F. E. DRURY & C. H. PAXSON.

Lawn Mower.

No. 237,099. Patented Feb. 1, 1881.

Fig 1.

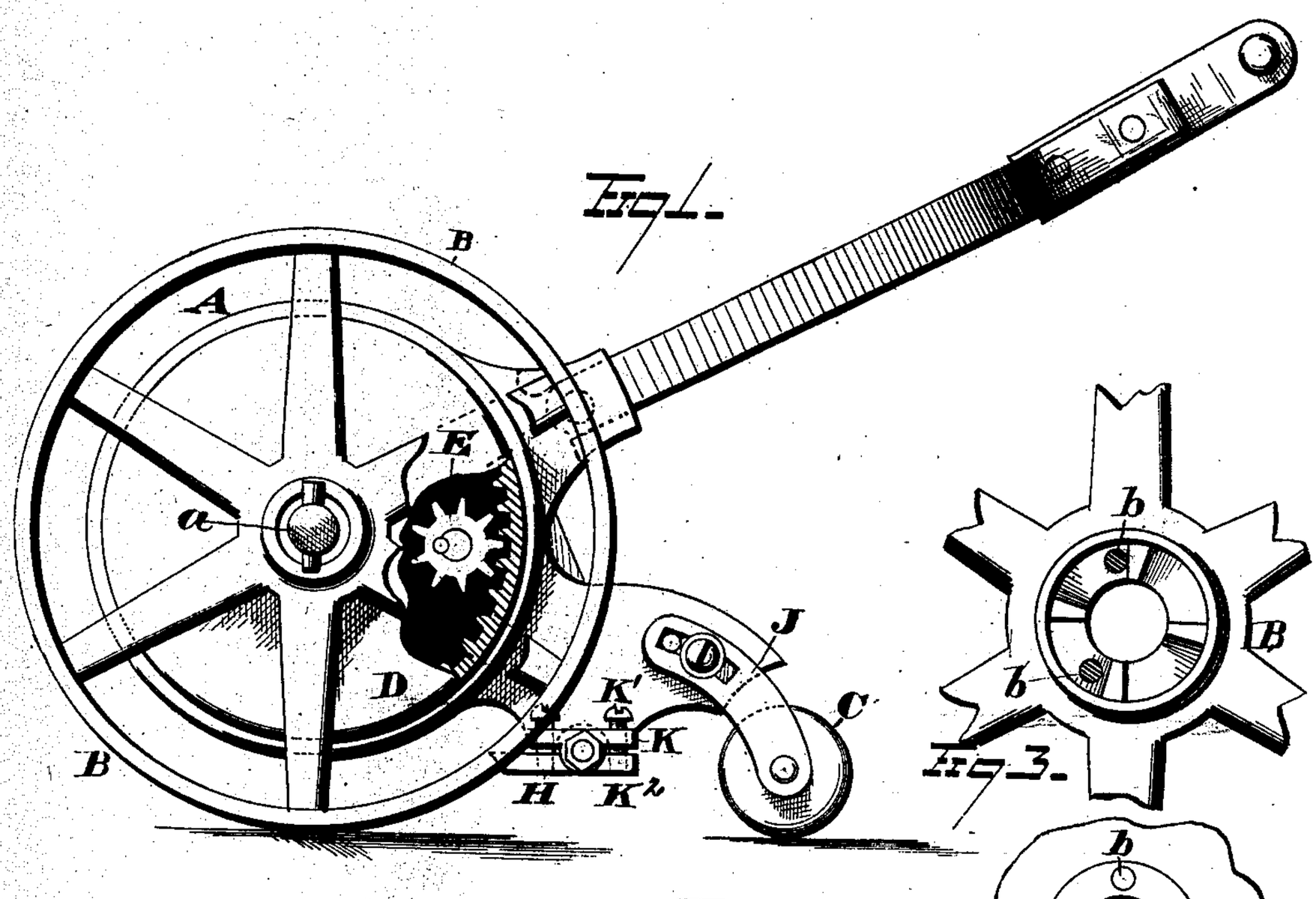
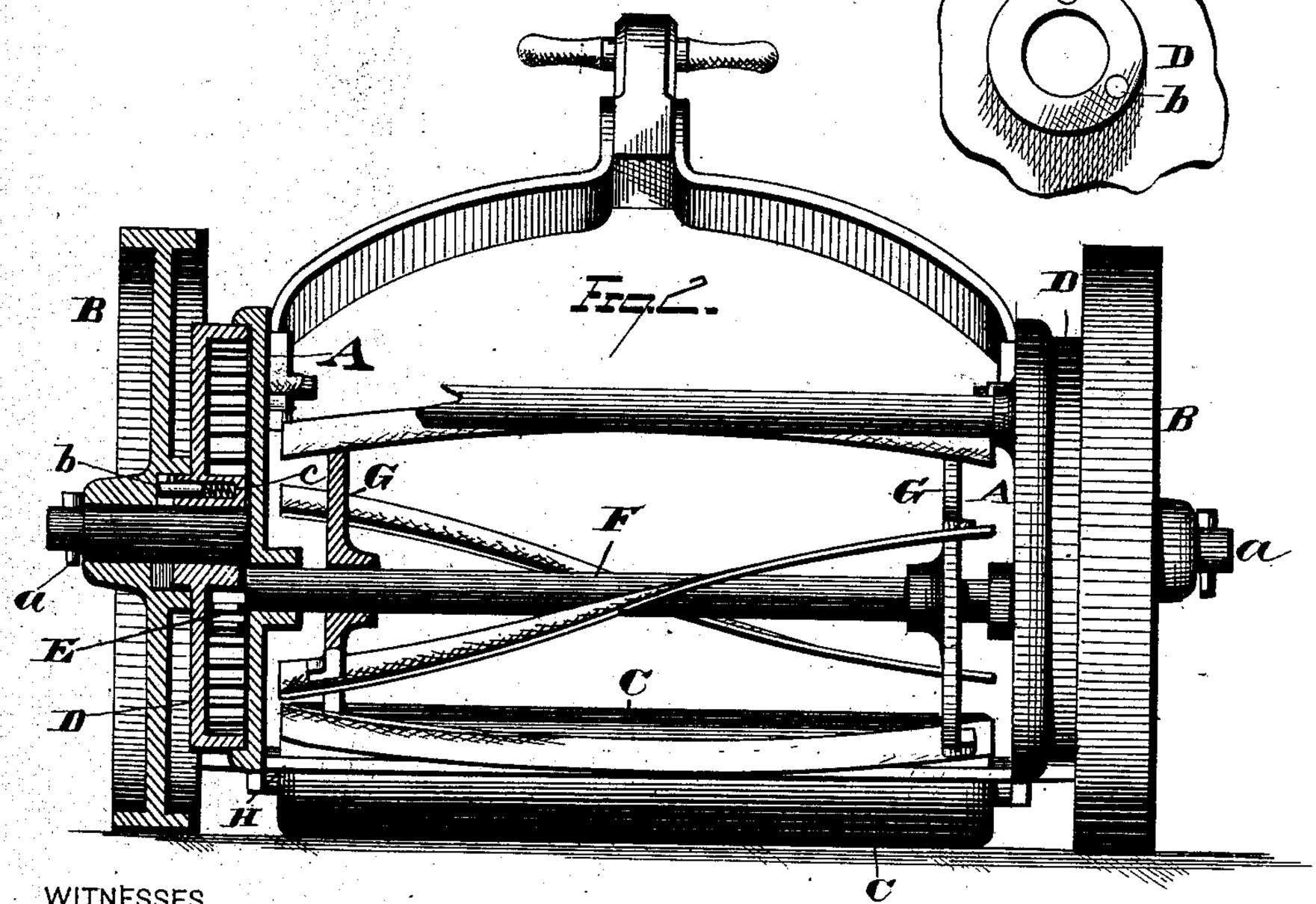


Fig 3.

Fig 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANCIS E. DRURY AND CHARLES H. PAXSON, OF CLEVELAND, OHIO;
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LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 237,099, dated February 1, 1881.

Application filed January 28, 1879.

To all whom it may concern:

Be it known that we, FRANCIS E. DRURY and CHARLES H. PAXSON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lawn-Mowers; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to that class of lawn-mowers in which a rotary head is provided with spiral blades acting in connection with a ed blade, and in which motion is imparted to the rotary head from the driving or ground wheels.

The invention consists in the parts and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, showing the construction and arrangement of the parts. Fig. 2 is a transverse vertical section, taken in part through the ground-wheel and in part through the center of the cutter-head. Fig. 3 represents, in detail, views of the inner faces of the hubs, respectively, of the ground and concentric gear wheels.

A represents the frame of the machine, supported by two ground-wheels, B, and a roller, C. The ground-wheels are mounted loosely on journals *a* on the main frame, and by the side of each wheel there is mounted loosely on the same journal an internally-toothed gear-wheel, D. The inner face of the hub of the ground-wheel B is provided with ratchet-teeth to receive clutch-pins *b*, mounted in the hub of the gear-wheel D and pushed outward by spiral springs *c*. This arrangement permits the ground-wheels to turn backward freely and loosely, but causes them to drive the gear-wheel D when turned forward. It is obvious that if the parts are so transposed that the ratchet-teeth be on the gear-wheel D and the clutch-pins in the hub of driving-wheel B they will perform the same office.

The wheels D gear into and drive the pinion E on the end of a transverse shaft, F, mounted on the main frame and sustaining the rotary cutter-head G. The cutter-head is provided, as usual, with spiral blades or knives, arranged to act in connection with a fixed knife or cutter-bar, H, located between the ground-wheels and the roller. The cutter-bar H is secured to the main frame of the machine by a metal rod, which passes through lugs on either end of the cutter-bar H and through holes in the frame of the machine. Said rod is provided with a nut on each end, by which means the main frame or sides of the machine and the cutter-bar are securely bound together. The cutter-bar is so constructed in relation to the main frame that while it is securely attached to the frame it is free to rock, to a limited extent, on the rod or bolt which attaches it thereto, to provide for the adjustment which may be made necessary by the wear of the knives. The sides of the main frame are provided with lugs or extensions K, through which pass adjusting-screws K′. The cutter-bar H is also provided with corresponding extensions K^2, and against which the adjusting-screws bear on each side of the pivotal point.

It will be observed that the cutter-bar may be adjusted in the exact position required with reference to the blades of the rotary head by raising or depressing the adjusting-screws.

In order that the height of cut may be regulated at will the roller is made adjustable by mounting it in arms J, which are provided with slots to receive clamping bolts or screws.

The outer side of the main frame is provided with a circular extension or rim, into which the revolving gear-wheel D fits. Said gear-wheel having a web or solid back, and fitting into this rim, a complete protecting-case is thus formed for the gearing.

It will be noticed that the driving pole or handle terminates in a spring-fork, which engages with studs fixed upon the stationary frame of the machine, and upon which the said forked ends spring. On each side of the studs on the main frame are fixed stops, which determine the position of the driving-handle. These stops, however, are sufficiently far apart to allow of a limited amount of free play to the handle. The handle-studs are sufficiently long

to admit of the reversal of the handle when it is desired to sharpen the cutter by running the machine backward. To accomplish this sharpening, the driving-wheels, which have right and left hand clutches, are changed from one side of the machine to the other. This will reverse the motion of the revolving cutter when the machine is run backward. The driving-handle is then reversed and the stationary cutter-bar adjusted in sufficiently-close juxtaposition with the revolving cutter. Any grinding solution, such as oil and emery, is applied to the knives, when, by running the machine backward, the knives will be sharpened and ground to an accurate cutting relation with each other.

Another feature of our device is the detachably-attached bent driving tongue or pole. If too high or too low to suit the convenience of the operator, it may be readily detached, turned over and attached, thereby raising or lowering the outer end of the handle, as the case may be. This is accomplished by forming the spring-fork portions of the tongue curved in an edgewise direction, thereby causing the handle proper, in its connection with said fork portions, to be inclined upwardly when the tongue is in one position, and to be inclined downwardly when the tongue is in reversed position. This feature and manner of adjustability, so far as we are aware, is novel with this invention.

What we claim is—

1. A lawn-mower having a loose ground-wheel and an independent internally-toothed gear-wheel, the latter forming, in combination with the main frame, a protecting-case for the gearing, substantially as shown.

2. The combination of a forked spring-handle and lugs on the main frame extending beyond the sides of the handle-stops, to allow of the reversal of the driving-handle, substantially as described.

3. In combination with a lawn-mower, a detachably-attached bent pole or driving-handle, by reversing which its height may be regulated, substantially as shown.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRANCIS E. DRURY.
CHARLES H. PAXSON.

Witnesses:
L. L. LEGGETT,
JNO. CROWELL, Jr.