

No. 811,376.

PATENTED JAN. 30, 1906.

C. E. CLEVELAND.  
RESAWING MACHINE.

APPLICATION FILED MAR. 28, 1904.

5 SHEETS—SHEET 1.

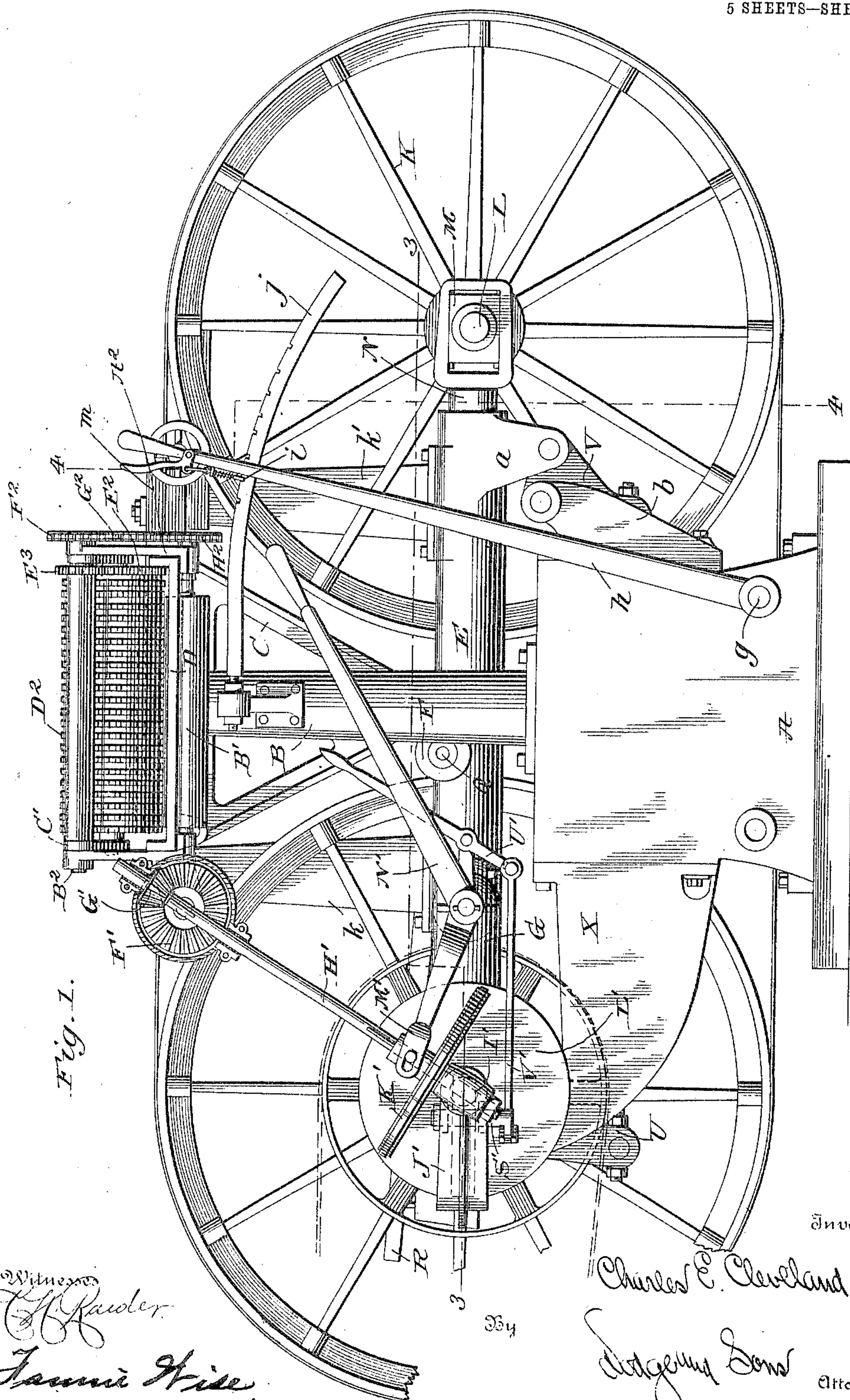


Fig. 1.

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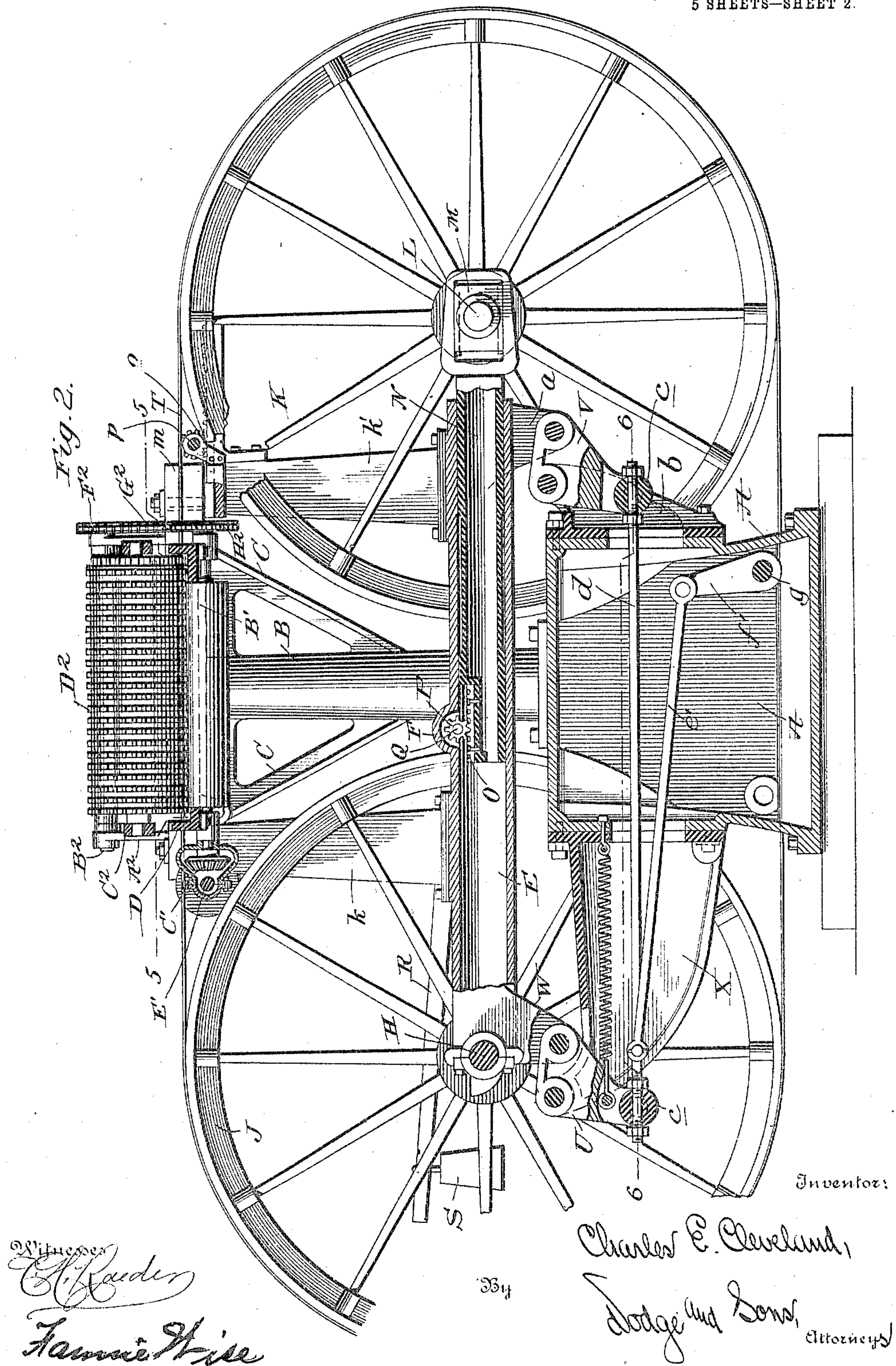


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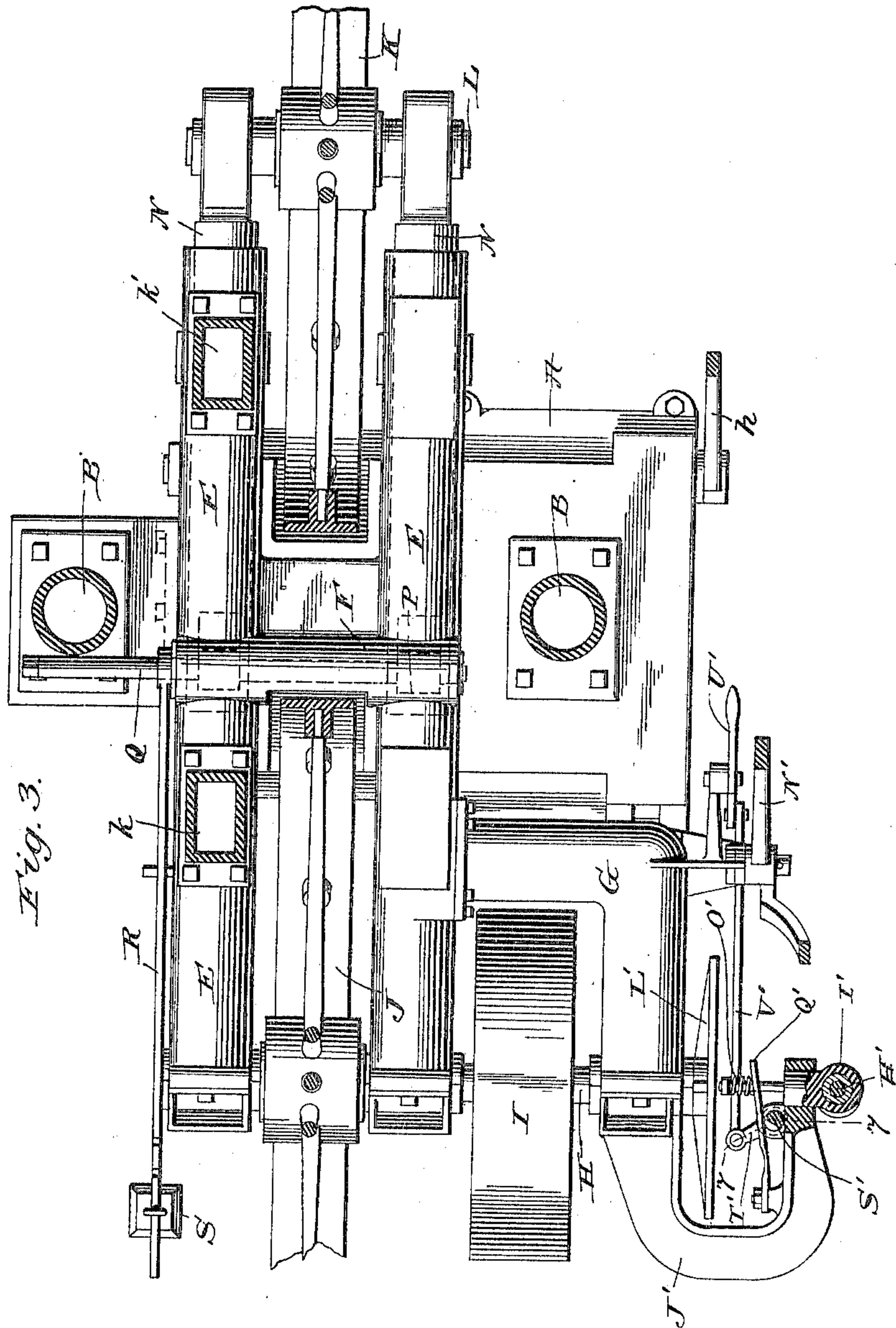
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5 SHEETS—SHEET 3.



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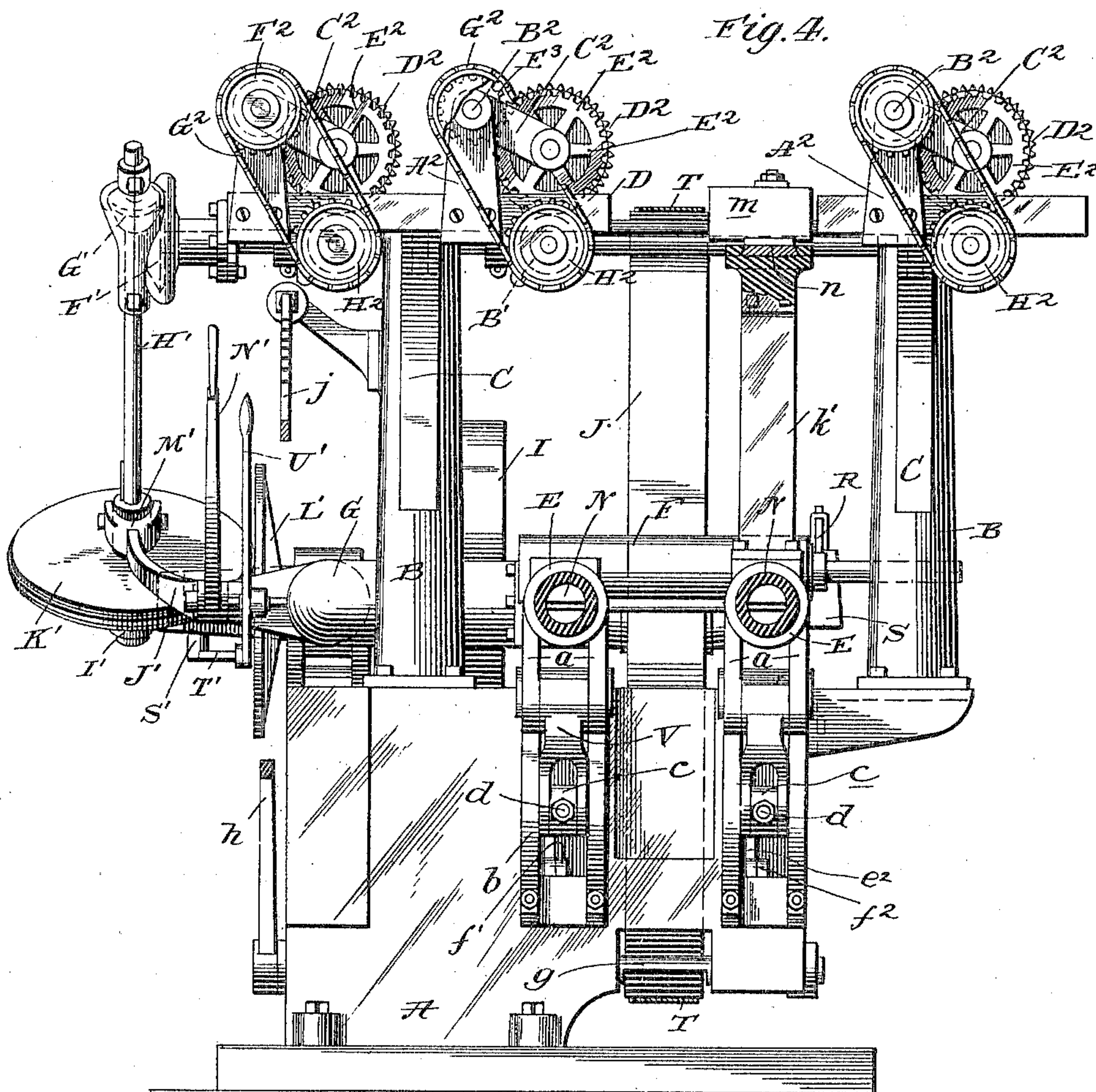
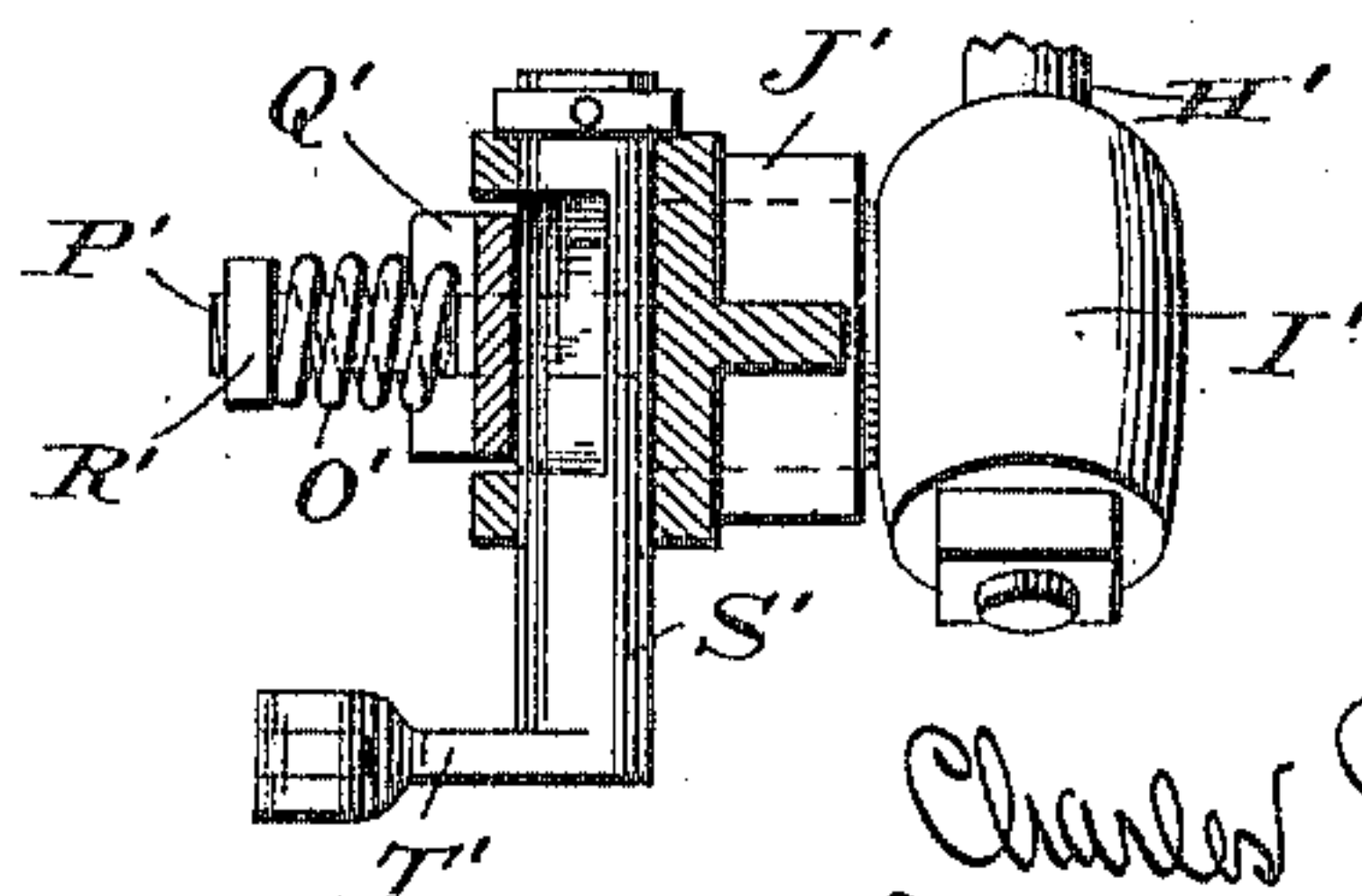


Fig. 7.



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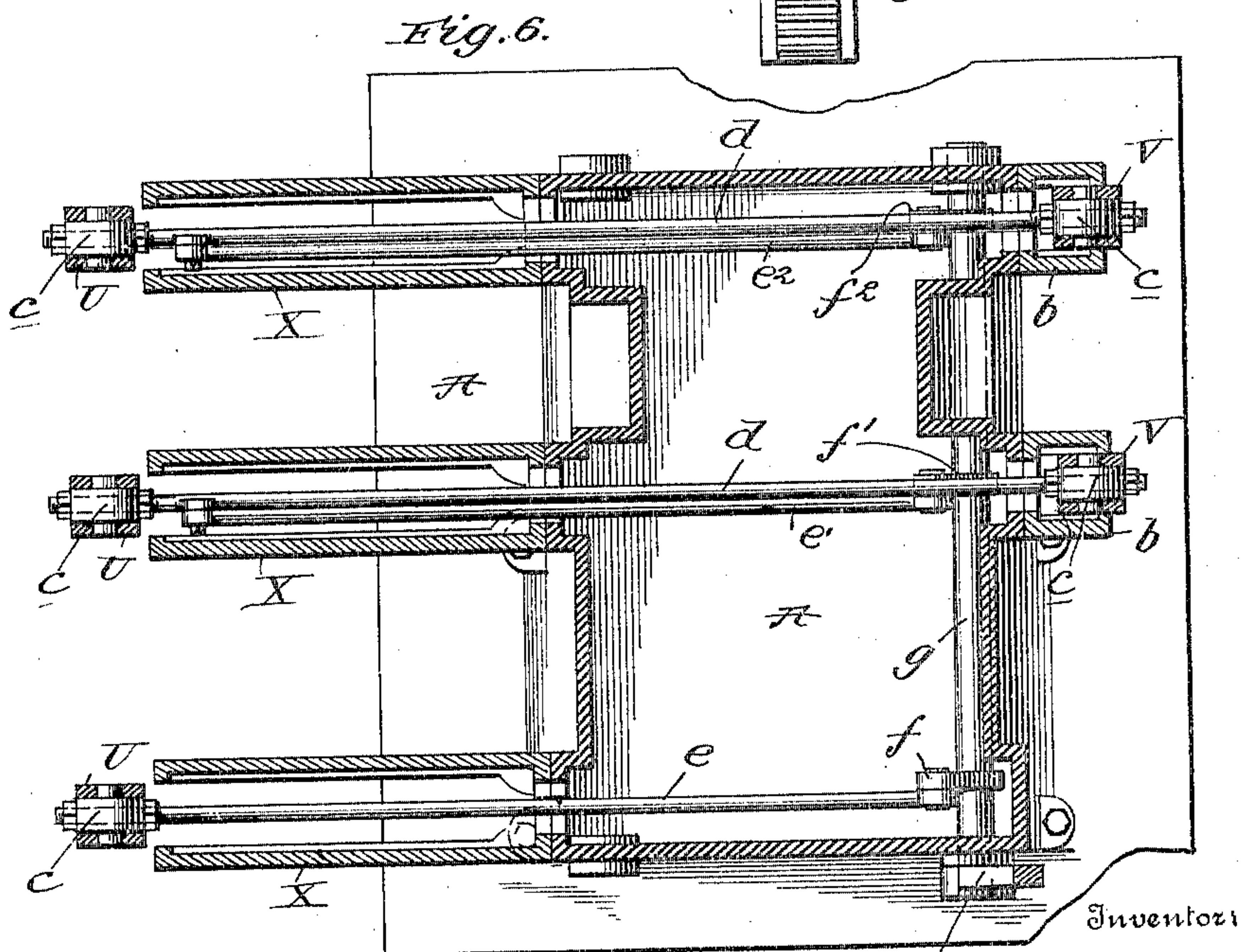
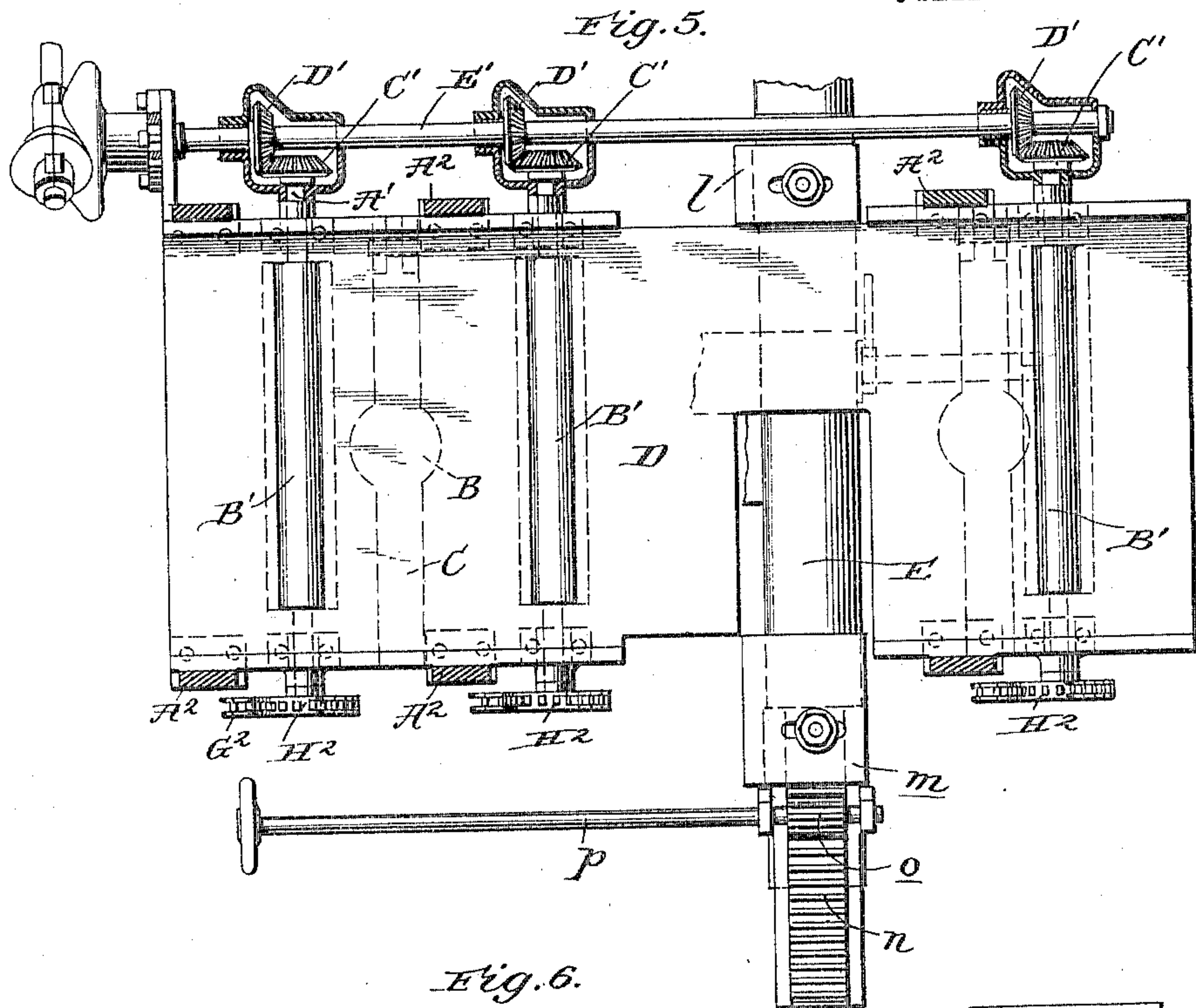
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5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

CHARLES E. CLEVELAND, OF FOND DU LAC, WISCONSIN.

## RESAWING-MACHINE.

No. 811,376.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed March 28, 1904. Serial No. 200,425.

*To all whom it may concern:*

Be it known that I, CHARLES E. CLEVELAND, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Resawing-Machines, of which the following is a specification.

My present invention pertains to improvements in resawing-machines, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a front elevation of the machine; Fig. 2, a transverse vertical sectional view; Fig. 3, a horizontal sectional view on the line 3 3, Fig. 1; Fig. 4, a vertical sectional view on the line 4 4, Fig. 1; Fig. 5 a, horizontal sectional view on the line 5 5, Fig. 2, portions being broken away to more clearly show the structure; Fig. 6, a similar view on the line 6 6, Fig. 2; and Fig. 7, a sectional view on the line 7 7, Fig. 3, showing certain details of construction.

The present invention is designed to produce a resawing-machine which shall be simple in design and effective in operation. In the construction set forth the bed or table is fixed and the saw, carried by the wheels, which in turn are supported on an adjustable frame, is movable toward and from the bed in order to vary the distance between the two, and thus determine the thickness of the board passing through the machine. The upper feed-rolls gravitate upon the work and together with the lower rolls are driven from a common source of power, the driving mechanism being so arranged that their speed may be varied, as desired. The details of these and other features of the invention will now be described.

A denotes the base of the machine, upon the upper face of which is secured a pair of columns B B. Said columns are each provided with laterally-projecting brackets C, upon which is mounted and secured the bed or table D, which is thus rendered stationary.

The supporting-frame for the band-wheels comprises two hollow parallel members E E, connected by a cross-piece F. (See Fig. 3.) An L-shaped bracket or arm G is secured to one of said members E, a bearing carried by the end of said bracket being in line with similar bearings mounted on the members E E. A shaft H is mounted in said bearings, a driving-pulley I being secured upon the

shaft, as best shown in Fig. 3. One of the band-wheels J is also mounted on the shaft intermediate the members E E, the companion wheel K being mounted on a shaft L. Said shaft L has its bearings in suitable boxes M, carried by arms N, slidable in the hollow members E. Each arm carries a rack O, (see Fig. 2,) with which meshes a pinion P, said pinions being mounted on a shaft Q, which passes through the cross-piece F and extends out to one side of the machine, one end of the shaft being squared, so that a crank may be applied thereto when necessary. A lever R, carrying a weight S, is secured to shaft Q and, acting through the pinions and racks, tends to simultaneously project arms N, and thereby maintain saw T under proper tension at all times.

The "saw-supporting frame," as the structure just described may be termed, is supported by a series of bell-crank levers U and V.

Levers U are pivotally connected to brackets W, extending downwardly from members E E and arm G, and also to brackets X, secured to the base or standard A, (see Fig. 6,) in line with said members E and arm G.

Levers V are similarly pivoted to brackets a, extending from the opposite ends of members E and likewise pivotally connected to brackets b, secured to the base or standard A.

The lower depending arm of each bell-crank lever carries a swivel-block c, and the levers which are directly below the members E E are connected by rods d, which pass through and are secured to the swivel-blocks. (See Fig. 6.) The bell-crank carried by arm G is connected through rod e and the swivel-block to an arm f, secured upon a shaft g, mounted in the base or standard. Said shaft also carries two similar arms f' and f'', to which are connected rods e' and e'', respectively, said rods in turn being connected to their corresponding connecting-rods d. Shaft g carries at its outer end (see Fig. 1) a lever h, which is held in any desired position within its range of movement by a dog or detent i, working in conjunction with a segmental rack j. The arrangement thus described will when the lever is moved in one or the other direction cause the saw to be raised or lowered, the latter at all times being maintained in parallelism to the bed. This is due to the use of the bell-crank levers and the manner in which they are pivotally mounted and connected.



Supported upon the saw-carrying frame are two columns  $k$   $k'$ , column  $k$  carrying at its upper end a saw-guide  $l$ , while column  $k'$  forms the support for a movable guide  $m$ , which is adjustable inwardly and outwardly, according to the width of the material being sawed. Adjustment is secured through the medium of a rack  $n$  and pinion  $o$ , the pinion-shaft  $p$  being extended to a point within easy reach of the operator. (See Fig. 5.)

A series of shafts  $A'$  is mounted beneath the table  $D$ , each shaft carrying a feed-roll  $B'$ , said feed-rolls extending to the required height above the table, as is usual. Each shaft carries at one end a bevel-pinion  $C'$ , which gears with a corresponding pinion  $D'$ , mounted upon a shaft  $E'$ . Said shaft carries at its forward end a bevel-gear  $F'$ , (see Fig. 1,) which meshes with a bevel-pinion  $G'$ , carried by a shaft  $H'$ , the lower end of which is journaled in a bearing member or sliding block  $I'$ . Said block in turn is mounted in a U-shaped bracket  $J'$ , secured to the outer end of bracket or arm  $G$ .

A brush-wheel  $K'$  is splined upon shaft  $H'$ , the periphery of said wheel normally bearing against a face-plate  $L'$ , mounted upon the end of shaft  $H$ . The hub of the brush-wheel is elongated and engaged by the yoke end  $M'$  of a lever  $N'$ , said lever extending to such position that it may be readily manipulated and the brush-wheel adjusted with reference to the face-plate.

The brush-wheel is normally held against the face-plate by a coiled spring  $O'$ , surrounding a bolt or stem  $P'$ , which extends inwardly from the block  $I'$ , being held thereon between a flat spring  $Q'$  (secured at one end to bracket  $J'$ ) and a nut  $R'$ , mounted upon the end of stem  $P'$ . A cam-shaft  $S'$  is mounted beneath the flat spring  $Q'$ , and its position is changed to flex or relieve the spring-plate, and consequently to compress or relieve spring  $O'$  through levers  $T'$  and  $U'$  and connecting-link  $V'$ . When the springs are relieved, the brush-wheel will move out of contact with the face-plate, thereby stopping the feed and permitting ready adjustment of the wheel upon its shaft.

Uprights or supports  $A^2$  are secured to the bed or table  $D$  upon each side thereof, as shown in Figs. 4 and 5, and carried by each pair of supports is a shaft  $B^2$ . (See Fig. 2.) Swiveled upon each shaft is a pair of arms  $C^2$ , which carry at their lower ends a feed-roll  $D^2$ , each roll overlying its companion feed-roll  $B'$ . The shaft of each feed-roll  $D^2$  carries a gear  $E^2$ , which meshes with a pinion  $E^3$ , Fig. 1, mounted upon shaft  $B^2$ . Motion is imparted to each shaft  $B^2$  through sprocket-wheel  $F^2$ , sprocket-chain  $G^2$ , and sprocket-wheel  $H^2$ , the latter being secured upon the end of shaft  $A'$ .

From the foregoing it will be seen that the upper gravitating-rolls are free to accom-

modate themselves to varying thicknesses of material and that they are all driven in unison, though any one may rise or fall independently of the others without affecting its peripheral speed. This arrangement permits the resawing of slabs as well as lumber, since the yielding rolls will be raised and lowered over knots, projections, or any rough stock which may be fed through the machine.

While the upper feed-rolls are shown as roughened, it will of course be understood that smooth-faced rolls may be employed.

Having thus described my invention, what I claim is—

1. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to said frame and the base; and means for positively actuating and adjusting said levers in unison, whereby the frame may be raised and lowered uniformly.

2. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to each end of the frame and to the base; connections intermediate the free ends of said levers; and means for positively swinging said levers simultaneously, substantially as described.

3. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed supported thereon; a saw-carrying frame; a series of bell-crank levers pivotally connected to each end of the frame and to the base; swivel-blocks carried by the depending ends of said levers; rods connecting the opposite blocks in pairs; means for swinging said levers; and means for maintaining the levers in their adjusted positions.

4. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; a saw-carrying frame; a series of bell-crank levers pivotally connected to the frame and to the base; cross-rods connecting the opposite depending ends of said levers; a shaft mounted in the base; a series of arms carried by said shaft; rods  $e'$ ,  $e^2$  connecting two of said arms to the cross-rods; and a rod  $e$  connecting a third arm with the depending arm of one of the bell-crank levers, substantially as described.

5. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; a saw-carrying frame comprising members  $E$ ,  $E$  connected together by a cross member  $F$ ; a power-shaft mounted at one end of said frame; a band-wheel thereon; sliding arms mounted in the other ends of said members  $E$ ,  $E$ ; means for normally protruding said arms; a second band-wheel carried by the arms; a band-saw passing about the wheels and over the bed; bell-crank levers interposed between said carrying-frame and



the base; connections intermediate said levers to cause them to move in unison; and means for adjusting said levers and maintaining them in their adjusted positions.

5 6. In a resawing-machine, the combination of a base; a fixed substantially horizontal bed carried thereby; feed-rolls working in line with said bed; supports extending above the bed, upon each side thereof; a shaft mounted  
10 in each pair of supports; a pair of arms fulcrumed on the shaft; a feed-roll carried by the arms; means for driving the feed-rolls; a saw-carrying frame; means for raising and lowering said frame; and means for maintain-  
15 ing the frame in its adjusted position.

7. In a resawing-machine, the combination of a base; a fixed bed mounted thereon; a movable saw-carrying frame; levers positively connecting different portions of said

frame with said base; and means for directly 20 shifting the position of said levers, whereby the frame will be positively and directly actuated, substantially as described.

8. In a resawing-machine, the combination of a base; a fixed bed mounted thereon; a 25 movable saw-carrying frame; a lever system positively connecting said frame and base at each end of said base and frame; and means for actuating said lever system, whereby the frame will be positively and evenly raised or 30 lowered throughout its length.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. CLEVELAND.

Witnesses:

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ALICE I. YAPP. 11