

H. H. DILLE & E. W. McGUIRE.  
Lawn Mower.

No. 231,286.

Patented Aug. 17, 1880.

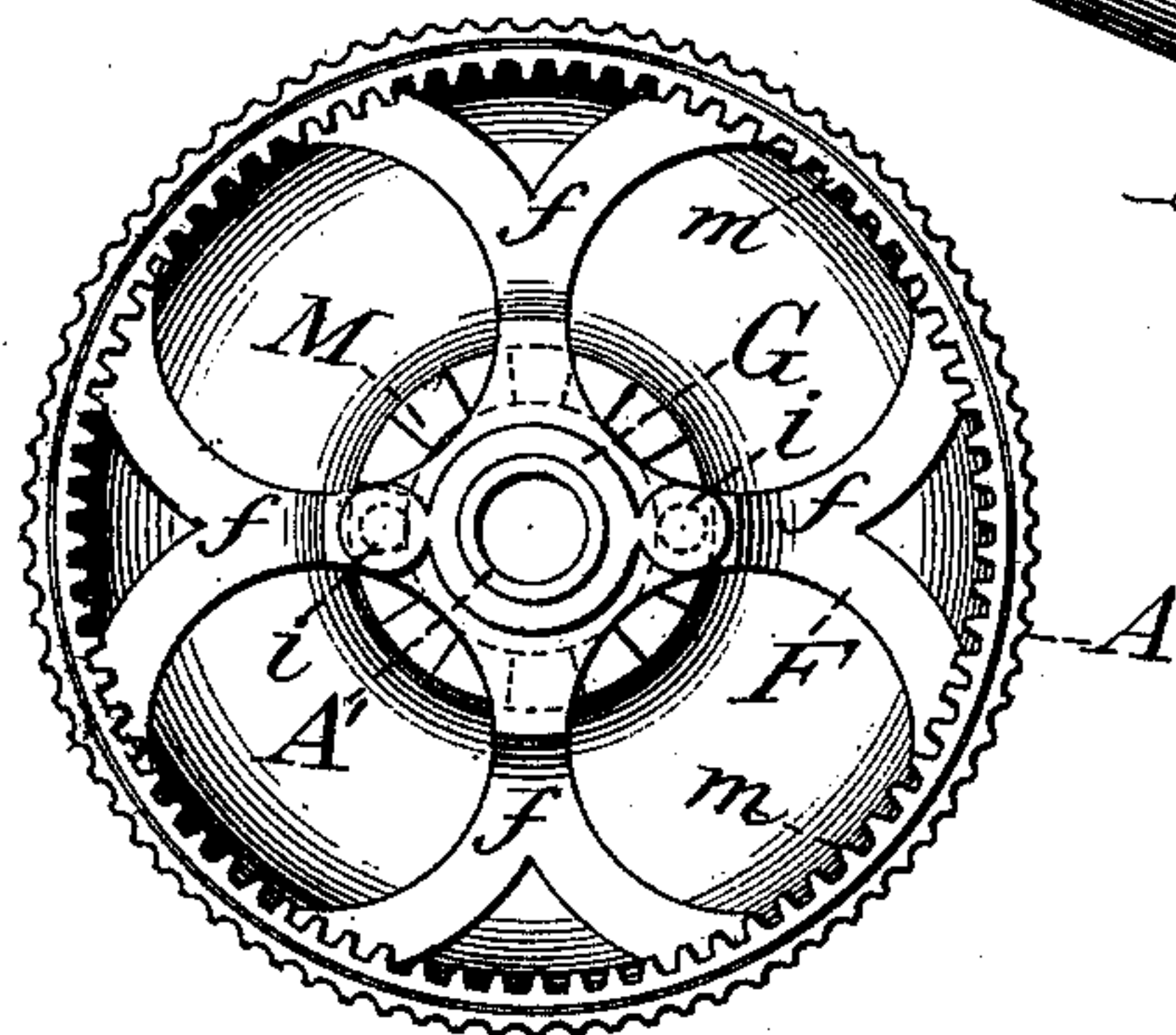
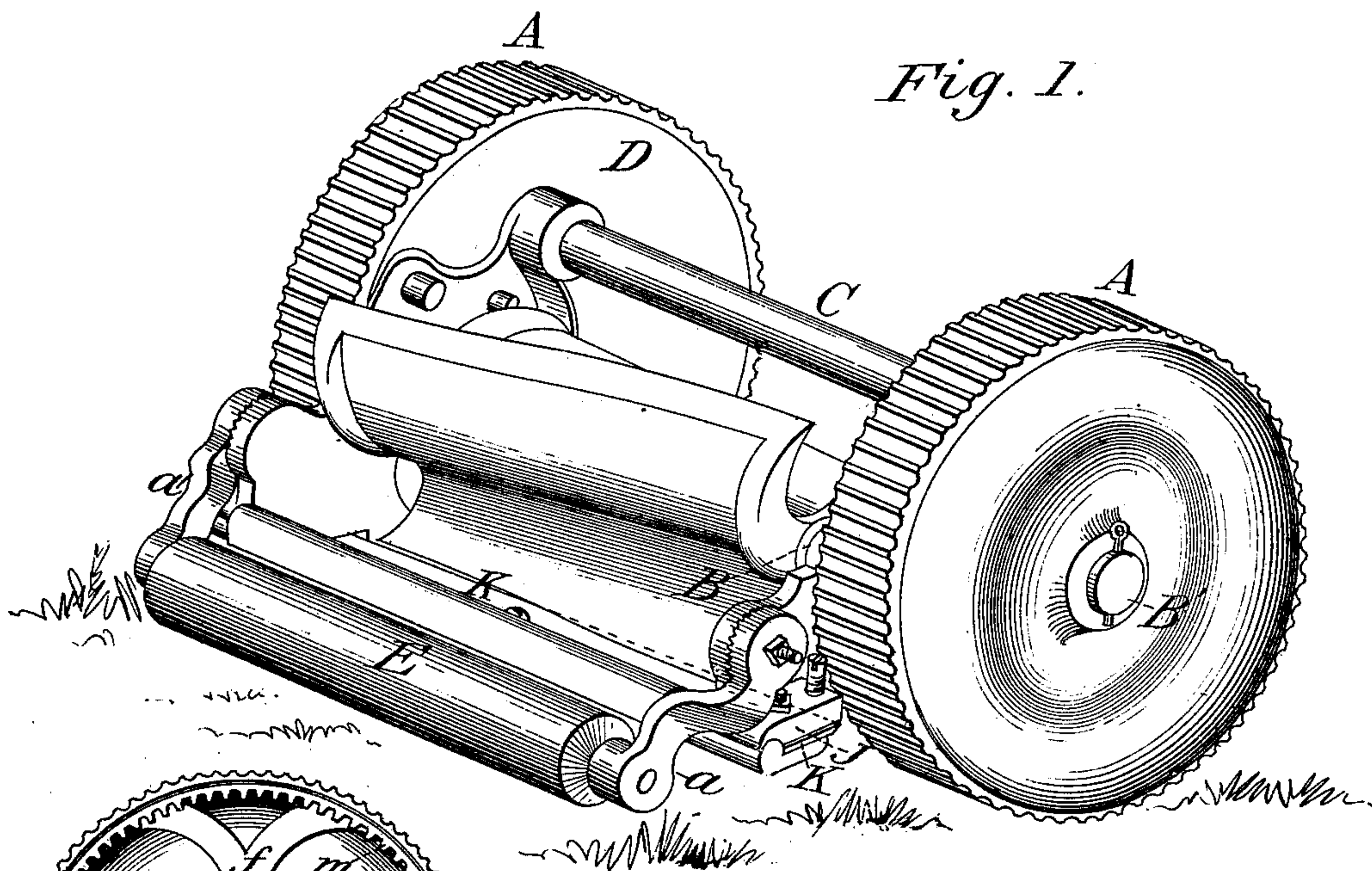


Fig. 2.

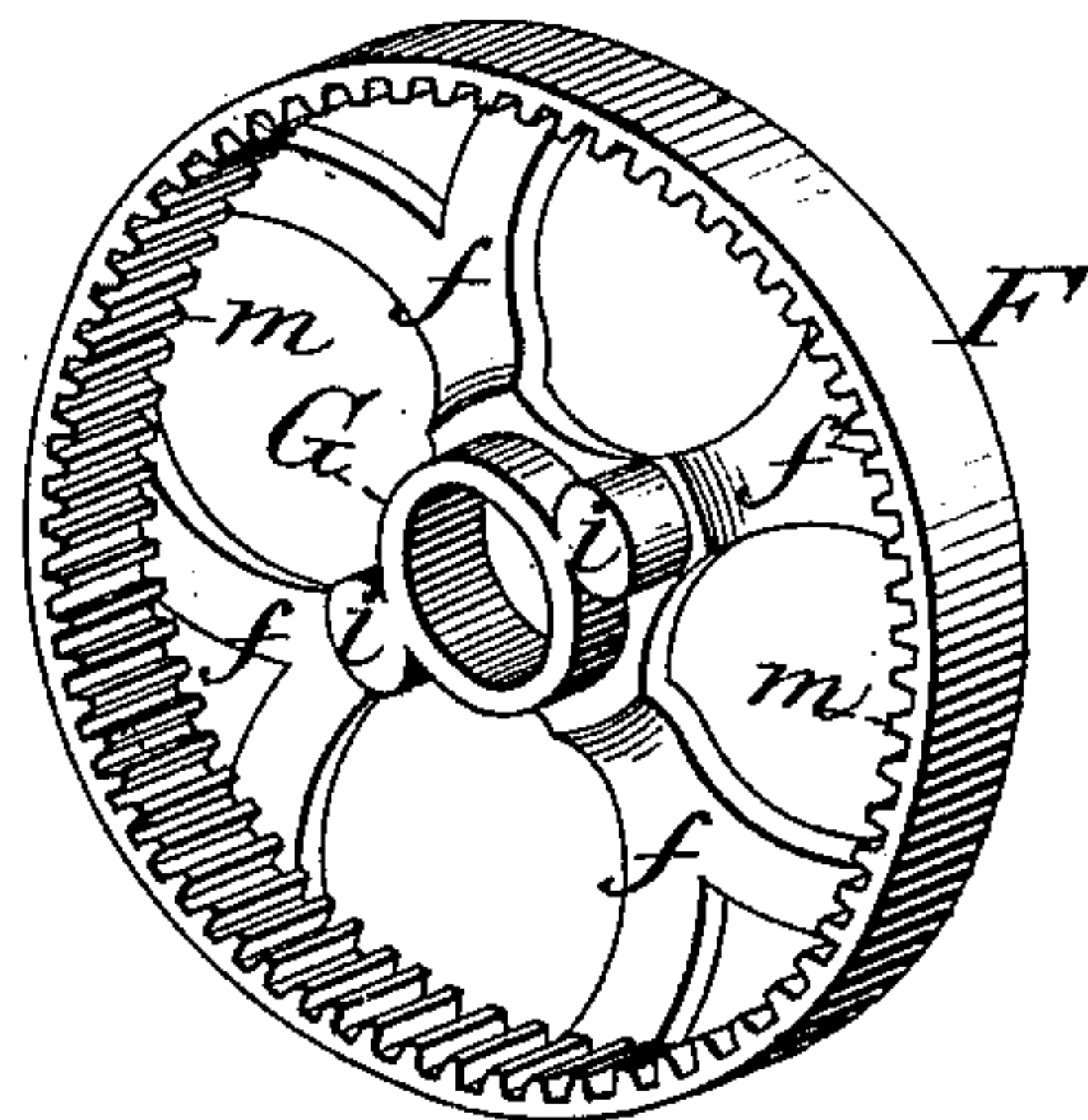


Fig. 3.

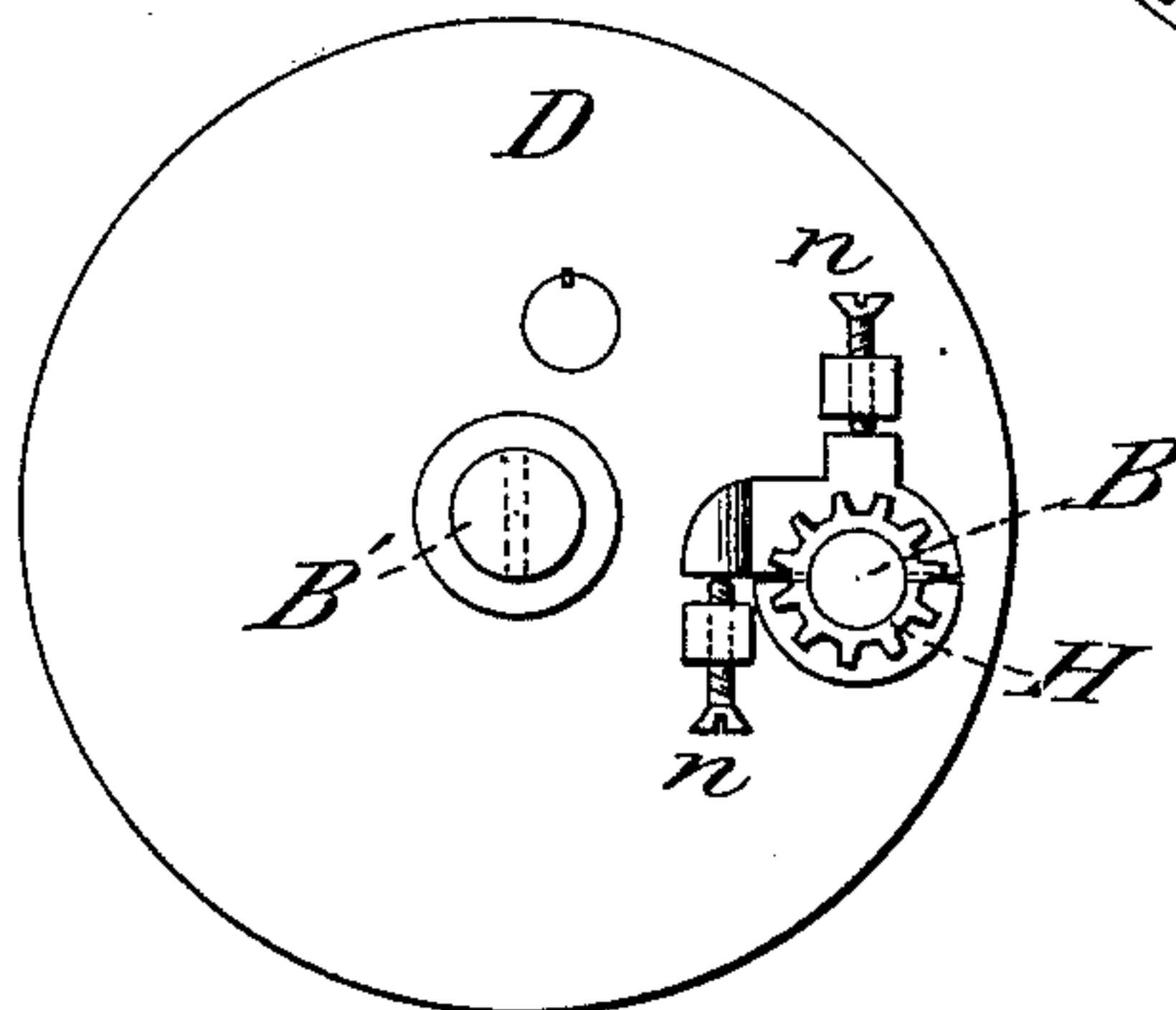


Fig. 4.

Attest:

W. J. Dennis  
P. P. Kim

Inventors.

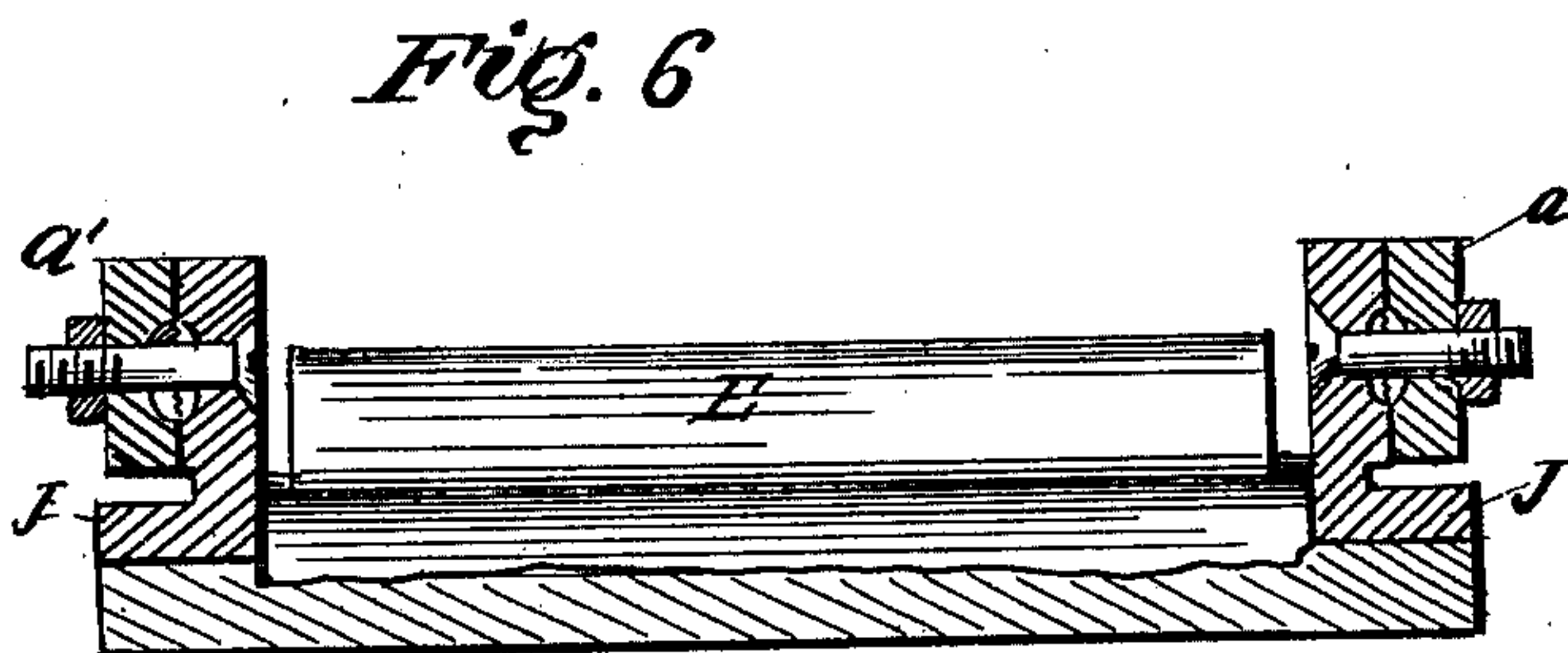
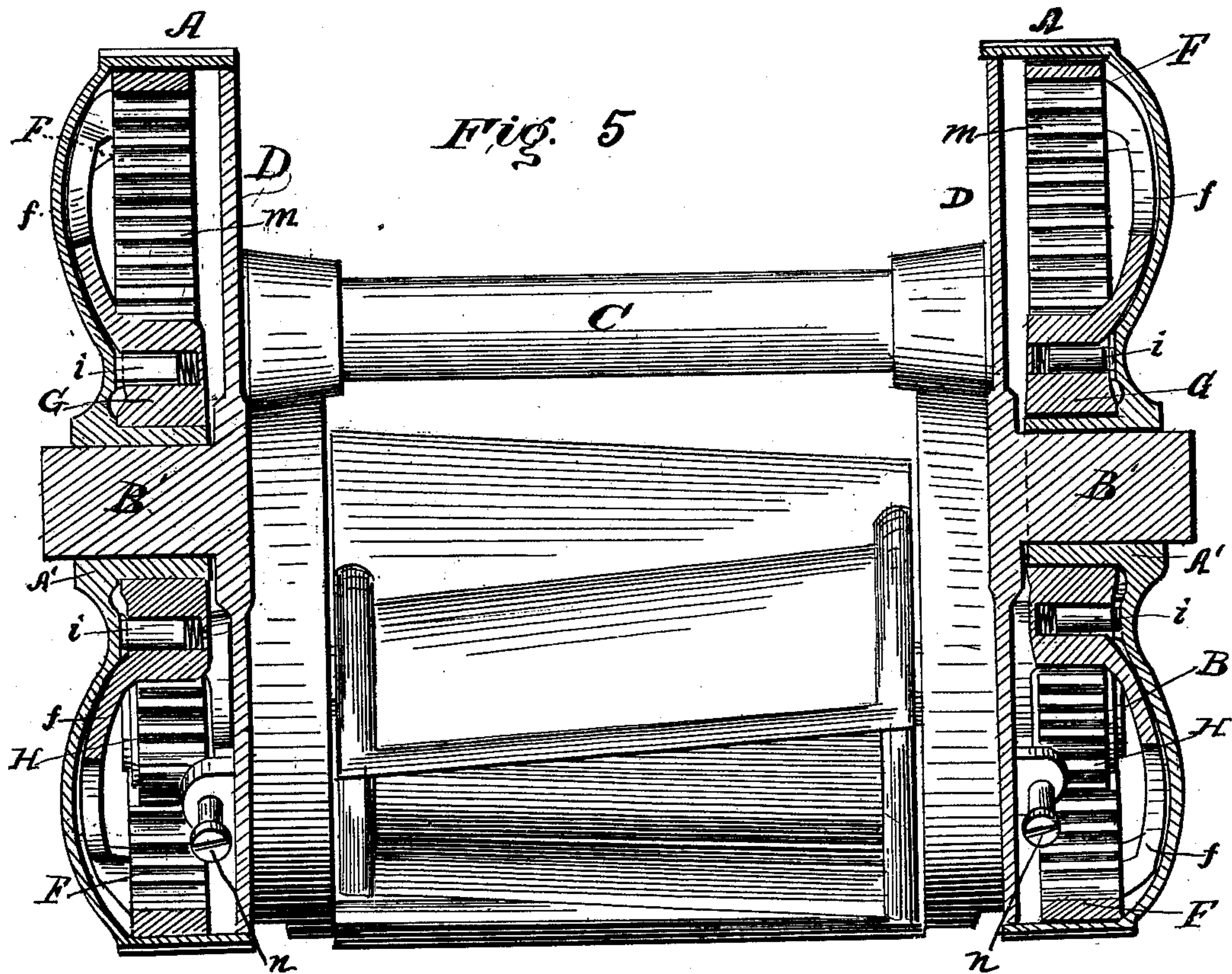
Harry H. Dille  
Edward W. McGuire



H. H. DILLE & E. W. McGUIRE.  
Lawn Mower.

No. 231,286.

Patented Aug. 17, 1880.



*Attest*  
John G. Birkenburg.  
Albert H. Krause.

*Inventor*  
Harry H. Dille.  
Elwood W. McGuire  
By Attorney DeWitt C. Allen



# UNITED STATES PATENT OFFICE.

HARRY H. DILLE AND ELWOOD W. McGUIRE, OF RICHMOND, INDIANA.

## LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 231,286, dated August 17, 1880.

Application filed August 15, 1879.

*To all whom it may concern :*

Be it known that we, HARRY H. DILLE and ELWOOD W. McGUIRE, of the city of Richmond, county of Wayne, and State of Indiana, have invented certain new and useful Improvements in Lawn-Mowers; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the drawings which accompany this specification, forming a part of the same, and to the letters of reference marked thereon.

In the drawings, Figure 1 is a perspective view of our machine. Fig. 2 is an inside view of the driving-wheel, showing the gearing and its arrangement. Fig. 3 is a perspective view of a shell-wheel which forms part of the gearing, contained within the periphery of the driving-wheel. Fig. 4 is a top view of the circular plate which forms the inside wall of the driving-wheel, provided with a journal or axle, and a view, also, of the pinion which operates the revolving spiral flanges. Fig. 5 is a vertical section of the machine through the driving-wheels. Fig. 6 is a transverse section through the adjusting-arms and frame carrying the stationary and revolving cutters.

To enable those skilled in the art to make and use our improvements, we will proceed to describe the same.

The object of our invention is to reduce the number of working parts of a mower, and to reduce the cost of the same, while rendering it more effective and of easier draft; and to this end the invention consists in the general construction, combination, and arrangement of parts, all as will be hereinafter fully described, and specifically pointed out in the claims.

In the drawings, A A represent the driving-wheels, having ribs or projections on the tread to prevent slipping. B is a shaft provided with spiral flanges, the edges of which are brought to a uniform distance from the center of the shaft, so that the revolutions of the cylinder or shaft will bring the edges of the flanges in a line parallel with the axis of the shaft B.

A connecting or brace rod, C, is rigidly attached to the circular plates D D, which plates D D are fixed and form a part of the frame, and at the same time constitute the inside walls of the chambers of the driving-wheels A A.

A pressure-roller, E, is attached to the rear of the frame by means of curved arms *a a'*. These arms *a a'* are provided with corrugated surfaces at the point where they are attached to the frame of the mower, and the frame at that point is similarly provided, so that by the means of a screw-bolt the connection between the arms *a a'* and the frame is made rigid, and the cutter of the mower may be raised or lowered at the pleasure of the operator.

The handles or handle may be attached to our machine in any convenient manner.

In Fig. 2, A is the driving-wheel, which is cup-shaped or concave, the cavity forming a circular chamber the outer edges of which are the rims or tread-surface of the wheel, the depth of the chamber being nearly equal to the breadth of tread of the wheel.

A' is the hub of the driving-wheel, projecting inwardly sufficient to form an axle or journal for the shell-wheel F.

The plate D is provided with an axle, B', at its center, upon which the driving-wheel A revolves, having its bearing at the hub A'. The axle B' supports the frame-work of the machine. Attached to the inside surface of the plate D, and near its periphery, a pinion is permanently fixed upon the shaft B of the revolving spiral flanges, the said shaft B having its end bearings provided in the plate D. Each end bearing for the shaft B is constructed in two pieces, one of which is separate and detachable, and is made adjustable by means of set-screws *n n*.

F is a shell-wheel fitting just within the rim of the driving-wheel A, provided with cog-gear on the inner surface of its circumference, and provided with arms *f f* and a hub, G, which is fitted to and revolves upon the outer surface of the hub A' of the driving-wheel A. The cog-gear *m m* engages with and operates the pinion H on the shaft B. F being a separate and independent shell gear-wheel, it can be easily replaced by a new one in case of the teeth being broken, thus obviating the expense of a new drive-wheel, which is necessary where the teeth are formed upon the inner face of the drive-wheel; and the pinion being permanently fixed upon the rotary cutter shaft or spindle, all wear between the shaft or spindle and inner side of the pinion is entirely obviated.

That portion of the inner surface of the driv-



ing-wheel A immediately surrounding the hub A' is provided with a ratchet, M, and two of the arms *ff* of the shell-wheel F are provided with puppet-pins inserted in proper chambers made in the arms *ff*, the said puppet-pins *ii* resting upon spiral springs at the bottom of the chambers to insure their regular action. The heads of the puppet-pins *ii* are beveled on one side to allow them to slip over the inclined portions of the ratchet-teeth when operated the reverse way, while they are engaged firmly in the teeth of the ratchet and give the required motion to the shell-wheel F when the forward motion is communicated to the machine.

J J are lugs or ears attached to and forming a part of the frame, to which is attached the knife K, which is of ordinary construction, and which can have its edge raised or lowered, as required, by set-screws, the lugs J J being provided with semicircular recesses to allow the journals of the knife-stock to turn for that purpose.

The driving-wheels A A are kept in place by linchpins passing through the axles in the ordinary manner.

We are aware that mowers have been constructed in which the rotary motion of the spiral-flange shaft is communicated by the driving-wheel direct, and that the devices producing this motion are placed inside the driving-wheel. This we do not claim; but

What we do claim as new, and desire to secure by Letters Patent, is—

1. In a lawn-mower, the combination of the drive-wheel open at one side and having a ratchet formed or secured on the inner face thereof, and mounted on the axle of an inclosing-plate, and a separate or independent interior shell gear-wheel adapted to mesh with a pinion for imparting motion to a rotary cutter, having arms provided with beveled puppet-pins for engaging with said ratchet when the drive-wheel is moving in one direction and sliding over the same when moving in an opposite direction, substantially in the manner herein shown and described.

2. In a lawn-mower, the combination, with a hollow drive-wheel open at one side and having interior mechanism adapted to operate a pinion for imparting motion to a rotary cutter, of an inclosing-plate provided with a bearing projecting through said plate and formed in two parts, one of which is adjustable for the shaft of the pinion, and devices for adjusting said bearing arranged inside of the drive-wheel, substantially in the manner herein shown and described.

HARRY H. DILLE.  
ELWOOD W. McGUIRE.

Witnesses:

W. T. DENNIS,  
P. P. KIRN.