

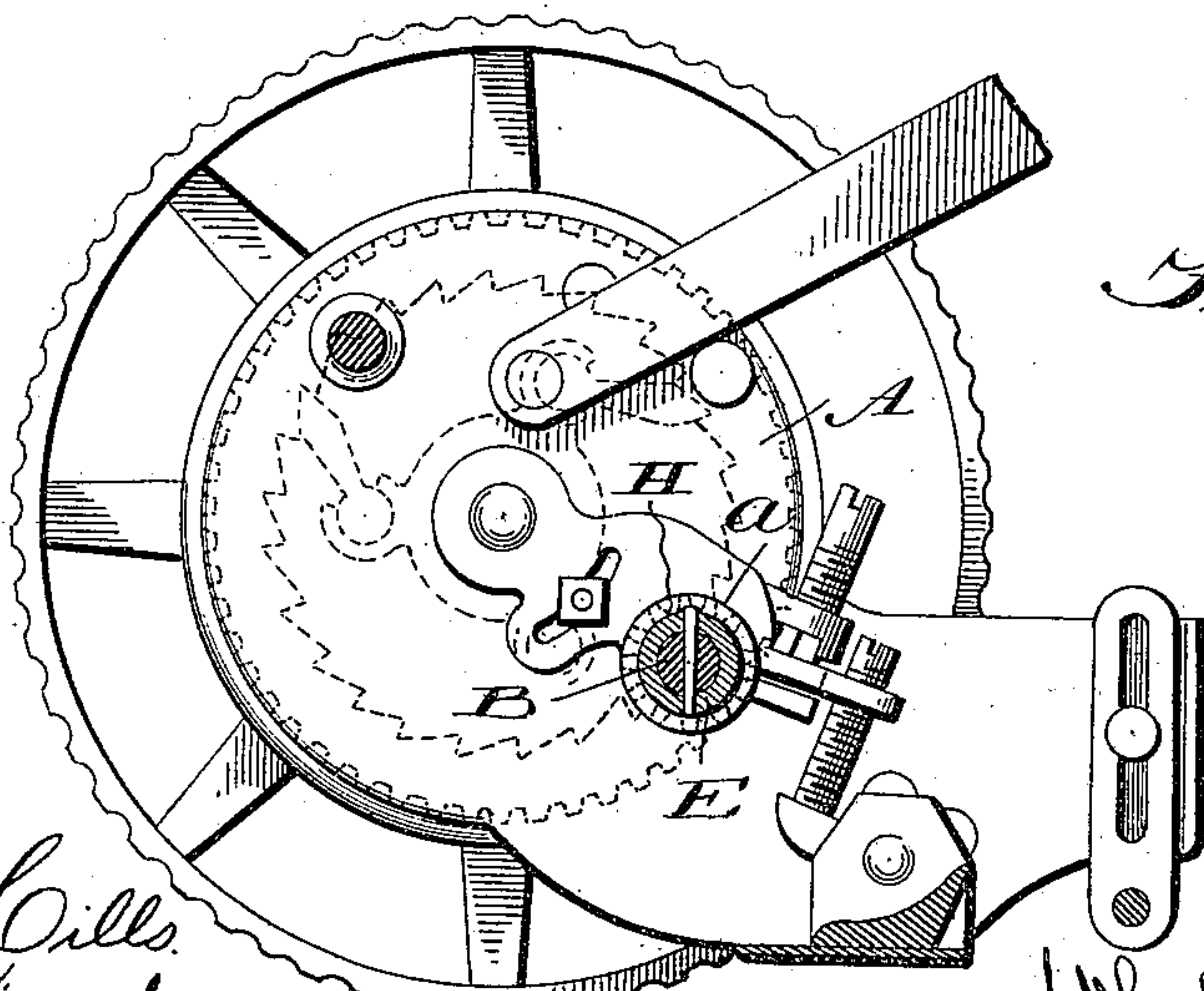
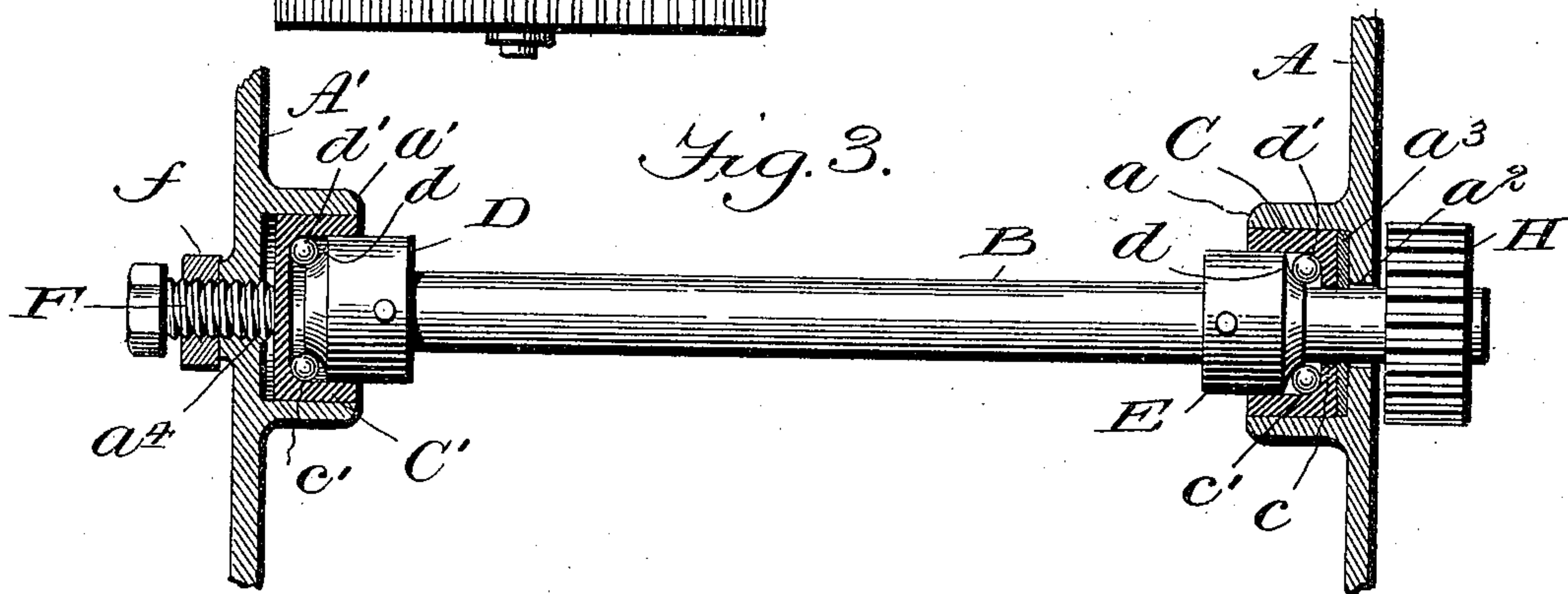
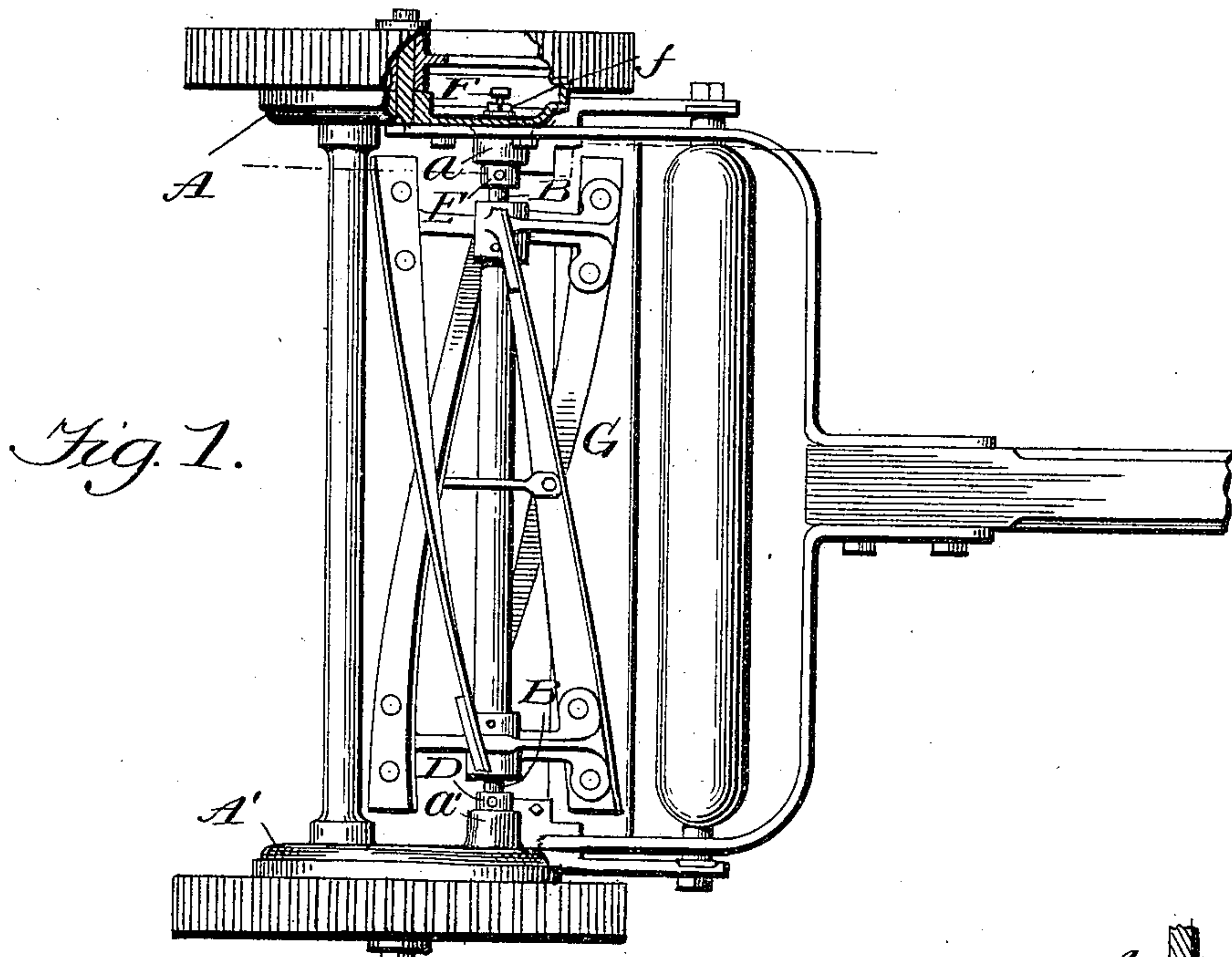
No. 617,671.

Patented Jan. 10, 1899.

T. COLDWELL.
LAWN MOWER.

(Application filed July 22, 1898.)

(No Model.)



Witnesses

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THOMAS COLDWELL, OF NEWBURG, NEW YORK.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 617,671, dated January 10, 1899.

Application filed July 22, 1898. Serial No. 686,593. (No model.)

To all whom it may concern:

Be it known that I, THOMAS COLDWELL, a citizen of the United States, residing at Newburg, in the county of Orange and State of New York, have invented certain new and useful Improvements in Lawn-Mowers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in lawn-mowers; and it consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a top plan view of a lawn-mower embodying my invention. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is an enlarged sectional view of the cutter-shaft and its bearings.

The object of my invention is to provide a lawn-mower with ball-bearings for supporting its rotary cutter-shaft and with devices for adjusting the same positively and automatically to compensate for the wear of the parts to insure the proper relations of the various parts at all times.

In the drawings, A A' represent the side frames of a lawn-mower, each provided on its inner face with an annular flange a and a' , respectively, which forms a socket to receive the cup of a ball-bearing. The plate A is provided with a central aperture a^2 in the center of the socket a to permit the passage of the shaft B therethrough.

Within the socket a is placed the ball-cup C, having an aperture c in its rear wall to register with the aperture a^2 and provided with a ball-race c' , the said cup being fitted accurately in said socket, but not rigidly attached thereto. C' represents a similar cup which is inserted in the socket a' , this cup being provided with a ball-race c' , but having no aperture in its rear wall.

The shaft B is provided at one end with a cone D, rigidly secured thereto and adapted to pass into the cup C', said cone having a ball-race d , and a series of balls d' are inserted

between the ball-races of the cone and cup, so as to form a roller-bearing. The shaft B extends through the apertures c and a^2 , before described, and is provided within the cup C with a cone E, similar to the cone D and secured rigidly to the shaft, said cone having a ball-race d , and a series of balls d' are also provided between the ball-races of the cone and cup. Before the cup C is placed in position in the socket a an elastic device or cushion is inserted in the socket a , consisting in this instance of a washer of rubber a^3 , although a coiled spring or other equivalent device might be employed.

The side frame A' is provided with a threaded aperture a^4 centrally of the socket a' , in which is inserted an adjusting set-screw F, which engages the rear wall of the cup C', and said screw is provided with a jam-nut f . By means of this screw the cup C' and the shaft can be adjusted laterally toward the other bearing, so as to simultaneously adjust both bearings with a single screw. The cup C' will be guided at all times by the flanges forming the socket a' . The screw F will be set so as to slightly compress the cushion or elastic washer a^3 , so that in case the parts wear slightly the elastic washer will expand and move the cup C toward the other bearing, and thus compensate for such wear and keep both the bearings tight and properly adjusted. If there should be such wear as will not be sufficiently taken up by the elastic washer, the set-screw F can be used to tighten up both bearings simultaneously from the outside of the machine-frame without disturbing the bearings in any way.

G represents the spiral cutting-blades of the rotary knife, which are so placed around the shaft B that when the knife is in use the end thrust caused by the spiral of the knife will be toward the set-screw F, so that it meets a solid unyielding resistance and will not interfere with the adjustment of the bearings in any way.

H represents the driving-pinion, which is placed on the end of the shaft which projects through the apertures c and a^2 , the shaft being driven from one end only.

It will also be observed that the cones D and E are provided with elongated cylindrical surfaces which fit as snugly as possible within

the cups C C', so as not to interfere with the rotation of the shaft, and this construction produces practically dust-proof bearings.

What I claim, and desire to secure by Letters Patent, is—

1. In a lawn-mower, the combination with the side plates provided on their inner faces with bearing-sockets, of a solid bearing-cup inserted in one of said sockets, an adjusting-screw extending through the side plate and the bottom of said socket and engaging the said cup, the opposite side plate being provided with an aperture for the passage of the shaft, concentric with its bearing-socket, a cup engaging said socket and having a shaft-aperture therein and a shaft provided with cones rigidly secured thereto and revolving in said cups, whereby the said solid cup and the shaft can be adjusted longitudinally toward the other bearing-cup, by said adjusting-screw, substantially as described.

2. In a lawn-mower, the combination with the side frames provided with bearing-sockets on their inner faces, of the bearing-cups inserted movably in said sockets, the shaft provided with cones engaging said cups, an elastic take-up device interposed between one of said cups and its socket, and an adjusting device for the other cup for adjusting it and the shaft longitudinally of the shaft toward the said take-up device, whereby said elastic take-up exerts a constant pressure on its adjacent bearing-cup, and the shaft, longitudinally thereof, keeping the bearings at both ends of the shaft tight and compensating for the wear thereof, substantially as described.

3. In a lawn-mower, the combination with the side frames provided with bearing-sockets, of the bearing-cups inserted movably in said sockets, the shaft provided with cones engaging said cups, an elastic take-up device interposed between one of said cups and its socket, an adjusting device engaging the

other of said cups for adjusting it and the shaft longitudinally toward the other cup, and a spiral cutting-blade on said shaft, the cut of the spiral blade tending to thrust the shaft away from said elastic take-up device and toward said adjusting device, substantially as described.

4. In a lawn-mower, the combination with the side frames provided with bearing-sockets on their inner faces, of the bearing-cups inserted movably in said sockets, the shaft provided with cones engaging said cups, an elastic take-up device interposed between one of said cups and its socket, an adjusting-screw engaging the other cup for adjusting it longitudinally of the shaft, and a spiral cutting-blade carried by said shaft, the cut of said blade tending to thrust said shaft in a direction toward the said adjusting-screw, substantially as described.

5. In a lawn-mower the combination with the side frames provided on their inner faces with bearing-sockets, of the bearing-cups, inserted movably in said sockets, the shaft extending through one of said cups and the adjacent side frame, and provided with a driving-pinion on the outside of said side frame, bearing-cones on said shaft engaging said cups, balls inserted between said cones and cups, an elastic washer interposed between the cup and its socket adjacent to the driving-pinion, a set-screw extending through the side wall adjacent to the opposite end of the shaft and engaging the other cup, and a spiral cutting-blade on said shaft, having its end thrust in a direction toward said set-screw, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

THOMAS COLDWELL.

Witnesses:

WILLIAM J. WYGANT,
HOWARD THORNTON.