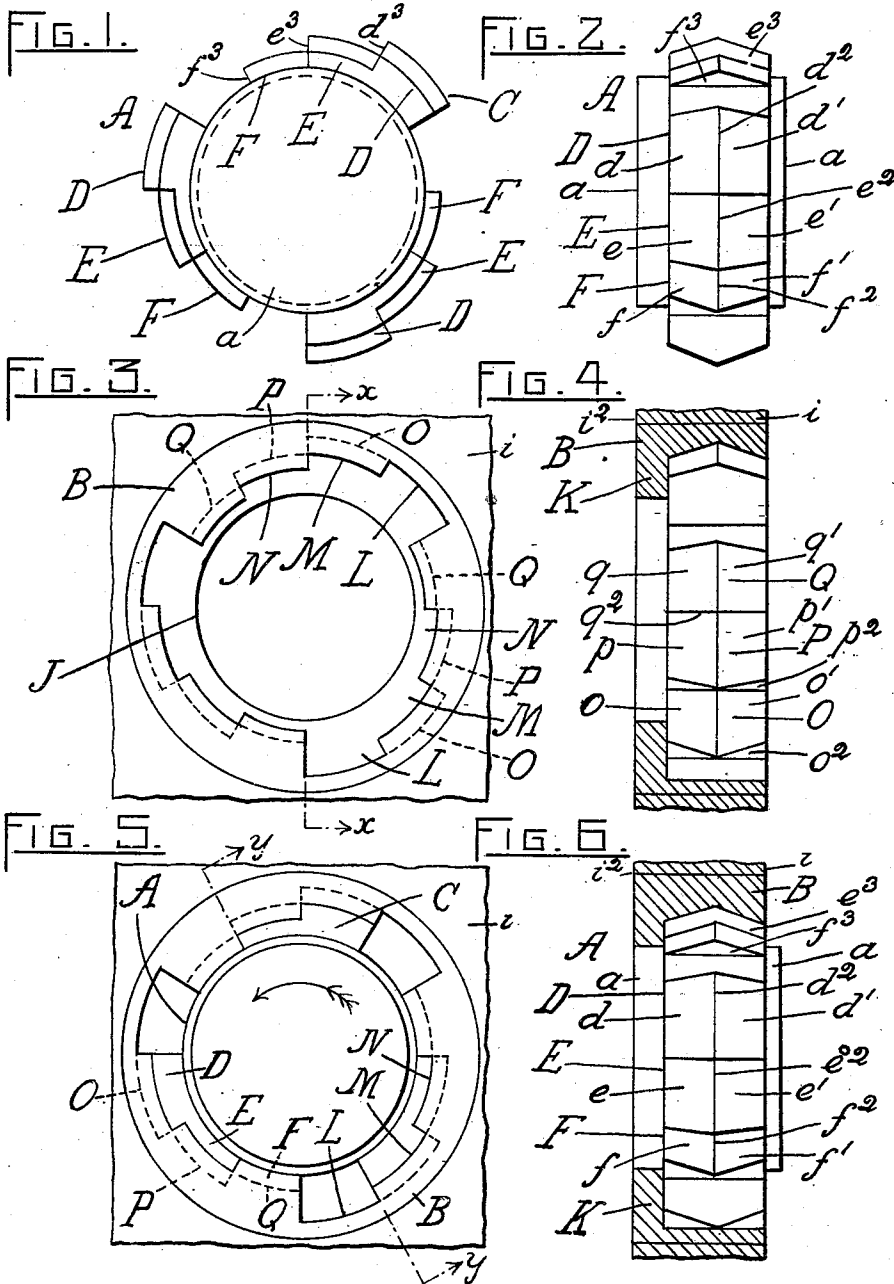


C. J. LJUNGGREN.
CLOSURE LOCKING MEANS.
APPLICATION FILED APR. 4, 1910.

977,646.

Patented Dec. 6, 1910.



WITNESSES:

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CLOSURE-LOCKING MEANS.

977,646.

Specification of Letters Patent.

Patented Dec. 6, 1910.

Original application filed September 2, 1908, Serial No. 451,444. Divided and this application filed April 4, 1910. Serial No. 553,302.

To all whom it may concern:

Be it known that I, CARL J. LJUNGGREN, a subject of the King of Sweden, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Closure-Locking Means, of which the following is a specification.

My invention relates to closure locking means adapted for use in such structures as gun breeches, port holes, man holes and vault doors, and is a division of my pending patent application Serial No. 451,444, filed Sept. 2, 1908.

The essential objects of the present invention are to afford a maximum of pressure resisting surface in the structure; to dispense with the employment of screw threads whose expense of construction and facile fracture and disintegration in use make them undesirable and dangerous; to distribute the strain upon the closure member; to render the interior parts inaccessible; and to attain these ends in a simple and inexpensive structure.

To the above ends my invention consists in the novel construction and combination of parts set forth in and falling within the scope of the appended claims.

Figures 1 and 2 are rear and side elevations respectively of my novel closure member, Fig. 3, a rear end elevation of the stationary member, Fig. 4, a section of the same on line $x x$ of Fig. 3, Fig. 5, a rear elevation of the closure member in engaged position within the orifice of the stationary member, and Fig. 6, a section of the same on line $y y$ of Fig. 5.

Like reference characters indicate like parts throughout the views.

My invention is embodied in a closure member A which is a plug, block, or door adapted to be seated in a stationary member B which is either a breech or jamb. The mechanism for supporting, inserting, rotating and withdrawing the member A forms no part of the present invention and is well known in the art hence herein omitted.

In detail the closure member A comprises a substantially cylindrical body portion, a , having intermediate its length a plurality

of annularly arranged segments C equidistant from each other, and each comprising a plurality of radially graduated stepped portions D, E, F. The peripheries of the stepped portions comprise inclined bearing surfaces $d, d', e, e',$ and f, f' , respectively extending from the sides of the segment outwardly and converging in lines $d^2, e^2,$ and f^2 respectively, disposed centrally of the stepped portions in the present instance. The end or radial faces d^3, e^3, f^3 of the stepped portions are non-inclined.

The receiving or stationary member is in this instance a collar B fixed in any suitable manner in the wall I whose inner face is i and whose outer face is i^2 . This collar incloses a substantially cylindrical orifice, J of preferably reduced diameter at its front end to form an abutment K. The orifice has a circumferential series of radially graduated entrance openings L, M, N, which merge into annularly arranged radially graduated channels or seats O, P, Q, respectively, having converging inclined side bearing faces $o, o', p, p',$ and q, q' , and non-inclined radial end faces or abutments, o^2, p^2 and q^2 respectively.

The parts A and B are interengaged as follows. The member A disposed as in Fig. 2 is introduced as a sliding fit into the member B from right to left as viewed in Fig. 6, the stepped portions D, E, F, entering the channels L, M, N, respectively. The member A is then turned in the direction of the arrow shown in Fig. 5 to bring the portions D, E, F, into the seats O, P, Q respectively, with the converging faces $d d', e e',$ and $f f'$, in frictional contact with the bearing faces $o o', p p',$ and $q q'$ respectively; and the radial faces d^3, e^3, f^3 against the abutments o^2, p^2 and q^2 respectively.

What I claim is,—

1. In a device of the type set forth, the combination with a stationary member, of a closure body, and a segment upon the body comprising radially graduated stepped portions provided with converging peripheral bearing surfaces.

2. In a device of the type set forth, the combination with a stationary member, of a closure body comprising radially gradu-

ated stepped portions, said stepped portions being provided with inclined outwardly converging peripheral bearing surfaces.

3. In a device of the type set forth, the
5 combination with a stationary member, of a closure body comprising radially graduated stepped portions, said stepped portions being provided with peripheral inclined

bearing faces converging in lines disposed centrally of the stepped portions. 10

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

CARL J. LJUNGGREN.

Witnesses:

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