

(No Model.)

2 Sheets—Sheet 1.

S. T. KENNAN.
MACHINE FOR PLANING FELLIES.

No. 292,752.

Patented Jan. 29, 1884.

Fig. 1.

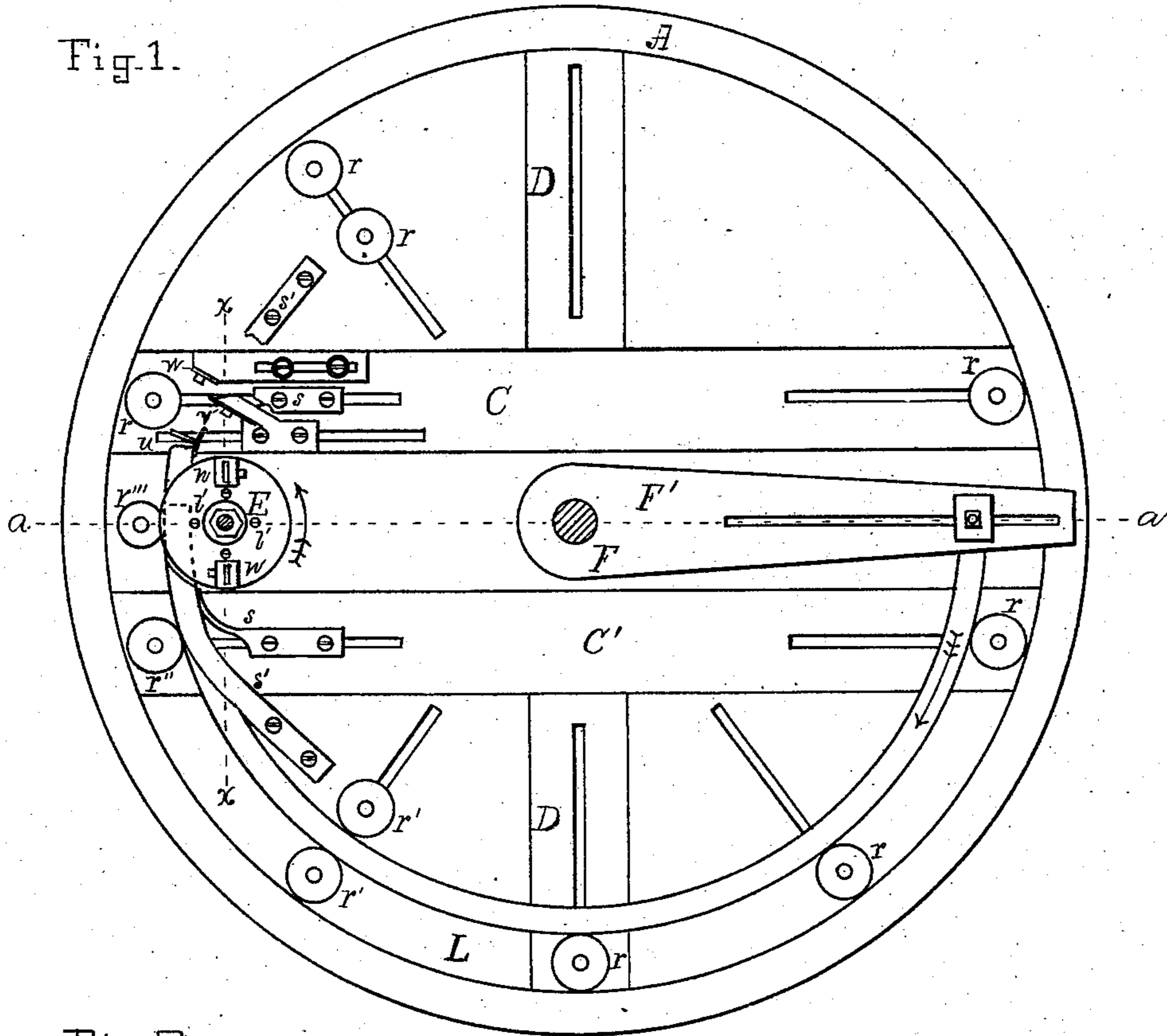
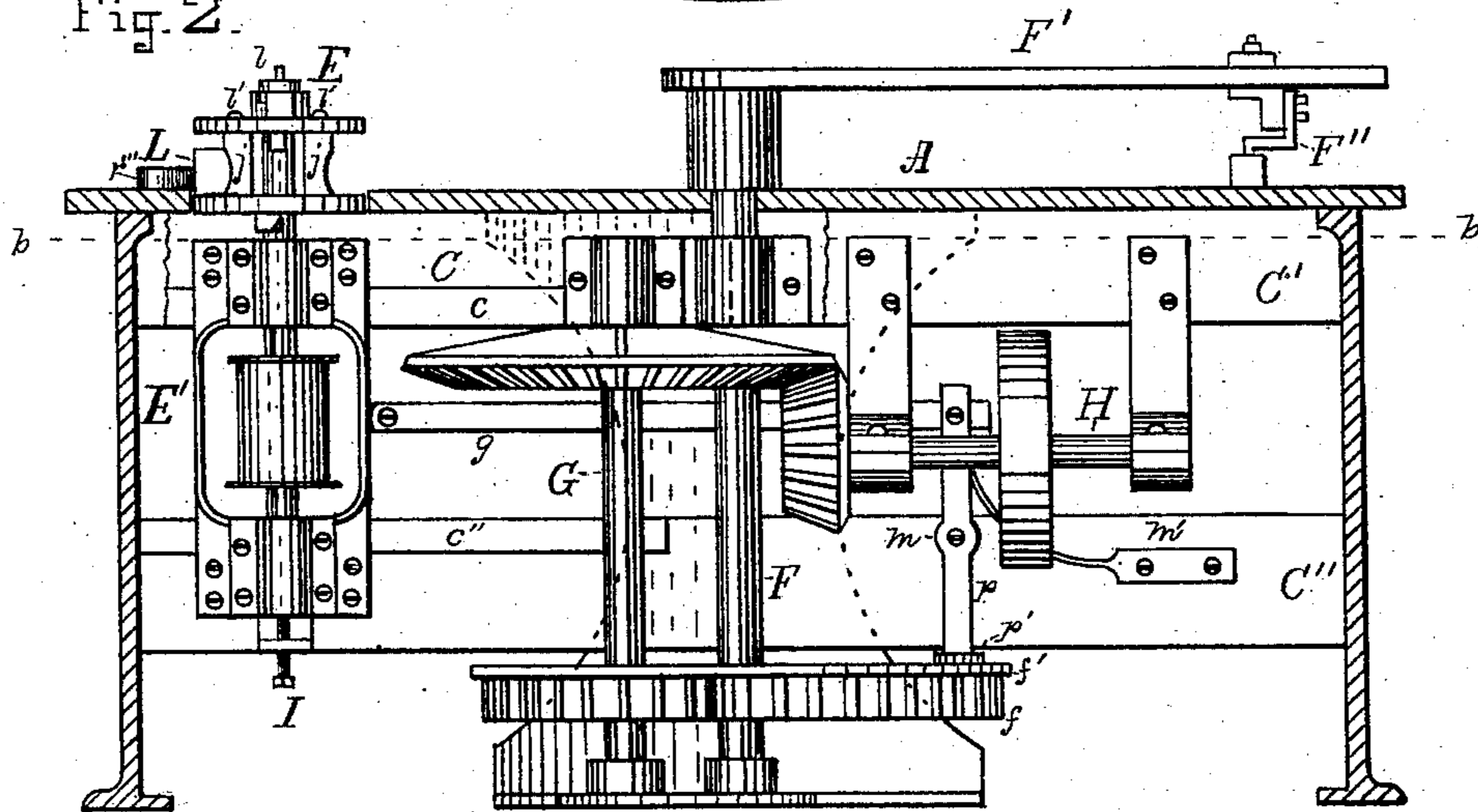


Fig. 2.



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By G. H. Albee
his Atty.

(No Model.)

2 Sheets—Sheet 2.

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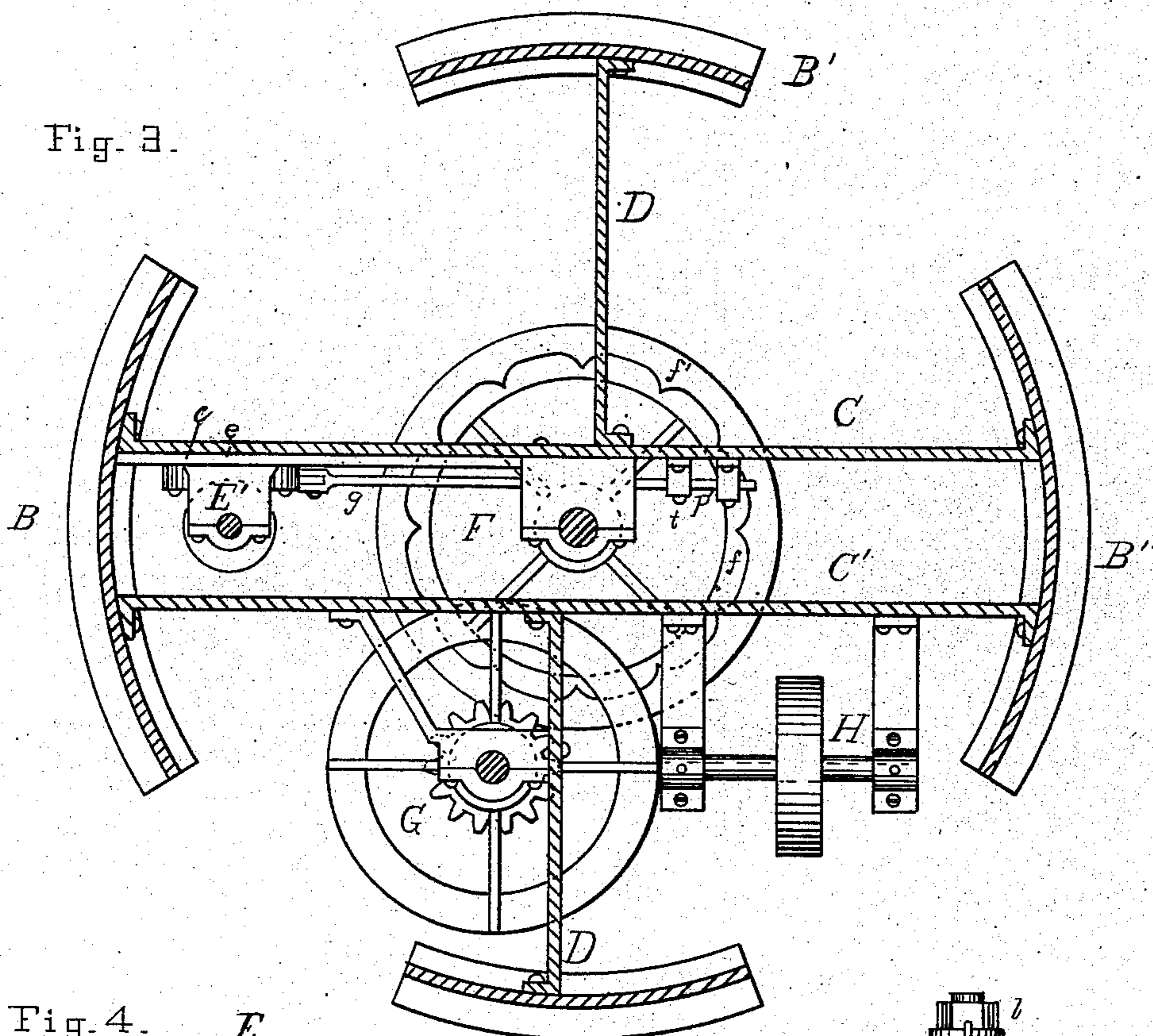


Fig. 3.

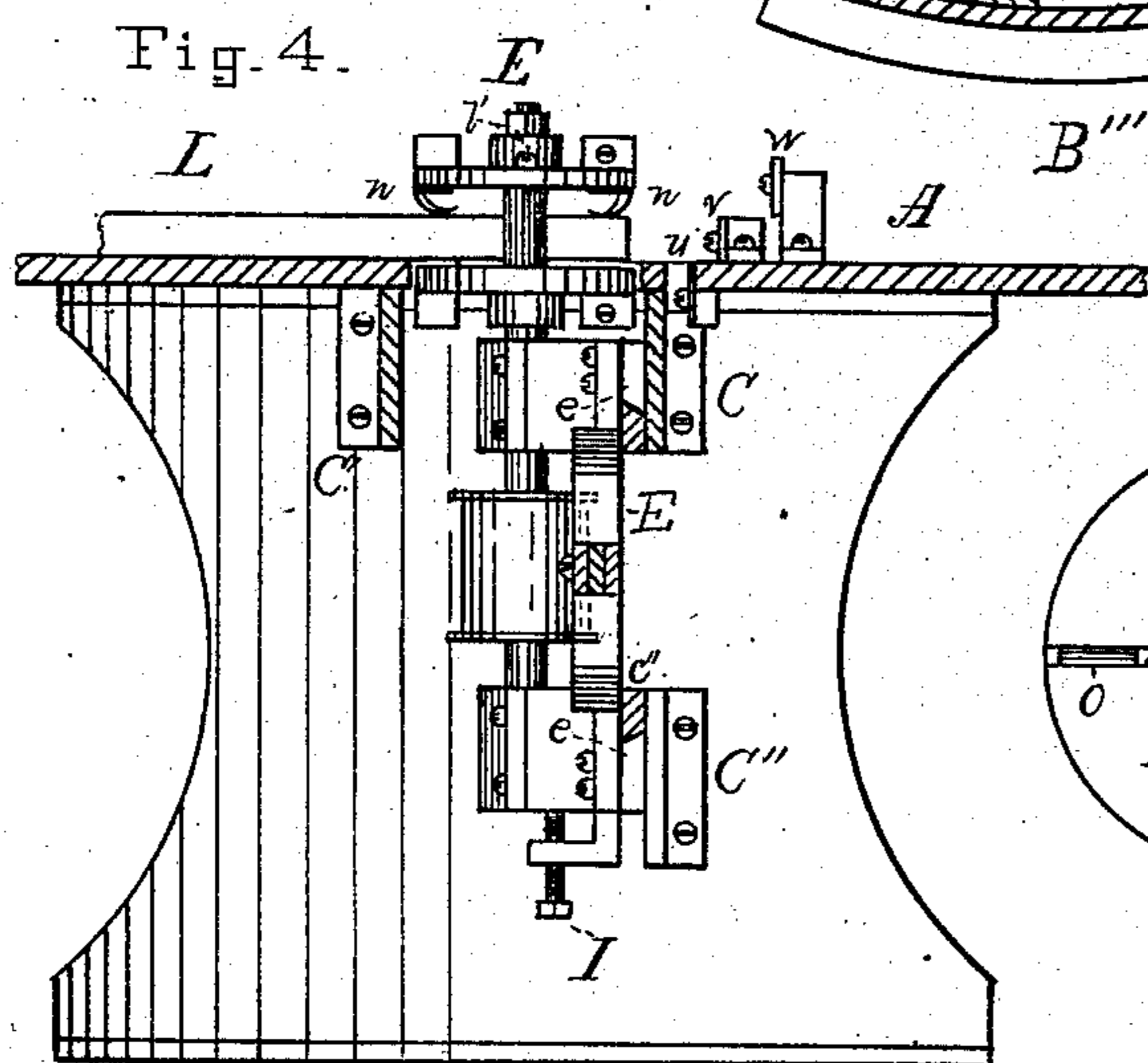


Fig-4.

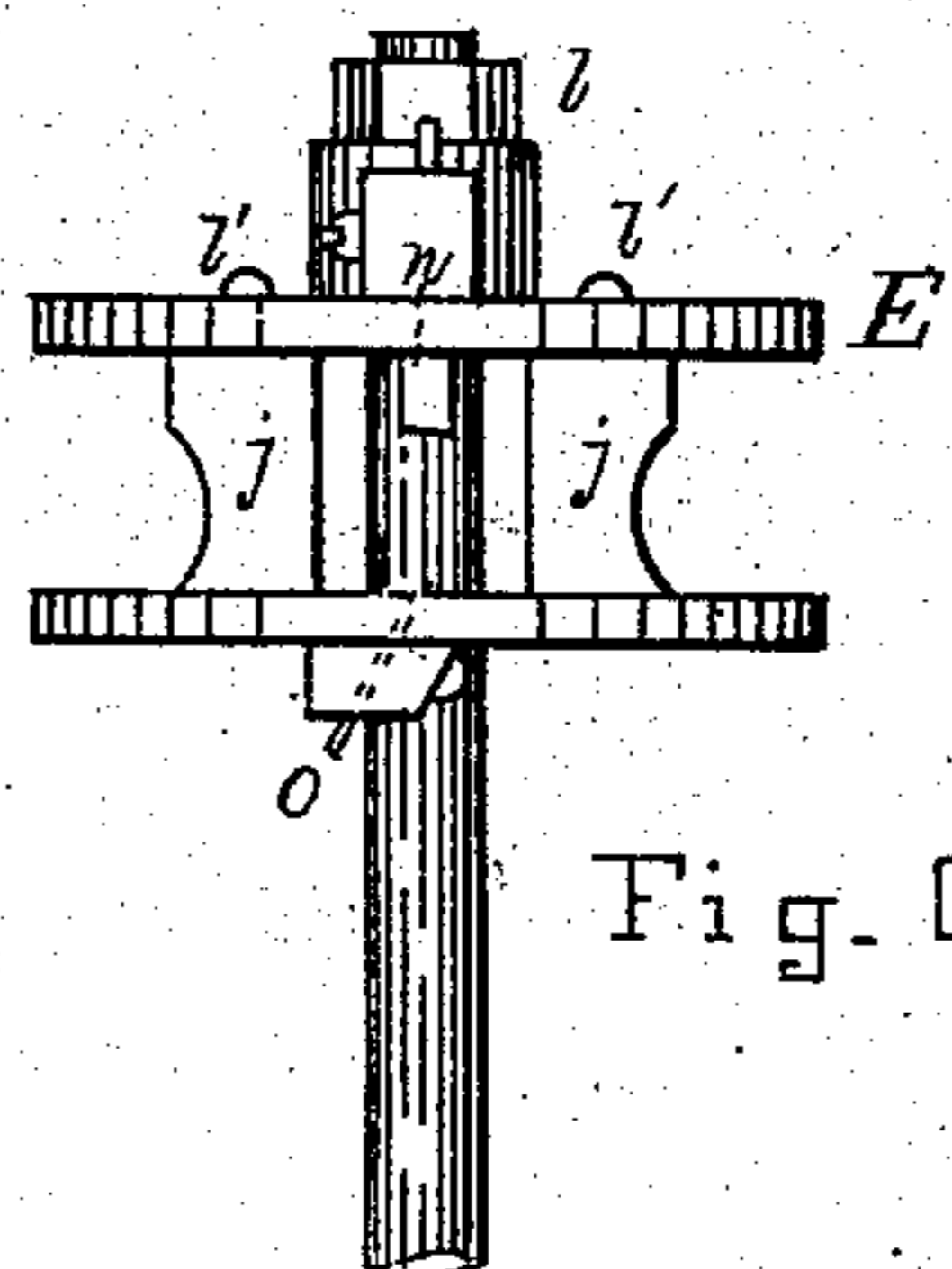


Fig. 6.

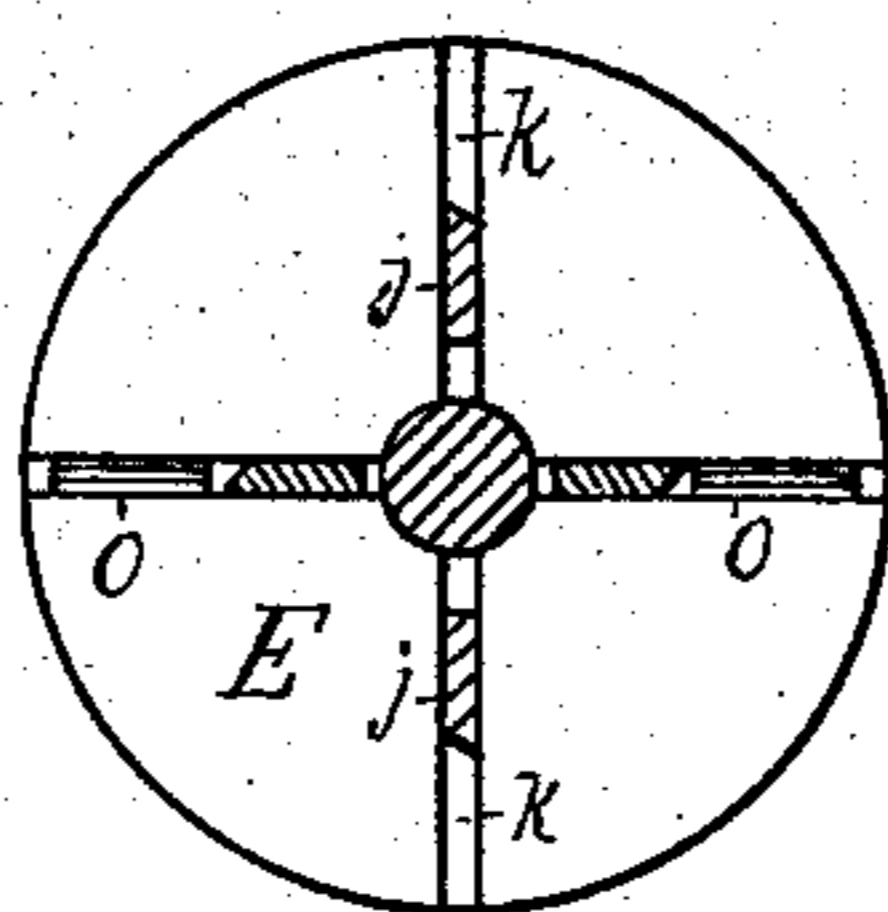


Fig. 5.

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UNITED STATES PATENT OFFICE.

SIDNEY T. KENNAN, OF MENASHA, WISCONSIN.

MACHINE FOR PLANING FELLIES.

SPECIFICATION forming part of Letters Patent No. 292,752, dated January 29, 1884.

Application filed July 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY T. KENNAN, a citizen of the United States, residing at Menasha, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Machines for Planing Fellies of Wagons and Carriages, of which the following is a specification.

My invention relates to a felly-planer in which a rotary cylinder with cutters attached is used for planing that class of carriage-stock designated as "bent fellies;" and the object is to plane the fellies after being bent and dried in the form of a half-circle upon three of their surfaces at a single operation, whereby those surfaces—viz., their two outer edges and inside surface—will be uniform in their dimensions and surface outline.

It further consists in mechanism for imparting a reciprocating motion to the cutting-cylinder, coacting with the feeding mechanism, whereby the fellies can be planed upon their inner surface to a beveled or circular form between the points for the entrance of the spokes, said points of entrance being left untouched by the cutting-tools, leaving them thereby with full square edges for the application of the spoke to its seat. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the planer with a felly in position for operation thereon. Fig. 2 is a front elevation of the same, the frame upon the line *a a* of Fig. 1 being in section. Fig. 3 is a top view of the operating mechanism below the line *b b* of Fig. 2. Fig. 4 is an elevation showing the cutting-cylinder and scraping or finishing knives upon the line *x x* of Fig. 1. Fig. 5 is a plan of the lower flange of the cutting-cylinder upon an enlarged scale, and Fig. 6 is an elevation of said cylinder and its knives upon the same scale.

Similar letters of reference indicate corresponding parts in the several views

A is the top or table of the planing-machine. B B' B'' B''' are the legs to correspond with and support the same. C, C', and C'' are castings connecting the legs B and B'', the pieces C and C' being of an angular form in their cross-section, one of their surfaces being slotted longitudinally, as represented, and serv-

ing as a portion of the table-surface. D and D', connecting the legs B' and B''' with C and C', respectively, are of a similar form, and serve also as a component of the table. E is the cutting-cylinder. F is the main feed-shaft. G and H are respectively the upright and horizontal shafts, operating by suitable gearing the main feed-shaft F.

Upon C and C'' are ways *c* and *c''*, to which is secured by gibs *e* the yoke E', containing a shaft, to the upper end of which is secured the cutting-cylinder E. Said yoke, with its shaft and cutting-cylinder, has a longitudinal movement upon the ways *c* and *c''*, and also a vertical adjustment within the gibs *e* by means of the screw I.

The cutters or knives *j* are secured in the cylinder-head E by their insertion in the grooves *k k*, as represented in Fig. 5—the upper flange having in it similar grooves—and retained therein by the nut *l* or set-screws *l'*, the cutters *n* and *o* being secured with set-screws, as shown in Fig. 6.

One or more cutter-heads may be used instead of the cylinder-head E, and they may be upon perpendicular or horizontal shafts, as desired, as I do not claim the cylinder-head E as my invention.

Upon the upper end of the spur-gear *f* is secured a ring, *f'*, serrated upon its inner edge, its serrations corresponding in number to the number of spokes desired in the wheel for which the felly being operated upon is designed, and the form of said serrations and the intermediate spaces adapted to produce the desired form upon the felly.

At the point *m* is fulcrumed the lever *p*, having upon its lower end the roller *p'*, its upper end being connected, through the longitudinal bar *g*, to the yoke E', containing the cylinder-head E.

Bearing against the upper end of the lever *p* is a spring, *m'*, which, by its action, retains the roller *p'* in contact with the serrations upon the ring *f'* as the feed-shaft F is revolved. This oscillation of the lever *p* produces a reciprocating motion to the cylinder-head E corresponding with the serrations of ring *f*. A positive reciprocating motion of the cylinder-head E may also be produced by placing an exteriorly-serrated ring inside of the

ring *f*, between which is placed the roller *p*'. The former method is preferable, being less expensive and more simple in use.

Upon the upper end of feed-shaft *F*, above the table, is secured a feed-arm, *F'*, depending from which is an angularly-formed finger or carrier, *F''*, which is movable in the slot of the arm *F'*, adapting it to fellies for wheels of different diameter.

Located at numerous points in the table are guiding-rollers *r r' r'' r'''*, and guiding-springs *s*, and holding-down springs *s'*. The number and position of the rollers and springs may be varied to meet the requirements of the particular work in hand.

The operation of the planer is as follows: Belts connect the pulleys upon the cylinder-shaft and feed-shaft *H* with a suitable motor revolving the cylinder and feeding-arm *F* in the direction of the arrows, when the end of a felly is inserted between the guiding-rollers *r'*. The feed-arm *F'*, as it is revolved by the shaft *F* around and over the planer-table, brings its depending finger *F''* in contact with the end of the felly, forcing it between the guiding-rollers *r'*, the rollers *r'' r'''* and springs *s* and *s'* directing its course to the cylinder *E*, where it is subjected to the action of the cutters *j, n*, and *o*, reducing it to the desired size and form throughout its entire length. The serrations upon ring *f*, revolving coactively with the feed-arm *F'*, cause the cutting-cylinder *E* to reciprocate upon the ways *c c''* and form the space between the seats of the spokes of the desired beveled or rounded form, and leaving each spoke-seat with the shape desired.

If it is desired to produce fellies uniform in size throughout their entire length, the lever *p* is detached and the cylinder-yoke *E'* is secured in a fixed position by the set-screw *t* acting upon the bar *g*.

u, v, and *w* are scraping-knives, for giving to the fellies a smoother surface than is produced by the rotary cutters, the scraper *u* finishing the lower surface, *v* its inner, and *w* its upper surface. The scraping-knives can be removed when their use is not desired.

The cylinder *E* is movable upon the ways *c c''* toward the center of the table, as are also the guiding-rollers *r r' r'' r'''*, the springs *s* and *s'*, and the scraping-knives *u, v*, and *w*, and the feeding-finger *F''*, thereby adapting their position to any diameter of felly within the limits of the machine.

Of the cutters *j*, two or more may be used, which can be of any form—straight, curved, or angular upon their cutting-edges—for producing the desired form upon the inner surface of the felly and their length as desired for the required thickness.

The machine-frame may be of any form or material, as desired; but I prefer the circular form and cast-iron for the principal material.

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

1. A planer feeding device for fellies of wagons and material of similar form, consisting of an arm and means for revolving it in a plane parallel with the fixed table of the planer, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, substantially as described.

2. The combination of an arm and means for revolving it in a plane parallel with the fixed table of a planer, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding anti-friction guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, substantially as described.

3. The combination of a cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm revolving in a plane parallel with the fixed table, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding anti-friction guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table, and with the rolls upon its convex side by means of springs, substantially as shown and set forth.

4. The combination of the cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm and means for their revolution, the arm revolving in a plane parallel with the fixed table, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, and the scraping-knives *u, v*, and *w*, so located and adjusted as to lightly scrape the material upon its concave surface and the sides adjacent thereto after action

thereon by the knives of the cutter-head, substantially as set forth.

5 5. The combination of a cutter head or
heads with cutters acting upon the concave
10 and two adjacent sides of the material, and an
arm and means for their revolution, the arm
revolving in a plane parallel with the fixed
table, upon which is supported the material
to be planed, said arm extending nearly at
15 right angles from a shaft which is supported
in suitable bearings, and having a projecting
finger adjustable for different diameters, for
engagement with and presentation of the ma-
terial to the action of cutters, and non-yield-
20 ing guiding-rolls secured to the table in a cir-
cular form, with means for their adjustment
for different diameters of material, said ma-
terial being kept firmly in contact with the
table and with the rolls upon its convex side
25 by means of springs, and also mechanism,
substantially as described, for producing to
the cutter-head a reciprocating motion in a
transverse direction to the line of travel of the
material at the cutting-point thereon for the
30 production of fellies, with spoke-seats of the
desired form, and rounded or beveled inter-
mediate spaces, substantially as described.

6. The combination of a cutter head or
heads with cutters acting upon the concave
30 and two adjacent sides of the material, and
an arm and means for their revolution, the

arm revolving in a plane parallel with the
fixed table, upon which is supported the ma-
terial to be planed, said arm extending nearly
at right angles from a shaft which is sup- 35
ported in suitable bearings, and having a pro-
jecting finger adjustable for different diame-
ters, for engagement with and presentation of
the material to the action of cutters, and non-
yielding anti-friction rolls secured to the 40
table in a circular form, with means for their
adjustment for different diameters of material,
said material being kept firmly in contact
with the table and with the rolls upon its
convex side by means of springs, and also 45
mechanism, substantially as described, for
producing to the cutter-head a reciprocating
motion in a transverse direction to the line of
travel of the material at the cutting-point
thereon, for the production of fellies with 50
spoke-seats of the desired form, and rounded
or beveled intermediate spaces, and with the
scraping-knives *u* and *w*, so located and ad-
justed as to lightly scrape the material upon
the surface in contact with the table and its 55
opposite side after action thereon by the
knives of the cutter head or heads, substan-
tially as described.

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Witnesses:

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