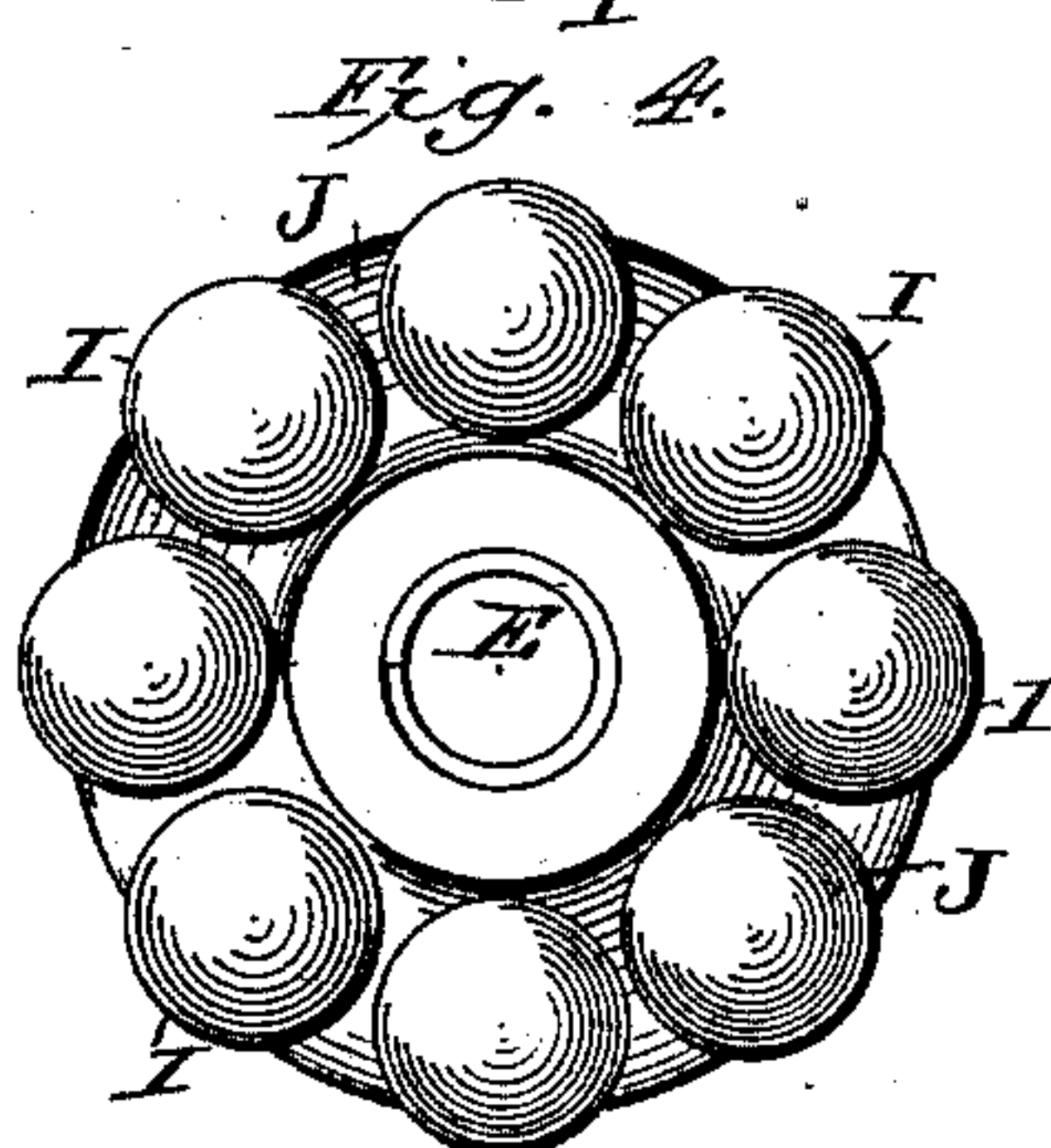
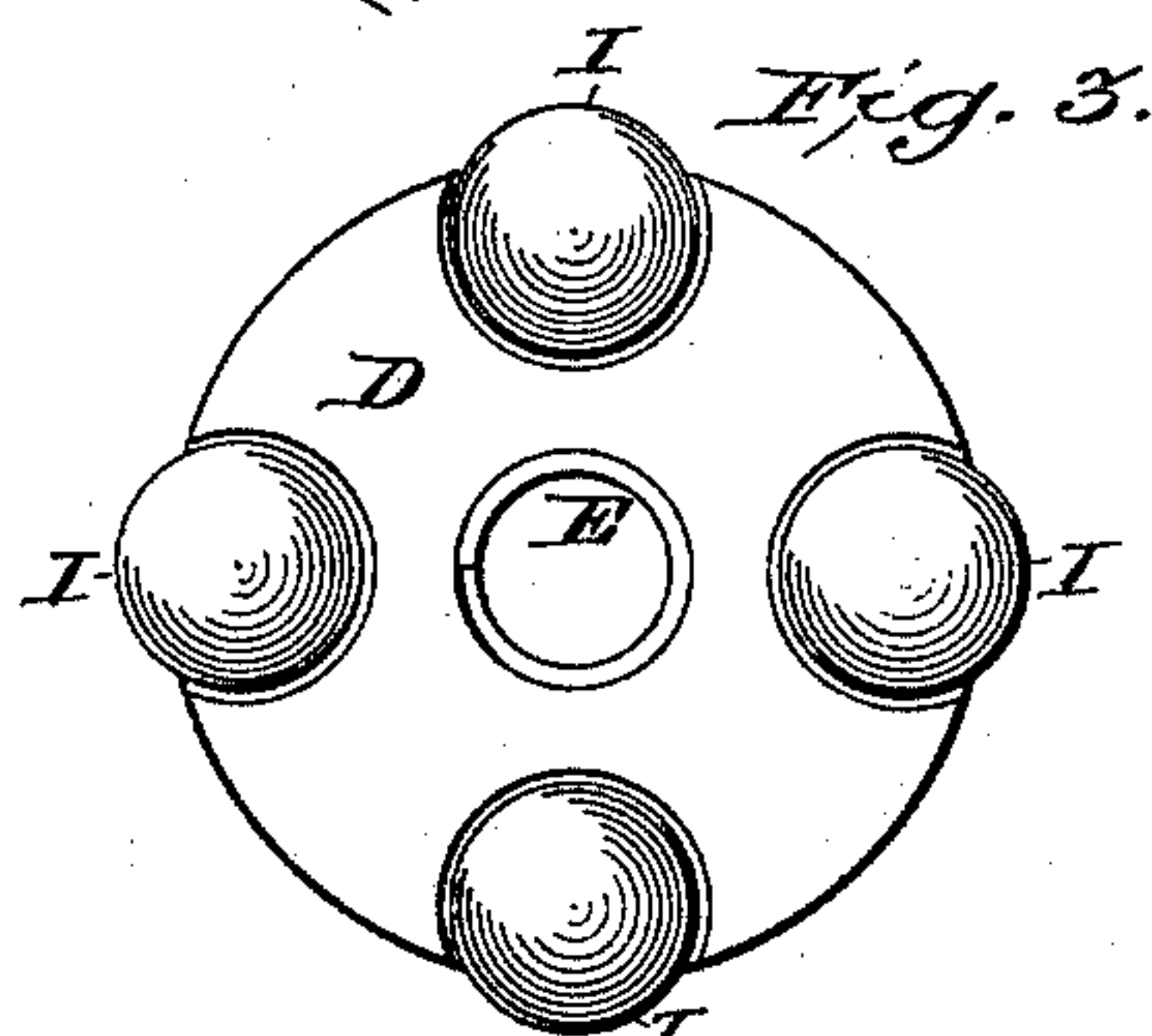
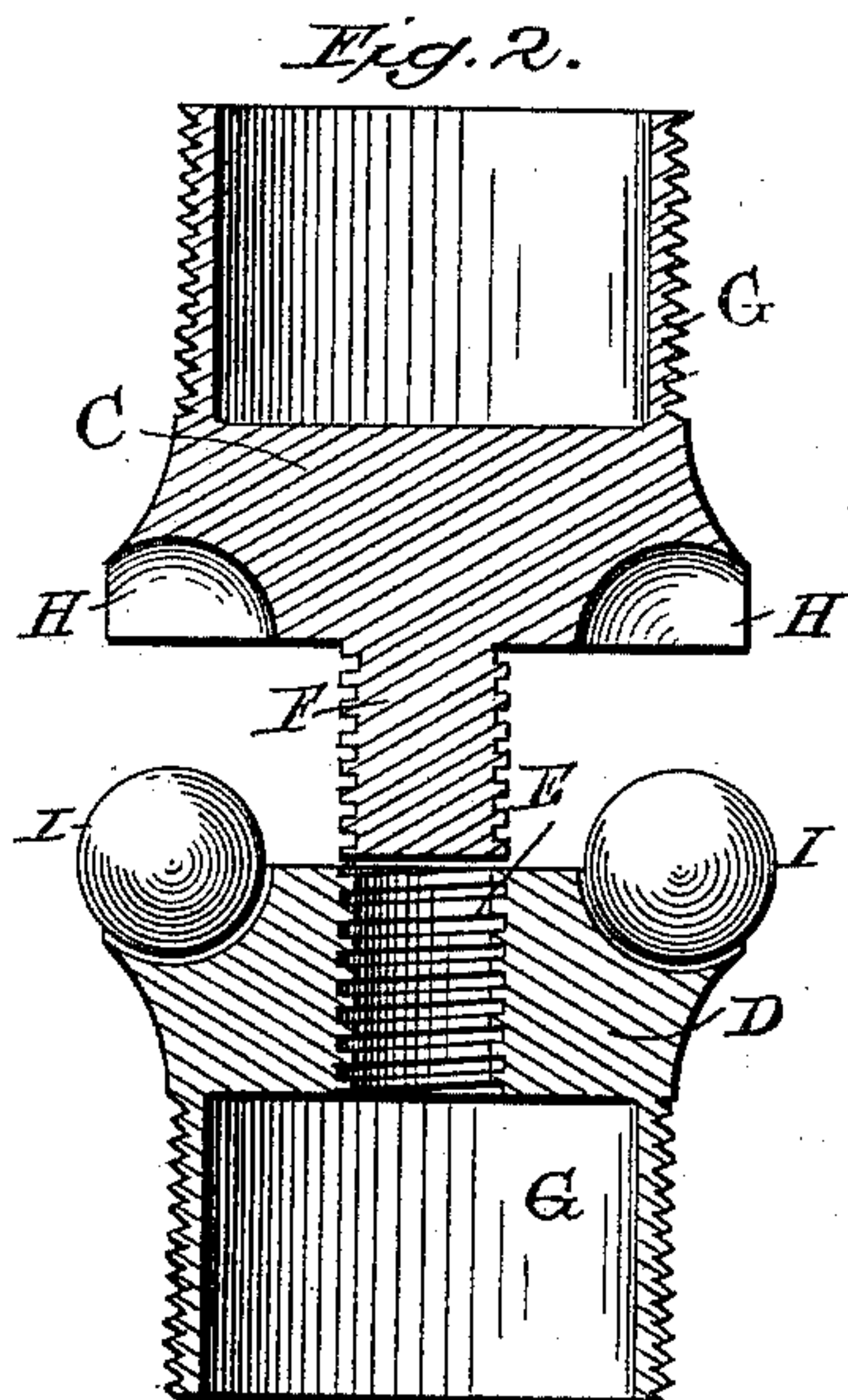
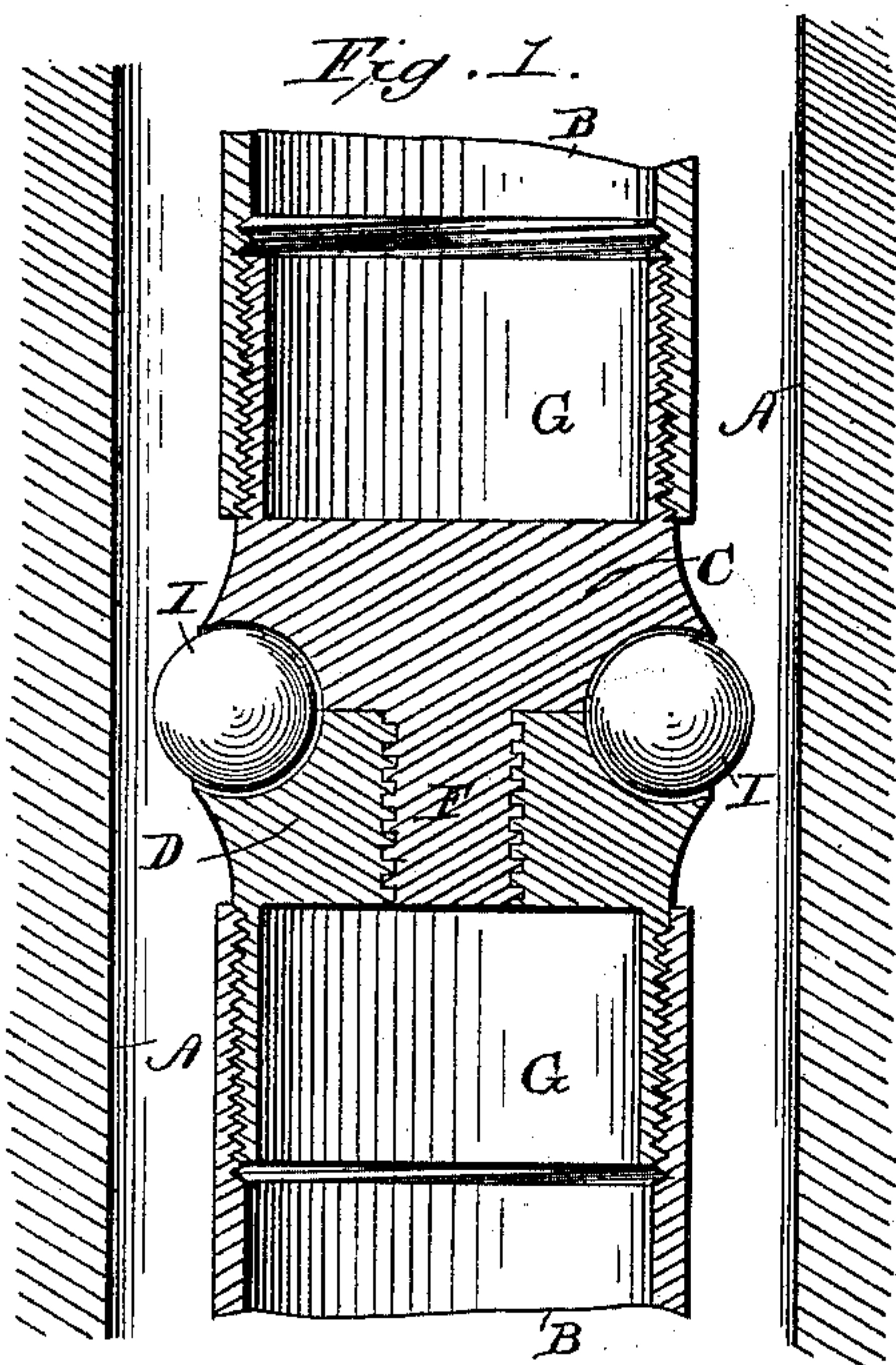


(No Model.)

W. L. BLACK.
ANTI-FRICTION SUCKER ROD COUPLING.

No. 467,494.

Patented Jan. 26, 1892.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM L. BLACK, OF FORT MCKAVETT, TEXAS.

ANTI-FRICTION SUCKER-ROD COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,494, dated January 26, 1892.

Application filed August 3, 1891. Serial No. 401,521. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. BLACK, a citizen of the United States, residing at Fort McKavett, in the county of Menard and State of Texas, have invented certain new and useful Improvements in Anti-Friction Sucker-Rod Couplings; 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 appertains to make and use the same.

This invention relates to certain new and useful improvements in sectional sucker-rods for artesian, oil, and other wells, and has for its object to provide an improved construction of coupling-joint for connecting the sections of the rods together. On account of the great depth of these wells it is practically impossible to get the tube or casing perfectly straight. In consequence of this considerable difficulty is experienced in getting the sucker-rods to work easily, as the rods bend where the casing is not straight and cause the joint to wear out in a short time by friction against the inner sides of the tubing.

My invention is designed to obviate this difficulty by providing an improved form of coupling-joint which will do away as far as possible with the friction of the joints against the tubing caused by the bending of the rods to conform to the tube or casing.

In the accompanying drawings, Figure 1 is a vertical sectional view of a portion of a well and its sucker-rod embodying my improvement. Fig. 2 is a vertical section of my improved coupler, showing the two sections thereof detached. Fig. 3 is a top plan view of the lower section of the coupler. Fig. 4 is a similar view illustrating a slight modification.

Similar letters of reference illustrate corresponding parts in the different views.

In the accompanying drawings, the letter A designates the sides of the well proper, B the sectional sucker-rod, and C D the upper and lower sections, respectively, of the coupler connecting the sections of the sucker-rod. The sections C D are in all respects identical, except that one of them (in the drawings the lower section D) is provided with a central

screw-threaded aperture E to receive the threaded projection F on the upper section C, thereby firmly uniting the parts. The said sections are also provided with the internally-screw-threaded extension G, adapted to screw onto and connect the sections of the sucker-rod, as shown in Fig. 1. The two sections of the coupler are flared toward their meeting surfaces and are provided on said surfaces near their outer edge with circular half-sockets H, as shown, adapted to register with each other and to receive and retain the friction-balls I, preferably four in number, said balls projecting slightly from the sides of the coupler and capable of a free rotation in their sockets when the coupler-sections are screwed together.

From the above description it will be seen that as the sucker-rod is moved up and down in the well the friction-balls projecting from the enlarged portion of the couplers will impinge against and receive the entire wear due to said contact, thereby preserving the couplers for an indefinite period.

In Fig. 4 I have illustrated a slight modification, wherein, instead of employing the series of sockets H, an annular groove J is provided, whereby a greater number of friction-balls may be employed and the coupler protected at every point.

The coupler and friction-balls are preferably made of brass, although I do not wish to limit myself to such material, as any metal may be employed. So, also, the sucker-rod may be formed of iron, wood, or other suitable material, as my coupler is adapted to operate well with any material employed for such purpose.

Having thus described my invention, what I claim, and desire to secure, is—

1. A coupler for the sections of sucker-rods, provided with a series of friction balls or rollers mounted in and projecting from the sides of the coupler, substantially as described.

2. A coupler for the sections of sucker-rods, having sockets in its outer periphery, in combination with friction balls or rollers loosely retained in said sockets and projecting beyond the sides of the coupler, substantially as described.

3. A coupler for the sections of sucker-rods,
formed in two parts adapted to be united, said
sections having half-sockets in their meeting
faces registering with one another, in combi-
5 nation with friction-balls loosely retained in
said sockets and projecting from the sides of
the coupler, substantially as described.

In testimony whereof I affix my signature in
presence of two witnesses.

WILLIAM L. BLACK.

Witnesses:

WM. LEHNS,
SAM. WALLICK.