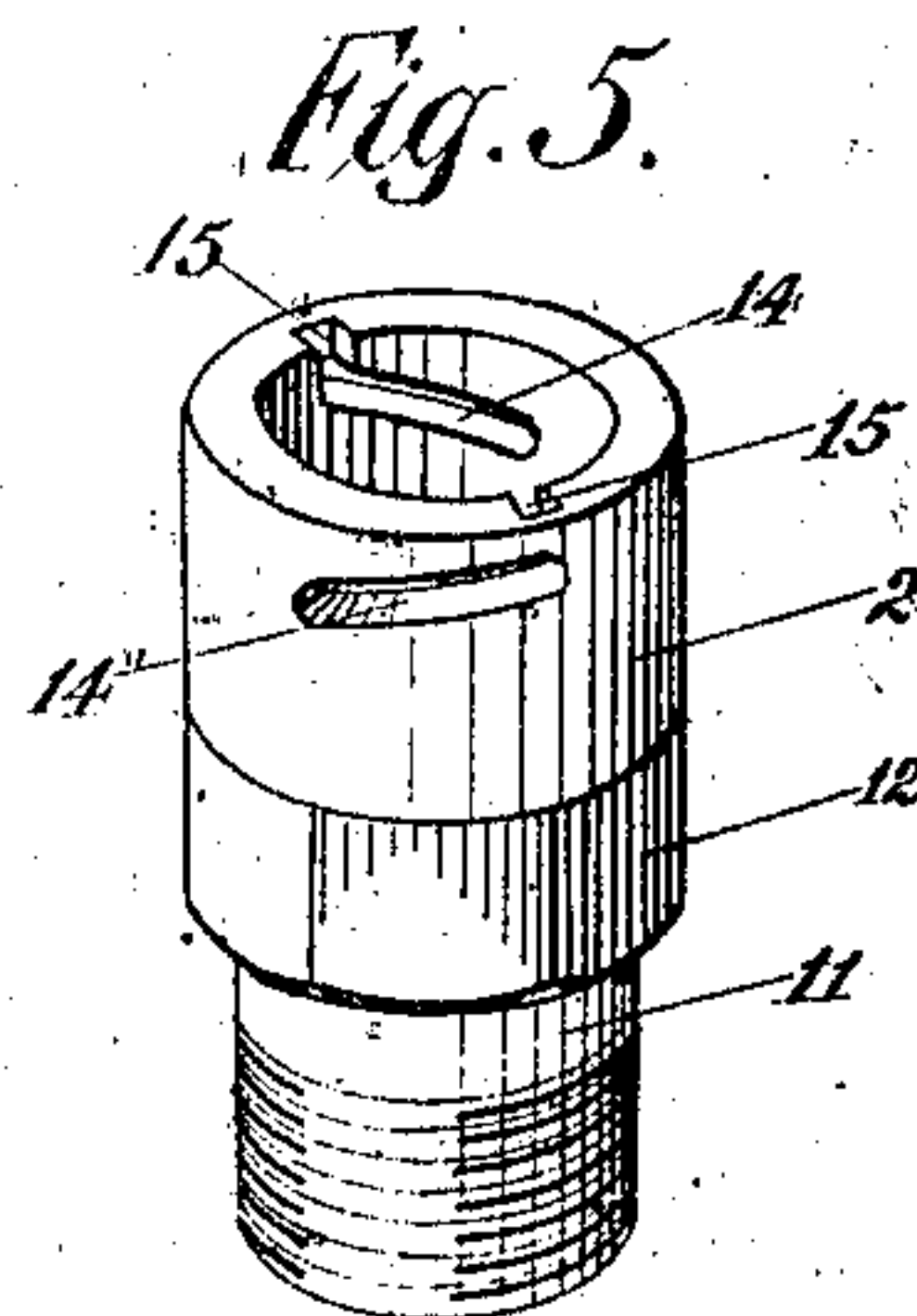
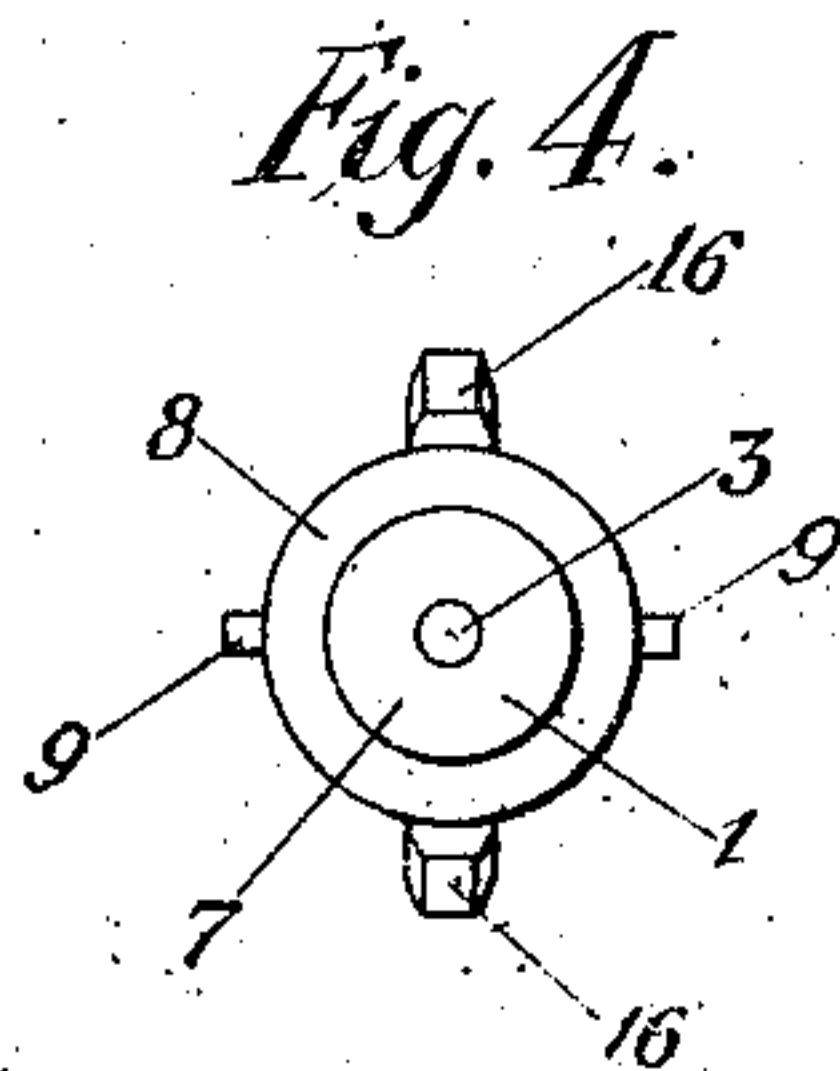
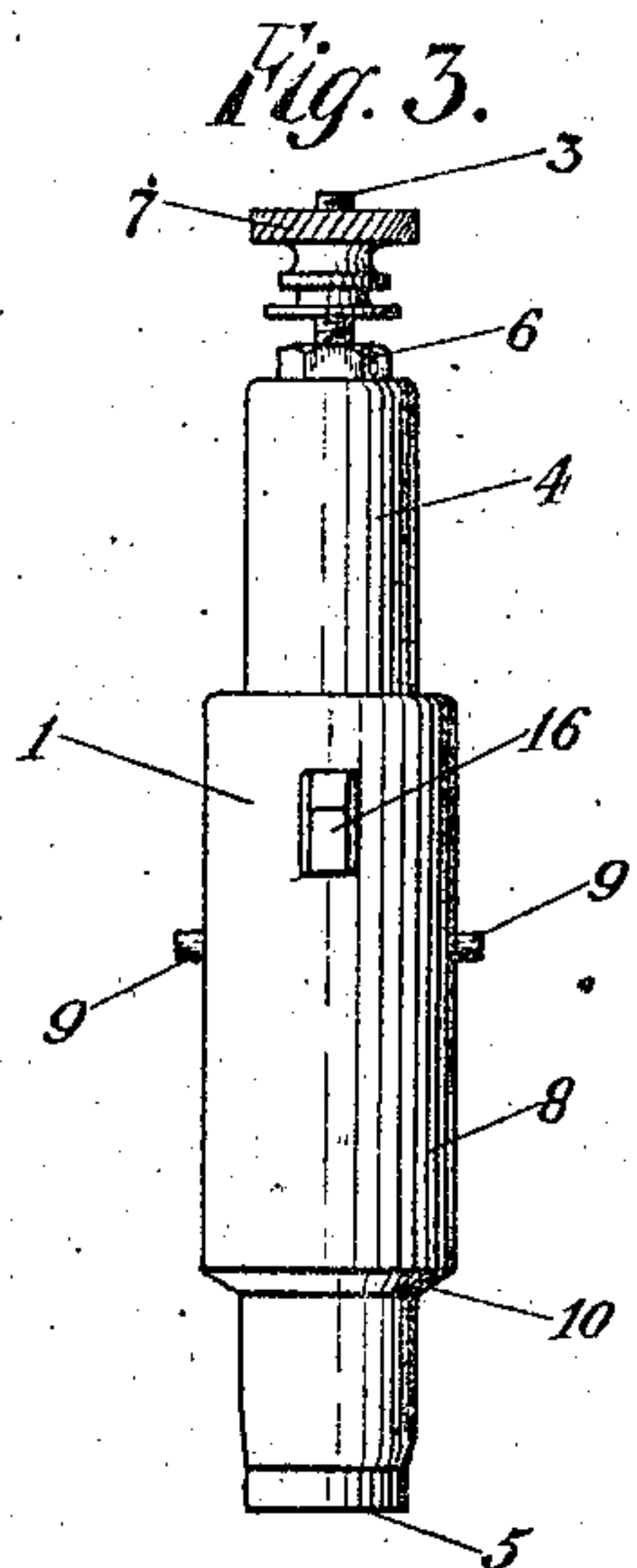
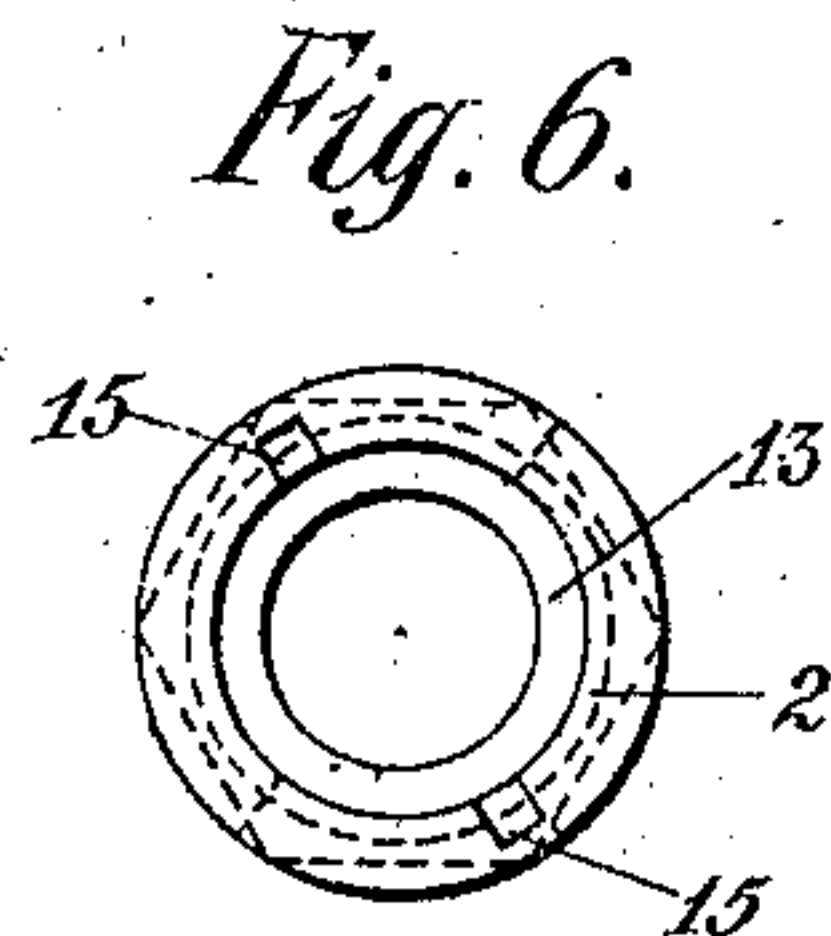
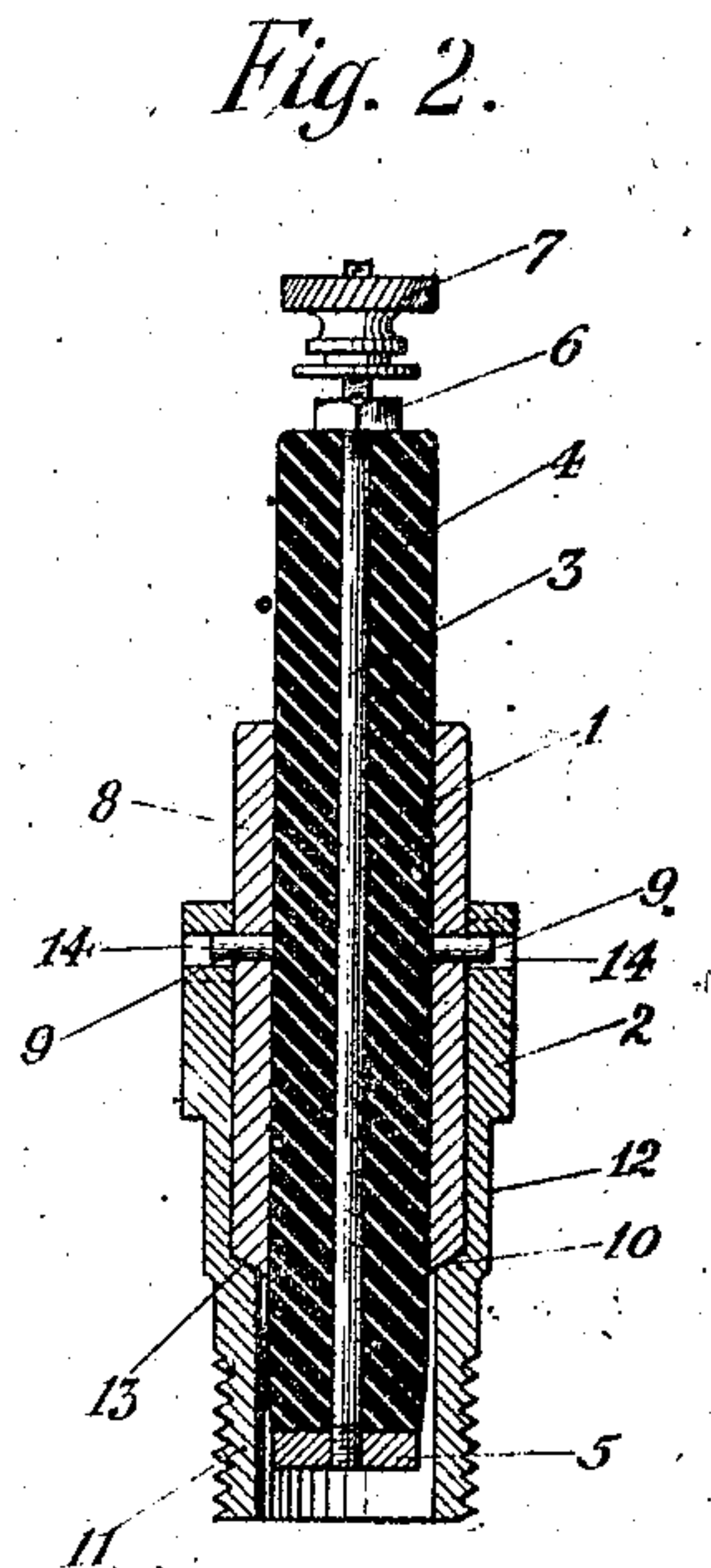
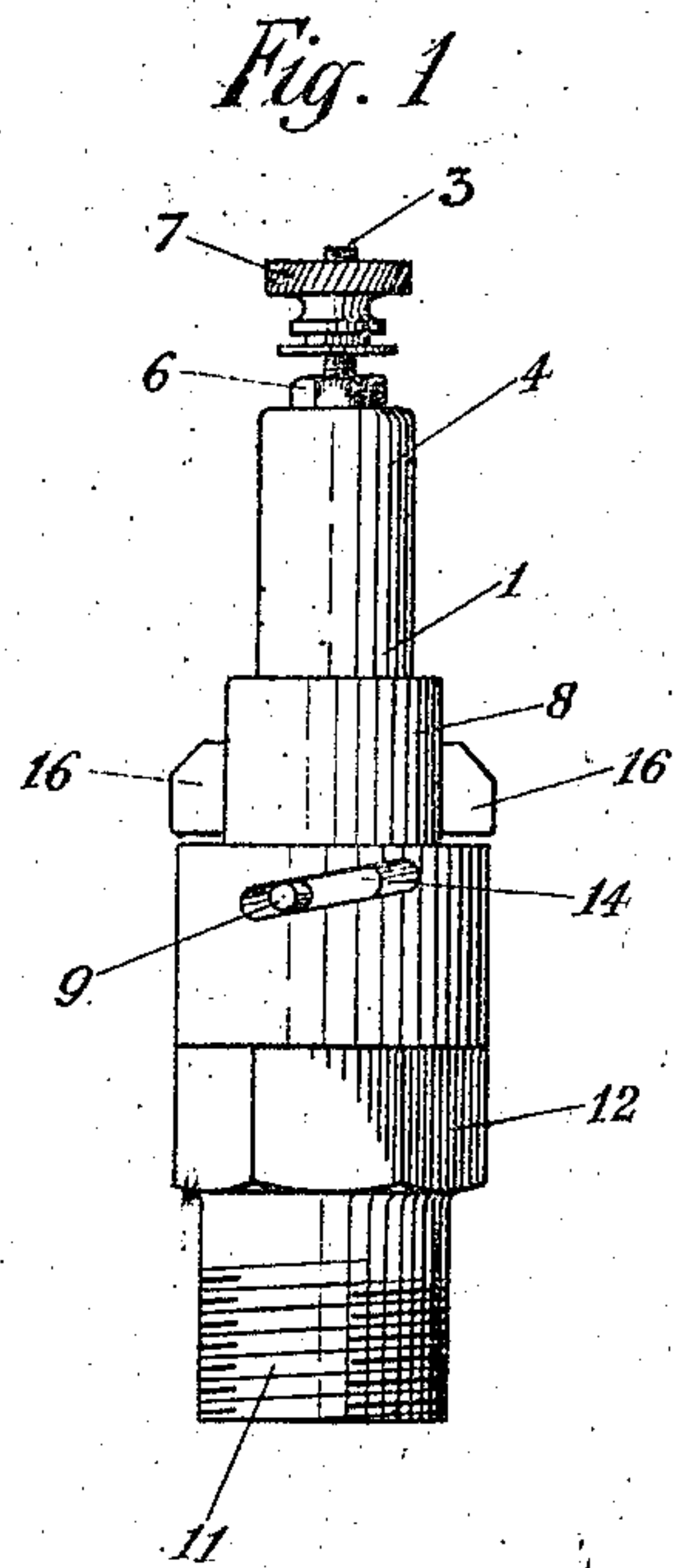


C. F. JONES.
SPARKING PLUG FOR EXPLOSIVE ENGINES.
APPLICATION FILED NOV. 4, 1908.

965,585.

Patented July 26, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

CYRUS F. JONES, OF OREGON, ILLINOIS.

SPARKING PLUG FOR EXPLOSIVE-ENGINES.

965,585.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed November 4, 1908. Serial No. 461,064.

To all whom it may concern:

Be it known that I, CYRUS F. JONES, a citizen of the United States, residing at Oregon, county of Ogle, and State of Illinois, have invented certain new and useful Improvements in Sparking Plugs for Explosive-Engines, of which the following is a specification.

My invention relates to sparking devices for explosive engines, and more specifically to that class of the same commonly known as sparking plugs.

The object of my invention is to provide a plug of the character mentioned, which will be especially applicable to gasoline engines, and one which will be of such improved construction as to be adapted to be readily and easily attached thereto or detached therefrom.

A further object of my invention is to provide a device of the character mentioned, which will be of the highest possible efficiency, and one which will be simple of construction, hence of low cost to manufacture.

Other objects will appear hereinafter.

With these objects in view, my invention consists in a plug characterized as above mentioned, and in certain details of construction and arrangement of parts all as will be hereinafter more fully described and particularly pointed out in the claim.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of my device in its preferred form, Fig. 2 is a central longitudinal section thereof, Fig. 3 is a side elevation of the sparking plug proper removed from the plug sleeve, Fig. 4 is a top plan view thereof, Fig. 5 is a perspective view of the plug sleeve, the plug proper being removed, and Fig. 6 is a top plan view thereof.

Referring now to the drawings, my device comprises a plug proper 1, and a sleeve 2 therefor, the latter being preferably formed of steel, although it may be formed of any other suitable metal. In the plug proper 1, 3 indicates a metal conducting rod and 4 an insulating coating therefor, the latter being formed of any suitable material, but preferably of porcelain, glass, or wood.

5 indicates a metal disk, preferably of steel, the same being of a diameter slightly less than that of the insulating coating 4.

Said disk is fixed in any suitable manner, but preferably threaded upon the lower extremity of the rod 3. Threaded upon the upper extremity of said rod 3, is a lock-nut 6 serving an obvious purpose, and a binding-nut 7 for a purpose hereinafter described. Fixed, preferably by being pressed thereon, upon the outer surface of said insulating coating 4, and preferably positioned thereon at substantially the central portion thereof, is a metal coating or sleeve 8. Said coating 8 is provided upon its outer surface, at points diametrically opposite each other, with radially extending projecting pins 9. The lower edge 10 of said coating 8, is preferably beveled, as clearly shown in Fig. 2 of the accompanying drawings.

The lower portion 11 of the sleeve 2, is provided with a male thread, and the outer surface of said sleeve is formed hexagonal as at 12 adapting said member to be screwed into, hence fixed in an engine casing. The inside diameter of the upper portion of said sleeve 2, is substantially the same as, or slightly greater than, as the outside diameter of the coating 8 of the plug proper, that is, said coating 8 is adapted to fit snugly within the upper portion of the sleeve member 2. The inside diameter of the lower end portion 10 of said sleeve 2, is slightly less than that of the upper portion thereof, the annular shoulder 13 thereby formed being preferably obliquely disposed at the same angle as the lower edge 10 of the coating 8 of the plug member 1, hence, making it possible when the latter is inserted in the sleeve member 2 to form an airtight connection between said parts, by contact of the shoulder 13 with said lower edge 10 of the member 1. Arranged diametrically opposite each other in the walls of said member 2, close to the upper edge thereof, are obliquely disposed slots 14. Longitudinally disposed passages 15, provided in the inside surface of said sleeve, and extending from the upper extremities of said slots 14, establish communication with the upper edge of the sleeve 2, as clearly shown in Fig. 5.

In attaching the plug proper to an engine provided with a sleeve member 2, hence attaching the same in said sleeve 2, said plug proper is inserted in said sleeve so that the pins 9 thereof shall engage, that is, pass through the passages 15, whence they enter the slots 14. Said pins 9 are so positioned on the member 1 and the slots 14 in the

member 2 that a partial rotation of the member 1, causes the beveled lower edge 10 of the coating 8 thereof to be forced down into contact with the shoulder 13 of the member 1, thereby forming an airtight connection therewith as before stated. In order to facilitate readily rotating said member, a necessity in order that such a connection be effected between said members, I provide the member 1 upon opposite sides thereof with finger projections 16, the same being preferably formed integrally with the metal coating 8 thereof.

In use the rod 3 of the member 1 of my device is connected with a battery or cell, or other electrical energizing means, by means of the binding-nut 7. An automatically operated make and break mechanism being interposed between the plug and the energizing means, it is obvious that as connections are made, sparks will jump from the periphery of the metal disk member 5, which forms the anode to the adjacent walls of the plug sleeve 2, which forms the cathode, hence, causing explosion of the explosive mixture in the engine.

By the provision in an engine of a sparking plug as described, it is obvious that the plug proper may be readily and easily removed from the plug sleeve, that is, from the engine, and may just as easily and quickly be replaced therein, resulting in numerous advantages known to any one with the slightest knowledge of explosive engines.

While I have shown what I deem to be the preferable form of my device, I do not wish to be limited thereto as there might be many changes made in the details of construction and arrangements of parts without departing from the spirit of my invention.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:

In a two-part sparking plug, a cathode-

forming sleeve comprising a cylindrical member having its central portion squared to form a wrench-hold, the lower end of said member being externally threaded, the bore of said member being reduced in diameter toward the lower end forming a conical shoulder, an anode-forming plug proper detachably secured in said plug sleeve, said plug proper comprising a cylindrical elongated member formed of insulating material having a uniform cross section of less diameter than the smallest diameter of said sleeve, said insulating member extending considerably above said cathode-forming sleeve and terminating within and at a distance from the inner end thereof, a central rod extending entirely through said cylindrical member, a metal disk threaded upon the lower end of said rod and bearing against the lower end of said member, a lock nut threaded upon the upper end thereof and a binding screw also upon said upper end, a metal jacket secured about the central portion of said member and adapted to fit loosely within the upper end of said plug sleeve, the lower end of said jacket being formed to fit upon said conical shoulder, oppositely disposed rods extending radially from said jacket, the inner surface of said sleeve being provided with obliquely disposed slots in its upper portion to receive said rods, whereby said plug and its jacket may be readily removed without loosening or removing any other part or parts of the device and whereby when in position a tight fit is maintained between the parts at said conical shoulder, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CYRUS F. JONES.

Witnesses:

H. H. TODD,

GLENN EDELMAN.