H. M. BURDICK.

Hay Tedder.

No. 113,849. Patented Apr. 18, 1871.

Fig. 1.

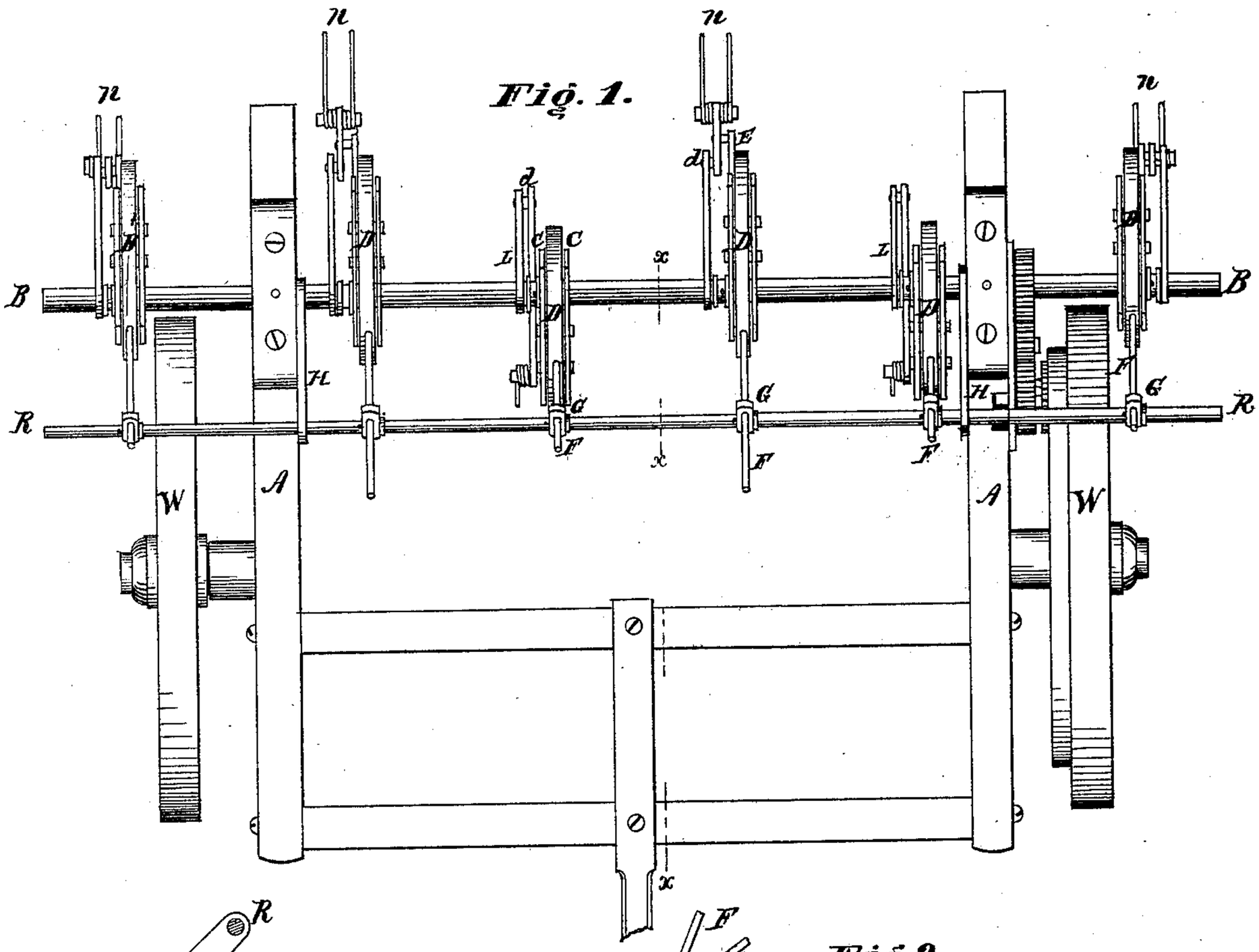


Fig. 3.

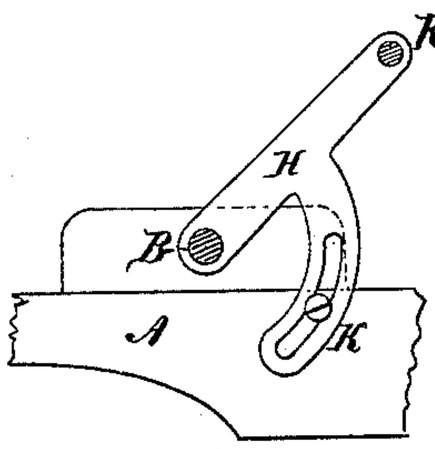
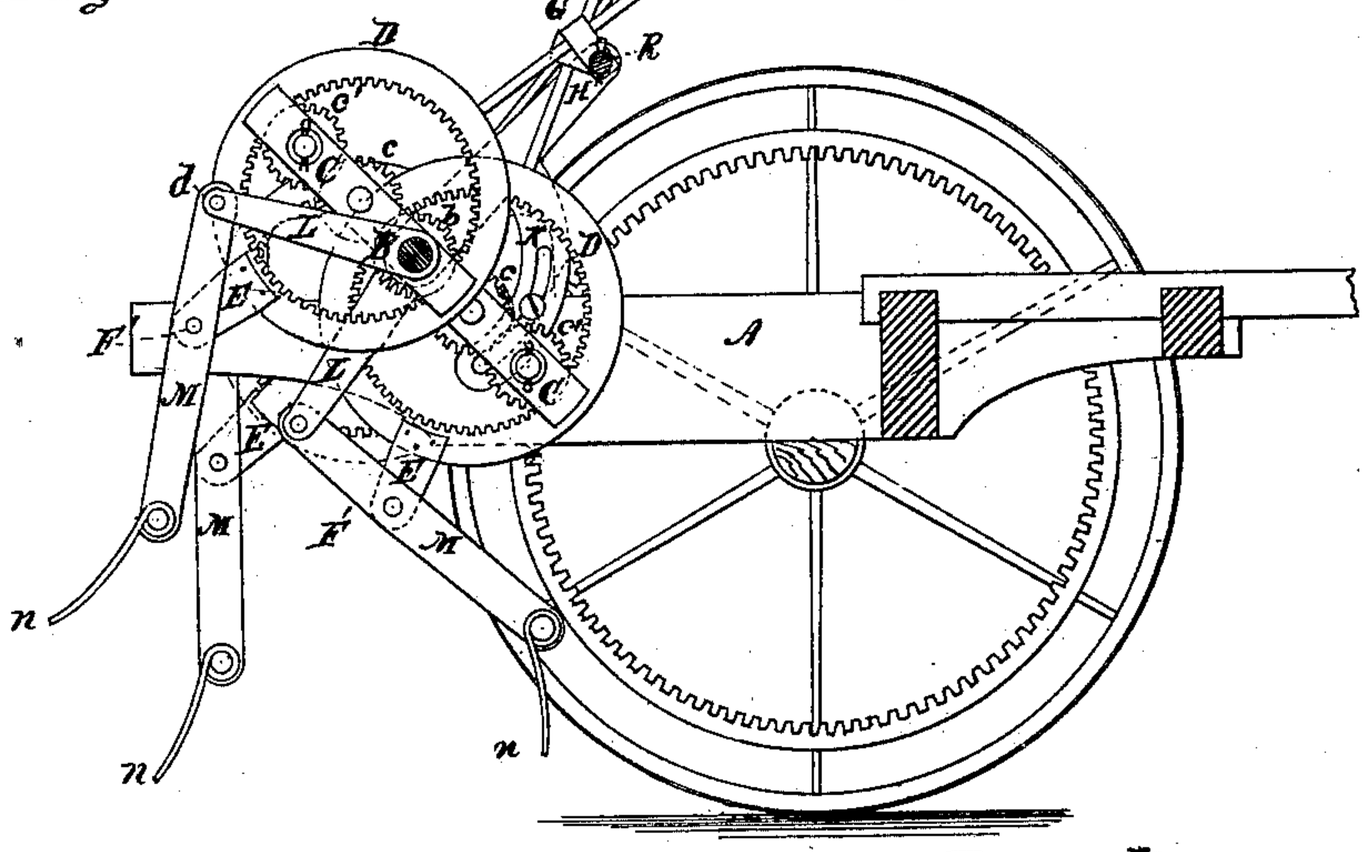


Fig. 2.



Witnesses.

H. L. Perrine.

Gilbert B. Towle

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his Atty

United States Patent Office.

HIRAM M. BURDICK. OF ILION, NEW YORK.

Letters Patent No. 113,849, dated April 18, 1871.

IMPROVEMENT IN HAY-TEDDERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HIRAM M. BURDICK, of Ilion, Herkimer county, State of New York, have invented a new and useful Improvement in Hay-Tedders, styled a "Kicker," which is fully described and represented by the following specification and accompanying drawing, in the different figures of which like letters represent like parts of the invention—

Figure 1 being a top view;

Figure 2, a transverse section as indicated by line *x x* of fig. 1; and

Figure 3, a detached view of the adjustable standards.

Nature.

My invention relates to that class of hay-tedders which is commonly called kickers, and consists of the devices for operating the kickers so that the forks have a longer sweep and a more sweeping and raking motion than in other machines, comprising a double lever with a flexible joint in combination with a fixed arm upon an internal gear-rim, eccentrically arranged and operated by three revolving pinions, one of which is arranged upon the driving-shaft and the other two upon pins attached to arms upon said shaft, and by a slide or cam-rod sliding in an oscillating bearing upon an adjustable rod supported by adjustable standards for securing the required position and motion of the kickers.

A A are the ends of the tedder-frame, upon which the driving-shaft B has its bearings, which is revolved by pinions connecting with a gear upon the driving-wheels W.

Pinions *b* are arranged to revolve upon shaft B, and *c c'* upon axles attached to the arms C, which are securely attached upon said shaft.

The ends of arms C extend beyond the pinions sufficiently to form guides and supports for holding in place the internal gear-rim D, upon which is a stationary arm, E, and cam-rod, F, which is arranged to slide back and forth through an oscillating block, G upon an adjustable rod, R, supported by the adjustable standards H with slotted braces K.

The standards are arranged upon the shaft B inside of the end beams A, to which the braces are attached by screws through the slots, so that the position of the rod R may be changed to secure the required position and motion of the kickers.

L is a lever the upper end of which is hung upon shaft B and the other end connected by a flexible joint, *d*, to lever M, which is attached, at a proper distance from joint *d*, to arm E, and carries at the lower end the forks *n n*.

The arms C, carrying pinions *c c'*, revolve with the driving-shaft B, imparting an eccentric motion to gear-rim D, which, by means of arm E, in combination with the double lever L M, gives the required raking motion to the forks.

By means of the double lever with the flexible joint the forks are thrown further forward and are brought to the ground in a sweeping motion, so as to drag over obstructions without liability to injury to them or the machine; and by placing the fulcrum F' nearer the flexible joint *d* the size of the internal gear-rim may be reduced and yet the length of the sweep retained, thus securing the required sweep with a minimum motion.

The increased length of the sweep and raking motion of the forks enables them to accomplish more with the same or less power and motion of the machine.

To throw the forks further forward rod R is raised by means of the adjustable standards H, and to throw the forks further back and higher from the ground the rod is lowered.

Six of the devices with kickers are arranged upon the driving-shaft alternately, so that every other one is thrown backward while the others are thrown forward, as seen in figs. 1 and 2, to balance the shaft.

Dimensions of the Parts.

In a full-size machine the sizes of the different parts of the machine are about as follows, viz:

Gear-rim D is about six inches in diameter.

Pinions *b c c'* are about two and three-eighths inches each in diameter.

Arm E is about two inches long.

Rod F is about seven inches long.

Levers L are about six and a half inches long.

Levers M are about eight and a half inches long.

Forks *n* are about eleven inches long.

Standards H are about seven inches long.

The forks have about nineteen (19) inches' sweep, and are raised at the highest point about sixteen (16) inches from the ground.

Claims.

What I claim, and desire to secure by Letters Patent, is—

1. The devices for operating the forks of a hay-tedder, consisting of the internal gear-rim D, having arm E and cam-rod F sliding in oscillating blocks G, the gear-rim being eccentrically arranged and operated by means of arm C and pinnions *b c c'* upon a driving-shaft B, substantially as described.

2. The devices for producing the sweeping and dragging motions of the forks of a hay-tedder, con-

sisting of the double levers L M with a flexible joint, *d*, in combination with arm E, rod F, and block G, substantially as described.

3. The combination and arrangement of shaft B, arms C, pinions *b c c'*, gear-rim D with arm E and rod F, block G upon rod R, and double levers L M with flexible joint *d*, substantially as described.

4. The adjustable rod R, supported by adjustable standards H H, in combination with cam-rod F and oscillating block G for adjusting the position and motion of the kickers, substantially as described.

In attestation of the foregoing specification of my improved hay-tedder I hereunto subscribe my name this day of March, 1871.

HIRAM M. BURDICK.

Witnesses:

J. B. PELTON,

W. J. LEWIS.