(No Model.)

A. W. LANPHERE.

SICKLE BAR MOVEMENT FOR MOWERS AND REAPERS.

No. 480,104. Patented Aug. 2, 1892.

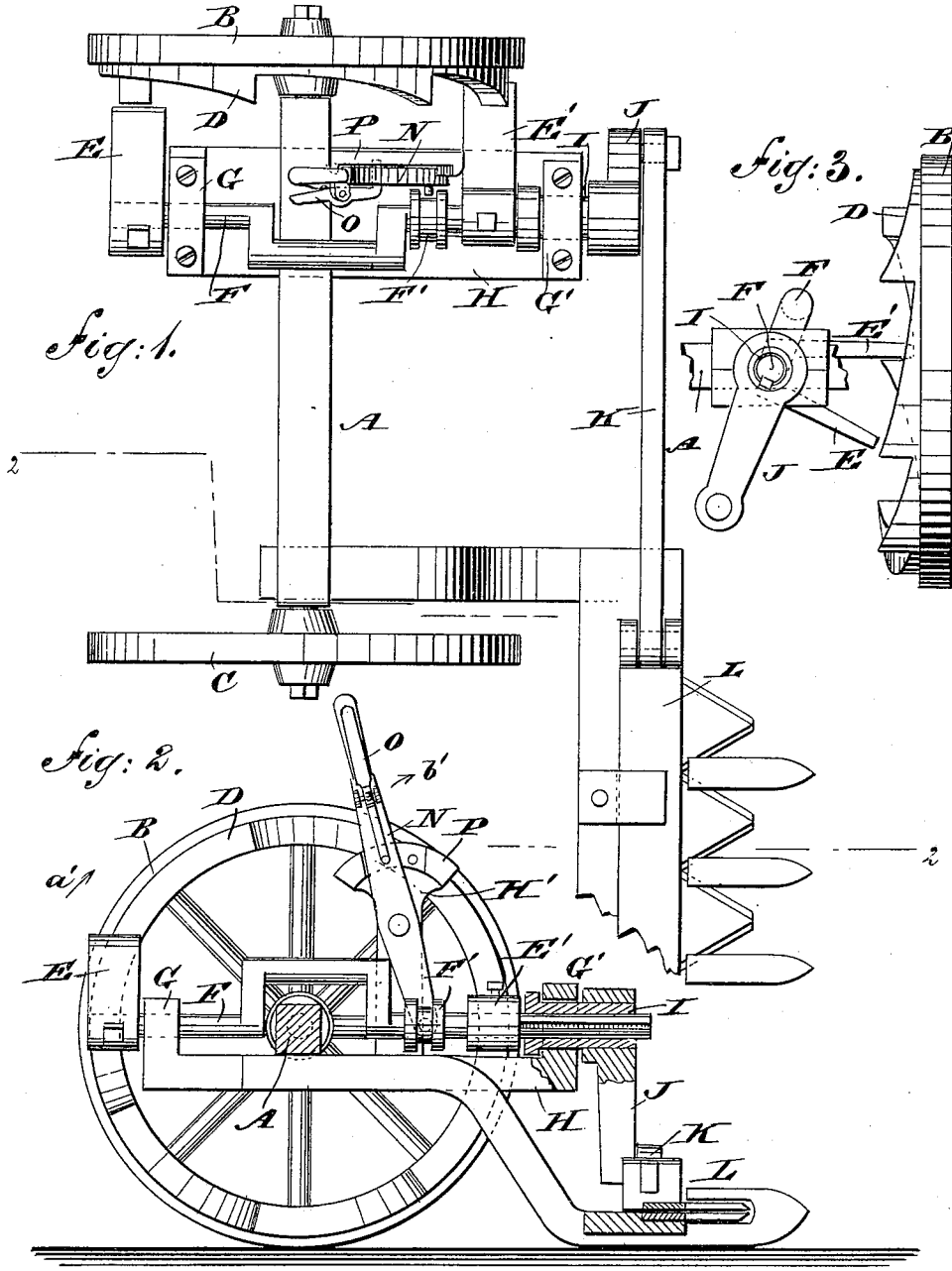

Fig: 1.

Fig: 2.

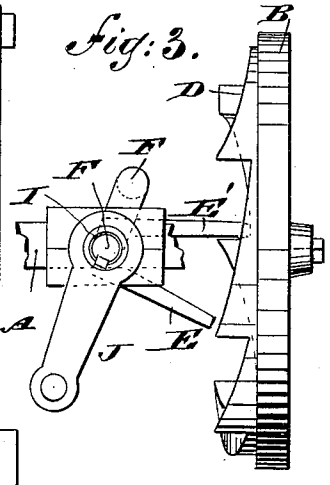

Fig: 3.

WITNESSES:

Chas. Nida.

C. Sedgwick

INVENTOR:

A. W. Lanphere

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALVIN W. LANPHERE, OF INDIAN LAKE, NEW YORK.

SICKLE-BAR MOVEMENT FOR MOWERS AND REAPERS.

SPECIFICATION forming part of Letters Patent No. 480,104, dated August 2, 1892.

Application filed March 21, 1892. Serial No. 425,724. (No model.)

To all whom it may concern:

Be it known that I, ALVIN W. LANPHERE, of Indian Lake, in the county of Hamilton and State of New York, have invented a new and Improved Sickle-Bar Movement for Mowers and Reapers, of which the following is a full, clear, and exact description.

The invention relates to mechanical movements for changing rotary motion to reciprocating motion; and the object is to provide a new and improved device, which is simple and durable in construction, very effective in operation, and designed for imparting a rapid and positive reciprocating motion to the sickle-bar of a mower or reaper without much loss of power.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional side elevation of the same on the line 2 2 of Fig. 1, and Fig. 3 is an end elevation of part of the improvement.

The axle A of the mower or reaper carries the two wheels B and C, of which the wheel B is the driving-wheel, and is provided on its inner face with a toothed wheel D, engaging at opposite sides the arms E and E′, secured to a shaft F. The arms E and E′ stand at angles to each other and are arranged relative to the teeth of the wheel D, so that when one arm is engaged by one of the teeth the other is disengaged from its corresponding tooth. Thus when the wheel B rotates in the direction of the arrow *a′* the teeth of the wheel D engage alternately the arms E and E′, so as to impart a continuous rocking motion to the shaft F. It will be seen that when the arm E swings upward, being carried in this direction by a tooth of the wheel D, then the other arm E′ swings over the back of the corresponding tooth, and when the arm E′ is moved downward by its corresponding tooth the other arm E swings in a like direction over the curved back of the corresponding tooth. As soon as one tooth leaves a corresponding arm the other arm is engaged by its tooth, so that a continuous rocking motion is given to the shaft F as long as the wheel B rotates in the direction of the arrow *a′*. The backs of the teeth of the wheel D are curved in the shape of a segment of a circle, the center of which is in the axis of the shaft F, so that the several ends of the arms E and E′ swing in close proximity to the teeth when not engaged by the latter.

The shaft F is mounted to turn at one end in a bearing G, secured on a frame H, attached to the under side of the axle A. The other end of the shaft is connected to a sleeve I, mounted to turn in a bearing G′, also attached to the frame H. The sleeve I permits the shaft F to slide longitudinally, so as to permit of moving the arms E and E′ out of mesh with the wheel D, as hereinafter more fully explained. The rocking motion of the shaft F is transmitted, however, to the sleeve I by the wheel, and on the outer end of the sleeve is attached a crank-arm J, connected by a link K with the sickle-bar L, mounted to slide transversely in the usual manner.

On the shaft F is secured a shifting collar F′, engaged by a pin on a lever N, fulcrumed on a suitable bracket H′, secured on the frame H. The upper end of the lever N is within convenient reach of the operator seated on the machine, and carries at this upper end a hand-lever O, adapted to engage a segment P, supported on the bracket H′ and serving to lock the said hand-lever O, and consequently the lever N, in place. When the lever N is in a normal position, as shown in the drawings, the arms E and E′ are in mesh with the toothed wheel D; but when it is desired to throw the said arms out of mesh the operator unlocks the lever N by pressing the hand-lever O, and then swings the lever N in the direction of the arrow *b′*, so as to shift the shaft F longitudinally to the rear, whereby the arms E and E′ are moved out of mesh with the toothed wheel D. When the arms E and E′ are acted on by the toothed wheel D, as above described, then a rocking motion is given to the shaft F, and this rocking motion is transmitted by the crank-arm J and link K to the sickle-bar L, which is thus caused to vibrate in its bearings in the usual manner.

When it is desired to stop the movement of the sickle-bar L while the machine moves for-

ward or backward, the operator moves the shaft F rearward, as previously described, by means of the lever N, so as to disengage the arms E and E′ from the toothed wheel D. The reciprocating motion of the sickle-bar then ceases.

It will be seen that by this device a very rapid and positive reciprocating motion can be given to the sickle-bar from the main driving-wheel of the machine on the forward motion of the latter.

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

1. In a device of the class described, the combination, with a toothed wheel, of a rock-shaft arranged parallel to the said toothed wheel, arms secured to the said rock-shaft and extending onto the teeth of the said wheel at opposite sides, the said arms being arranged at angles to each other, so as to be alternately engaged by the teeth of the said wheel, a sleeve fitted on the said shaft and arranged to turn with the latter and to permit a sliding motion of the shaft, and a crank-arm secured on the said sleeve and adapted to be connected with the sickle-bar, substantially as shown and described.

2. In a device of the class described, the combination, with a toothed wheel, of a rock-shaft arranged parallel to the said toothed wheel, arms secured to the said rock-shaft and extending onto the teeth of the said wheel at opposite sides, the said arms being arranged at angles to each other, so as to be alternately engaged by the teeth of the said wheel, a sleeve fitted on the said shaft and arranged to turn with the latter and to permit a sliding motion of the shaft, a crank-arm secured on the said sleeve and adapted to be connected with the sickle-bar, and means, substantially as described, for imparting a longitudinal sliding motion to the said shaft to throw the said arms into and out of mesh with the said toothed wheel, substantially as shown and described.

ALVIN W. LANPHERE.

Witnesses:
THEO. G. HOSTER,
C. SEDGWICK.