

999,990.

Patented Aug. 8, 1911.

Fig. 1.

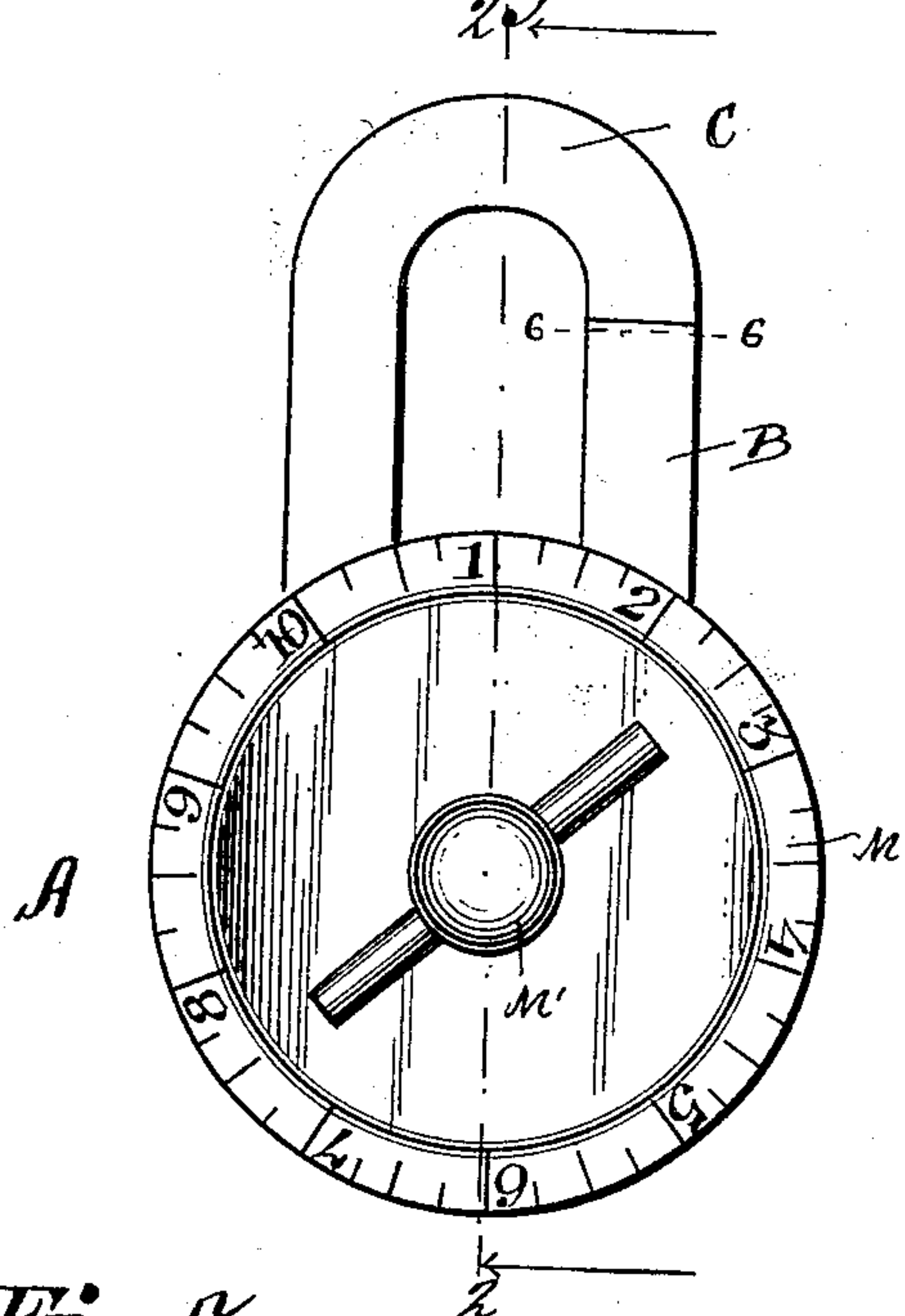


Fig. 2.

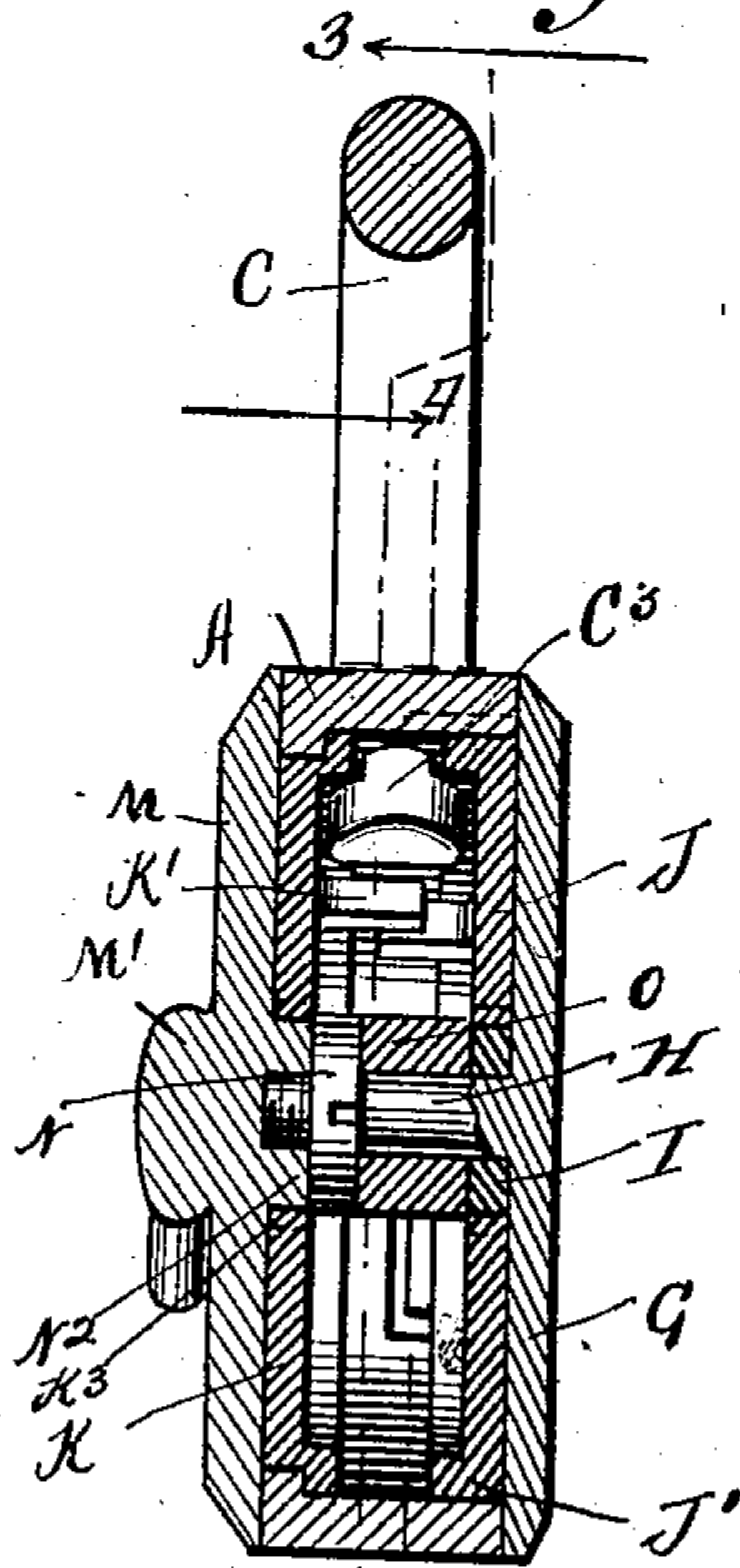


Fig. 3.

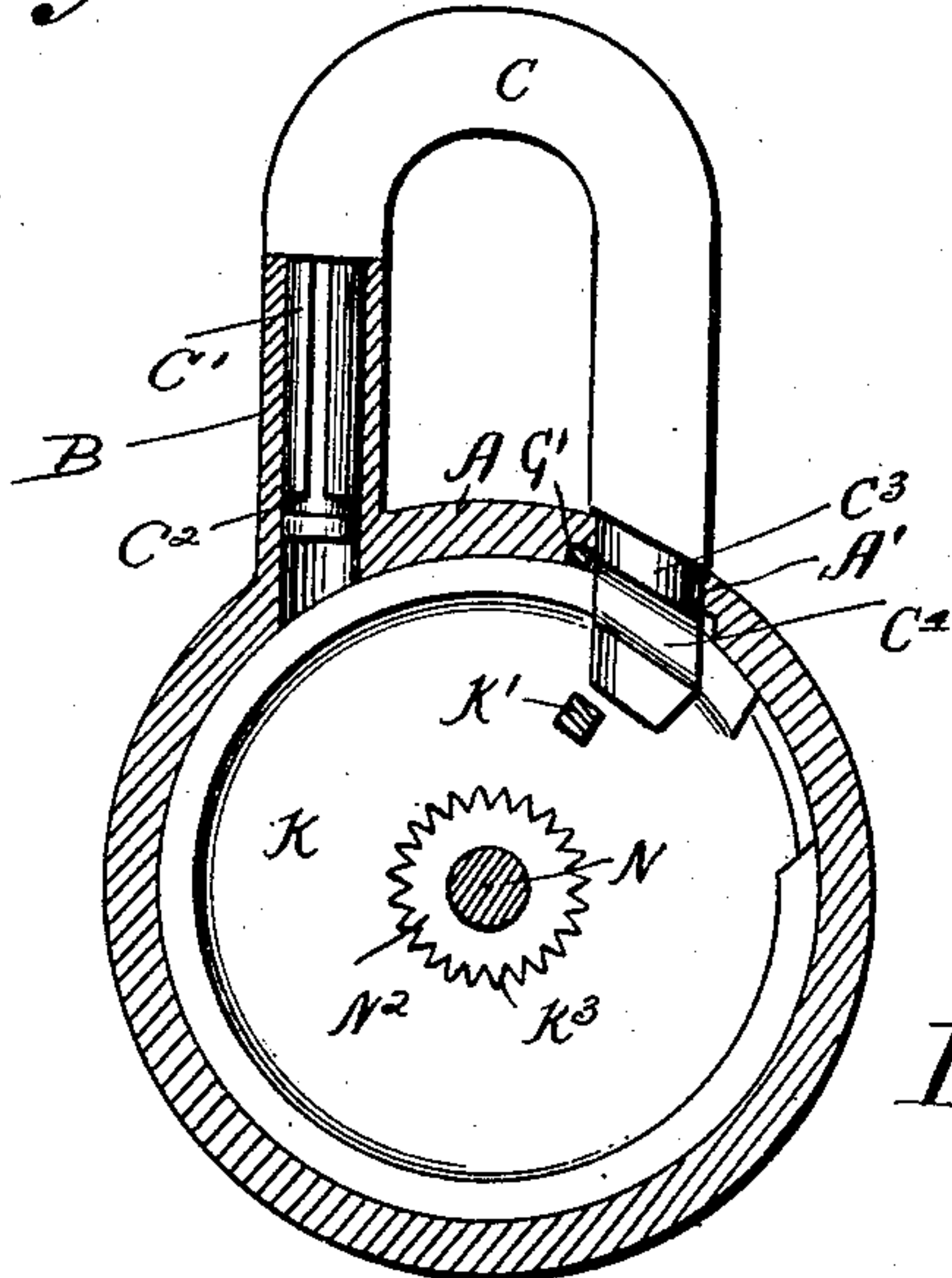


Fig. 4.

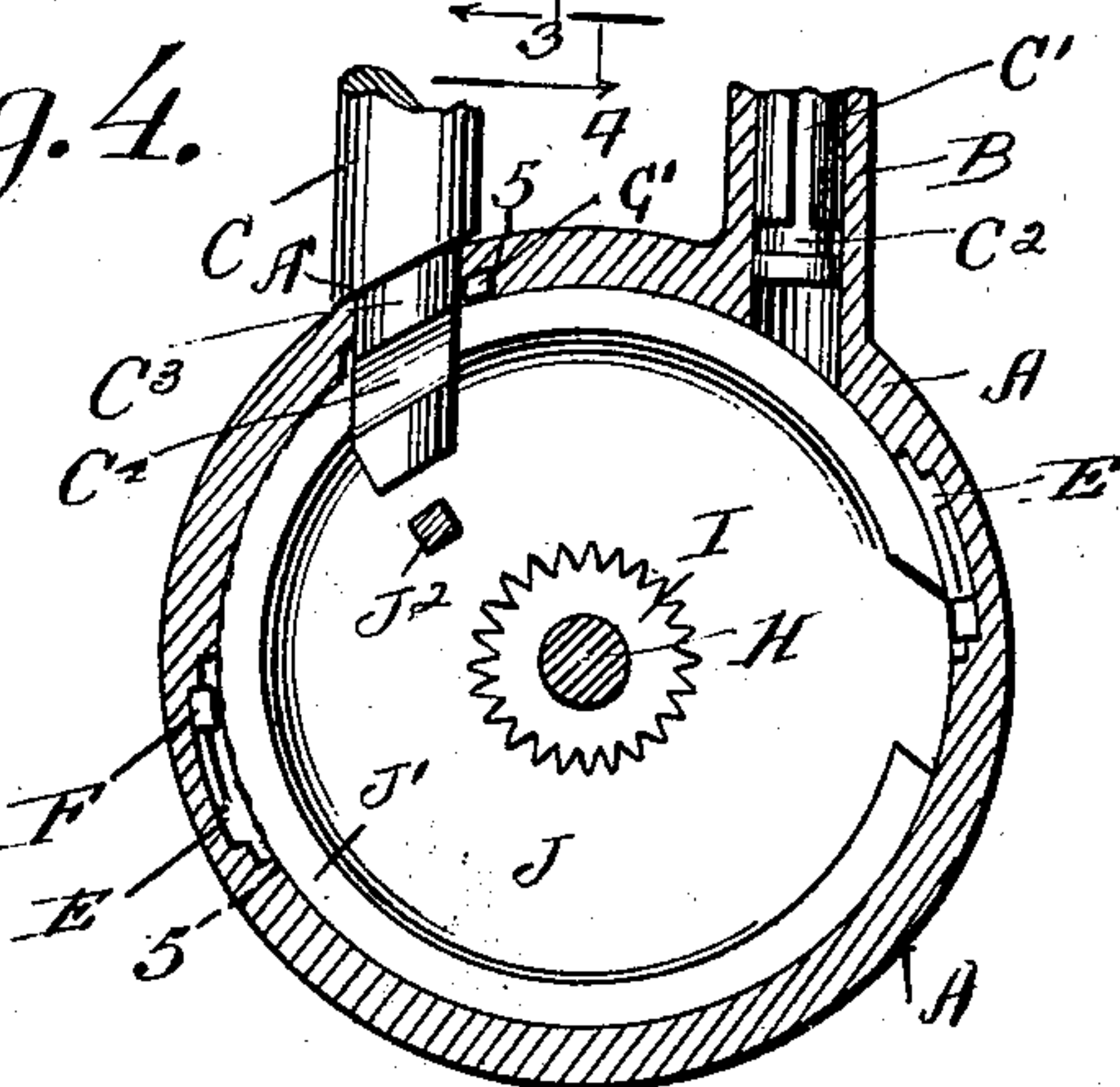


Fig. 6.

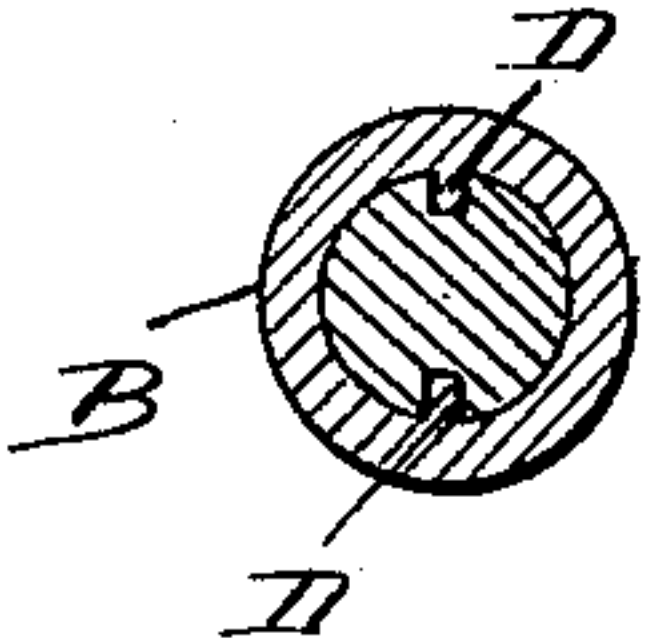
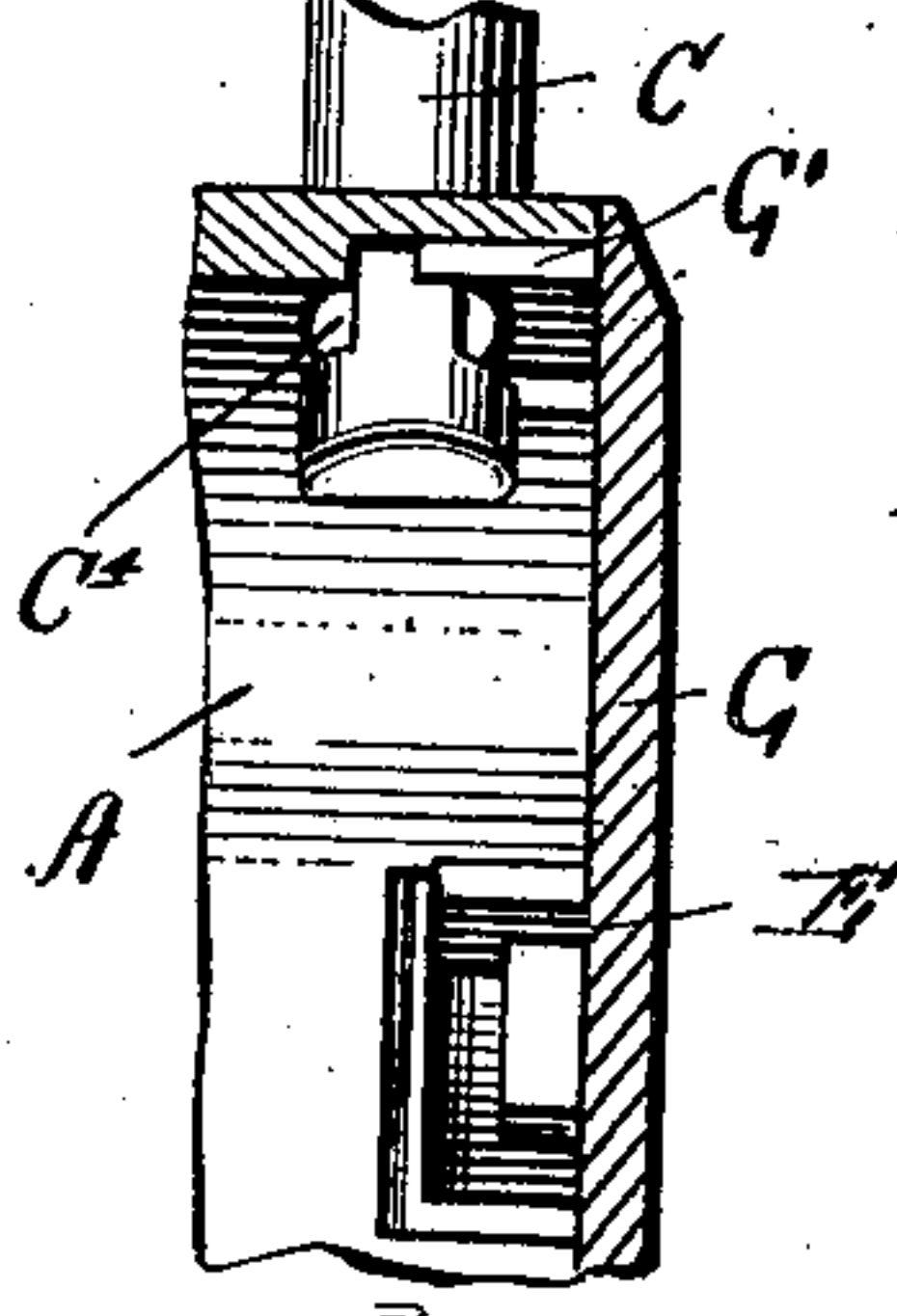


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## PADLOCK.

999,990.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed August 20, 1910. Serial No. 578,086.

*To all whom it may concern:*

Be it known that I, HARRIS HANFLIG, a citizen of the United States, residing at Charlestown, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Padlocks, of which the following is a specification.

This invention relates to certain new and useful improvements in combination padlocks, the object being to provide a combination pad lock which is so constructed that the lock can be taken apart easily and quickly when the same is in an open position in order to change the combination of the lock.

Another object of my invention, is to provide a combination lock with a slidably mounted shackle which is so carried that the same can be moved vertically and swung to one side.

A still further object of my invention is to provide the body of the lock with a removable back which is mounted on the body of the lock in such a manner that by oscillating the same when the shackle is removed the back can be detached, and when placed in a locked position the shackle will prevent the same from being oscillated.

A still further object of my invention is to provide a shackle with oblique grooves upon opposite sides in which the flanges of the locking disks are adapted to be forced so as to lock the shackle, said disks being provided with cut-away portions through which the shackle extends in order to allow the shackle to be forced into the lock or removed therefrom.

With these objects in view, the invention consists in the novel features of construction, combination and arrangement of parts, hereinafter fully described and pointed out in the claims.

In the drawing forming a part of this specification:—Figure 1 is a side elevation of my improved combination pad lock. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is a section taken on line 4—4 of Fig. 2. Fig. 5 is a section taken on line 5—5 of Fig. 4. And Fig. 6 is a detail section taken on line 6—6 of Fig. 1.

In carrying out my improved invention, I employ a ring shaped body A provided with an upwardly projecting sleeve portion B, in which is mounted the longitudinally grooved portion C' of a shackle C, which is

provided with an annular groove C<sup>2</sup> at its lower end communicating with the longitudinal groove, and in which are adapted to extend pin members D arranged in the upper end of the sleeve portion B in order to allow the shackle to be moved up and down, and to be swung sidewise. The other leg of the shackle is reduced as shown at C<sup>3</sup>, and is provided with grooves C<sup>4</sup> upon opposite sides, the reduced portion of the shackle being adapted to extend into an opening A' formed in the casing A.

The wall of the casing A is provided with bayonet slots E, in which are adapted to fit headed lugs F carried by a back plate G which is provided with a central stud shaft H, on which is arranged a bearing I, the periphery of which is toothed, over which is arranged an annular flanged disk J which is provided with a toothed opening co-acting with the toothed bearing, the flange J' of which is provided with an opening adapted to receive the shackle when the same is forced into the body of the lock, and by turning the disk the flange is carried into the groove of the shackle so as to lock the same.

The back plate G is provided with a lug G' having a beveled end which is adapted to be seated in a recess formed adjacent the opening A' of the casing, and against which the shackle is adapted to bear when the same is forced into the opening so as to prevent the back plate from being oscillated in order to disengage the lugs from the bayonet slots. The disk J is provided with a pin J<sup>2</sup> which is adapted to co-act with a pin K' of a similar shaped locking disk K which is carried by a dial plate M, said plate being provided with a handle M' and a toothed projection N<sup>2</sup> which co-acts with the toothed edge of an opening K<sup>3</sup> formed in the locking disk K so that by changing the position of the disk K on projection of the dial M, the combination will be changed. The toothed projection is provided with a centrally threaded opening in which is mounted a screw N for locking the disk in its adjusted position on the same, and for spacing the disks apart I provide the stud-shaft H with a spacing sleeve O which engages the screw head and holds the two locking disks properly spaced apart. The locking disk K is also provided with an annular flange having a cut-away portion adapted to allow the shackle to be forced



into the body of the lock, and when turned the flange is carried into the groove of the shackle so as to lock the same. By this construction, by turning the dial when the shackle is in a locked position until the same registers in an indicating point, one of the guide way portions of the locking disk will be carried into alinement with the opening of the casing, and then by reversing the dial the other disk will be oscillated so as to bring its cut-away portion into alinement with the opening of the casing in order to allow the shackle to be withdrawn or inserted, and by reversing this operation the flanges of the disks will be forced into the grooves of the shackle so as to lock the same within the body.

From the foregoing description, it will be seen that I have provided a combination lock with a removable back plate, which is locked into the body of the casing in such a manner that when the shackle is drawn from the same, the back plate can be oscillated so as to allow the same to be removed in order to reach the interior of the lock in order to change the combination of the same.

What I claim is:—

1. A combination pad lock comprising a ring shaped casing having a sleeve extending there-from, a shackle slidably mounted in said sleeve, locking disks mounted in said casing co-acting with the shackle, a dial for operating said disks, and a removable back plate locked in position by the shackle.

2. A combination lock comprising a casing provided with bayonet slots, a back plate provided with headed lugs working in said bayonet slots, and a projection carried by said back plate engaged by said shackle for locking the lugs in the slots.

3. A combination pad lock comprising a ring shaped casing having a sleeve extending upwardly there-from, pins extending

inwardly from the upper end of said sleeve, a shackle provided with a longitudinally grooved leg and having an annular groove communicating there-with mounted in said sleeve, said casing being provided with an opening to receive the other leg of the shackle, the end of said shackle being reduced and having grooves and a pair of notched annular flanged disks arranged within said casing co-acting with said shackle.

4. A combination pad lock comprising a ring shaped casing having a sleeve, and an opening to receive the shackle, a pair of locking disks mounted within said casing co-acting with said shackle one of said locking disks being carried by a dial plate and the other by a removable back plate.

5. A combination pad lock comprising a casing having a shackle receiving opening, a sleeve carried by the casing, a shackle secured in said sleeve and having a reduced end portion adapted to enter said opening, said casing being provided with bayonet slots, a back plate, headed lugs carried by the back plate and adapted to cooperate with the said slots, means carried by said plate and adapted to be engaged by the shackle for the purpose of holding said plate against movement, a flanged locking disk pivotally connected to the back plate and provided with a notch adapted to register with the casing opening before mentioned, a pin carried by said disk, a dial rotatably carried by the casing, a second locking disk carried by said dial and having a notch adapted to register with the casing opening, and a pin carried by the last mentioned locking disk and adapted to engage the pin carried by the first mentioned disk.

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