

(No Model.)

2 Sheets—Sheet 1.

G. McKAY.  
INTERLOCKED CORDAGE MACHINE.

No. 553,623.

Patented Jan. 28, 1896.

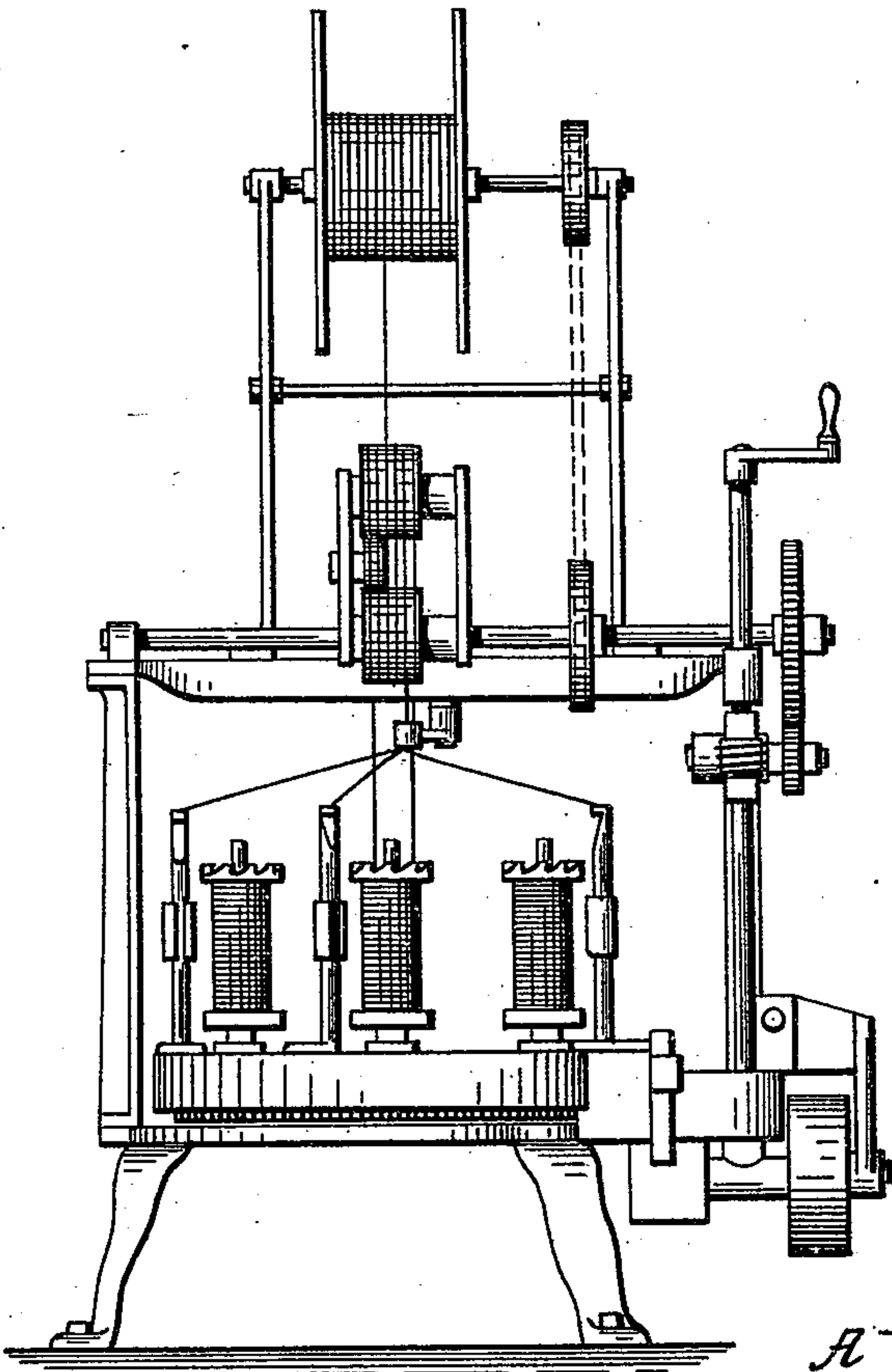


FIG. 1.

FIG. 2.

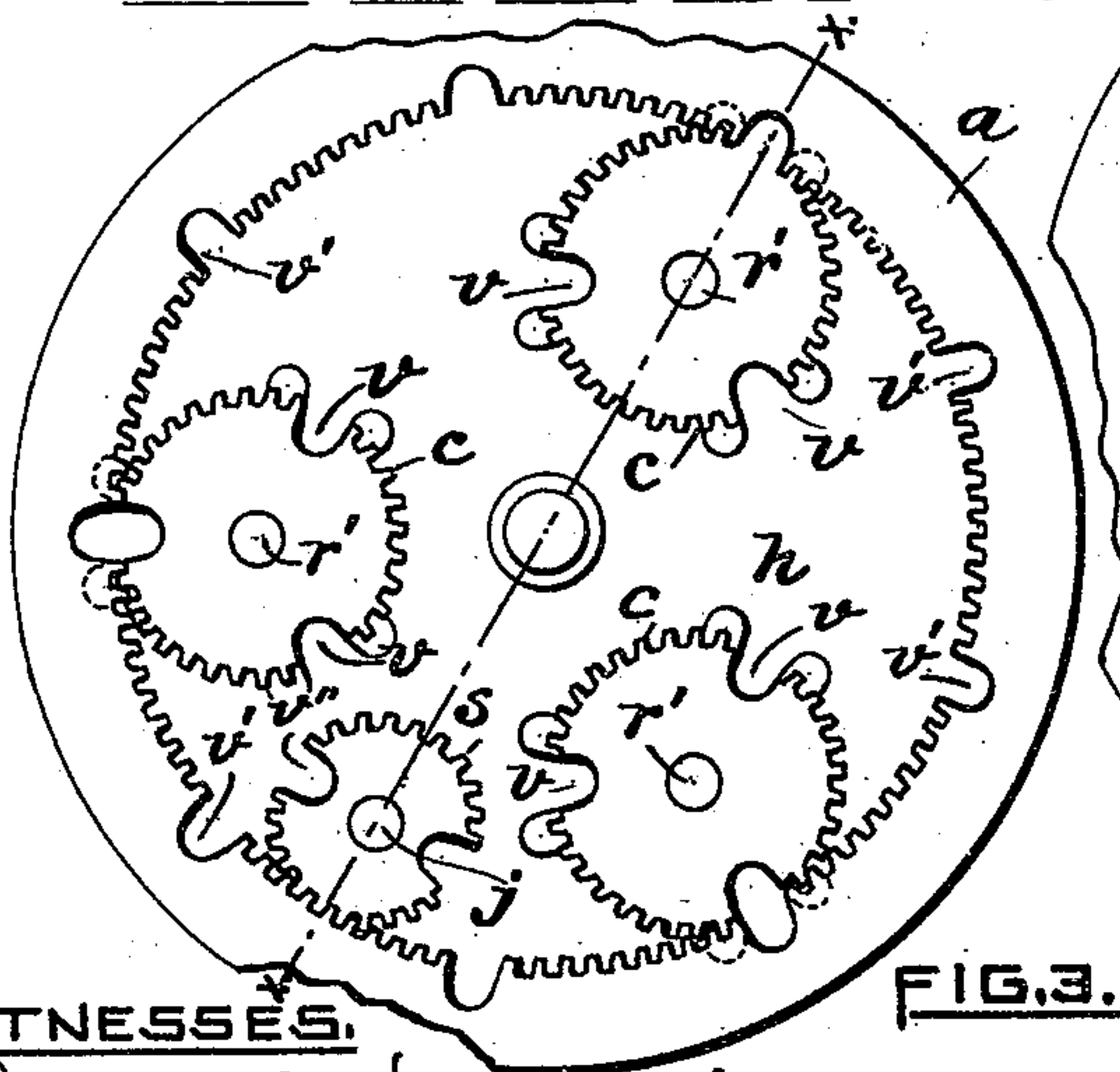
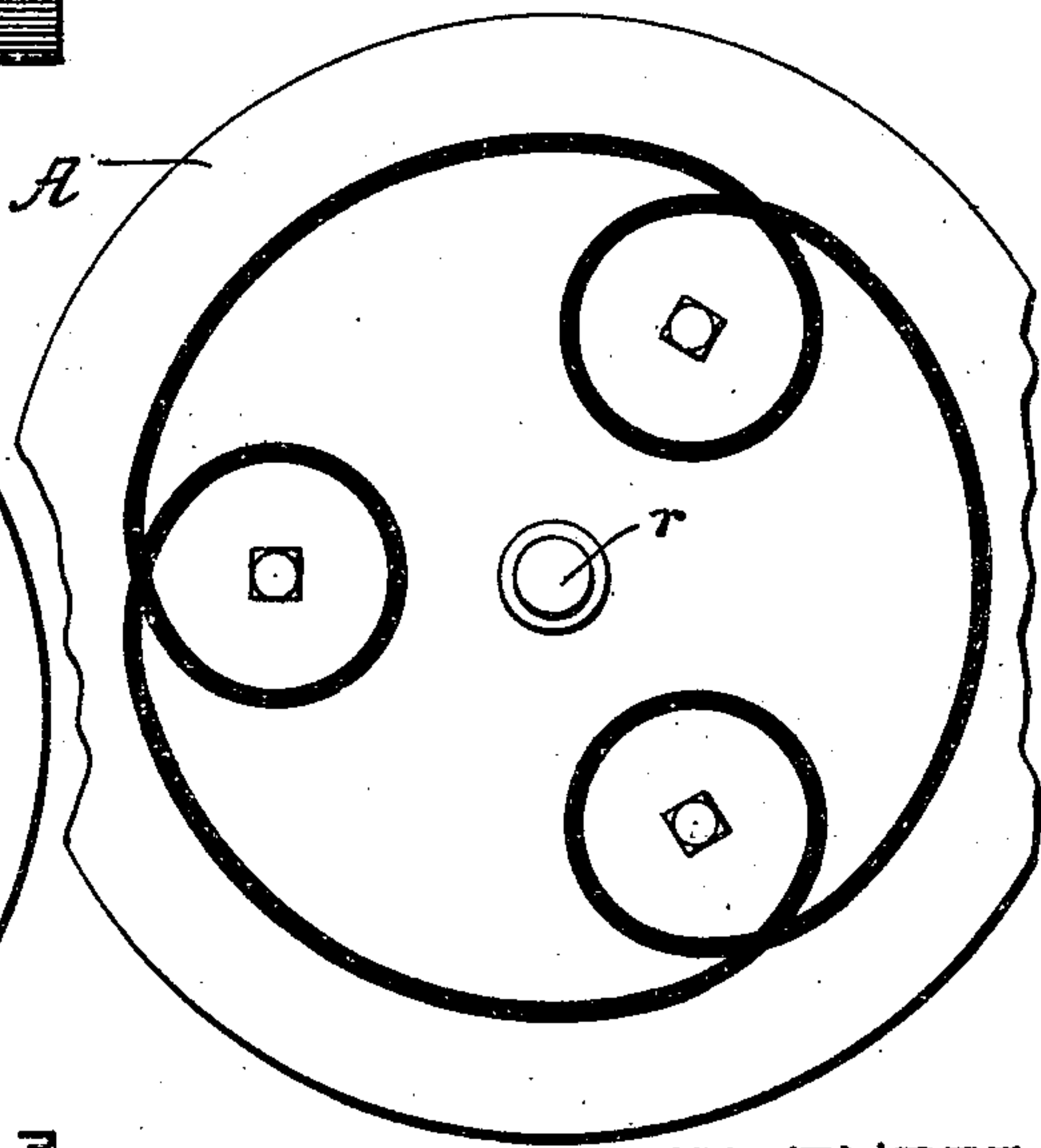


FIG. 3.



WITNESSES.

Charles T. Hannigan.  
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INVENTOR.

George McKay.  
By Benj. Arnold  
Att'y.

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2 Sheets—Sheet 2.

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FIG. 4

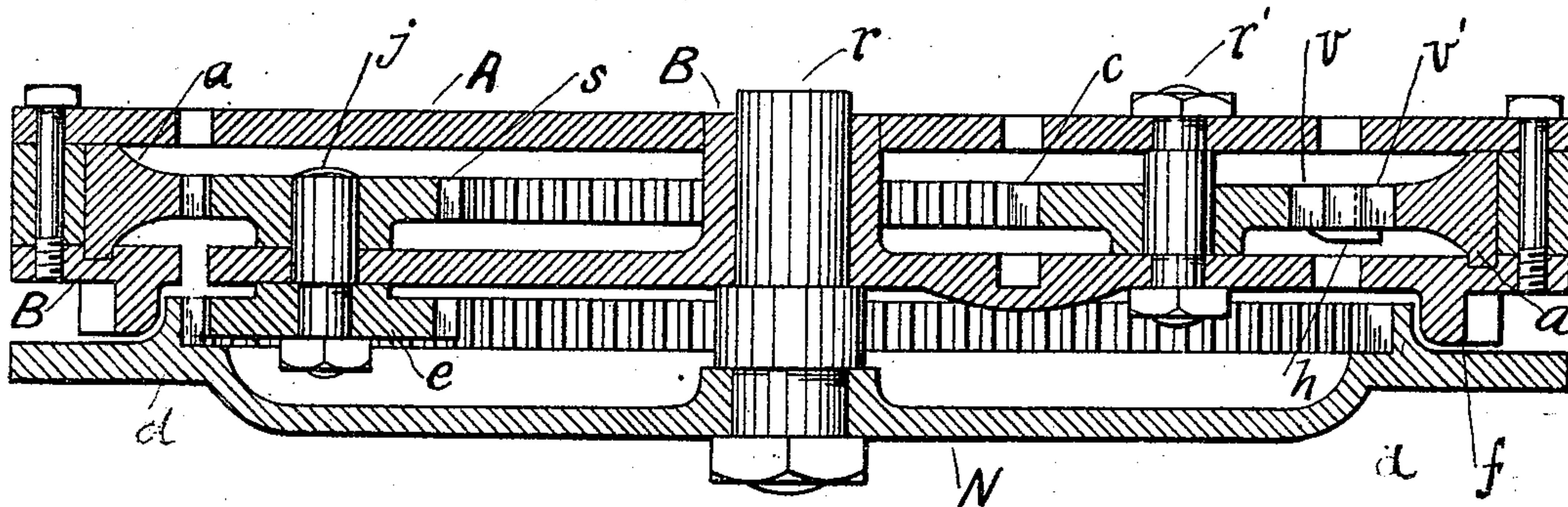


FIG. 5

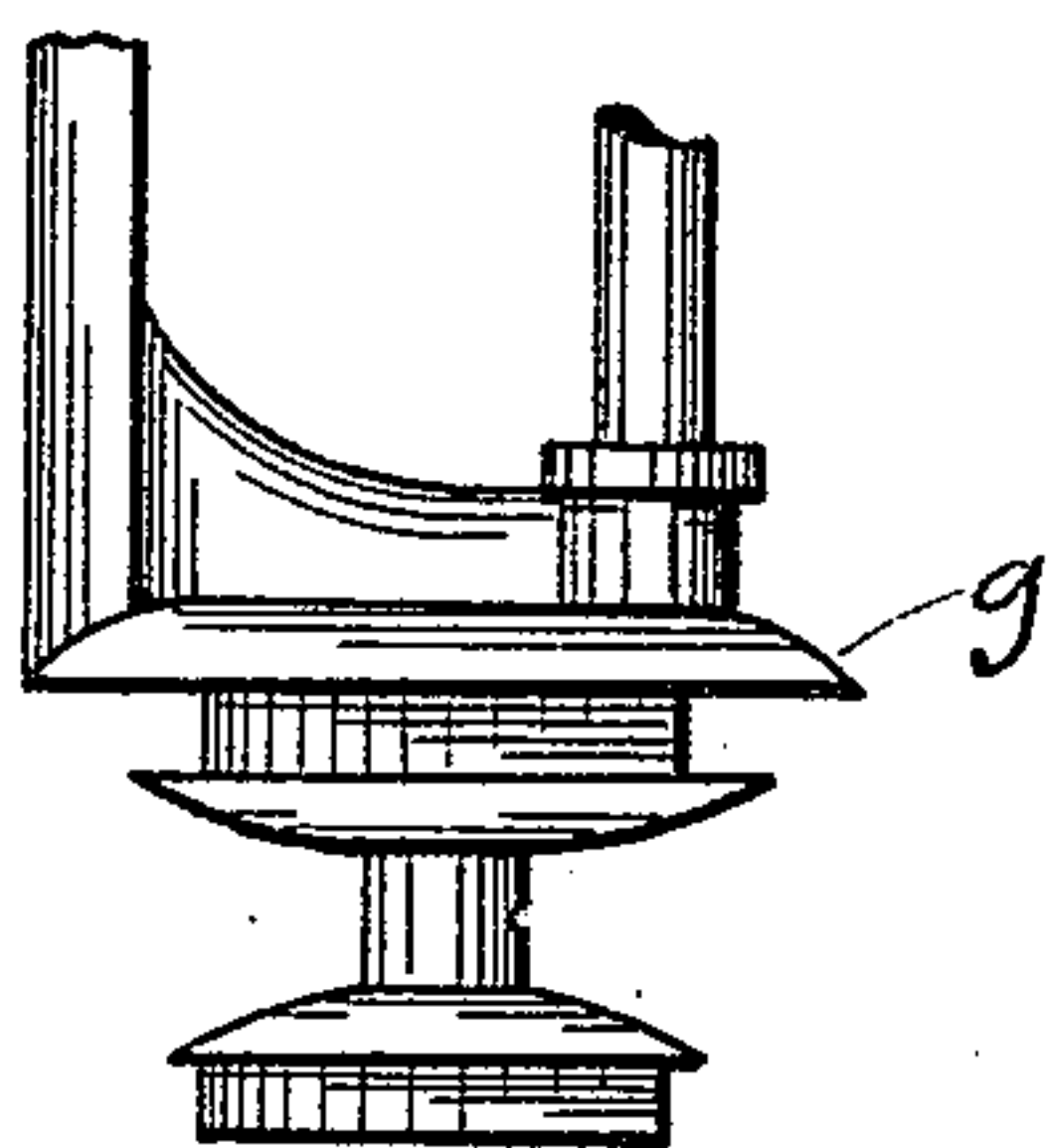


FIG. 6

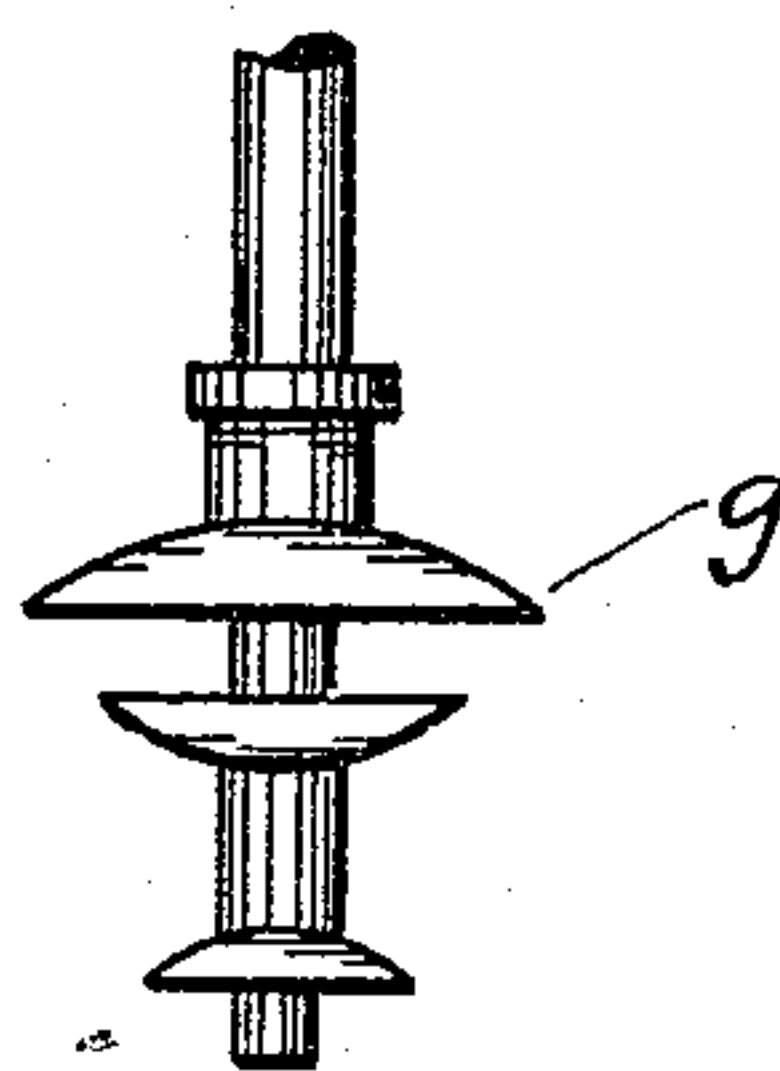
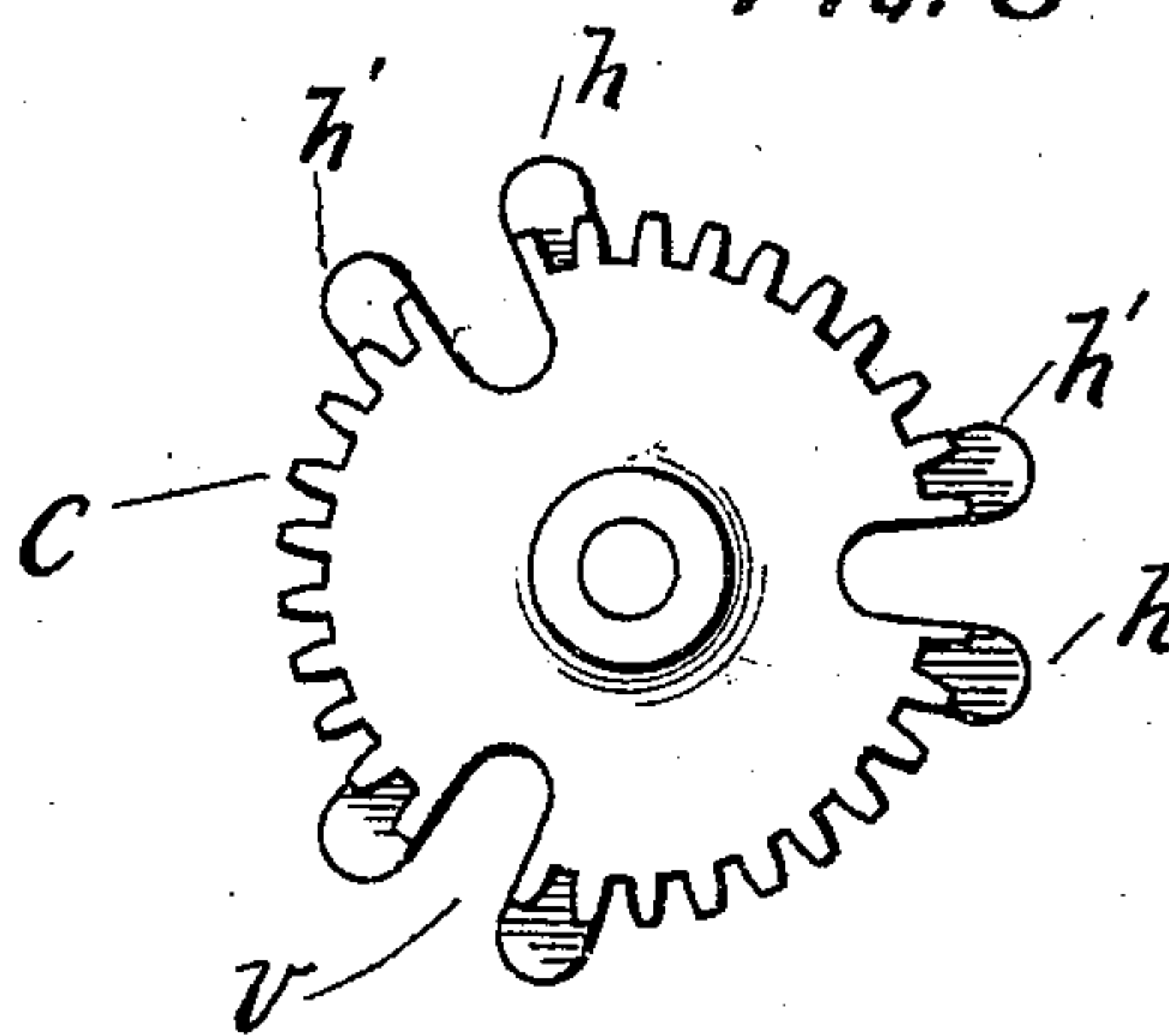


FIG. 7



FIG. 8



Witnesses:

S. M. Snow.

J. W. Richardson

Inventor.

George McKay

By Percy Arnold

Attorney.



# UNITED STATES PATENT OFFICE.

GEORGE MCKAY, OF NORWICH, CONNECTICUT.

## INTERLOCKED-CORDAGE MACHINE.

SPECIFICATION forming part of Letters Patent No. 553,623, dated January 28, 1896.

Application filed August 7, 1895. Serial No. 558,484. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE MCKAY, of Norwich, in the county of New London and State of Connecticut, have invented certain  
5 new and useful Improvements in Interlocked-Cordage Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters  
10 of reference marked thereon, which form a part of this specification.

This invention relates to that class of cordage-machines used in making interlocked cordage, in which the yarns forming the  
15 strands are changed from one strand to another in the process of twisting them, thereby interlocking the strands with each other. It is fully explained and illustrated in this specification and the accompanying drawings.

20 Figure 1 shows a front elevation of the machine. Fig. 2 is a top view of the upper plate, showing the form of the raceway for the spool-carriers. Fig. 3 shows the parts with the top plate removed, with the gear-wheels that  
25 move the carriers in place. Fig. 4 is a vertical section of the plates and internal gear-rims on line *xx* in Fig. 3. Fig. 5 is a side elevation of a spool-carrier. Fig. 6 shows an edge elevation of a carrier. Fig. 7 is a bottom view of a carrier. Fig. 8 is a top view of  
30 one of the carrier-gears.

That part of the machine to which the improvements relate consists of an upper and a lower race-plate *A B*, which are fastened  
35 together, with an internal gear-ring *a* held between them that is held from turning, and carrier-gears *c c* held on studs secured to the lower race-plate, the teeth of the wheels engaging with the teeth of the internal gear-  
40 rim *a*. These parts are held on a base-plate *N*, to which the legs of the machine and the uprights for the feed motion are attached, and all except the internal gear-rim rotate on  
45 a stud *r* fast in the center of the base-plate *N*. The gear-rim between the race-plates is held from turning by being connected by gears *s* and *e* with a stationary internal gear-rim of same size made fast to the base-plate. The gears *s* and *e* are made fast to the up-  
50 right shaft *j*, which runs freely in a bearing in the lower plate.

In Fig. 3 the three carrier-gears *cc* are seen

held on the studs *r' r'*, and their teeth engaging with the teeth of the internal gear-rim *a*. Each gear *c* has three gaps *vv* cut in its periph- 55  
ery corresponding with the gaps *v' v'* made in the gear-rim *a*, and on each side of the gaps *v* in the gears *c* projecting lugs *h h* are put, being held on the under side of the gear to  
60 have them out of the way of the gear-rim. These lugs *h* push the carrier that has passed around in a gap *v* of one of the gears *c* out into a gap *v'* in the rim *a* when the two gaps  
65 come opposite each other. The shape of the race around the gears *c* and the larger outer race where they join directs the carrier out into the outer race but requires the aid of the  
70 lugs *h* on one side of the gap *v* to move them far enough out, and likewise when a carrier leaves the outer race to pass around one of  
75 the gears *c* the lug *h* on the other side of the gap *v* assists in drawing it into the race around the gear *c*. In this way the action of the parts in transferring the carriers is made certain,  
and the machine may be run at a much higher  
80 rate of speed than such machines usually are. The gears *cc* are revolved on their studs *r' r'* by the gear-rim *a* in which their teeth engage as they travel around the stud *r* with the plate  
85 *B*, the rim *a*, as before stated, being held from turning by the two gears *s e* fast on shaft *j* that connect the gear-rim *a* with gear-rim *d* fast on base-plate *N*. The upper one of these  
90 gears, *s*, has gaps *v''* made in it like those in the gears *c* to allow it to pass a carrier held in one of the gaps *v'* in the gear-rim *a*. Power  
95 is applied to the gear-rim *f* on the lower plate, and the carriers are transferred from each gap in gear-rim *a* to the third gap in advance, as shown and described in United States Patent  
100 No. 353,396. Any of the feed or take up motions used on braiding or cordage machines may be applied to the machine.

The most important feature of this invention consists in providing two points of sup- 95  
port for the spool-carriers, one above and the other below the point at which the power is applied to the carrier to move it, and that the plates containing the raceways that give the  
100 support to the carrier at these two points are themselves revolving with the carriers. This gives a firm support to the carrier, which is particularly necessary in this class of machinery, as the yarn has to be laid up in the cord

under great tension, and carrier delivering the yarn from the top is liable to be cramped in the raceway and produce great friction that reduces the speed and wears out the parts.

5 Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

10 In an interlocked cordage machine, the combination of upper and lower revolving plates having like raceways made in them, with spool carriers having upper and lower bearings adapted to slide in said raceways, an internal gear rim between said plates, spool carrier gear wheels pivoted on said lower re-

volving plate and engaging with said internal 15 gear rim, a stationary internal gear rim held fast on a base plate under the lower raceway plate, a vertical shaft held in a bearing in said lower revolving plate, gear wheels fast on each end of said shaft one of said gears 20 engaging with the upper internal gear and the other gear wheel engaging with the internal gear on said base plate substantially as described.

GEORGE MCKAY.

Witnesses:

BENJ. ARNOLD,  
L. J. BUSH.