S. A. HAND.

Lawn-Mowers.

No. 158,794. Patented Jan. 19, 1875.

Fig. 1.

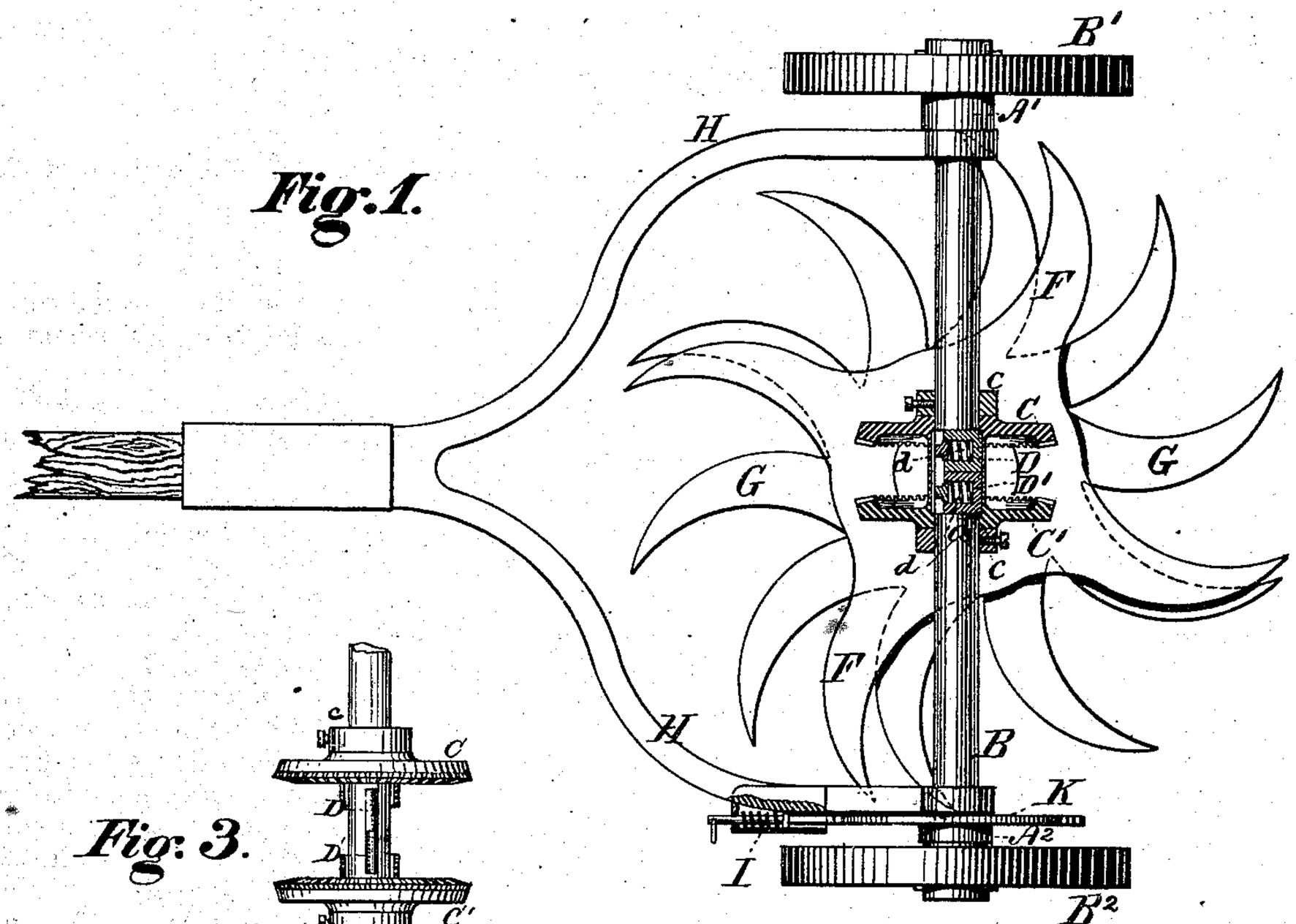
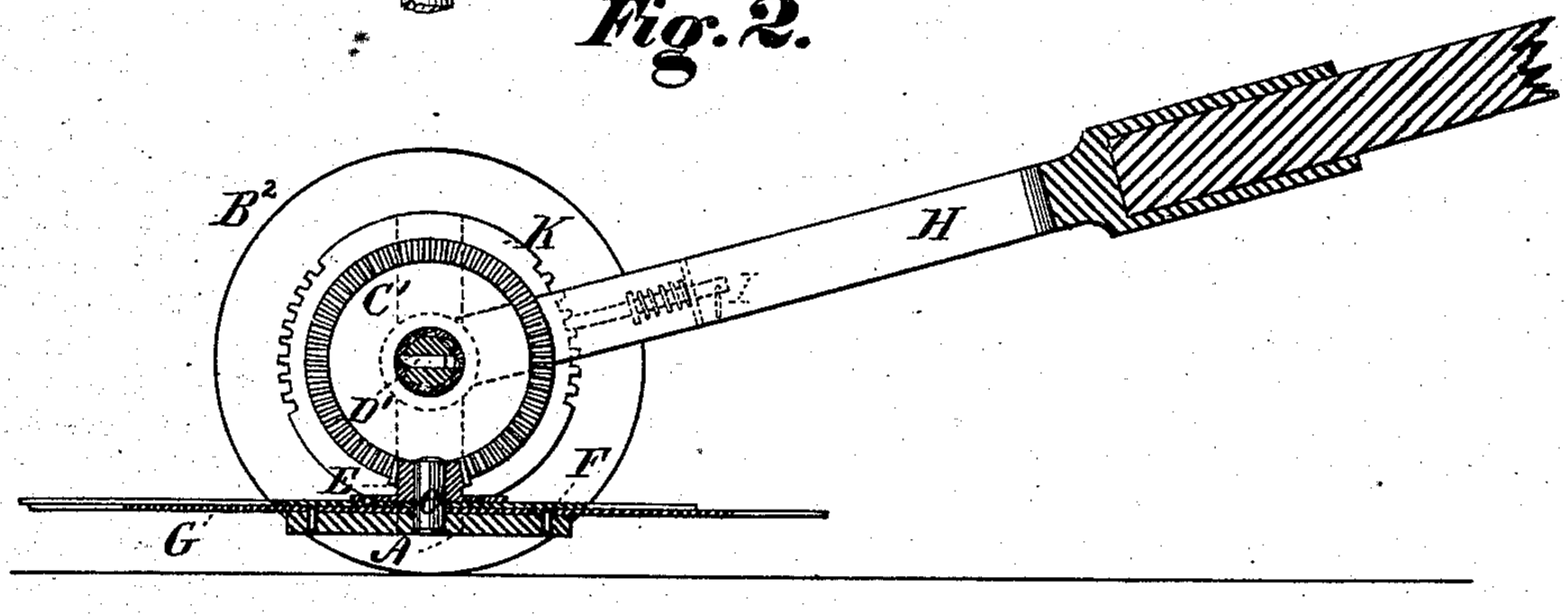


Fig. 3.

Fig. 2.



Witnesses.

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S. ASHTON HAND, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. **158,794**, dated January 19, 1875; application filed November 28, 1874.

To all whom it may concern:

Be it known that I, SAMUEL ASHTON HAND, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Lawn-Mowers, of which the following is a specification:

The object of my invention is to provide a simple and economical lawn-mower, adapted to be conveniently operated by hand, and so constructed as to enable the cutting mechanism to operate continuously, irrespective of the direction in which the machine is moved; to which end my improvement consists in combining with a stationary and a rotating cutter a driving-axle and ratcheted bevel-gearing for operating the rotating cutter, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan or top view, partly in section, of a lawn-mower embodying my improvements; Fig. 2, a vertical central section of the same; and Fig. 3 is a plan of the shaft, with the pawls exposed.

The frame of the mower consists of a transverse bar, A, having upwardly-projecting arms A^1 A^2 on its ends, which arms provide bearings for a driving-axle, B, having driving-wheels B^1 B^2 secured upon it. Bevel-gears C C′ are mounted loosely upon the driving-shaft B, being held in position endwise by collars *c*, fast upon the shaft. The hubs of the gears C C′ are prolonged, and ratchet-teeth are formed upon the inside of the hubs. The ratchet-teeth of the gears C C′ are inclined in reverse directions, and are respectively provided with pawls D D′, placed in a recess formed in the driving-axle and set out by spiral springs *d*. The gears C C′ mesh into a bevel-pinion, E, to which is secured the rotating cutter or sickle F, which in this instance is shown as having four curved arms or blades. The bevel-pinion and cutter rotate upon a vertical stud, *e*, centrally secured to the transverse frame-bar A, this stud passing through an opening in the stationary cutter G, which is provided with a series of curved blades arranged in a circle, and is firmly secured to the bar A, immediately beneath the rotating cutter.

From this arrangement it will be seen that one or the other of the bevel-gears will be made fast upon the driving-axle by its pawl, and will rotate the pinion E and cutter F, irrespective of the direction of movement of the machine, and, further, that such rotation of the cutter will always be in the same direction.

The machine is propelled by a bail, H, the arms of which are journaled upon the driving-axle B adjacent to the bearing-arms A^1 A^2.

A recess is formed in the outer end of the bail for the insertion of a suitable handle, and the angle of the bail and handle can be readily adjusted, as required, by means of a spring-latch, I, resting in a case on one of the arms of the bail, and taking into a notched segment, K, secured to the frame-arm A^2. The segment may be made double, as shown—that is to say, having notches on each side of the axle—by which arrangement the direction of the handle may be shifted, if desired, from front to rear of the machine.

The precise form and number of the blades of the rotating and stationary cutters are not material, as the same may be varied without departing from the spirit of my invention.

I am aware that the combination of stationary with revolving cutters is one of the earliest forms of cutting apparatus known in the art of harvester construction, and do not, therefore, broadly claim such device.

I claim as my invention—

The combination, in a lawn-mower, of a driving-axle, bevel-gears loose thereon, and having ratchet-teeth set in respectively reverse directions, spring-pawls to engage with the ratcheted bevel-gears, a bevel-pinion and rotating cutter, and a stationary cutter, substantially as set forth.

S. ASHTON HAND.

Witnesses:

J. SNOWDEN BELL,

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