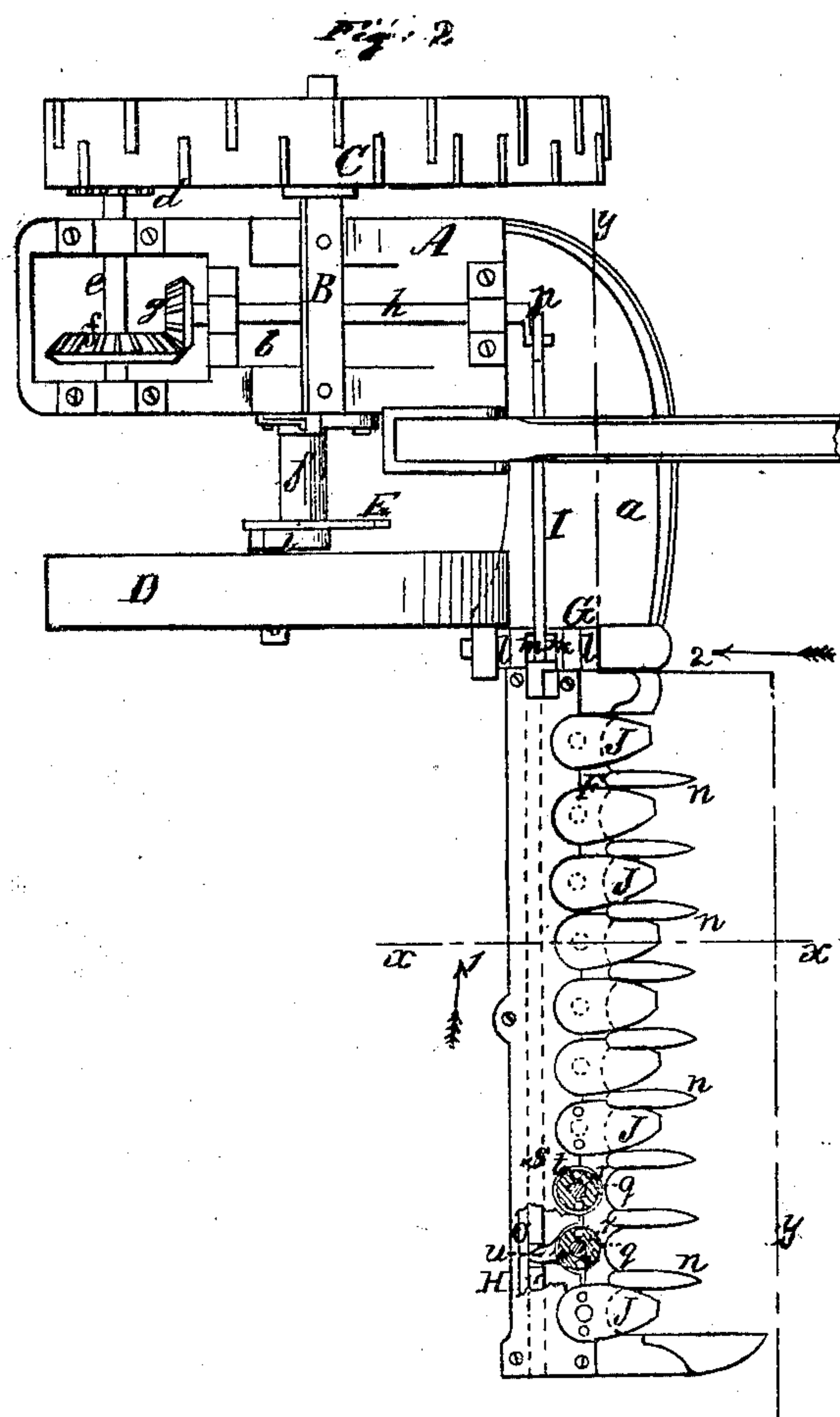
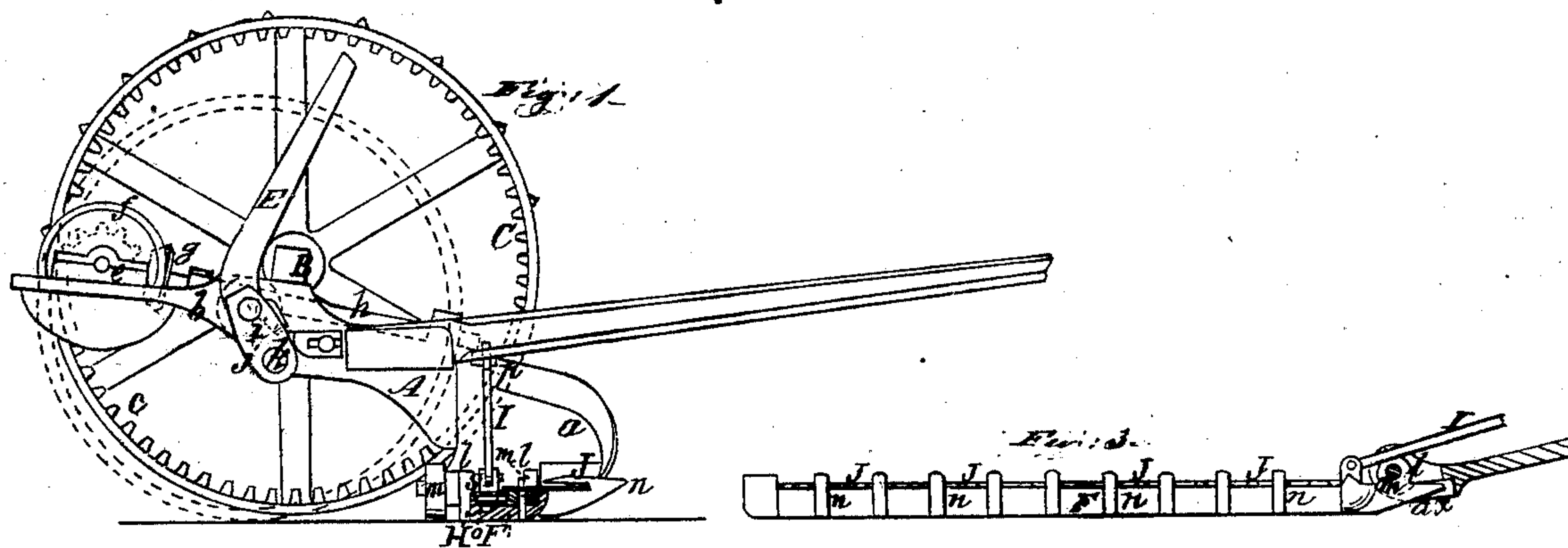


F. Russell, Mower.

N^o 21,777.

Patented Oct. 12. 1858.



UNITED STATES PATENT OFFICE.

FISK RUSSELL, OF SOUTH BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MOWING-MACHINES.

Specification forming part of Letters Patent No. 21,777, dated October 12, 1858.

To all whom it may concern:

Be it known that I, FISK RUSSELL, of South Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Mowing-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *xx*, Fig. 2, and looking in the direction indicated by arrow 1. Fig. 2 is a plan or top view of the same. Fig. 3 is a vertical section of a portion of the same, taken in the line *yy*, Fig. 2, and looking in the direction of arrow 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in that class of mowing-machines in which detached pivoted vibrating or oscillating cutters are used.

The object of the invention is to so arrange the cutters that they will offer no obstruction to the cut grass, but allow the same to pass freely over the finger-bar without the possibility of choking or clogging the cutting device.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the main frame of a mower. This frame is of cast metal, cast in a single piece, and its front part, *a*, is curved, being at right angles with its back portion, *b*, as shown plainly in Fig. 2.

To the portion *b* of the main frame A the axle B of the driving-wheel C is attached. This driving-wheel is toothed on its inner periphery, as shown at *c*, and a pinion, *d*, which is attached to a transverse shaft, *e*, on the frame A, gears into *c*. On the shaft *e* a bevel-toothed wheel, *f*, is placed, and this wheel *f* gears into a bevel-pinion, *g*, on the back end of a shaft, *h*, which is placed longitudinally on the frame A.

D is the inner wheel of the frame A. This wheel may be smaller in diameter than the driving-wheel C, and its hub is placed on a crank, *i*, which is secured to a socket, *j*, said socket being fitted loosely on an arm, *k*, attached to the main frame A. A lever, E, is attached to the crank *i*. The front part, *a*, of

the main frame A is inclined, so that its lower end is in contact with the ground.

To the lower end of the front part, *a*, of the main frame a finger-bar, F, is attached by a joint, G, said joint being formed of two lugs or ears, *l l*, on the finger-bar, in which two pins, *m m*, in the lower end of the portion *a* of the main frame fit. The inner end of the finger-bar projects some distance beyond the lugs or ears *l l*, as shown at *a'*, so as to form a support for the bar when the front end of the main frame A is raised. This will be clearly understood by referring to Fig. 3. The finger-bar F and fingers *n* may be cast in one piece; or the fingers may be made or cast detached and then connected to the finger-bar. The finger-bar has a recess or groove, *o*, made longitudinally in it to receive a bar, H, which is the sickle-bar. This bar is connected by a rod, I, with a crank, *p*, at the front end of the shaft *h*, as shown clearly in Fig. 2.

J represents the cutters, which are of an oval or approximate form, constructed of steel-plate beveled at each side to form cutting-edges, and placed between the fingers *n*. The cutters J are permanently attached to hubs or bosses *q*, one to each, said hubs or bosses being fitted on vertical pins *r*, which are fitted in the finger-bar. The hubs or bosses *q* are allowed to turn freely on the pins *r*, and a plate, *s*, is placed on the finger-bar F, the front edge of said bar having semicircular recesses *t* formed in it to receive the back parts of the hubs or bosses, (see Fig. 2, in which two cutters, J, are removed and a portion of the plate *s* broken away.) To each hub or boss *q* arms *u* are attached, the outer ends of which fit in notches *v* in the bar H. By this connection the cutters J are vibrated by the reciprocating movement of the cutter-bar H. When the plate *s* is secured to the finger-bar the cutters J are only exposed. They work on a flat smooth surface, and as the cutters are of thin steel-plate no obstruction is offered to the cut grass, and it consequently passes readily over the finger-bar, and the cutters are not liable to become choked or clogged. As the machine is drawn along the finger-bar and sickle, by actuating-lever E, may be raised bodily at any time in order to clear obstructions, the inner end of the finger-bar retaining it in nearly a horizontal position in consequence of bearing against

the under side of the front part, *a*, of the main frame A, and the finger-bar is allowed to yield, so as to conform to the inequalities of the ground.

I do not claim attaching the wheel D to a crank, *i*, placed on an arm, *k*, projecting from the main frame A, for this has been previously done in order to elevate, when necessary, the finger-bar; nor do I claim attaching the finger-bar to the main frame by a joint; neither do I claim, separately or in themselves considered, the vibrating cutters J, for they have been previously used, although arranged differently from the plan herein shown and described; but,

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

Attaching the cutter J to hubs or bosses *q*, which are fitted on pins *r* in the finger-bar, and provided with arms *u*, which are fitted in notches in the cutter-bar H, the bosses *q*, arms *u*, and bar H being covered by a plate, *s*, substantially as and for the purpose set forth.

FISK RUSSELL.

Witnesses:

ALBERT C. TAYLOR,
HORACE SMITH.