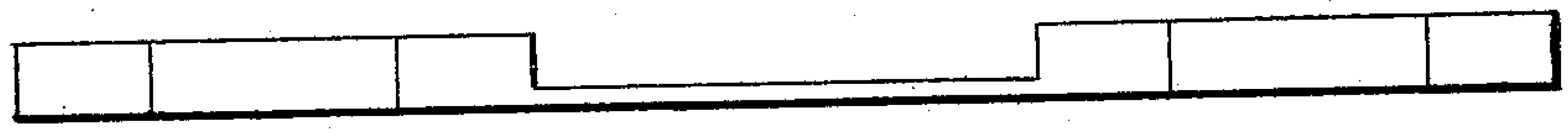
R. RUTTER.

NUT LOCKING WASHER.

No. 103,780. Patented May 31, 1870.



Sec. Fig's 14 & 15

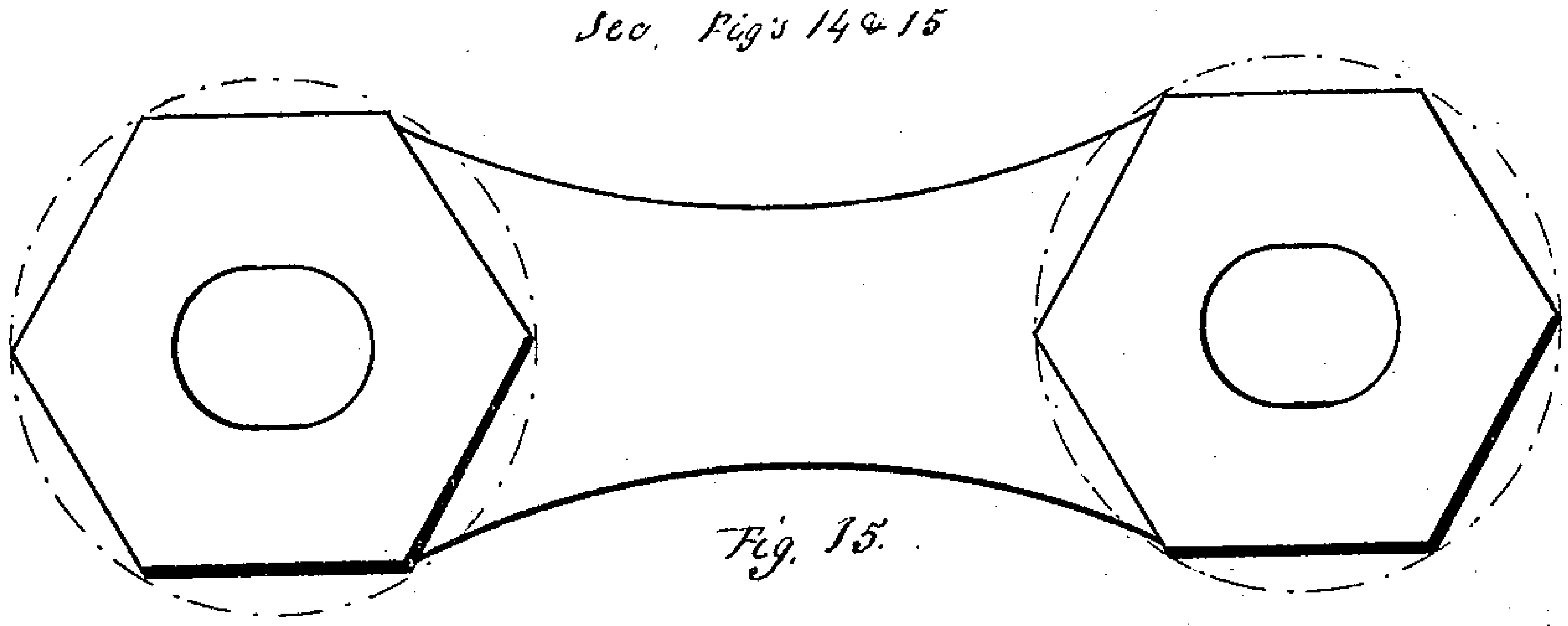
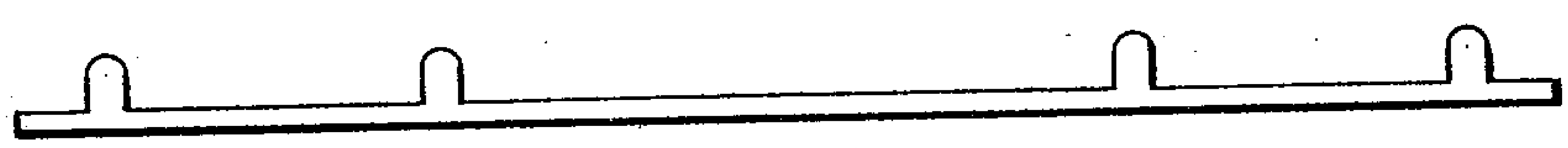


Fig. 15.



sec. Fig 7

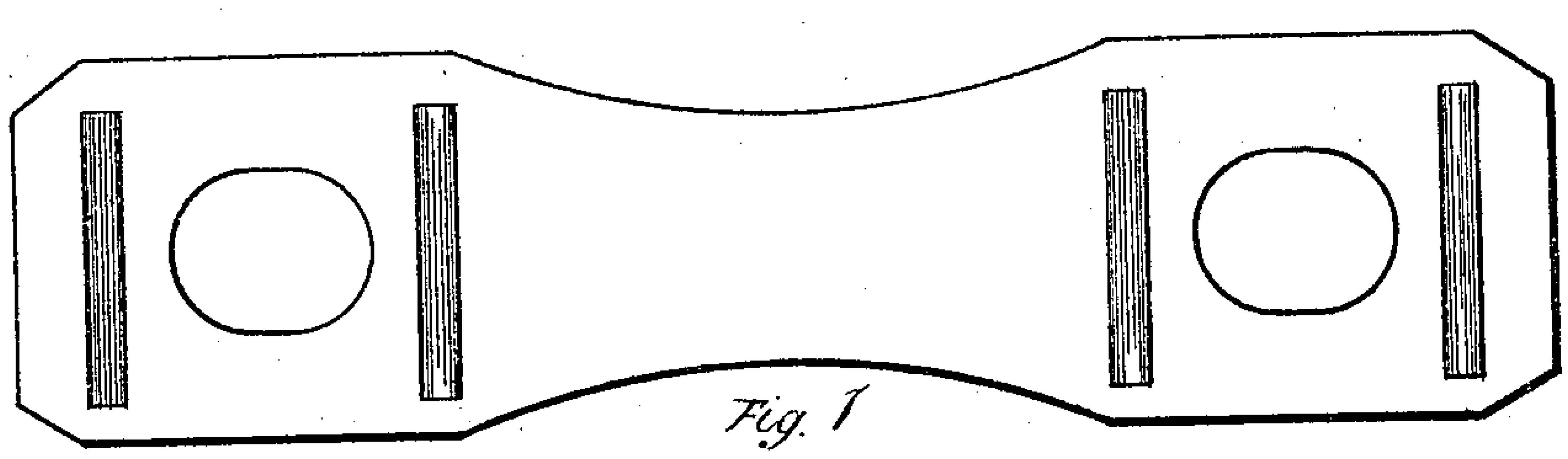
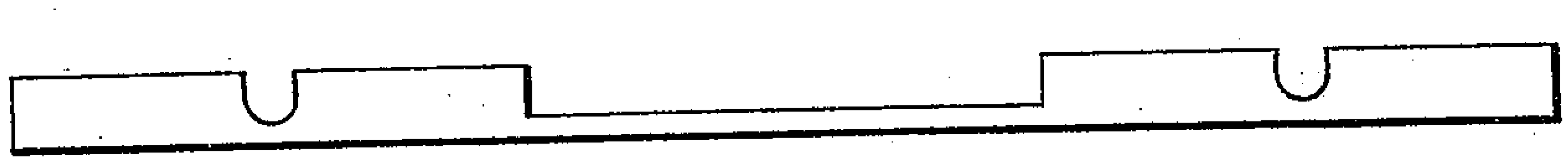


Fig. 7



sec. Fig 5

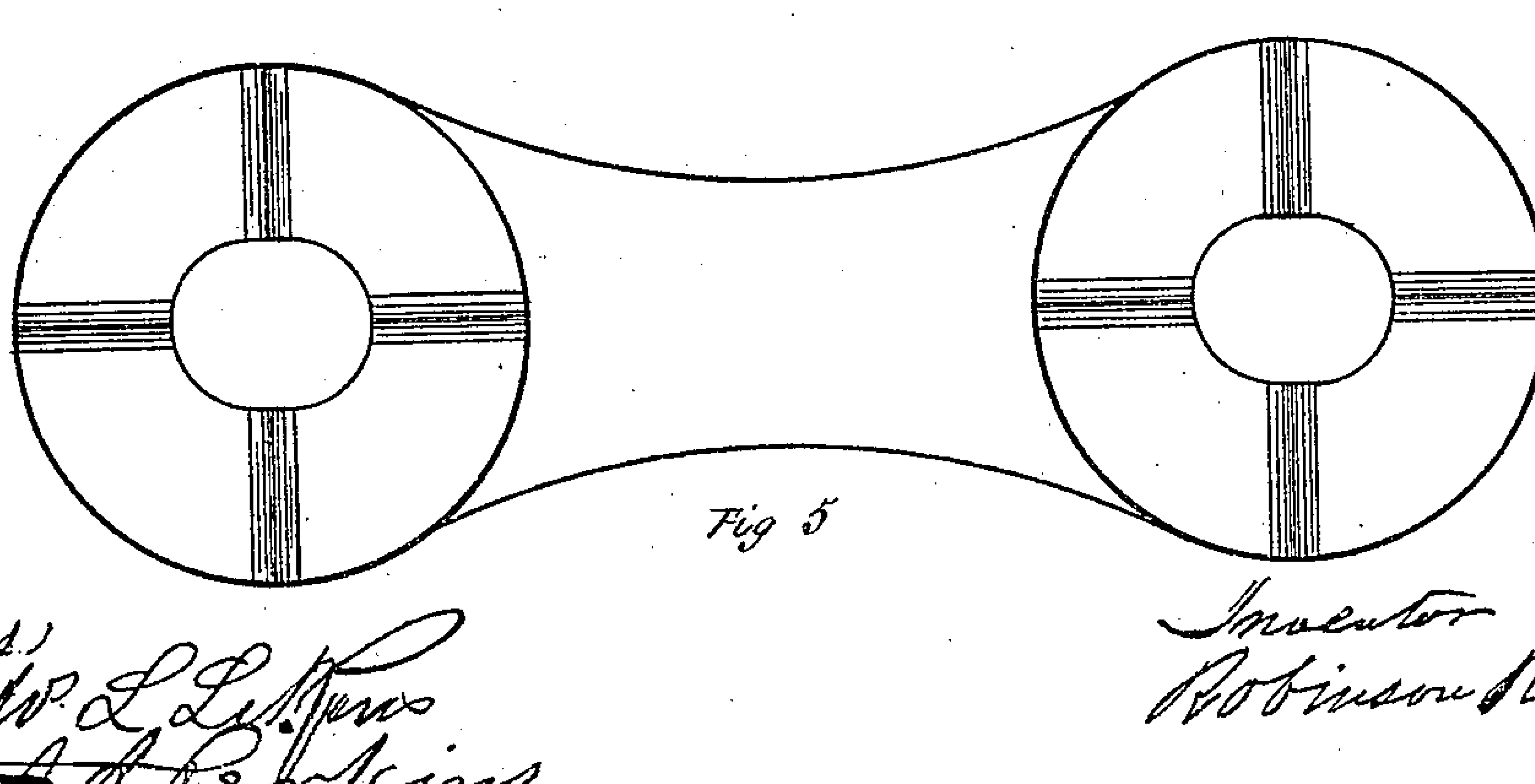


Fig 5

Witnesses:
Jo. L. [illegible]
A. J. Perkins

Inventor
Robinson Rutter

4 Sheets—Sheet 2.

R. RUTTER.

NUT LOCKING WASHER.

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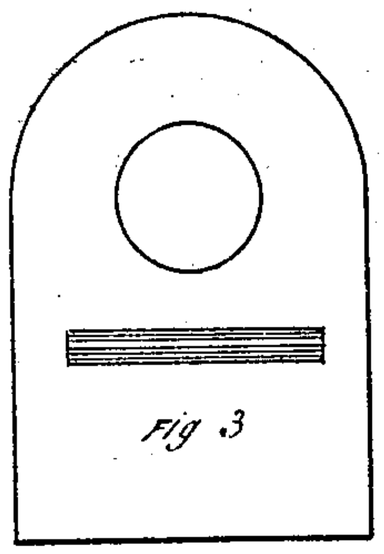
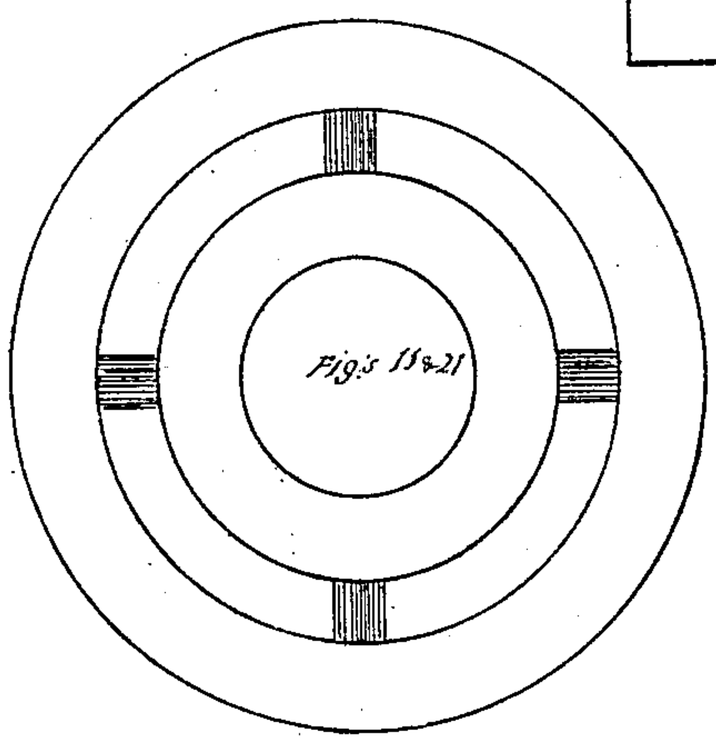


Fig. 3



Figs. 11 & 21

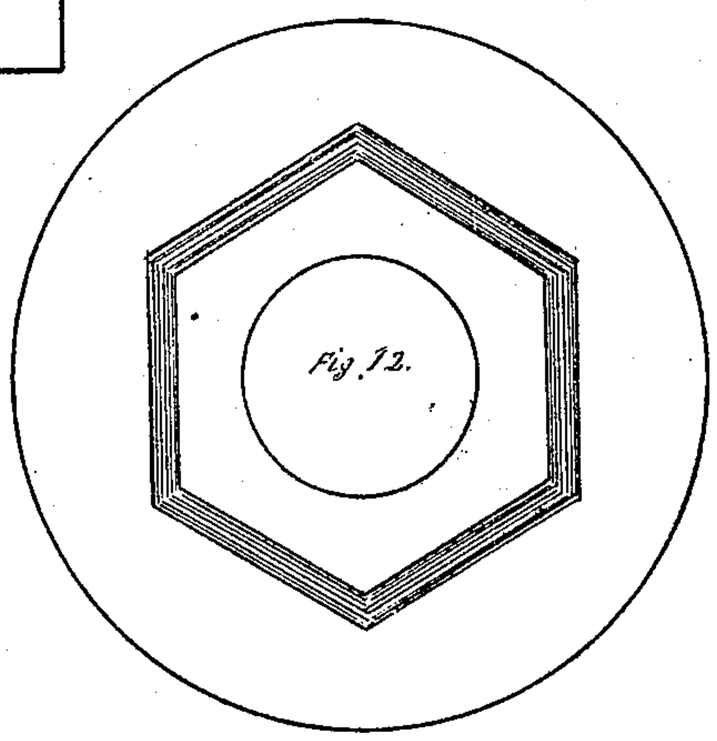
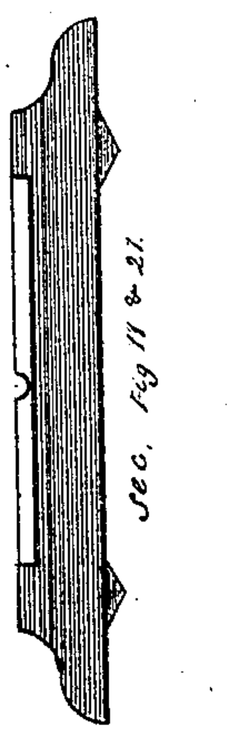
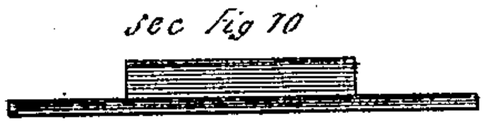


Fig. 12.



Sec. Fig 11 & 21.



Sec Fig 10

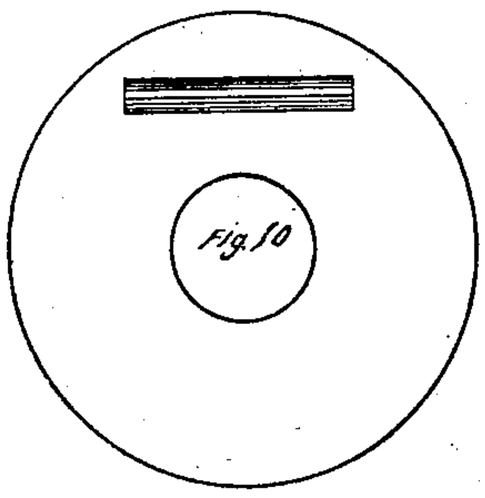
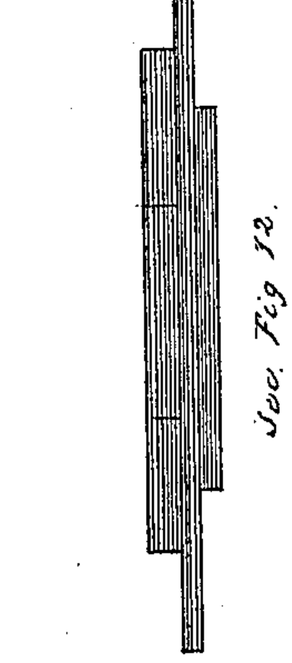
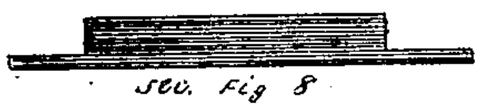


Fig. 10

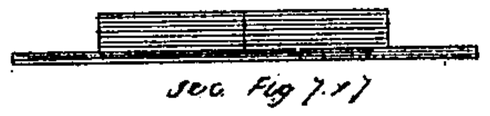


Sec. Fig 12.



Sec. Fig 8

Sec. Fig 9



Sec. Fig 7 x 7

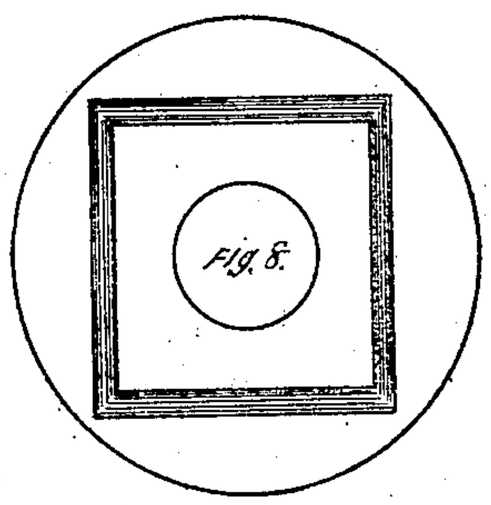
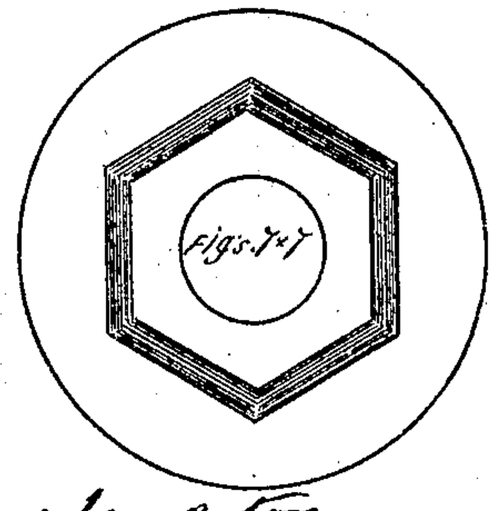


Fig. 8.

Fig 9



Figs. 7 x 7

Witness
Jr. L. Lipps

Inventor
Robinson Rutter

4 Sheets—Sheet 3.

R. RUTTER.

NUT LOCKING WASHER.

No. 103,780. Patented May 31, 1870.

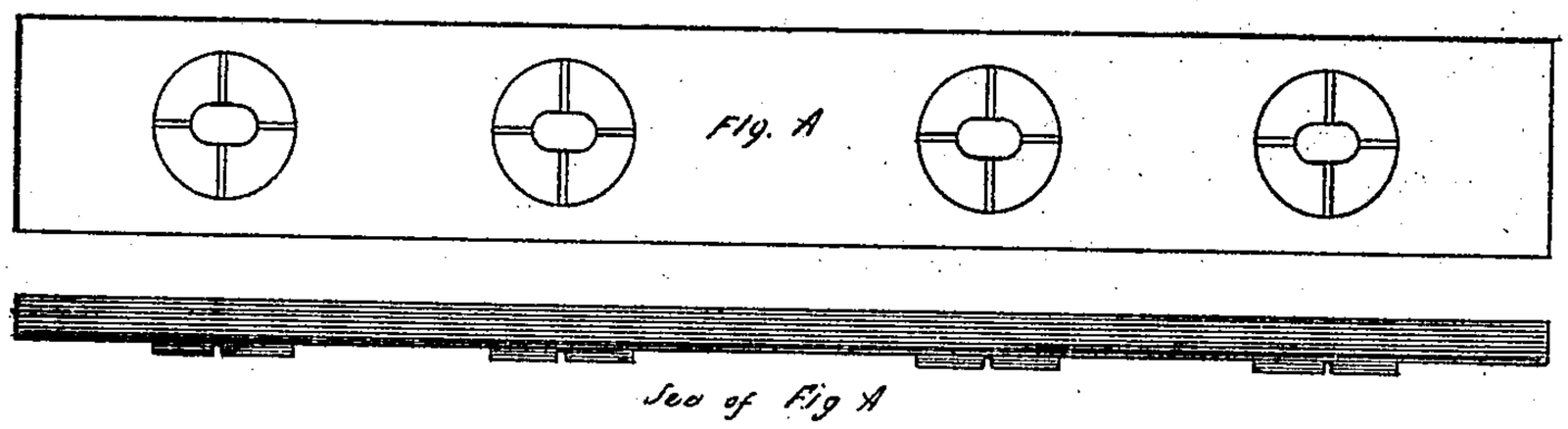


Fig. A

Sec of Fig A

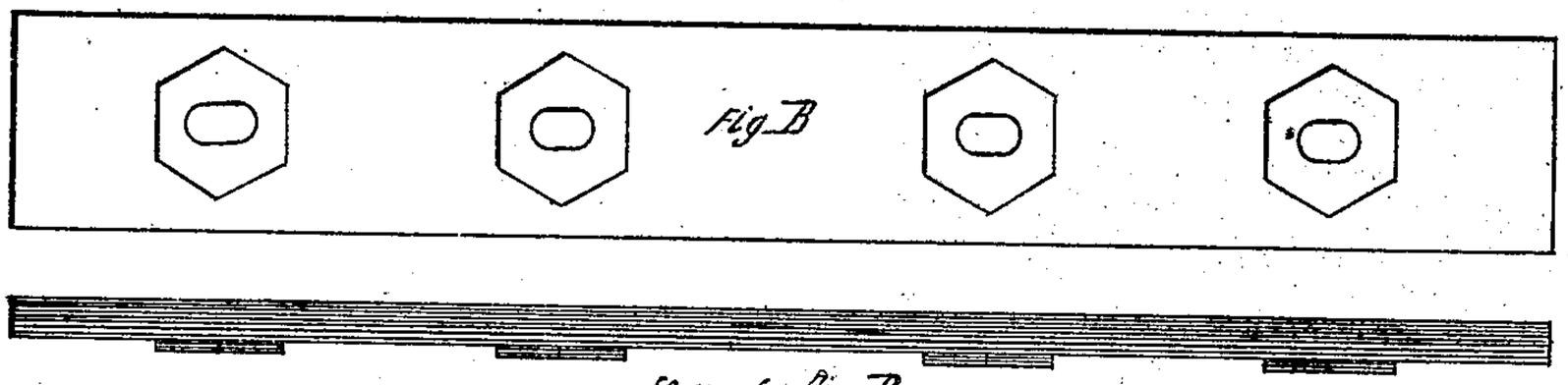


Fig B

Sec of Fig B

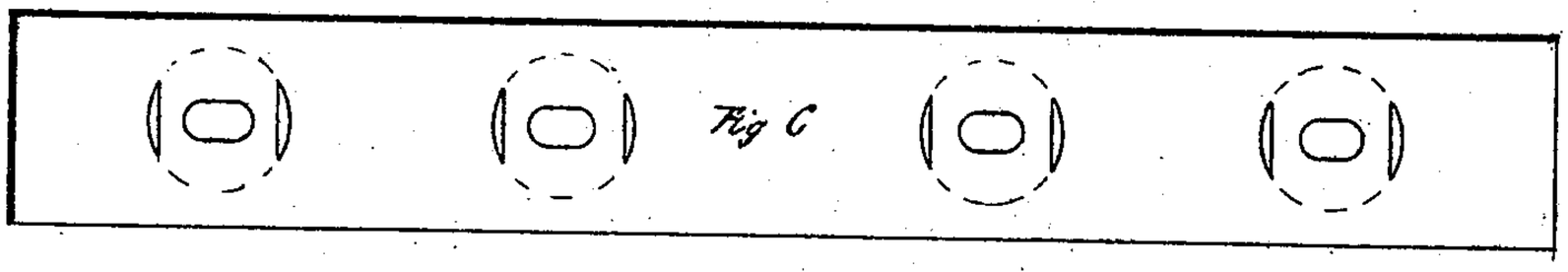


Fig C

Sec of Fig C

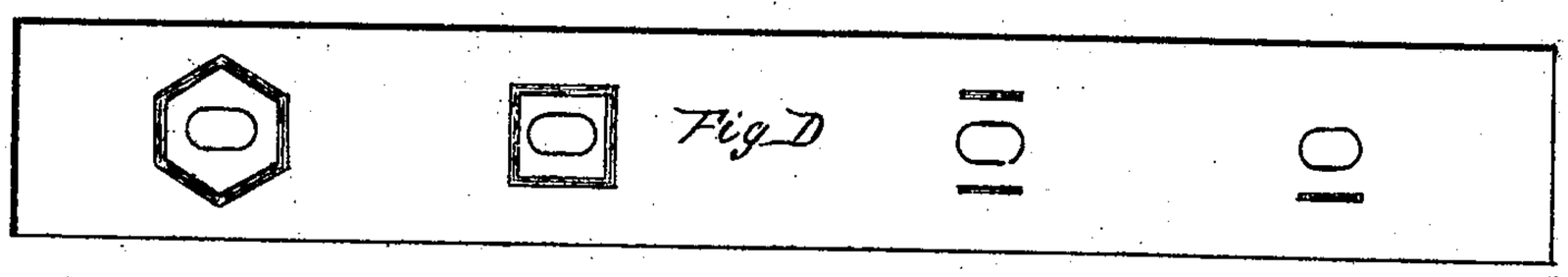


Fig D

Sec of Fig D

Witness
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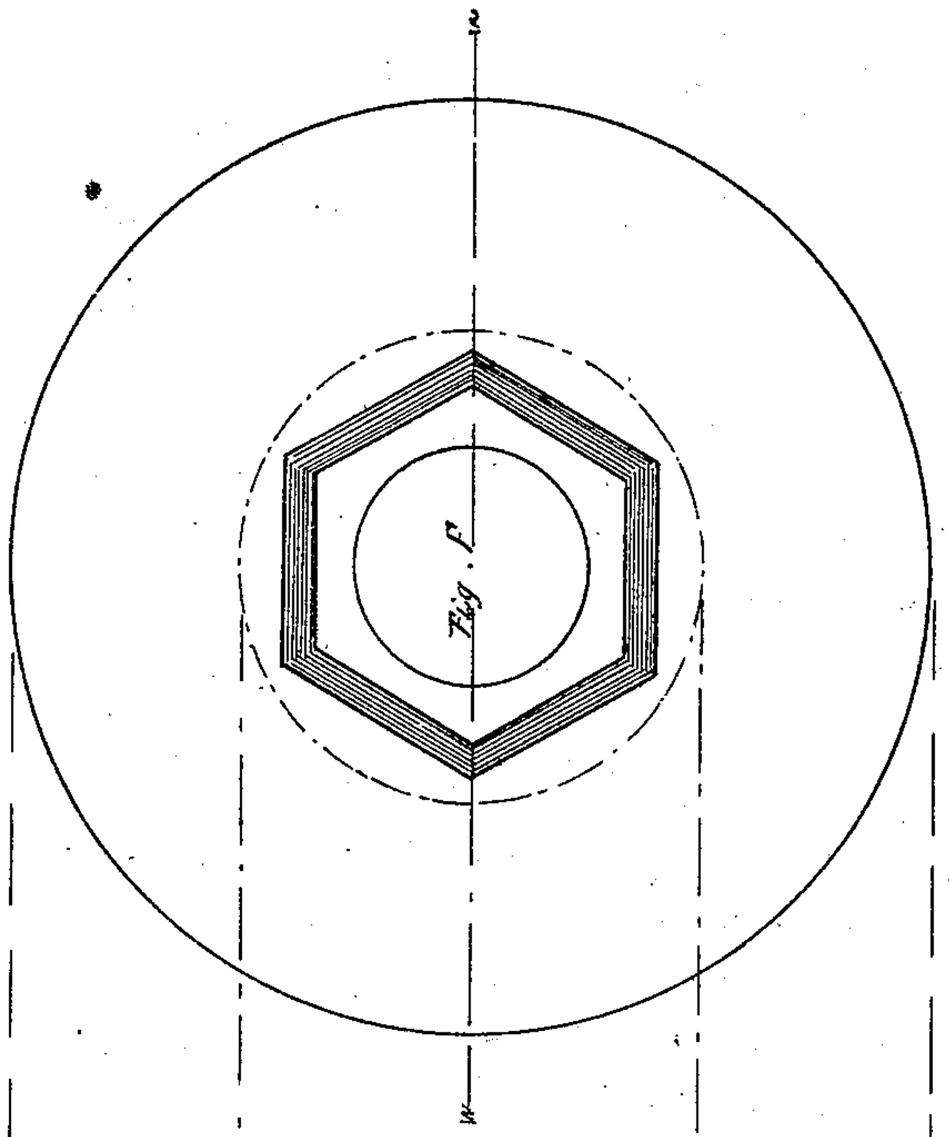
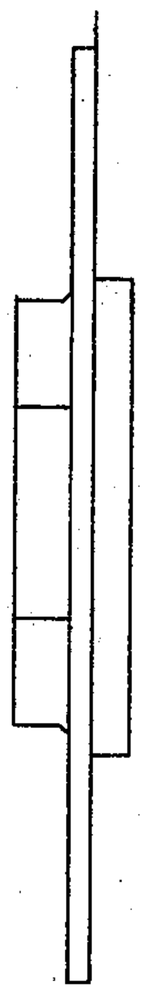
4 Sheets—Sheet 4.

R. RUTTER.

NUT LOCKING WASHER.

No. 103,780. Patented May 31, 1870.





See Fig F. cut through w. w.

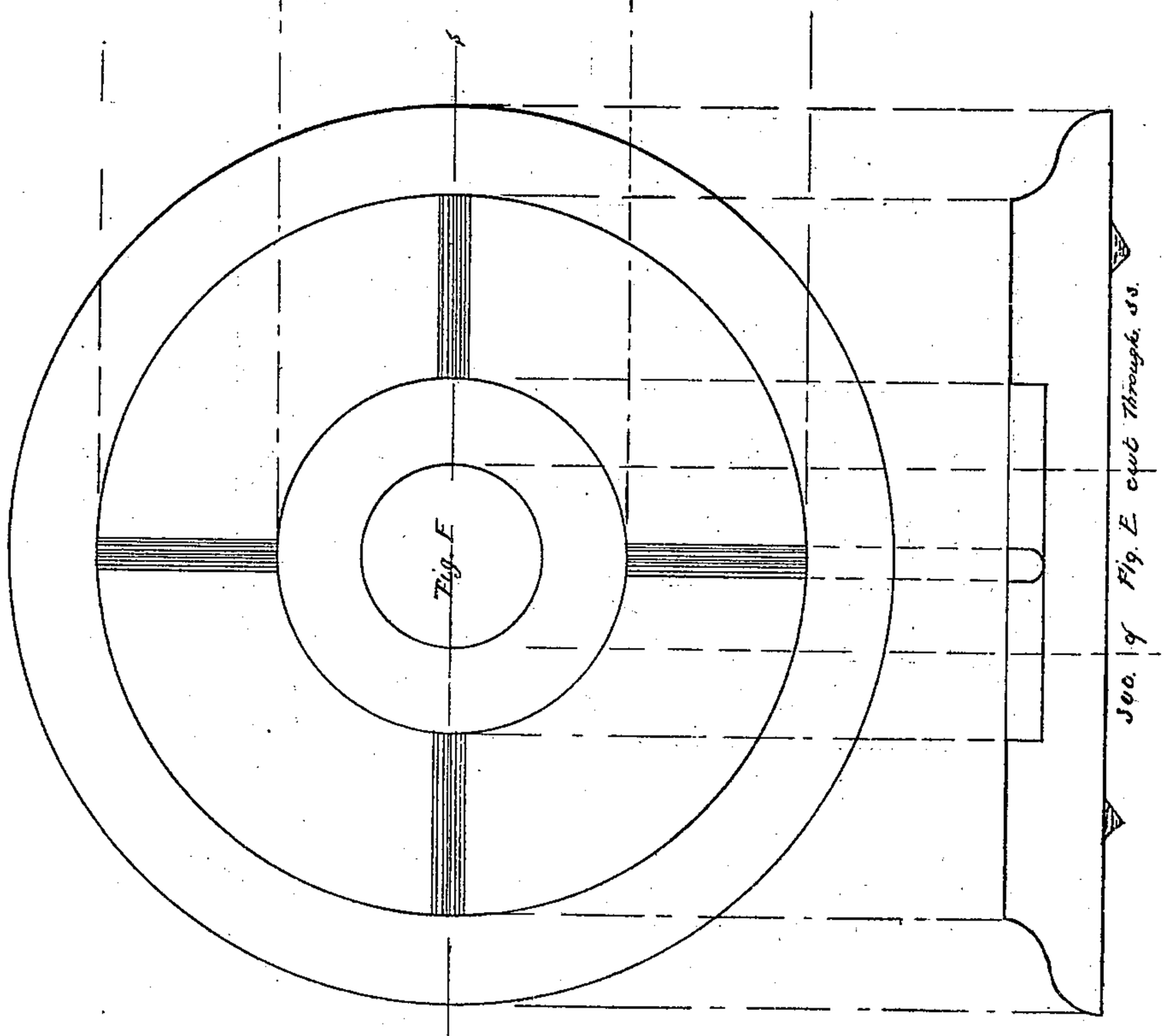


Fig. E cut through s s.

Witnesses
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A. J. Perkins

Inventor
Robinson Rutter

United States Patent Office.

ROBINSON RUTTER, OF VALLEJO, CALIFORNIA.

Letters Patent No. 103,780, *dated May* 31, 1870.

IMPROVEMENT IN NUT-LOCKING WASHERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, ROBINSON RUTTER, civil engineer, of Vallejo, and State of California, have invented certain new and useful Improvements in the construction and arrangement of Fish-Plates for Rail-Joints; also, straps for fish-plates, which I have designated the lock-strap; likewise washers, with raised lips, to prevent screw-bolts and nuts of any size from working loose, whether on fish-plates, bridges, stamping-batteries for crushing quartz, or on any other kind of machinery, and that the following is a description thereof.

My invention consists—

First, in the improvement with fish-plates for rail-joints, made with the malleableized process only, of which—

Figure A represents a side view with prints cast thereon, two inches in diameter, projecting out one-fourth of an inch to one-half an inch, fluted out, as will be seen, to receive the tamping of the washers when screwed up tight against that part of the fish-plate.

Section shows a side view of fish-plate, Fig. A, with the fluted out prints, as already described.

Figure B represents also a side view of a fish-plate, with six-sided prints cast on the fish-plates, for washers of two inches in diameter.

The washers, when screwed up tight against its face, allow a projection in the washer, which is bent over and hammered on and over the edges of the prints, keeping the prints perfectly fast from twisting and working loose.

Figure C represents a plane-faced fish-plate, except where the washers are placed over the bolt-holes, as will be seen.

On each side there are sunk recesses to allow the projecting part of the washers to be bent over the edges and tamped in.

The dotted circulars denote the washers.

Section of Figure C shows how the recesses are cast or cut in.

Figure D represents another face of a fish-plate, with raised lips or beads, single, double, square, and six-sided, suitable for the bolt-heads only to rest in, which prevents the bolts from turning round when being screwed up, or after.

The lips are cast on and project out one-fourth, three-eighths, or one-half an inch.

The second part of my invention relates to the lock-straps, which are placed on the face of any plain-faced fish-plates now in use.

The lock-straps are two in number; one for the heads of the bolts, the other for the nuts of the bolts. They both pass over two holes when fixed upon the fish-plates.

Figure 1 shows the side view for the bolt-head side, with raised lips or beads cast onto the lock-strap. The holes are a little oblong to admit of expansion and contraction.

Section of fig. 1 gives a side view, full size. The lips can be raised to one inch in depth, and of malleableized castings.

Figure 5 represents the lock-strap for the nuts of the bolts, fluted on that circular part to tamp the washers into when screwed tight up.

Section, fig. 5, is a side view of fig. 5, and shows how it is fluted out to receive tamping of washers.

Figure 15 represents another lock-strap, showing how the washer can be hammered over the edges of the six sides to keep them immovable when screwed up. Fig. 15 refers to figure 14, as also figs. 14 and 15 show the side view, full size, of straps.

The third part of my invention refers to lip-washers, or beads, with suitable raised lips to receive bolt-heads, or nuts, or both, as may be required, and is designed to apply to iron bolts of any size, and in cases where screw-bolts are required and used.

Figure E represents a large washer for machinery where vibration and oscillation loosen the nuts and screw-bolts of any size.

Section of Fig. E, as cut through *s s*, gives a side view, with a sunken recess, to receive the top washer, Fig. F, from moving out of its center while being screwed up.

Fig. E has four, more or less, flutes hollowed out to receive the tamping in of washer, Fig. F.

There are cast onto the sole or bottom of washer, Fig. E, points or stubs, to prevent it turning round while being screwed up, and relates to washers of any size.

Figure F is for either the head or nut of a bolt, with raised lips to an inch deep, single, double, square, or six sides, to receive the heads or nuts of any sized bolt of iron.

Figure 3 represents a washer, or half-round strap for bolt-heads only, with a raised lip underneath for the bolt-head, to prevent it turning round, placed against the side of a plain-faced fish-plate. The square part of this washer rests on the bottom of the rail, and keeps the washer from moving left or right.

Figures 7, 8, 9, and 10, represent washers to be used on the lock-straps for fish-plates, with raised lips on all sides to keep the nuts in place, with raised lips to an inch in depth, if required.

The washers are made by the malleableized iron process, and can be tamped into fluted fish-plates now in use, or can be tamped into the hollows of my lock-straps, or into any of my improved fish-plates.

Figures 11, 21, and 12 show a small sized washer, recessed and fluted out, to keep the upper washers in place on machinery, gunnery, or bridges.

I claim as my invention—

The combination, in a nut-lock, of a flanged lock-strap for the head of a bolt, a grooved or indented lock-strap for the screw-end of a bolt, and a flanged washer against which the nut is placed, said washer being forced into the lock-strap, all substantially as set forth.

ROBINSON RUTTER.

Witnesses:

JOS. L. LIKINS,

A. J. PERKINS.