

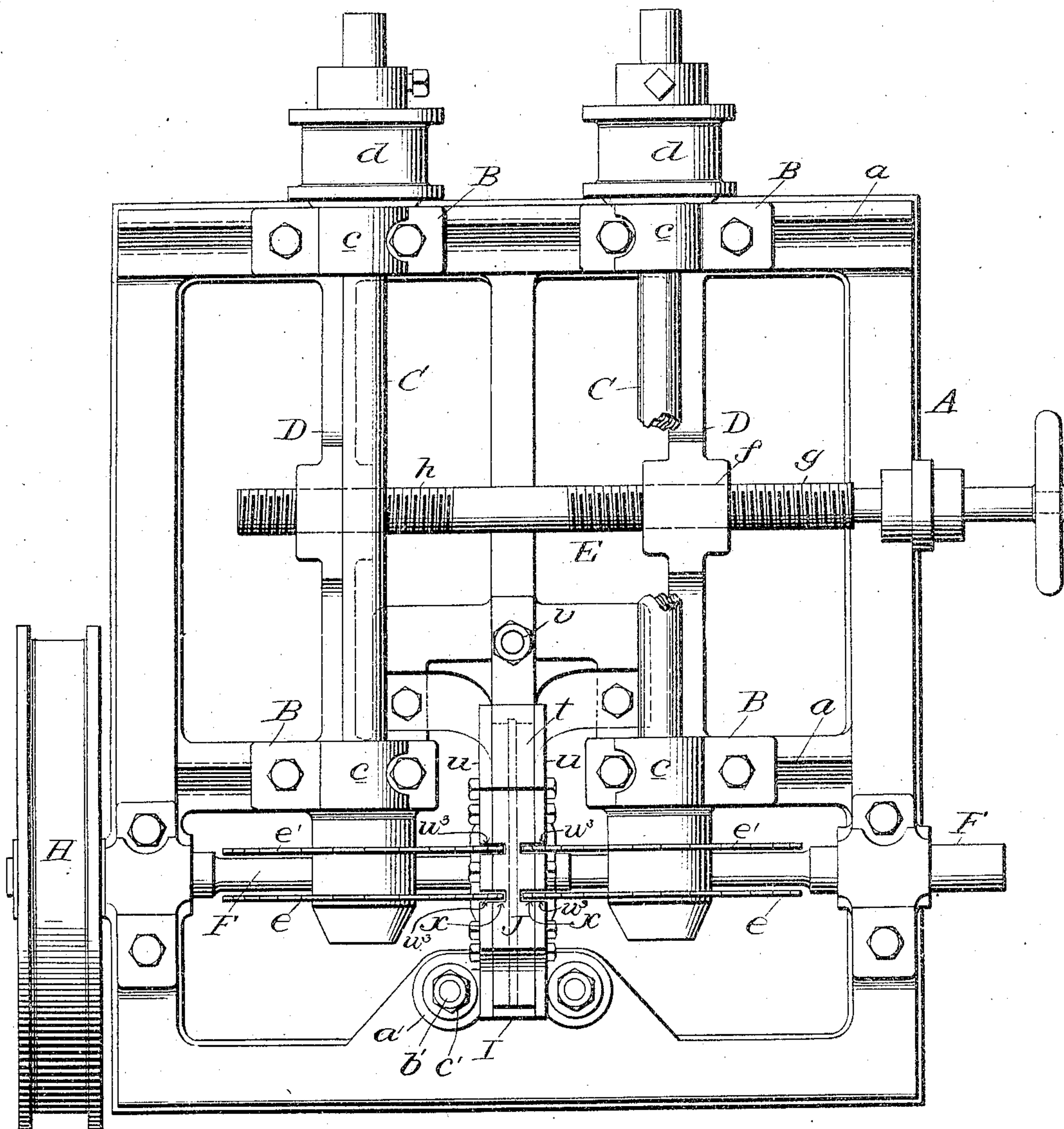
No. 789,852.

PATENTED MAY 16, 1905.

O. C. N. GUNDERSEN.
CARPET RAVELING MACHINE.
APPLICATION FILED JAN. 23, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 7.

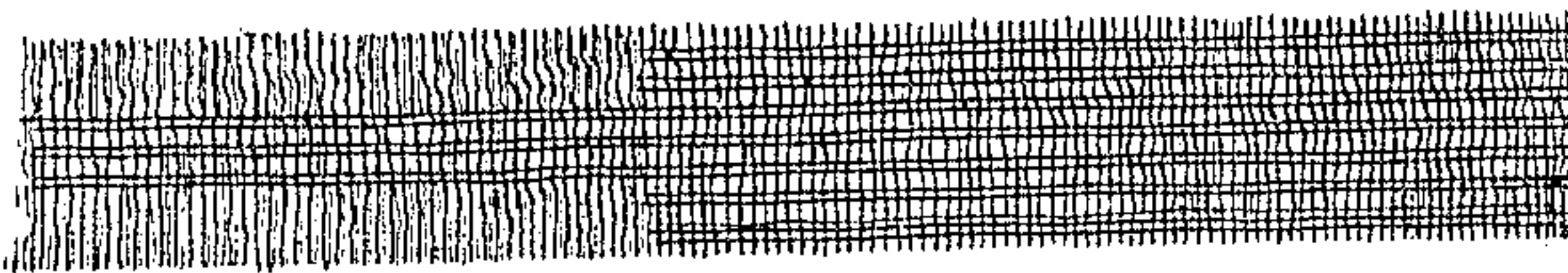


Fig. 2.

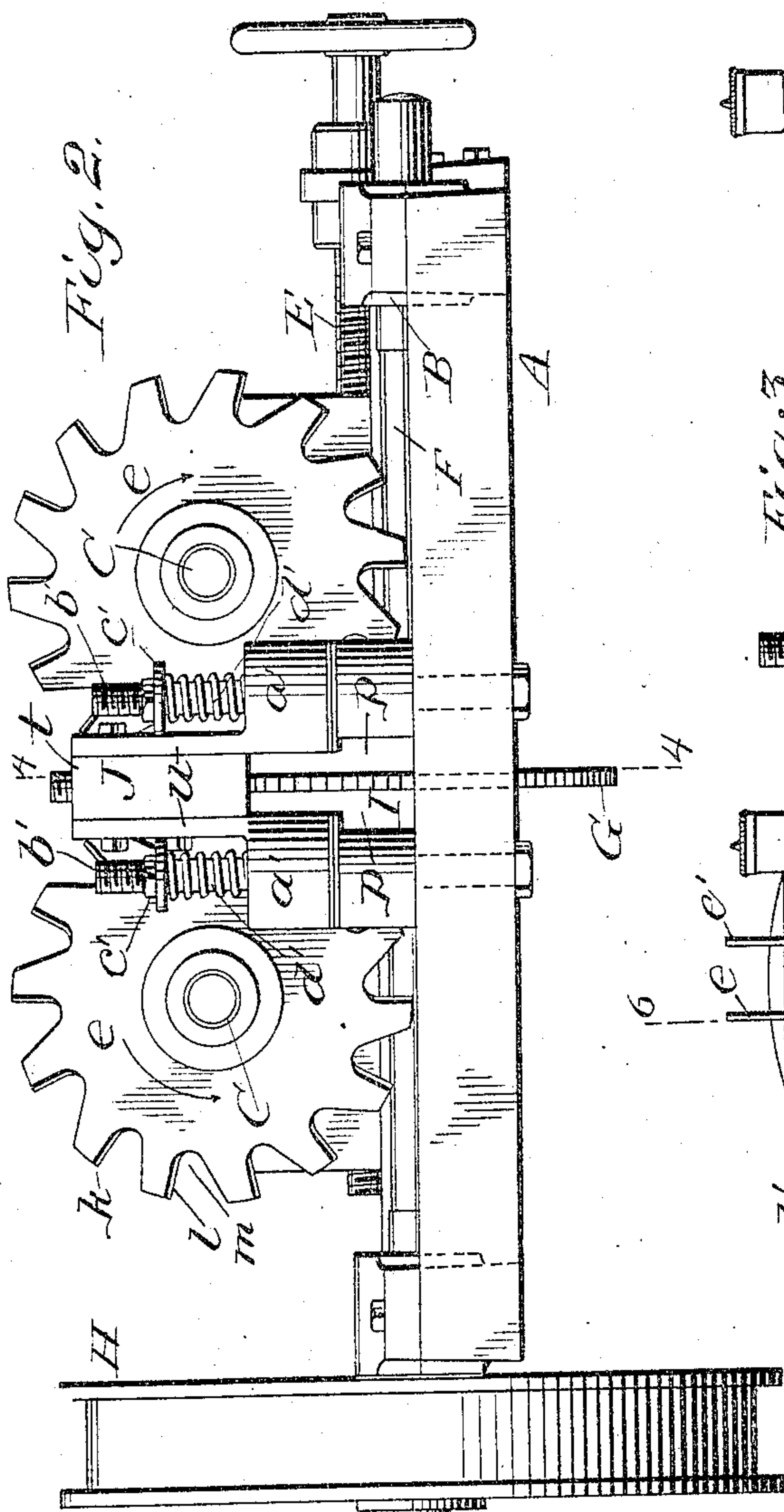
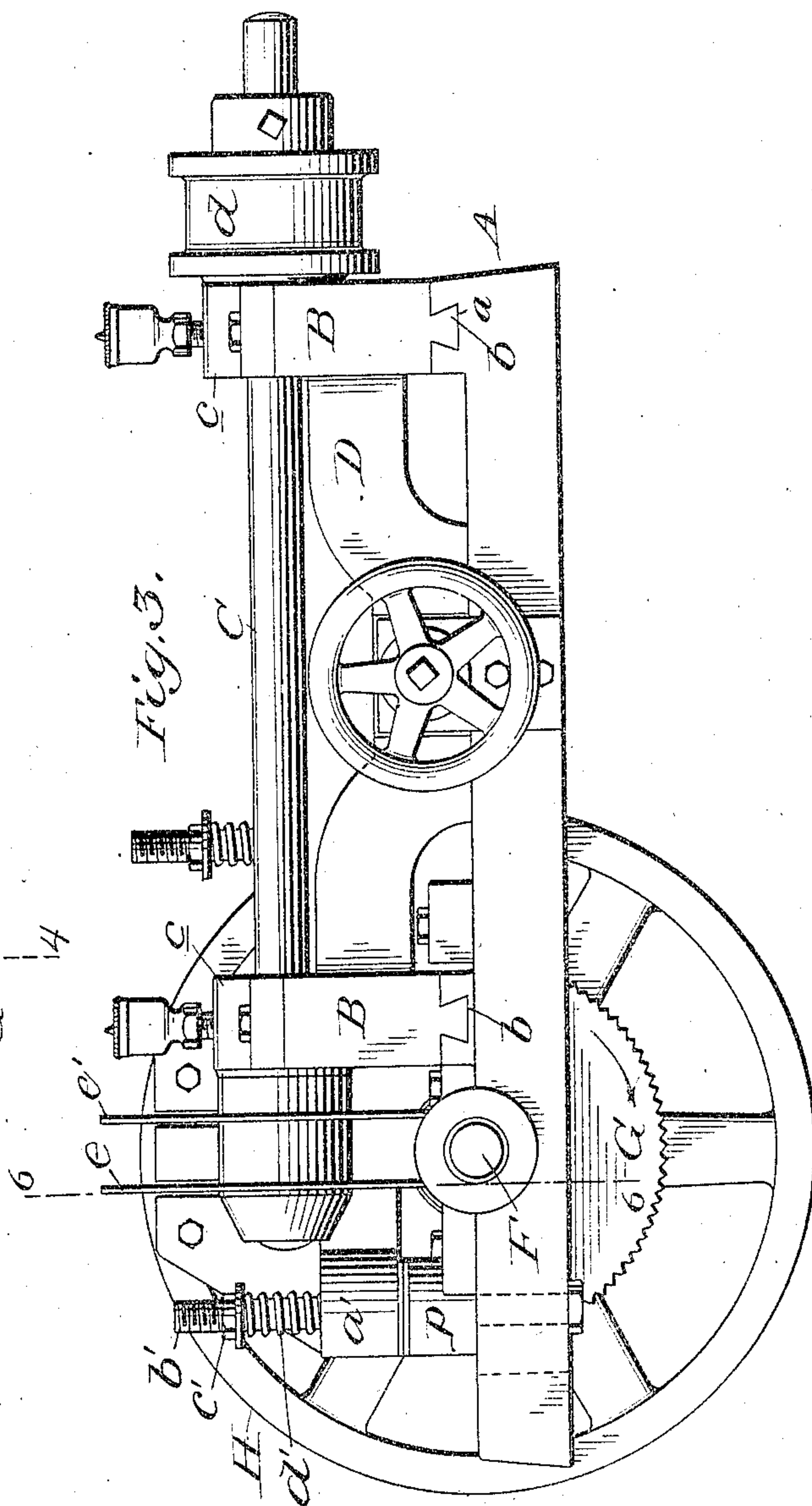


Fig. 3.



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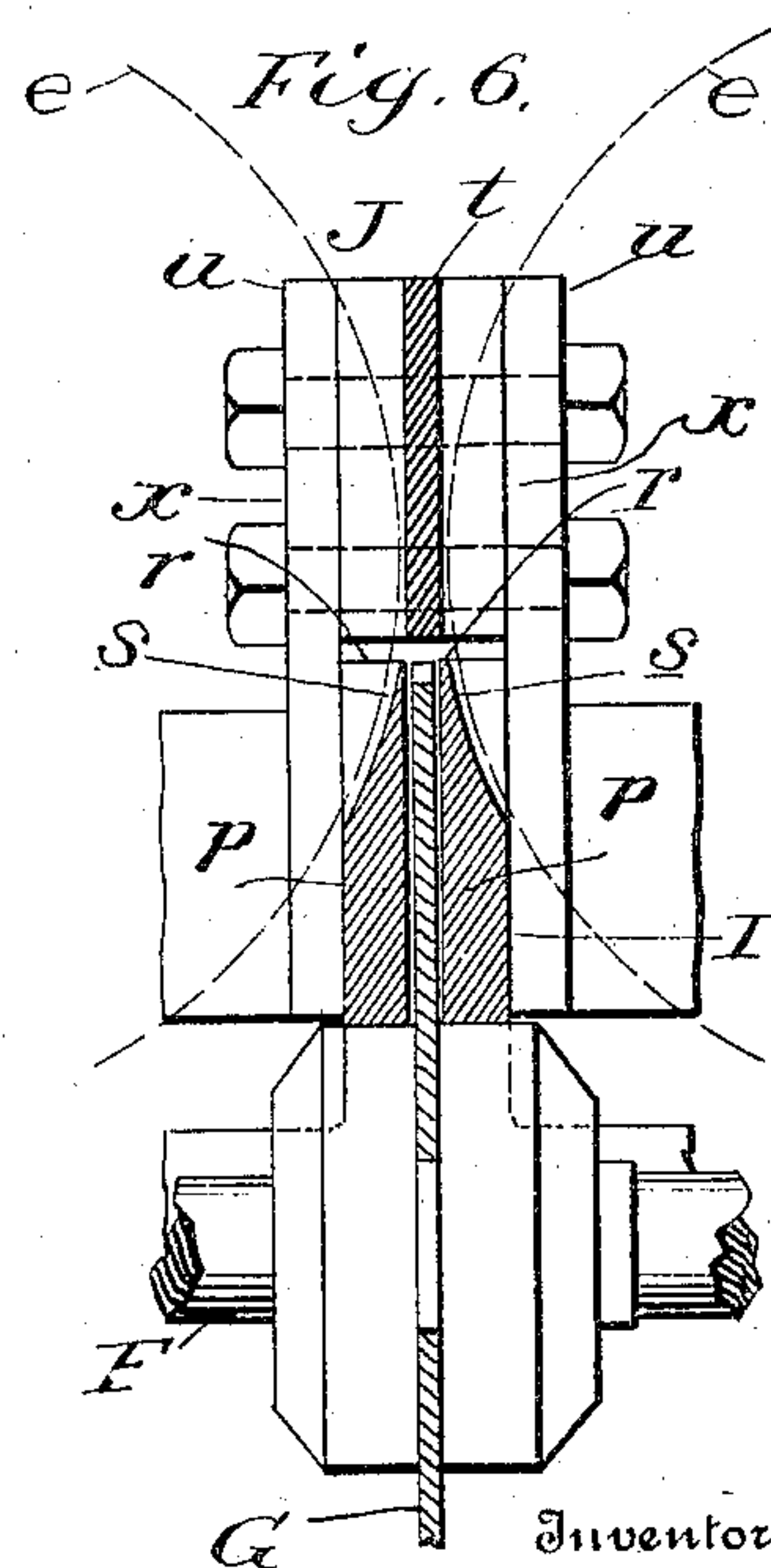
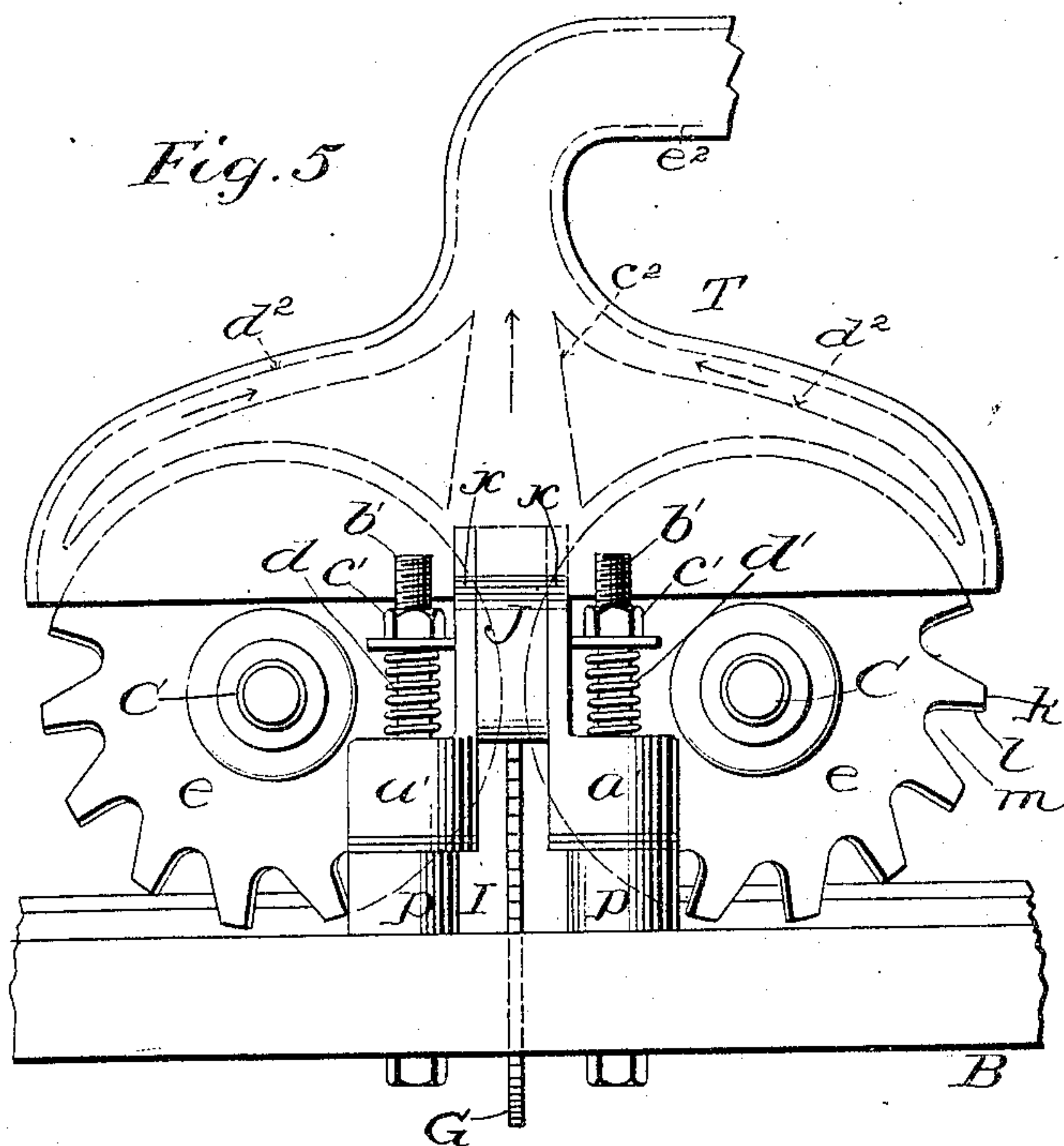
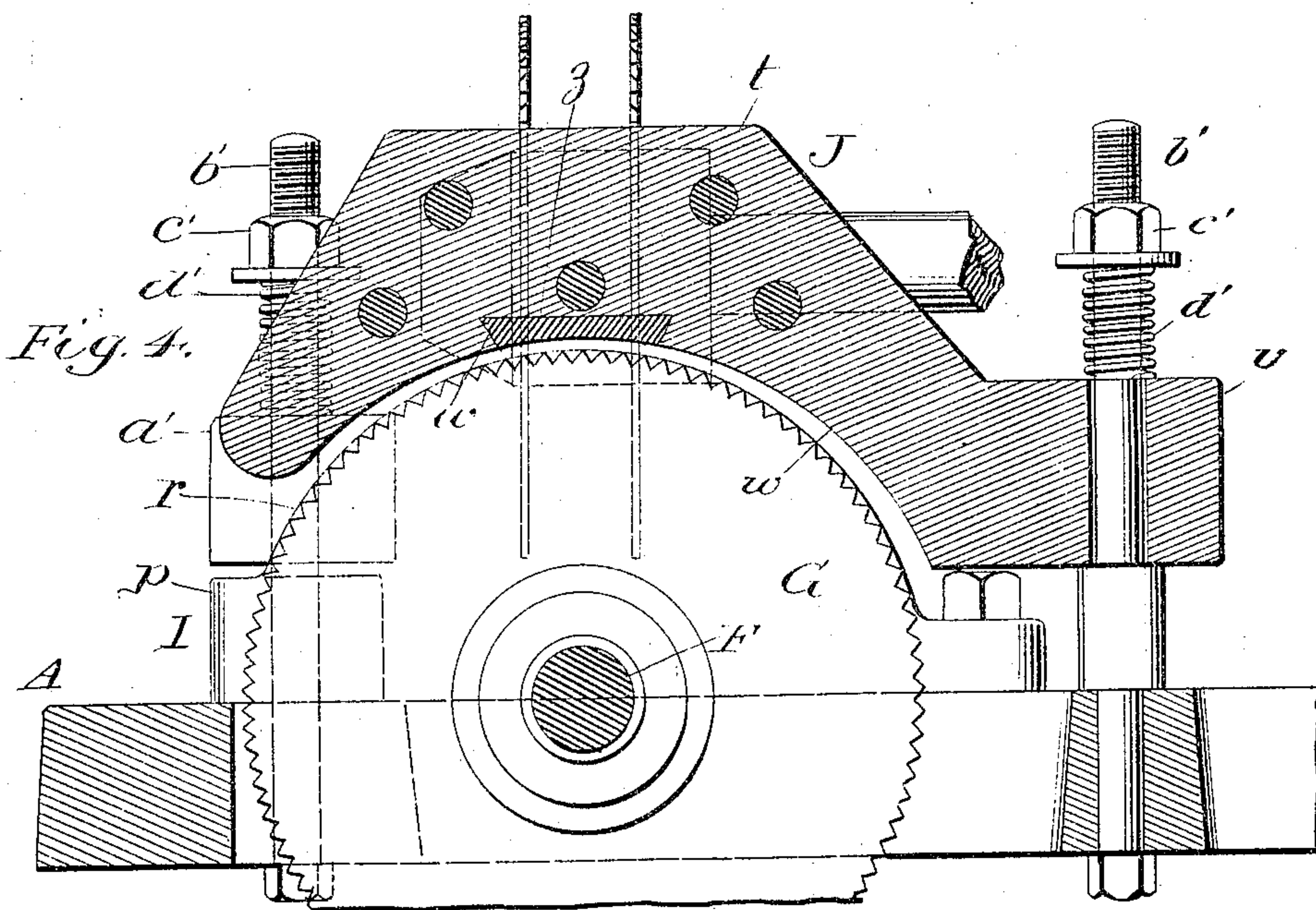
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3 SHEETS—SHEET 3.



Witnesses

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CARPET-RAVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 789,852, dated May 16, 1905.

Application filed January 23, 1905. Serial No. 242,375.

To all whom it may concern:

Be it known that I, OTTO C. N. GUNDERSEN, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented new and useful Improvements in Carpet-Raveling Machines, of which the following is a specification.

My invention pertains to carpet-raveling machines—i. e., machines for raveling the edges of strips of carpet with a view of adapting the said strips to be worked into rugs and the like; and it has for its object to provide a highly efficient carpet-raveling machine of simple and compact construction and one adapted to be readily and truly adjusted to suit it to carpet strips of various widths and also adapted to remove the ravelings from the strips, as well as to carry off the removed ravelings and dust, dirt, &c., and prevent the same from annoying and interfering with the work of the operator.

Other objects and advantages of the invention will be fully understood from the following description and claims when taken in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view, partly in top plan and partly in section, of the machine constituting the present and preferred embodiment of my invention, the said machine being shown without the means for carrying off ravelings, dust, and dirt, which means is a desirable but not essential adjunct of the machine and may therefore be omitted without involving a departure from the scope of my invention. Fig. 2 is an elevation of one side of the machine as shown in Fig. 1. Fig. 3 is an elevation of the machine, taken at right angles to Fig. 2. Fig. 4 is a detail section taken in the plane indicated by the line 4 4 of Fig. 2 and hereinafter specifically referred to; and Fig. 5 is a view similar to Fig. 2 with the means for carrying off ravelings, dust, and dirt properly applied. Fig. 6 is a detail section on the line 6 6 of Fig. 3, and Fig. 7 is a detail view of the material treated.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is the bed of the machine, which is preferably of cast-iron and is provided with parallel guideways *a* of dovetail form in cross-section, Figs. 1 and 3.

B B are bearing-blocks having dovetail lugs *b* disposed in the guideways *a* of the bed and adapted to be moved in said guideways, and C C are parallel shafts carried by the said blocks B and resting between the blocks B and the complementary caps *c* thereof and respectively equipped with a band-pulley *d* and carpet-raveling disks *e e'*. There are four of the bearing-blocks B, and the same are arranged in pairs, as best shown in Fig. 1, and the blocks of each pair are connected by a bar D, in which there is a transverse threaded aperture *f*. The threads of the said apertures *f* are pitched in opposite directions, so as to adapt one aperture to receive the threaded portion *g* of a feed-screw E and the other aperture *f* to receive the oppositely-threaded portion *h* of the said screw. The feed-screw E is journaled in suitable bearings on the bed A and is disposed at right angles to the shafts C, and hence it will be apparent that when the feed-screw is turned in one direction the shafts C will be moved inwardly or toward each other, while when the screw is turned in the opposite direction the shafts will be moved outwardly or away from each other, also that incident to each manipulation of the screw the shafts and their appurtenances will be moved a uniform distance in one direction or the other. This latter will be appreciated as an important advantage when it is borne mind that it is essential to position the raveling-disks of the shafts equidistant from the line of feed of the strips of carpet in order to uniformly ravel both edges of the strip and properly prepare the same to be worked into what is known as a "fluff" rug or a rug having considerable thickness and a fluffy and rich appearance.

The raveling-disks *e e'* (best shown in Figs. 1 and 2) are provided with peripheral teeth *k*, which are large in proportion to the diameter of the disks, are provided with sharpened forward edges *l*, and are arranged such a distance apart as to form large interdental

spaces m between them. In virtue of the raveling-disks being thus equipped it will be observed that when the said disks are rotated in the directions indicated by arrows in Fig. 2 they will cut the strip of carpet that is being operated on without dragging the strip at right angles to the line of feed. This latter is due, in large measure, to the interdental spaces m , which prevent the disks from interfering with the proper forward feed of the strip of carpet. There are two of the disks $e e'$ complementary to each shaft C, Figs. 1 and 3, and the forward disks e have for their purpose to effect the cutting of the edges of a strip of carpet, while the rear disks e' are designed to pull the ravelings from said edges. From this it follows that the two pairs of disks are materially advantageous, since it is essential to the proper raveling of the edges of a strip of carpet that all the ravelings be neatly removed therefrom without affecting the remainder of the strip.

F, Figs. 1 and 3, is a shaft journaled in suitable bearings on the bed A and disposed at right angles to the shafts C. G, Figs. 2, 3, and 4, is a feed-wheel—i. e., a wheel having peripheral teeth—fixed on the shaft F and disposed between and at right angles to the disks $e e'$, and H is a band-pulley fixed on the shaft F at one side of the bed A. The band-pulleys d and the band-pulley H are designed to be driven from an overhead shaft through the medium of suitably-arranged bands; but because of the difference in diameter between the pulleys d and the pulley H it will be observed that the raveling-disks $e e'$ will be rotated at a much higher rate of speed than the feed-wheel G, as is desirable.

I, Figs. 1, 2, 3, and 4, is the work-support of the machine. The said support comprises parallel sections p , bolted or otherwise connected to the bed A, so as to snugly receive the feed-wheel G between them, and having upper edges r , which describe an arc of a circle and are disposed slightly below the toothed periphery of the feed-wheel G, and also having parallel notches or grooves s at opposite sides of their vertical centers, designed for the passage of the teeth of the raveling-disks. As shown in Fig. 6, the notches or grooves s extend from the upper edges r of the sections p to points intermediate of the upper and lower edges thereof and are gradually diminished in depth from their upper ends to their lower ends and have inner walls curved in conformity to the toothed peripheries of the disks $e e'$.

J is a presser device disposed over the work-support I and having for its purpose to yieldingly hold the strip of carpet that is being operated on down against the toothed periphery of the feed-wheel G. The said presser device comprises a longitudinal central section t and side sections u , bolted or otherwise fixed with respect to the said section t . The section t is provided at its rear end with an

apertured lug v and is also provided with a lower concave edge w , kerfs x in its opposite sides designed for the passage of the teeth of the raveling-disks, and a dovetail piece z , of hardened steel, arranged in its edge w at a point above the uppermost portion of the feed-wheel G, which is the point of greatest wear, and designed to be removed when worn and replaced with a similarly-shaped new piece. The side sections u of the presser device have lower portions or skirts depending below the said concave edge w of the section t and are provided with parallel slots u^3 coincident with the kerfs x of the section t and are also provided at their forward ends with lateral apertured lugs a' . The notches s of the work-support I and the kerfs x and slots u^3 of the presser device J constitute ways which receive the raveling-disks and enable the said disks to operate on the edges of a strip of carpet as the same passes between the feed-wheel and the presser device. The apertured lugs v and a' of the presser device receive bolts b' , and the said bolts, which are fixed to and rise from the bed A and are threaded, carry nuts c' and coiled springs d' , the said springs being interposed between the nuts and the lugs of the presser device and having for their function to exert downward pressure on said lugs of the presser device, and thereby yieldingly hold the presser device against the strip of carpet that is being operated on.

In the practical operation of the machine as thus far described the raveling-disks $e e'$ are first positioned and adjustably fixed relative to the feed-wheel G, the work-support I, and the presser device J and the shafts C and F are set in motion. With this done it will be observed that the feed-wheel G will be rotated in the direction indicated by arrow in Fig. 3 and the raveling-disks in the directions indicated by arrows in Fig. 2; also, that the teeth of the raveling-disks will work through the slots u^3 in the side sections u of the presser device J and the kerfs x in the section t of said device and the notches s in the sections p of the work-support I. From this it follows that when a strip of carpet is placed between the work-support I and the presser device J and in engagement with the toothed periphery of the feed-wheel G the said strip will be fed toward the rear of the machine, and incident to such passage its opposite edges will be uniformly raveled by the disks $e e'$. This uniform raveling of the opposite edges of the strip of carpet is due partly to the before-mentioned uniform positioning of the two shafts C and partly to the side sections u of the presser device J, which side sections guide the strip of carpet in a straight line while the same is being operated on by the disks $e e'$. In its passage toward the rear of the machine the strip of carpet passes at the side of the bolt b' .

In order to carry the ravelings and the dust

and dirt removed from strips of carpet by the described operation of my novel machine away from the machine, with a view of preventing such ravelings, dust, and dirt from annoying and interfering with the work of the operator of the machine, I provide the hood T. (Illustrated in Fig. 5.) This hood is fixed on the machine above and at right angles to the feed-wheel G and over the upper portions of the raveling-disks $e e'$, and it is provided with a central duct c^2 and lateral ducts d^2 , and hence is adapted to receive the ravelings, dust, and dirt at three points. The said hood is also provided with an eduction-opening e^2 in communication with the three ducts mentioned, and when the said eduction-opening is connected with a suction device, which I have deemed it unnecessary to illustrate, it will be apparent that all of the ravelings, dust, and dirt will be carried off immediately after the same are free from the strips of carpet.

It will be gathered from the foregoing that while my novel machine is simple, compact, and inexpensive in construction it is possessed of large capacity and requires but little effort or attention on the part of the operator; also, that notwithstanding its large capacity the machine is adapted to fit the strips of carpet in the best manner to make said strips fluffy at their opposite edges and suitable to be worked into fluff rugs.

I have entered into a detailed description of the construction and relative arrangement of the parts included in the present and preferred embodiment of my invention in order to impart an exact understanding of the said embodiment. I do not desire, however, to be understood as confining myself to the said specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

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

1. In a carpet-raveling machine, the combination of a work-support, means for feeding a strip of carpet over the work-support, a presser device arranged to yieldingly hold the strip of carpet against the feeding means and having sides, whereby it is adapted to guide the strip of carpet, raveling-disks arranged one in front of the other at an angle to the line of feed and at one side of said line, and raveling-disks arranged one in front of the other at an angle to the line of feed and at the opposite side of said line; all of the said disks being provided with peripheral teeth.

2. In a carpet-raveling machine, the combination of means for feeding a strip of carpet, raveling-disks arranged at opposite sides of the line of feed and at an angle to said line, and means common to the two disks for synchronously and uniformly adjusting the same

in opposite directions and relative to the line of feed. 65

3. In a carpet-raveling machine, the combination of means for feeding a strip of carpet, raveling-disks arranged one in front of the other at an angle to the line of feed and at one side of said line, a shaft carrying the said disks, raveling-disks arranged one in front of the other at an angle to the line of feed and at the opposite side of said line, a shaft carrying the latter disks, and means common to the two shafts for synchronously and uniformly adjusting the same in opposite directions and relative to the line of feed. 70 75

4. In a carpet-raveling machine, the combination of means for feeding a strip of carpet, raveling-disks arranged at opposite sides of the line of feed and at an angle to said line, shafts carrying said disks, movable bearings carrying the shafts, a nut connected with the bearing of one shaft and having a thread pitched in one direction, a nut connected with the bearing of the other shaft and having a thread pitched in the opposite direction, with reference to the first-mentioned thread, and a feed-screw having oppositely-pitched threads disposed in the said nuts. 80 85 90

5. In a carpet-raveling machine, the combination of a work-support, means for feeding a strip of carpet over the work-support, a presser device arranged to yieldingly hold the strip of carpet against the feeding means, and having sides, whereby it is adapted to guide the strip of carpet, and one or a plurality of raveling-disks. 95

6. In a carpet-raveling machine, the combination of a work-support having an edge describing an arc of a circle, a feed-wheel resting in said support and having its periphery disposed slightly above the said edge of the same, and a spring-pressed presser device having a concave edge presented to the said edge of the work-support and the periphery of the feed-wheel and also having sides adapted to guide a strip of carpet; said work-support and presser device being further provided with a way disposed at an angle to the line of feed, and a raveling-disk having its periphery disposed in the said way of the work-support and presser device. 100 105 110

7. In a carpet-raveling machine, the combination of a work-support having an edge which describes an arc of a circle, and also having notches, a feed-wheel arranged in said support and extending slightly above the said edge of the same, a presser device arranged over the said work-support and feed-wheel and having kerfs and slots alined with the notches of the former, means for yieldingly pressing the said device downwardly, raveling-disks disposed at an angle to the line of feed and arranged to work through the said notches, kerfs and slots, shafts carrying the said disks, movable bearings carrying the 115 120 125

shafts, a nut connected with the bearing of
one shaft and having a thread pitched in one
direction, a nut connected with the bearing of
the other shaft and having a thread pitched
5 in the opposite direction, and a feed-screw
having oppositely-pitched threads disposed in
the said nuts.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

OTTO C. N. GUNDERSEN.

Witnesses:

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G. M. ANNIS.