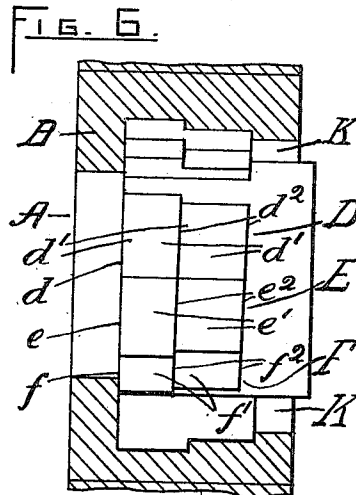
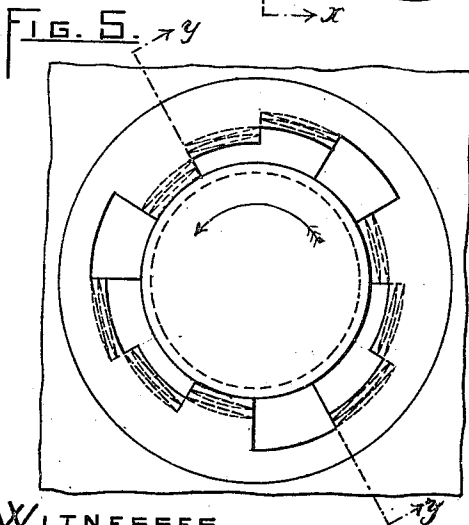
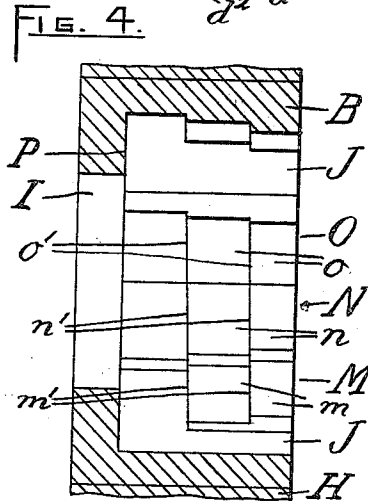
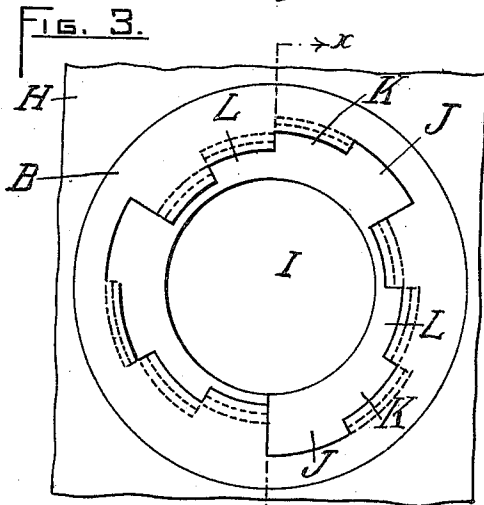
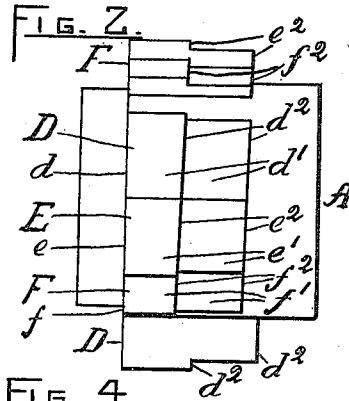
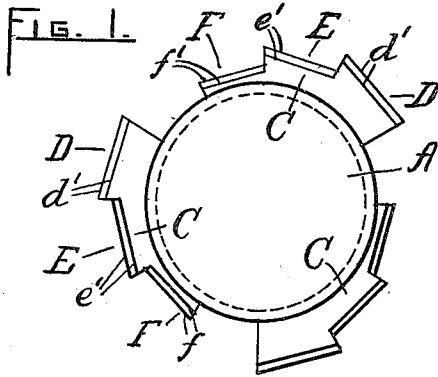


C. J. LJUNGGREN.
CLOSURE LOCKING MEANS.
APPLICATION FILED AUG. 31, 1910.

994,013.

Patented May 30, 1911.



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CLOSURE-LOCKING MEANS.

994,013.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed August 31, 1910. Serial No. 579,953.

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 vaults, guns, port holes, etc., and embodies certain features of construction disclosed in my pending patent application Serial No. 451,444 filed Sept. 2, 1908.

The objects of my invention are those commonly sought in this type of structures, and particularly to distribute the strain of the parts, to compensate for wear, and to generally strengthen the structure.

To the above and other ends my invention consists of such features, combinations, and details of construction as are set forth in the appended claims.

In the accompanying drawings which form a part of this specification Figures 1 and 2 are rear and side elevations respectively of the novel plug or closure member, Fig. 3, a rear end view of the stationary member, Fig. 4, a section on line *x x* of Fig. 3, Fig. 5, a rear elevation of the closure member locked in the stationary member, and Fig. 6, a partial section on *y y* of Fig. 5 showing the closure member in side elevation.

In the drawings like reference characters indicate like parts throughout the views.

In its present form of embodiment my invention consists of a plug, door, or closure member A adapted to coöperate with a breech or jamb B. The mechanism for supporting, inserting, rotating, and withdrawing the member A forms no part of this invention and is well known in the art, therefore is not herein set forth.

The member A of cylindrical form is provided with a plurality of angularly arranged interspaced segments C. Each segment comprises a plurality of radially graduated stepped portions D, E, F, which extend longitudinally of the body. The front faces *d, e, f*, of the portions D, E, F, are in the same plane and form a shoulder. The stepped portions are preferably provided

with a series of transversely disposed steps of gradually lessening radii toward the rear of the member A, and whose outer or peripheral faces *d', e', f'* are plane surfaces or flat, and whose rear faces *d², e², f²*, are in this instance in alinement with each other but in pitched relation to the body.

The stationary member herein shown consists of a collar B fixed in the wall H in any desired manner, inclosing a substantially cylindrical orifice I provided with a circumferential series of radially graduated longitudinally disposed entrance channels J, K, L, respectively corresponding with the stepped portions D, E, F. In the orifice are a plurality of longitudinally disposed graduated channeled portions M, N, O, whose respective seats *m, n, o*, are preferably arcuate, transversely inclined, and pitched, as well as of gradually diminishing radii rearwardly. These channels are in alinement with each other, and form shoulders or abutments *m', n', o'*, for the rear faces *d², e², f²*, respectively of the stepped portions D, E, F. The parts A and B are thus interengaged. The member A, disposed as illustrated in Fig. 2, is introduced in the member B from right to left as shown in Fig. 6. The stepped portions D, E, F, pass through channels J, K, L respectively, whereupon the member A is turned in the direction of the arrow shown in Fig. 5 bringing the portions D, E, F into the channeled portions M, N, O respectively. The plane faces *d', e', f'* register in the arcuate seats *m, n, o*. The rear faces *d², e², f²* come into frictional engagement with the abutments *m', n', o'*. The shoulder formed by the faces *d, e, f* bears against the internal end face P of the member.

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 a plurality of radially graduated portions provided with flat peripheral faces.

2. 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 a plurality of radially graduated portions provided with flat peripheral faces and with rear pitched faces.

3. In a device of the type set forth, the combination of a hollow stationary member provided with longitudinally disposed channeled portions, each channeled portion being
5 provided with a transversely disposed channel and a closure member within the stationary member and radially graduated portions upon the closure member provided

with flat peripheral faces adapted to seat in the transversely disposed channels. 10

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

CARL J. LJUNGGREN.

Witnesses:

LEONARD W. HORTON,
HORATIO E. BELLOWS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
