I² is pivotally connected at its free end with a pusher-bar K, sliding in ways in the shuttle, with its outer end K' extending into a recess K², formed in the outside of the shuttle and constituting a push-button by which the three-armed lever may be rocked by the attendant and the feelers F F' separated sufficiently to allow a bobbin filled with weft to be inserted in the shuttle by the action of the insulated pins I³ I⁴ against the oblique sections J J' of the feelers. When a full bobbin has been inserted in the shuttle, the push-button is released and the springs G G' act to reverse the motion of the push-button and to carry the feelers into contact with the weft, and as the weft is removed in the operation of weaving the feelers will approach each other until the metallic band D' is uncovered and the feelers brought into contact therewith.

Each of the studs E E' is electrically connected with contact-plates L L' on the top of the shuttle, which are arranged to be brought in contact with electrical brushes M, mounted upon the lathe and electrically connected with the poles of a battery or other source of an electric current, so that whenever the shuttle is in its position in the shuttle-box it brings the contact-plates L L' into contact with the brushes M, and the feelers F F' become the terminals of an electric circuit which is completed by the contact of the feelers with the metallic band D' as the weft is withdrawn and the band uncovered.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a circuit-closer for looms, the combination with a shuttle-body and a bobbin held therein, of a pair of yielding feelers arranged to press against the weft on the bobbin, contact-strips on the outside of the shuttle-body, means for electrically uniting said contact-strips and said feelers and a push-button car-

ried by the shuttle and operatively connected with said feelers to move them away from the weft, substantially as described.

2. In an electric-circuit closer for looms the
5 combination with a shuttle-body, a bobbin and a pair of yielding feelers normally held in the path of the bobbin as it is inserted in the shuttle, of means operative from the outside
10 of the shuttle for withdrawing both of said feelers out of the path of the bobbin, substantially as described.

3. In an electric-circuit closer for looms the combination with a shuttle-body, a bobbin of
15 a yielding feeler arranged to press against the weft on the bobbin, and normally held in the path of the bobbin as it enters the shuttle and means carried by the shuttle-body for forcibly withdrawing said feeler from the path of the bobbin, substantially as described.

4. In an electric-circuit closer for looms, the
20 combination of a shuttle-body, a bobbin or weft-carrier adapted to be supported therein and having a contact-band thereon, feelers and means for normally forcing said feelers toward the contact-band to make electric con-
25 nection therewith and complete the circuit when the weft has become nearly exhausted, and means for separating the free ends of the feelers to permit a filled bobbin or weft-carrier to be readily inserted in the shuttle. 30

In testimony whereof I have signed my name to this specification, in presence of two subscribing witnesses, this the 24th day of January, 1900.

HARRY W. SMITH.

Witnesses:

RUFUS B. FOWLER,
AVA T. MURPHY.