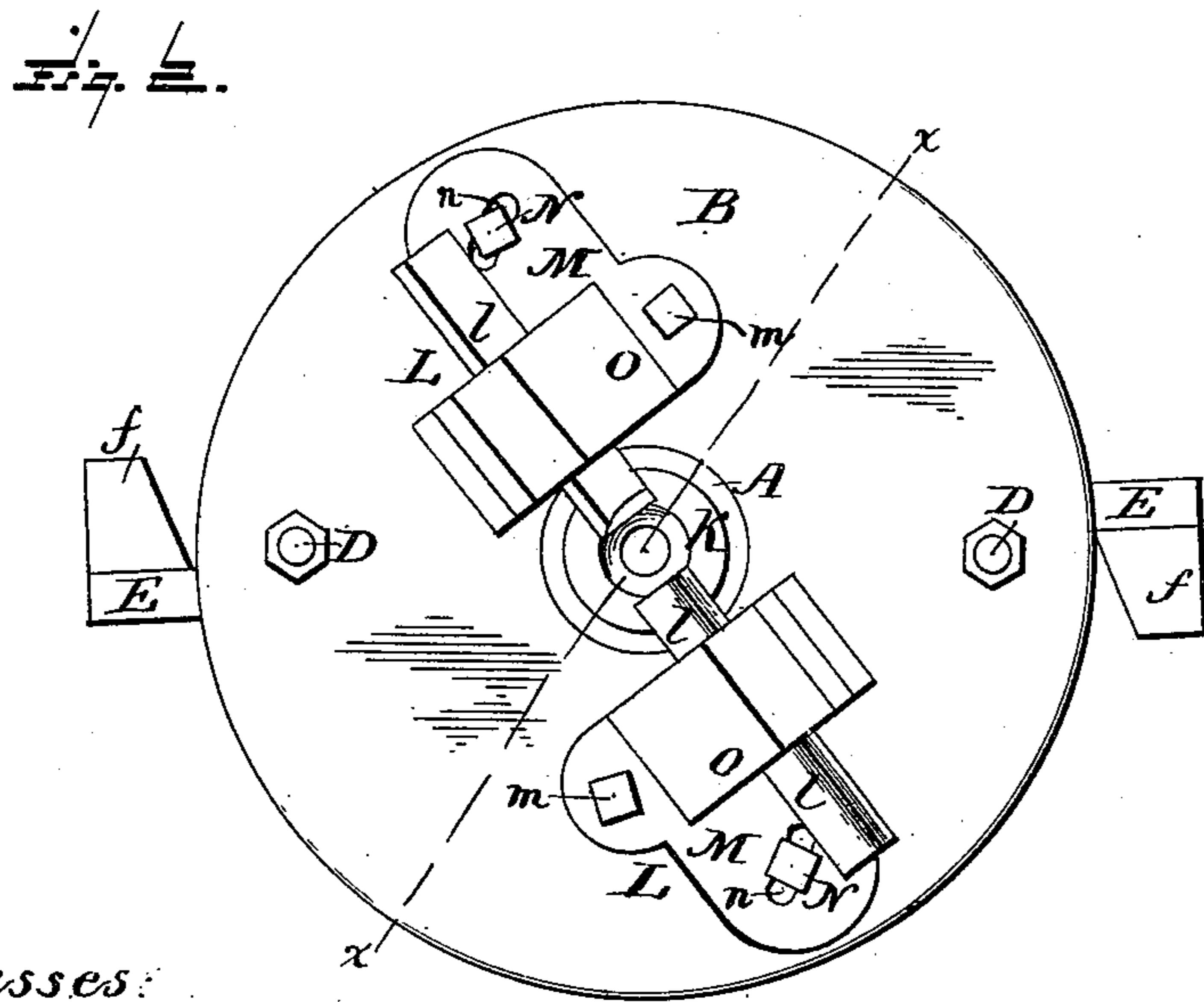
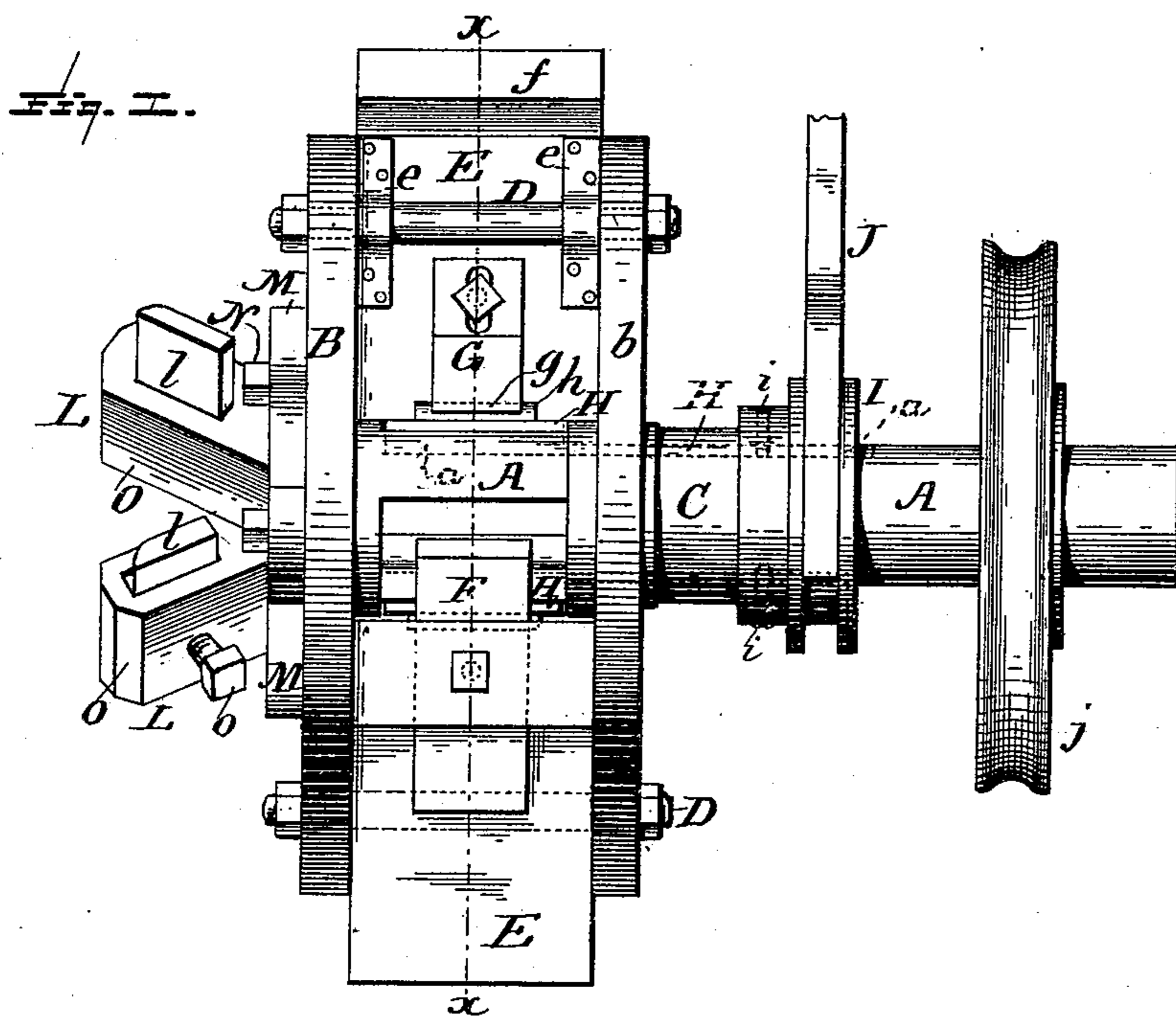


2 Sheets—Sheet 1.

No. 481,875.

Patented Aug. 30, 1892.



Witnesses:
C. C. Schiller
Arthur E. Fowell

Inventor:
W. S. Snyder
by
J. H. Alexander
att'y

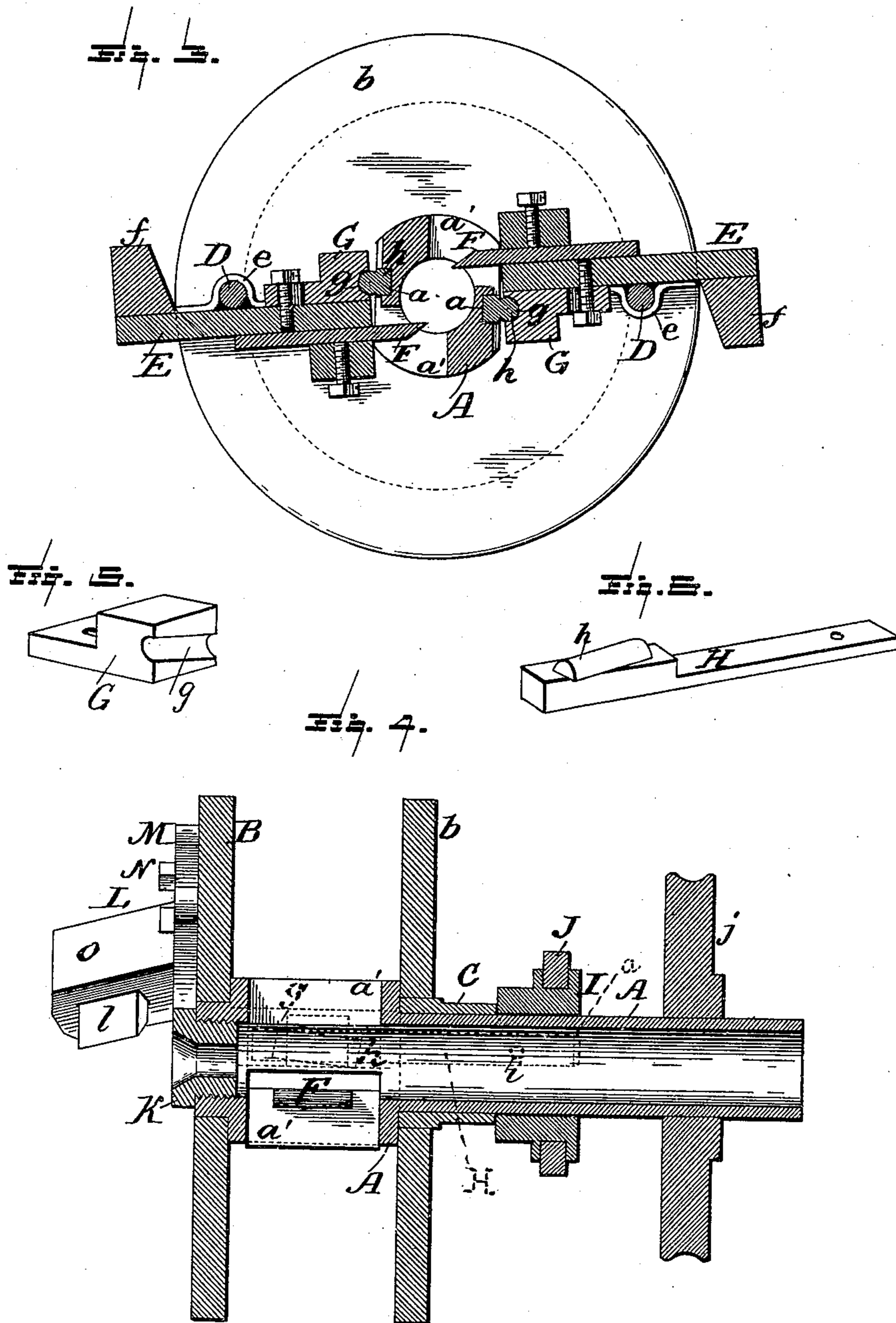
(No Model.)

2 Sheets—Sheet 2.

W. D. SNYDER.
MACHINE FOR TURNING HANDLES.

No. 481,875.

Patented Aug. 30, 1892.



Witnesses:

C. C. Schiller,
Arthur E. Towell.

Inventor

W. D. Snyder
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UNITED STATES PATENT OFFICE.

WILLIAM D. SNYDER, OF WETZELL, MICHIGAN.

MACHINE FOR TURNING HANDLES.

SPECIFICATION forming part of Letters Patent No. 481,875, dated August 30, 1892.

Application filed August 10, 1891. Serial No. 402,313. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. SNYDER, of Wetzell, State of Michigan, have invented certain new and useful Improvements in Machines for Turning Handles; 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 of reference marked thereon, which form part of this specification, in which—

Figure 1 is a top plan view of my improved cutting-head for handle-turning machines. Fig. 2 is a face view thereof. Fig. 3 is a transverse sectional view on line *x x*, Fig. 1. Fig. 4 is a longitudinal sectional view on line *x x*, Fig. 2. Figs. 5 and 6 are detail views.

This invention is an improvement in cutting-heads for handle-making machines or lathes wherein the handles are cut by revolving knives from rough stock, and it is also an improvement upon the handle-machine for which Letters Patent of the United States were issued to me on the 21st day of July, 1891.

The object of this invention is to shorten the distance between the cutters and journal-bearings of the revolving arbor which supports the knives and to improve the construction of the finishing-knives support, all of which will be clearly understood from the following description and summarized in the claims.

Referring to the drawings by letters, A designates a tubular revoluble arbor mounted in proper journal-bearings on a suitable supporting-frame, and on its projecting end are fixed two similar proximate disks B *b*, the former being at the outer end of the arbor and the latter near the outer bearing, and C is a short sleeve fitted on the arbor and adjoining disk *b* and forming one of the journal-bearings of the arbor. The disks B *b* are united rigidly by transverse bolts D D, which are shouldered at their ends, so as to hold the disks properly separated.

E E designate finishing-knife holders, consisting of blocks suspended by straps or eyes *e e* on bolts D between the disks B *b*, so that the blocks can oscillate on the bolts. Two blocks are shown arranged diametrically opposite to each other, and the finishing-knives

F F are adjustably attached to the inner ends thereof, substantially as shown, and are equipped or counterbalanced by weighting the outer ends of the holders, as indicated at *f*. 55

G G are adjustable gibs secured to the inner ends of the holders opposite the knives and having inclined grooves *g* in their faces adjoining the arbor, which grooves are engaged by inclined tongues *h* on sliding rods H, resting in longitudinal grooves *a a* in arbor A, which grooves and rods extend under disk *b* and sleeve C, as shown by dotted lines in Figs. 1 and 4, to a clutch-collar I, loosely mounted on the arbor between its bearings, but connected by pins *i i* to the ends of rods H, so that by shifting the collar on the arbor the rods will be shifted, and by reason of the engagement of inclined tongues *h* with grooves *g* will oscillate the knife-holders E, so as to throw the knives F toward or from the axial line of the arbor, thereby regulating the cut of the knives. The collar can be shifted by a bifurcated pivoted lever J or in other suitable manner, so as to control the position of the knives, as usual. The edges of the finishing-knives project more or less into the arbor through openings *a'* therein adjoining the inner ends of the holders between disks B *b*, as shown. 80

j is a sheave-pulley fixed on the arbor and by which motion is imparted thereto by belting. It will be observed that the sliding rods H H pass under the sleeve-bearing C of the arbor and the collar is placed between the bearings instead of outside the same, thus enabling me to shorten the arbor or at least bring the cutting-knives nearer the outer journal-bearing and rendering the arbor more steady in operation. 90

In the end of arbor adjoining disk B is a blank guide K, which is a metal ring screwed into the end of arbor and having a flaring conical mouth tapering to a bore of the desired size to guide the work into the arbor between the finishing-knives. This guide is removable and can be replaced by others of different sizes, according to the work to be produced. 95

L L designate the gouging-knife holders, (two being shown,) mounted on the outer face of disk B diametrically opposite to each other. 100

They consist of a base-plate M, pivoted by a bolt *m* to the face of disk B, and adjustably secured by means of a bolt N, passing through a slot *n* in the plate M and tapped into disk

5 B. From plates M spring outwardly-inclined slotted studs O O, through which pass the roughing-knives *ll*, which are retained by set-screws *o*. The edges of the gouging-knives are held diagonal to the length of the blank, 10 thus increasing their effectiveness, and the holders can be adjusted to different angles to the blank, being cut so as to secure the best working position for the knives. By this construction the parts are strongly and compactly 15 assembled, the arbor shortened, and the finishing-knives and their holders better protected, and there is less danger to the workman than in the machine already patented to me.

20 Having thus described my invention, what I therefore claim as new, and desire to secure by Letters Patent, is—

1. The combination of the revoluble tubular arbor having openings near one end for 25 the introduction of finishing-knives and the disks fixed on the arbor at the ends of said openings, with the oscillating equipoised finishing-knife holders pivotally suspended between the disks, and means for adjusting said 30 holders, substantially as described.

2. The combination of the tubular arbor, the opposed fixed disks thereon, the bolts uniting said disks, and the finishing-knife holders suspended between the disks and re- 35 volved therewith, with the finishing-knives and grooved gibs mounted on said holders and the sliding rods moving in guide-slots in the arbor and extending through one journal-bearing thereof, having inclined tongues en- 40 gaging said gibs for adjusting the holders, all substantially as and for the purpose set forth.

3. The combination of the revoluble tubular arbor having openings near one end for 45 the introduction of finishing-knives and longitudinal grooves, with the knife-holders pivotally supported on and revolved by the arbor, and the sliding rods lying in and protected by the grooves of the arbor, extending through one journal-bearing thereof and engaging the 50 inner ends of the holders, and means for shifting said rods, substantially as specified.

4. The combination of the tubular arbor having openings and grooves, substantially as described, the disks secured thereto, the 55 knife-holders pivotally mounted between the disks, the grooved gibs on the inner ends thereof, the movable rods lying in the grooves

of the arbor, extending through one of the journal-bearings of the arbor and having inclined tongues engaging the gibs, and the de- 60 vices for shifting said rods, substantially as described.

5. The combination of the tubular arbor, the opposed disks fixed thereon, the bolts uniting said disks, and the adjustable opposite 65 oscillating equipoised finishing-knife holders suspended between the disks and revolved therewith, and means for simultaneously adjusting said holders, and the independently-adjustable gouging-knife holders L, attached 70 to the outer disk, substantially as set forth.

6. The combination of the revoluble tubular arbor having openings near one end for the introduction of finishing-knives and longitudinal grooves, and a journal-sleeve there- 75 on near said openings, with the knife-holders pivotally supported on the arbor, and the sliding rods lying in the grooves of the arbor, passing through said sleeve and engaging the inner ends of the holders, means for shifting 80 said rods, and the blank guide in the end of the arbor, substantially as described.

7. The combination of the tubular arbor having openings and grooves, substantially as described, the disks secured thereto, the 85 knife-holders pivotally mounted between the disks, the grooved gibs on the inner ends thereof, the movable rods lying in the grooves of the arbor and having inclined tongues engaging the gibs, and the devices for shifting 90 said rods, and the journal-sleeve slipped over the arbor and rods and adjoining the inner disk, substantially as specified.

8. The combination of the tubular arbor, the opposed disks fixed thereon, the bolts uniting said disks, and the oscillating equipoised 95 finishing-knife holders suspended on said bolts between the disks and revolved therewith, the gouging-knife holders attached to the outer disk, and the blank guide in the end of 100 the arbor, with the grooved gibs on said holder, the movable rods extending through one journal-bearing of the arbor, having inclined tongues engaging said gibs, and the devices for shifting said rods, substantially as and 105 for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM D. SNYDER.

Witnesses:

C. J. PAILTHORP,
O. L. SEARLE.