

E. D. HEAGNEY.

LOCK WASHER.

APPLICATION FILED SEPT. 7, 1909.

959,857.

Patented May 31, 1910.

Fig. 1

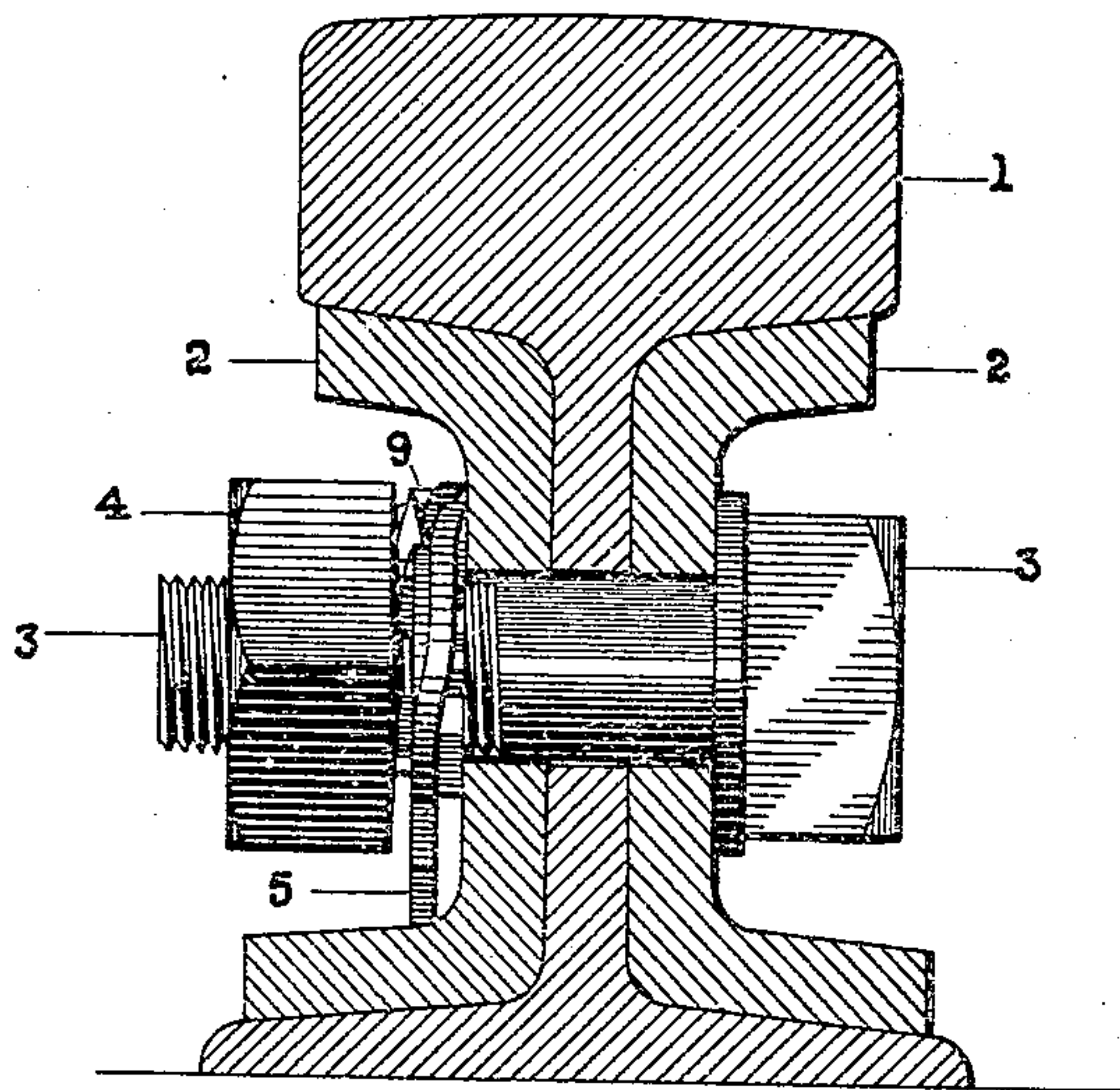


Fig. 2

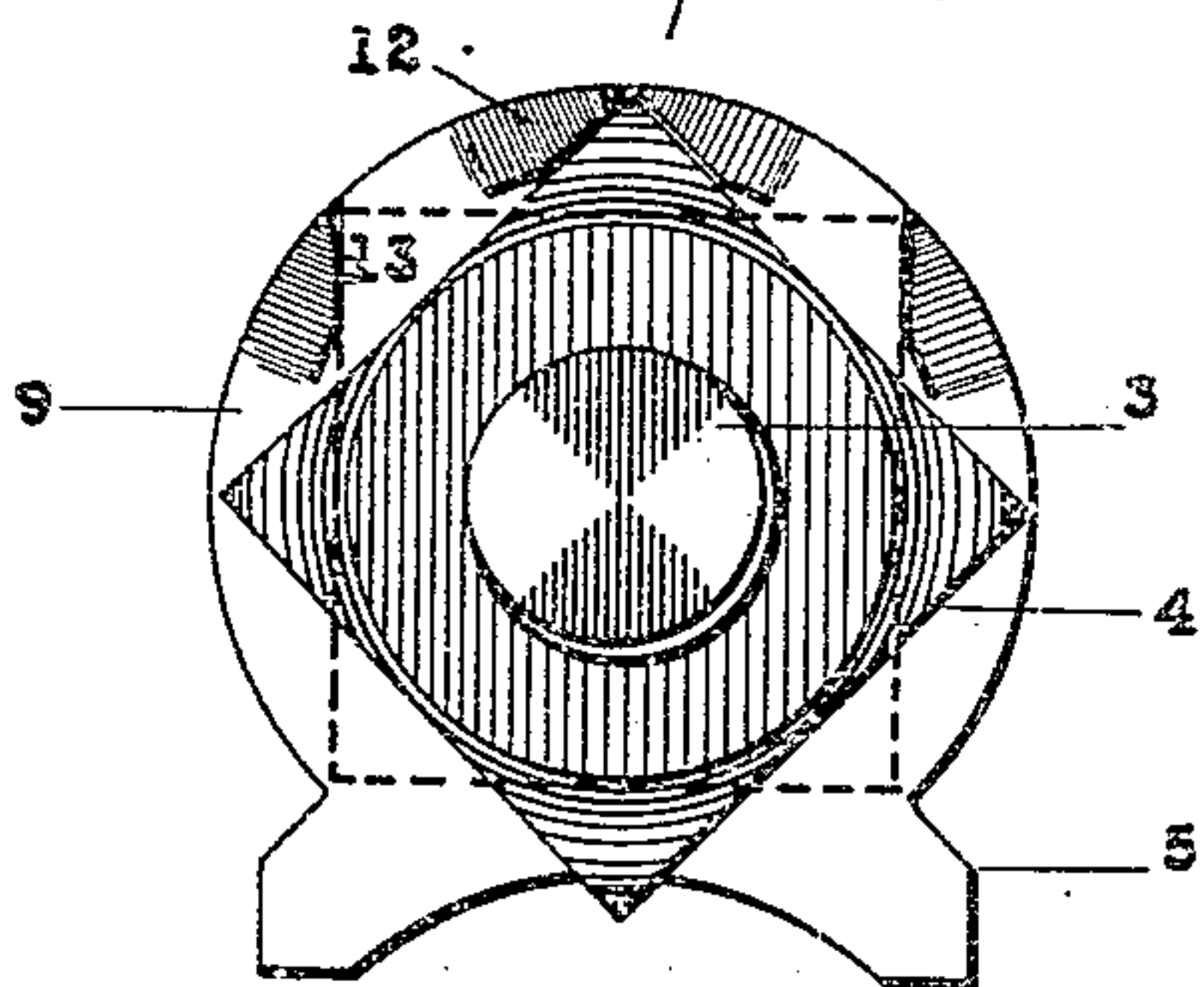


Fig. 3

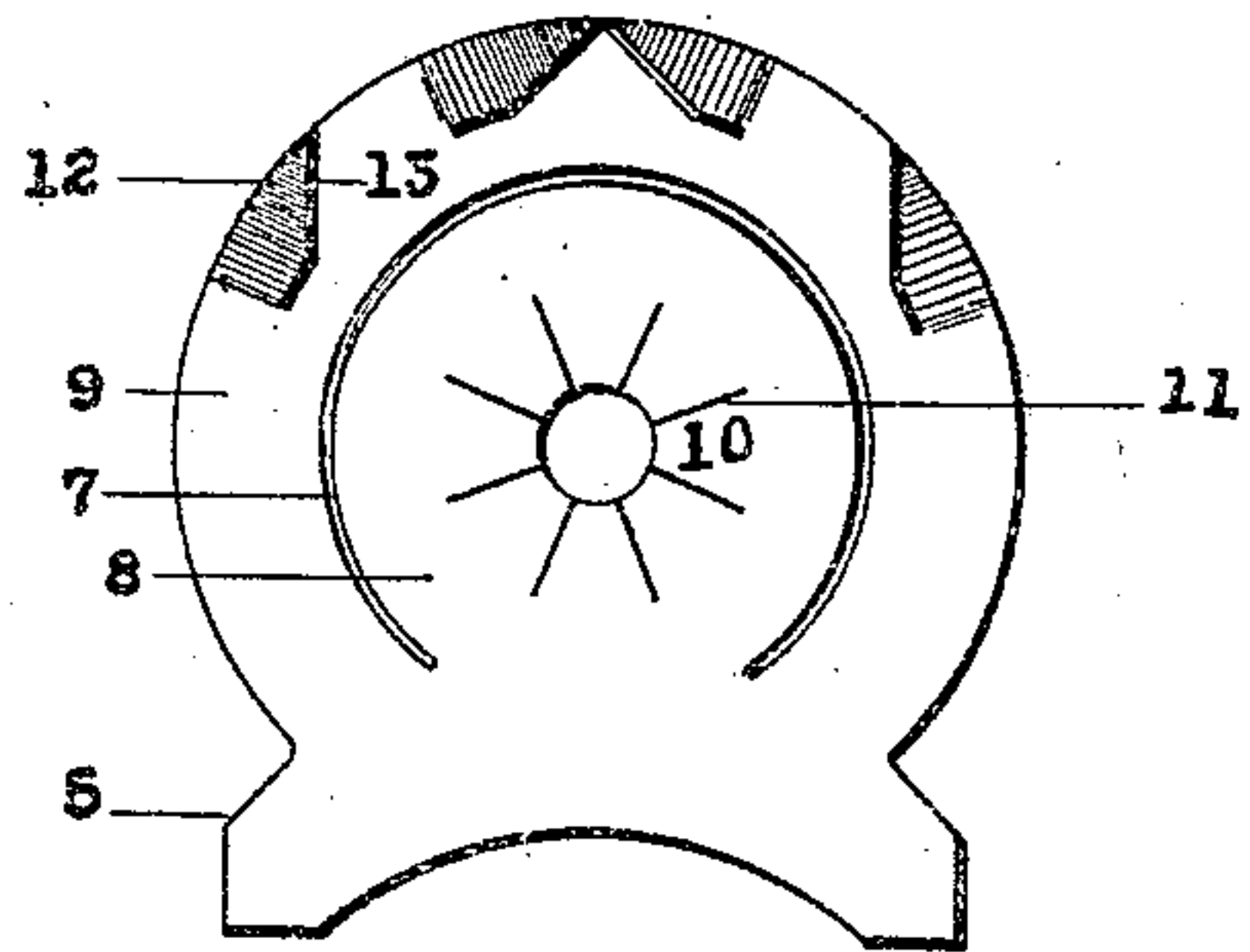


Fig. 4

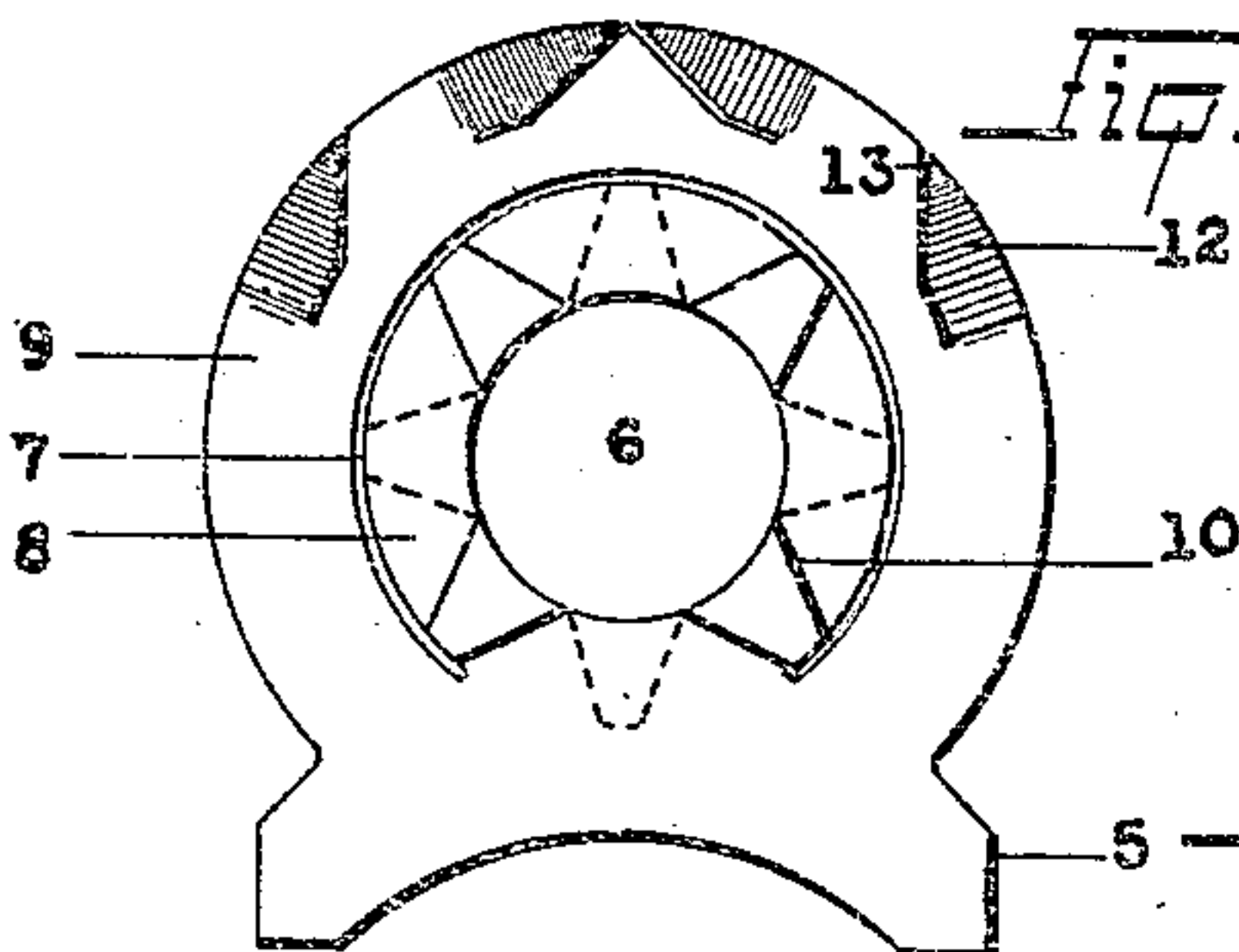


Fig. 5

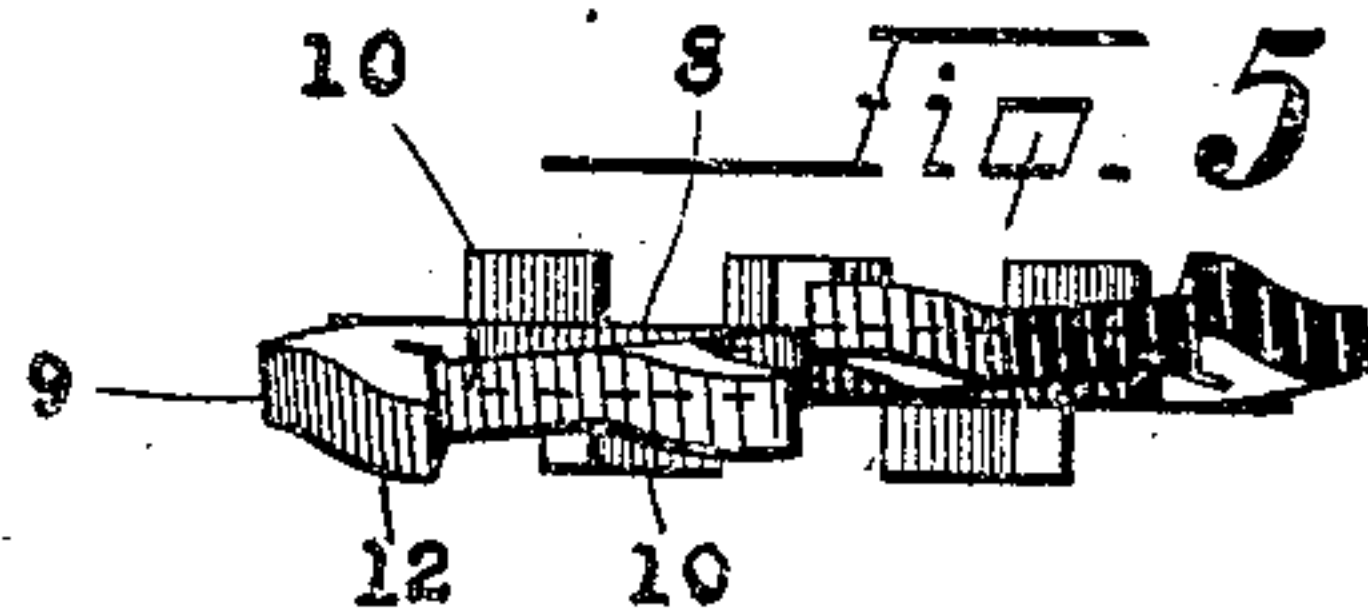
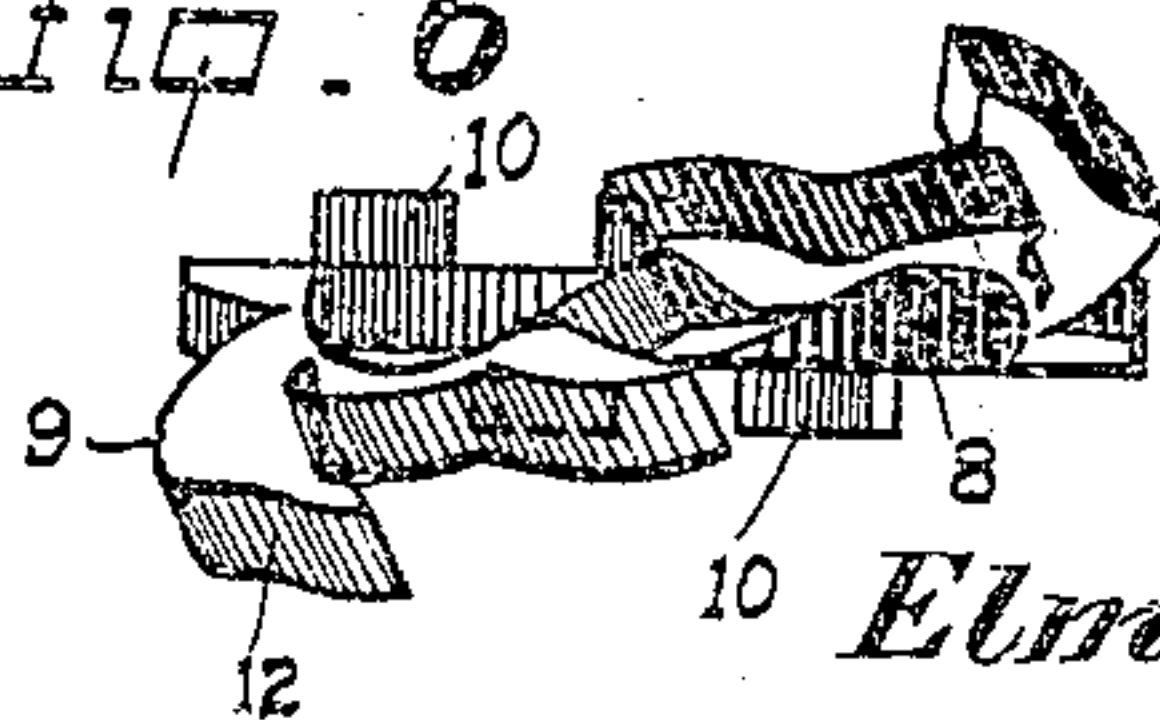


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

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LOCK-WASHER.

959,857.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ELMER D. HEAGNEY, a citizen of the United States, residing at French Camp, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Lock-Washers; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in nut-locks and particularly to a lock washer for locking nuts in position upon their bolts, the object of the same being to produce a spring lock washer which will be a positive lock under all conditions and one which can be readily unlocked and removed for any purpose.

A further object of the invention is to produce a simple and inexpensive device and yet one which is exceedingly effective for the purposes for which it is designed and one which will not cause it to become necessary to alter or change the nut or bolt to apply the same.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a sectional view of a rail and fish plate structure showing a nut and bolt therein, the nut being locked in position by my improved lock washer. Fig. 2 is a front elevation of a bolt, nut and my improved washer as they appear in locked position. Fig. 3 is a front elevation of the lock washer showing central incisions forming ears to be bent back. Fig. 4 is a similar view showing the ears bent back. Fig. 5 is a top plan view of the washer. Fig. 6 is a similar view to Fig. 5 but showing the parts of the washer spring farther out.

Referring now more particularly to the characters of reference on the drawings 1 designates a rail and 2 the fish plates thereon through which rail and fish plates is disposed the usual bolt 3 carrying the ordinary type of nut 4.

Interposed between the nut 4 and the fish plate 2 is a lock washer having a square base 5 resting on the base of the fish plate which prevents the said washer from turning on the bolt 3 over which it is disposed by means of its bore 6. The washer is split in a semi-circle as at 7 leaving the washer proper as at 8 and an outside spring ring as at 9 which ring curves obliquely over the top of the portion 8 thus projecting partly against the fish plate 2 on one side and against the nut 4 on the other side and gives to this ring a spring tension at all times. I further provide a plurality of ears 10 formed by cutting incisions 11 centrally of the portion 8 which ears 10 are alternately bent on opposite sides of the portion 8 and around the bore 6 giving the portion 8 a thickness three times that of the spring ring 9 and thus such ring of alternated ears 10 will at all times present a spring tension to the nut 4.

On each side of the ring 9 are outwardly projecting spring finger members 12 having squared shoulders 13 to engage the nut 4 and lock the same in position upon the bolt, said nut passing over and depressing said spring fingers when being advanced upon the bolt but engaging said shoulders when it has a tendency to move backward from the bolt. Of course when it is desired to remove the nut a wrench can be used which will depress the fingers 12 and ring 9 as it turns the nut.

By having the spring ring 9 on each side of the washer and the fingers 12 on each side of the said ring the washer can be readily inserted either way upon the bolt or can be readily removed and turned around should any of the finger members break or bend.

A few of the advantages gained by my invention are the simplicity, durability and cheapness of the same, it is produced in one piece, it eliminates the fitting of parts and loosening of parts prevalent in so many forms of nut locks, the lock does not necessitate the changing of the bolt or nut, and the lock can be removed without breakage.

From the foregoing description it will be readily seen that I have produced such a lock washer as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device still in practice such deviations

from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what
5 I claim as new and useful and desire to secure by Letters Patent is:—

A lock washer comprising a washer proper having a central orifice, a plurality of ears
10 on said washer around said orifice projecting out of the plane of the washer, a spring

ring disposed obliquely across the top of said washer and a locking means on said ring.

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

ELMER D. HEAGNEY.

Witnesses:

PERCY S. WEBSTER,
JOSHUA R. WEBSTER.