(No Model.) 2 Sheets—Sheet 1.

J. DAVIDSON.

MOWING MACHINE.

No. 451,031. Patented Apr. 28, 1891.

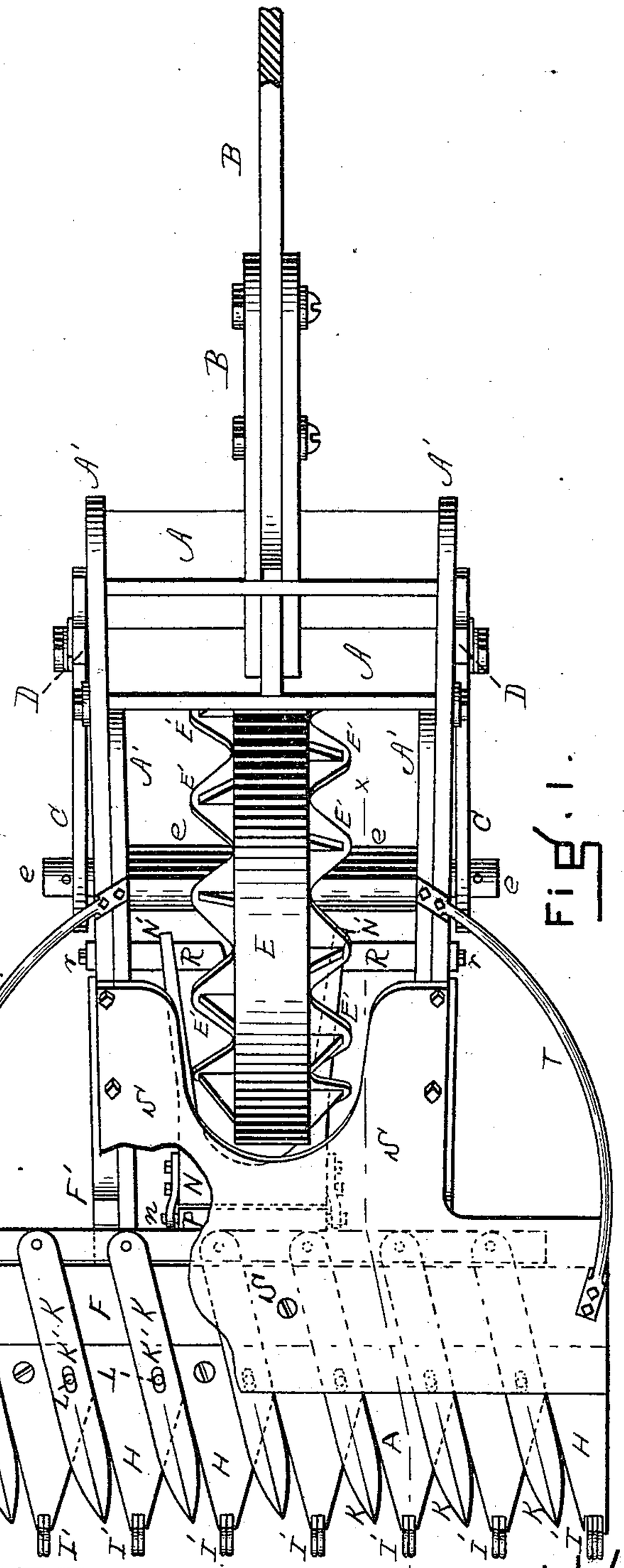

Fig. 1.

WITNESSES.
J. M. Hartnett.
Weston S. Lewis

INVENTOR
John Davidson
By his Att'y.
Henry Williams

(No Model.)

2 Sheets—Sheet 2.

J. DAVIDSON.

MOWING MACHINE.

No. 451,031. Patented Apr. 28, 1891.

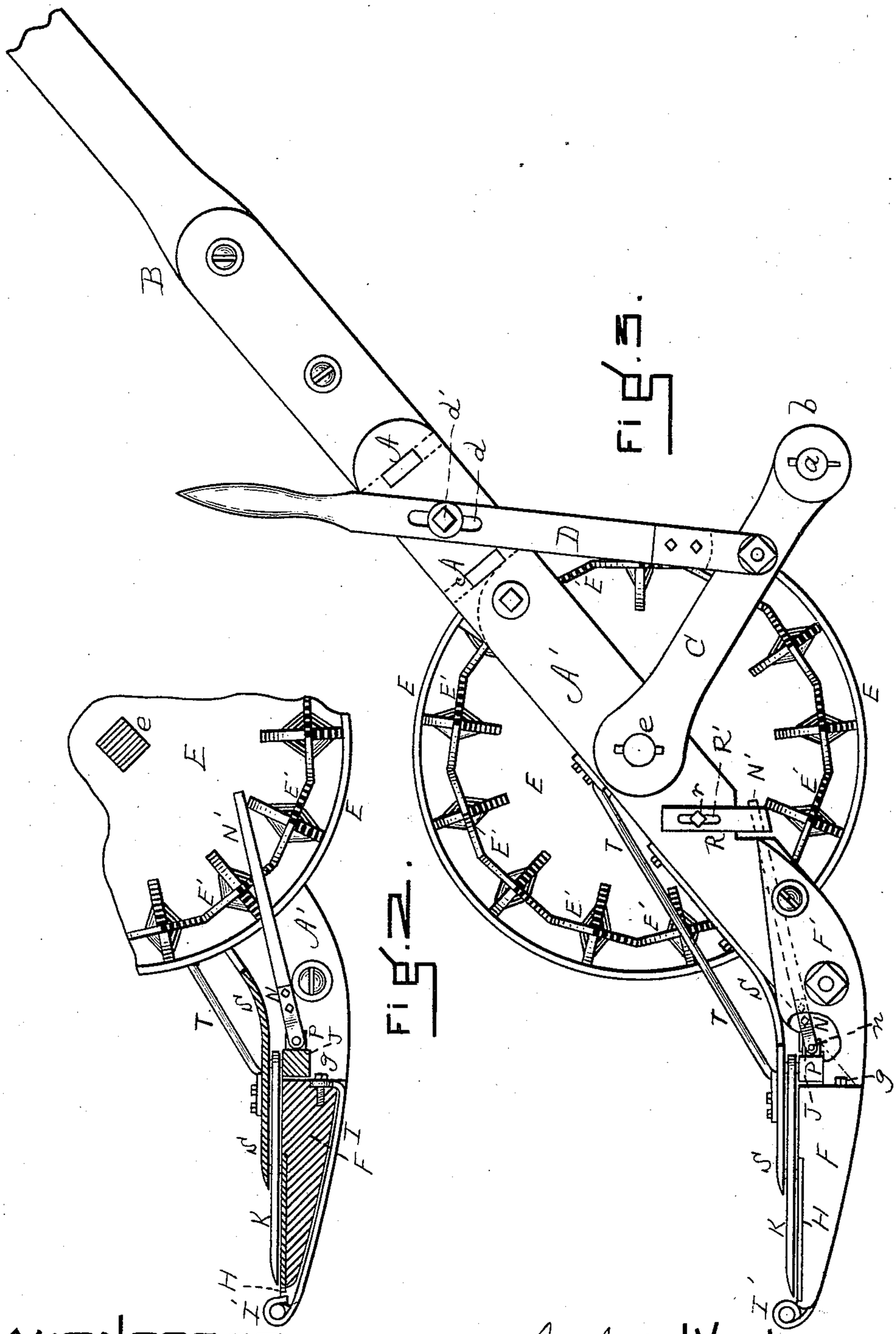

FIG. 1.

FIG. 2.

WITNESSES.

J. M. Hartnett

Weston A. Lewis

INVENTOR

John Davidson

By his Atty.

Henry Williams.

UNITED STATES PATENT OFFICE.

JOHN DAVIDSON, OF MALDEN, MASSACHUSETTS.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 451,031, dated April 28, 1891.

Application filed September 19, 1890. Serial No. 365,450. (No model.)

To all whom it may concern:

Be it known that I, JOHN DAVIDSON, of Malden, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Mowing-Machines, of which the following is a specification.

The invention consists in the below-described novel combination and arrangement of parts, whereby an efficient mower is constructed, either to be used as a lawn-mower or in place of a scythe, and one which will not be injured by the shock produced by striking a stone or other obstruction while it is being operated.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a plan view of a lawn-mower embodying my improvement, a portion of the cover over the knives being broken out. Fig. 2 is a vertical section on line *x*, Fig. 1. Fig. 3 is a side elevation, a small portion of one end of the said cover being broken out.

The handle in the drawings is represented as broken off.

A is the frame of the machine, and B the handle extending therefrom.

C C are arms, whose inner ends are loose on the shaft *e*, and whose outer ends support a shaft *a*, Fig. 3, on which are ordinary rollers *b*. These arms and rollers are rendered adjustable vertically by means of the hangers D D, whose lower ends are pivotally secured to said arms, and which are slotted at *d* and adjustably secured in said slots by screws or bolts *d'* to the frame A. The shaft *e* has its bearings in the side pieces A' of the frame A, and has fixed upon it the cam-wheel E. On each of the outer sides of this wheel near its periphery is a series of substantially V-shaped cams E', each cam being opposite the space between the two cams on the opposite side of the wheel, as shown in the drawings.

F is the finger-bar, supported by the brackets F', which are bolted to the lower ends of the parts A' of the frame, said finger-bar being provided with the stationary cutters or knives H of substantially the shape shown.

I I are springs, whose rear ends are secured at *g* to the rear side or edge of the finger-bar, as shown in Fig. 2. These springs extend from the points indicated by the letter *g* under the finger-bar, following the shape of the under side thereof, and thence forward and up in front of each stationary cutter H, at which point the springs are coiled into a spiral shape, as shown at I', Fig. 1. By this means when the lawn-mower strikes a stone or other obstruction the portions I' of the springs or guards sustain the shock and act as cushions, thus preventing injury to the operating parts of the mower. These spring-guards from their shape render the machine at its front edge less dangerous, as they are located in front of the cutters.

J is the cutter-bar, to which the rear ends of the cutters K are pivotally secured, said cutters being centrally slotted at K', and such slots receiving the pivots L, which extend up from the finger-bar F.

N is a frame pivoted horizontally at *n* to a bracket P, secured to the rear edge of the cutter-bar, and N' N' are arms extending rearward from and integral with the frame N and lying normally on rests R, which project inwardly from the side bars A' and are secured adjustably thereto by means of the bolts *r* and slots R' on each side of the cam-wheel E.

When the machine is pushed forward by grasping the handle B, the cams E' on the opposite sides of the wheel E strike the arms N' alternately, and hence cause the frame N, and with it the cutter-bar J, to reciprocate horizontally, thus vibrating the knives or cutters K. If the machine is drawn backward, however, the arms N' and the hinged frame N are swung up by the cams without being reciprocated. When the wheel progresses forward, however, the arms N' lie on the rests R, and hence are obliged to move horizontally as the cams strike them and pass by them.

A cover S is secured to the machine over the rear portions of the knives K and adjacent parts, said cover being of substantially the shape shown. Wire guards T extend from the outer edges of this cover to the frame, whereby when the machine is in motion the cut grass is drawn in and prevented from falling on the standing grass at the sides, thus leaving a clear space for the machine to strike into again as it goes around the lawn or forward and backward in the field. Of course, if the machine is driven by horse-

power, the handle B would be removed, and under certain circumstances the roller *b* would also be taken off the machine.

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

1. In a mowing-machine, the combination of the frame, the cam-wheel E, supported therein and provided with the two series of alternately-arranged cams E′ on the opposite sides of said wheel near its periphery, the cutter-bar J, the frame N, pivotally secured to said cutter-bar and provided with the arms N′, extending on both sides of the cam-wheel and arranged to be engaged by the cams, the rests R, the vibrating cutters K, the finger-bar F, and stationary cutters H, substantially as set forth.

2. The combination, with the finger-bar F, of the guard-springs I, said springs being secured at their rear ends to the finger-bar and having their forward ends bent up into coils or spirals I′ in front of said finger-bar and cutters, substantially as described.

JOHN DAVIDSON.

Witnesses:
HENRY W. WILLIAMS,
J. M. HARTNETT.