

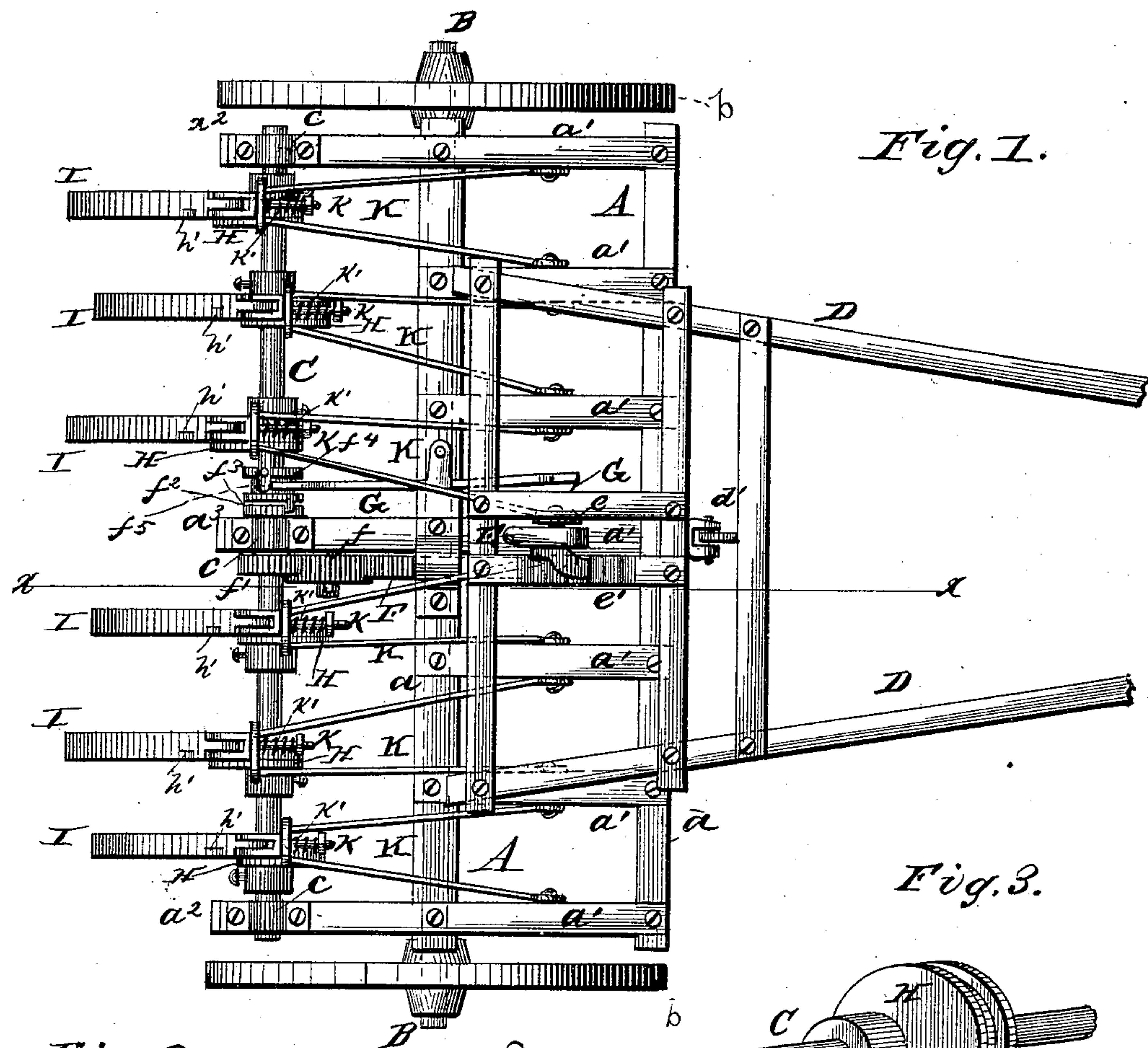
(No Model.)

W. E. KNOX

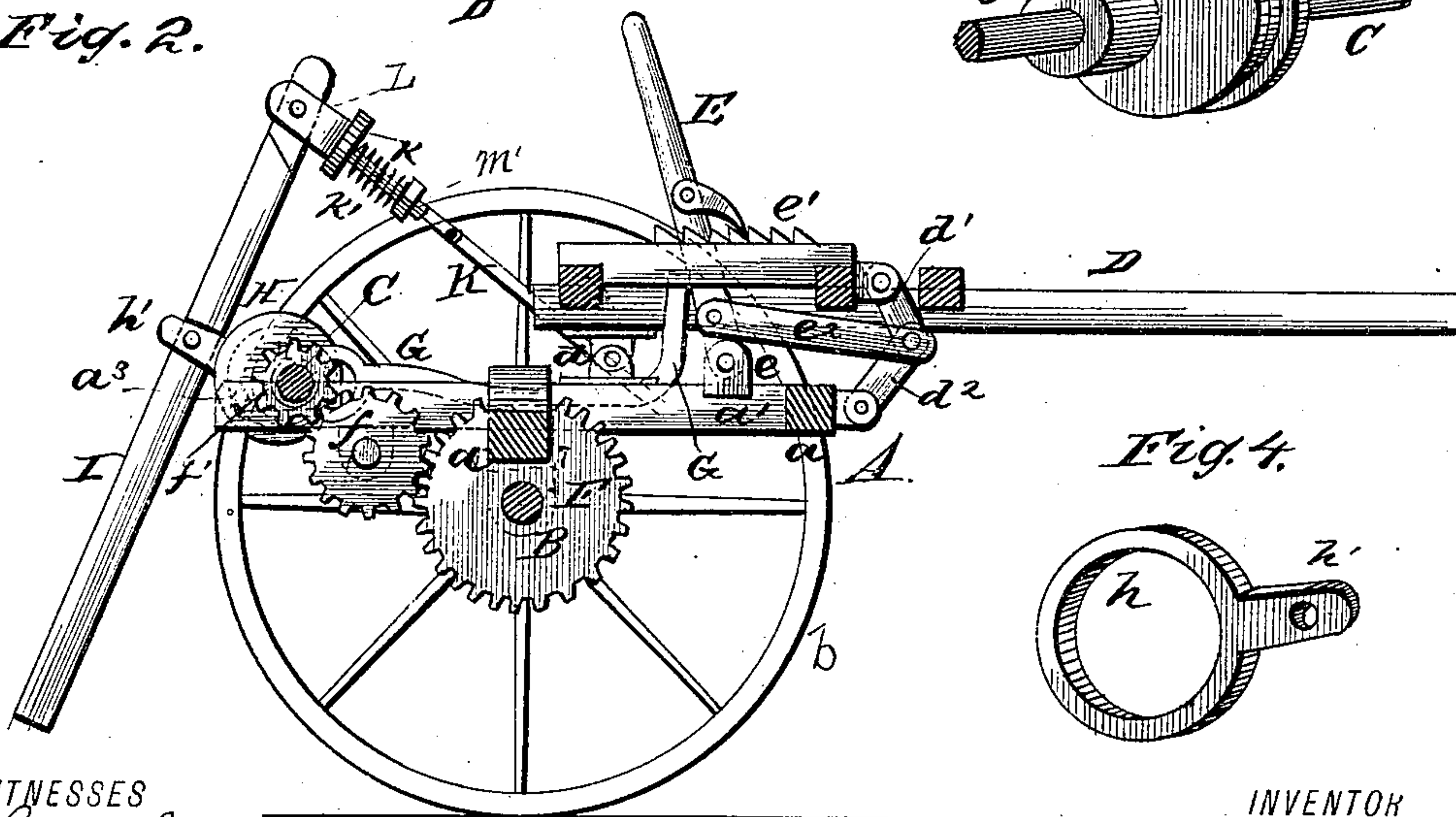
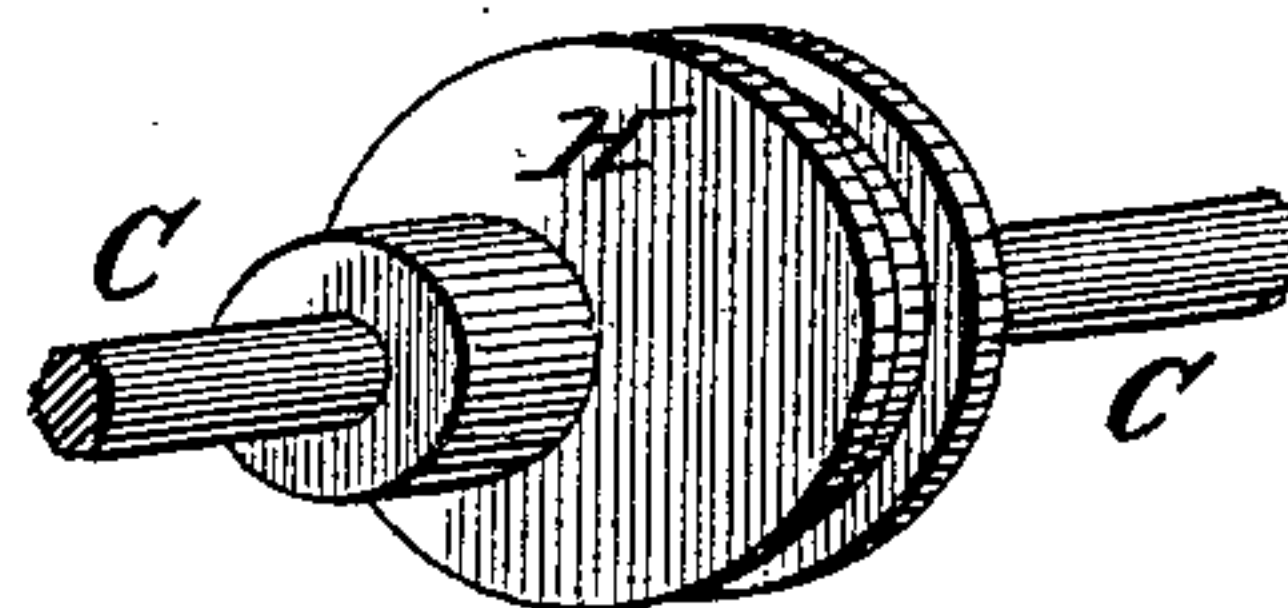
HAY TEDDER.

No. 316,371.

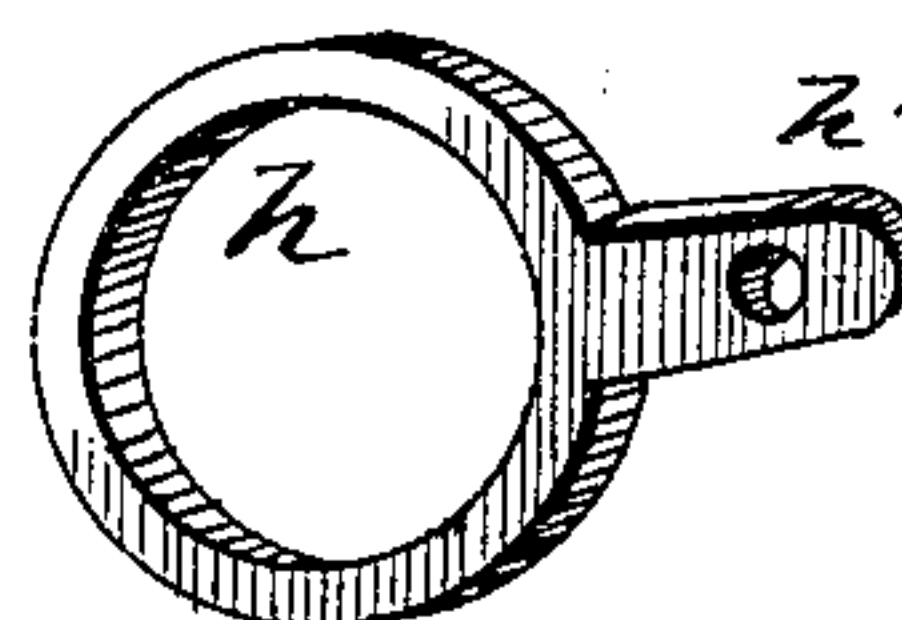
Patented Apr. 21, 1885.



*Fig. 1.*



*Fig. 4.*



WITNESSES

Philip C. MacArthur  
E. H. Bates



K Fig. 5.

INVENTOR

Wm E. Knox  
by Anderson & Smith  
his ATTORNEYS



# UNITED STATES PATENT OFFICE.

WILLIAM E. KNOX, OF SPRINGFIELD, ASSIGNOR OF ONE-HALF TO JAMES P. MARTINDELL, OF CLARK COUNTY, OHIO.

## HAY-TEDDER.

SPECIFICATION forming part of Letters Patent No. 316,371, dated April 21, 1885.

Application filed June 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. KNOX, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Hay-Tedders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a plan view of my device. Fig. 2 is a vertical section of the same; and Figs. 3 and 4 are detail views, and Fig. 5 is a detached view, of one of the rods, K.

The invention belongs to that class in which the teddering mechanism is fixed to a transverse shaft situated behind the axle and is actuated by gearing or other proper means connecting it with the same.

In the accompanying drawings, A represents the frame of the machine, composed of the transverse beams  $a$   $a$  and cross-beams  $a'$   $a'$ .  $a^2$   $a^2$  are backward extensions of the end beams  $a'$   $a'$ , and  $a^3$  is an equal and similar backward extension of the middle beam  $a'$ .

B is the axle, turning in proper bearings on the lower surface of the frame A, and having secured to its ends the wheels  $b$   $b$ .

C is the transverse shaft which carries the teddering mechanism, the said shaft turning in proper bearings  $c$   $c$ , fixed to the backward extensions  $a^2$   $a^2$  and  $a^3$ , respectively.

D D are the thills or shafts, pivoted at their rear ends to similar uprights,  $d$   $d$ , fixed to the beams  $a'$   $a'$ , at equal distances on each side of the central longitudinal line of the machine.  $d'$  is a link pivoted at its upper end to the center of the front transverse bar of the frame, and at its lower end to the upper end of a similar link,  $d^2$ , the lower end of which is pivoted to the front beam  $a$  of the frame A.

E is an upright lever pivoted at its lower end to a support or bearing,  $e$ , fixed at a proper point to the central beam  $a'$ , and provided with a pawl or detent which engages a longitudinal rack,  $e'$ , secured to the upper surface

of the thill-frame.  $e^2$  is a link pivoted by its rear end to the lever E above the support  $e$ , and by its front end to the joint between the links  $d'$  and  $d^2$ . By means of said lever, rack, and links the forward portion of the tedder-frame may be raised or depressed and the tedder-arms secured at any desired elevation.

F is a gear-wheel fixed to the center of the axle and meshing with a gear-wheel,  $f$ , which has its arbor attached to a proper point of the frame A.  $f'$  is a pinion meshing with  $f$  and provided with the sleeve  $f^2$ , which fits over the shaft C and forms one half of a clutch,  $f^3$ , the other half of which is formed by a sleeve,  $f^4$ , which fits and slides upon the shaft C and is provided with a circumferential groove,  $f^5$ .

G is an actuating-lever pivoted at its center to a proper point on the frame A. The rear end of the said lever is forked, the ears of the fork fitting in the groove  $f^5$  and controlling the sleeve  $f^4$  of the clutch  $f^3$ , so as to engage or disengage the pinion  $f'$ .

H H, &c., are eccentrics fixed upon the shaft C at equal distances apart, there being, usually, three eccentrics on each side of the central beam  $a'$ . Each of the eccentrics is provided with the eccentric band  $h$ , having the projection  $h'$  for the attachment of a tedder arm or lever. The eccentrics H H are so arranged upon the shaft C that every second one of the six throw out as the alternate three throw in.

I I are tedder arms or levers, each pivoted near its center to a projection,  $h'$ , from an eccentric band  $h$ , and provided at its lower end with a proper device for spreading the hay.

K is a rod, forked at its lower ends, the points of said fork pivoted to the sides of two adjacent beams  $a'$   $a'$ . The said points may be curved so as to fit over pins attached to the beams  $a'$   $a'$ , or otherwise properly attached to the same. The upper end of each branch of the rod K is secured to a transverse stop-plate,  $k$ , which is centrally perforated for the passage of the stem  $M'$ , formed on the forked castings L, which are pivotally connected with the upper ends of the tedder-arms, so that a spring-connection may be formed between the said forked castings and the rods K, which are secured to the main frame. The stop  $k$ , which



sustains the upper end of a spiral spring,  $k'$ , the lower end of which bears against a nut on the outer end of the stem of the casting L, the said spring being compressed when the said arm is at its highest elevation and acting against the upper end of the same as it descends.

The operation of the invention is apparent from the description of the several parts of the machine.

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

1. The combination, in a hay-tedder, with the main frame, of the shaft C, carrying the alternate oppositely-directed fixed eccentrics provided with circumferential grooves, the tedder-arms connected therewith, as set forth, and pivotally connected at their upper ends to the main frame by the rods K, and the springs interposed between the stops  $k$  on the

rods K and the nuts on the stems of the forked castings L secured to the tedder-arms, substantially as shown and described.

2. The combination, with the main frame, of the thills pivoted at their rear ends thereto near the middle thereof, and their cross-bars connected to the forward portion of the said frame by means of the pivoted links, the rod connecting the said links with the hand-lever which is pivoted at its lower end to the tedder-frame, the said lever carrying a pawl or detent, and the thill-frame carrying a rack, whereby the said tedder-frame may be raised and depressed, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. KNOX.

Witnesses:

E. S. WALLACE,  
RANDOLPH COLEMAN.