(No Model.)

A. ARNDT.

TEDDER.

No. 395,307. Patented Jan. 1, 1889.

Fig. 1

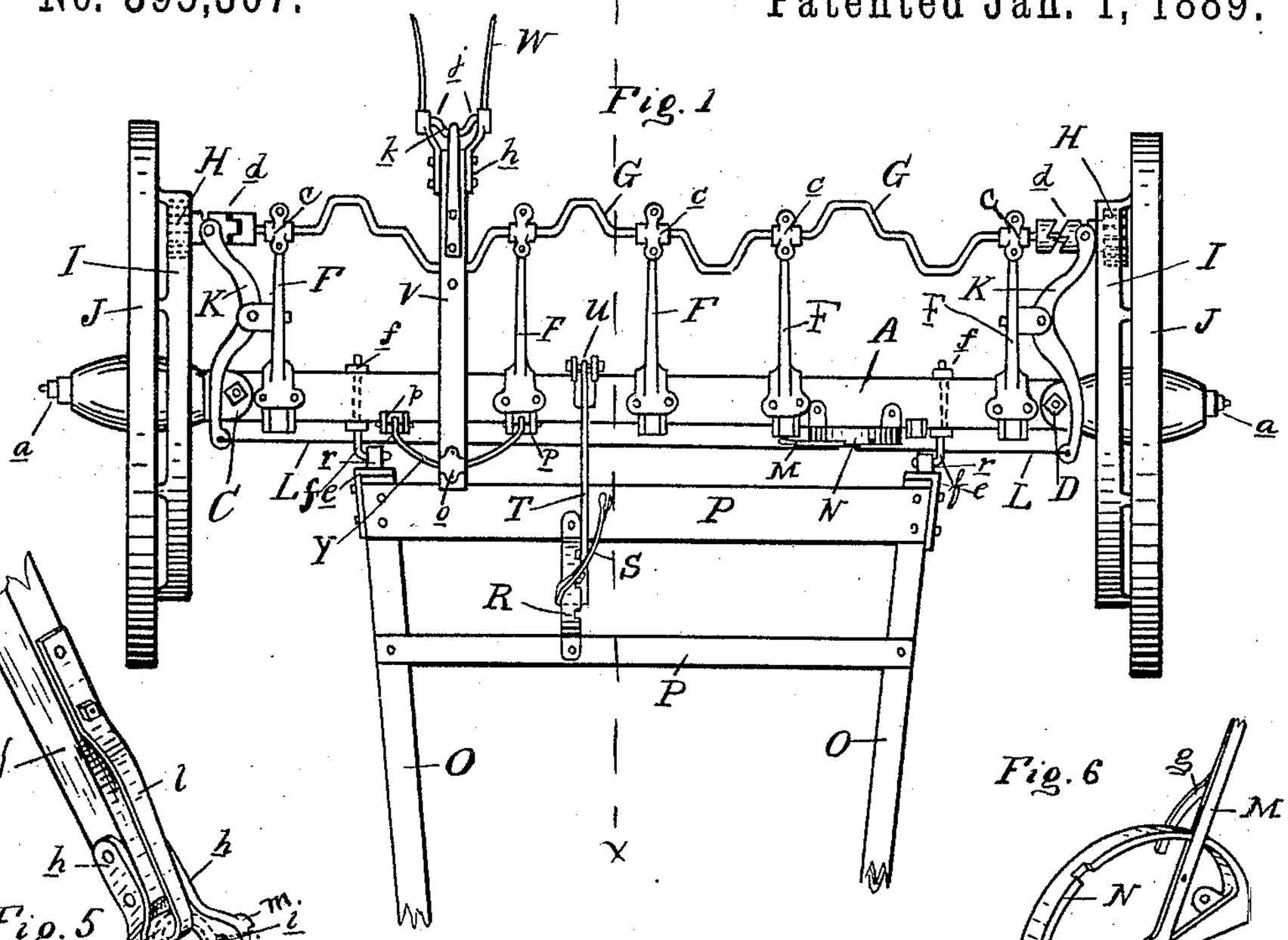

Fig. 5

Fig. 6

Fig. 2

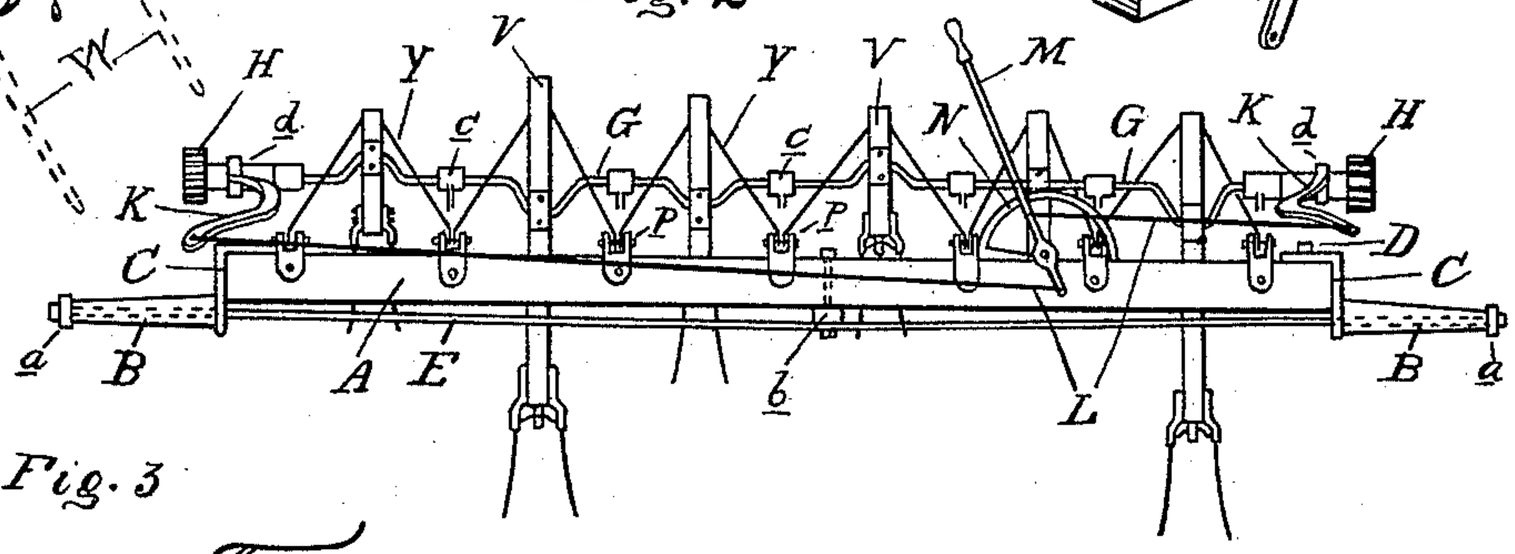

Fig. 3

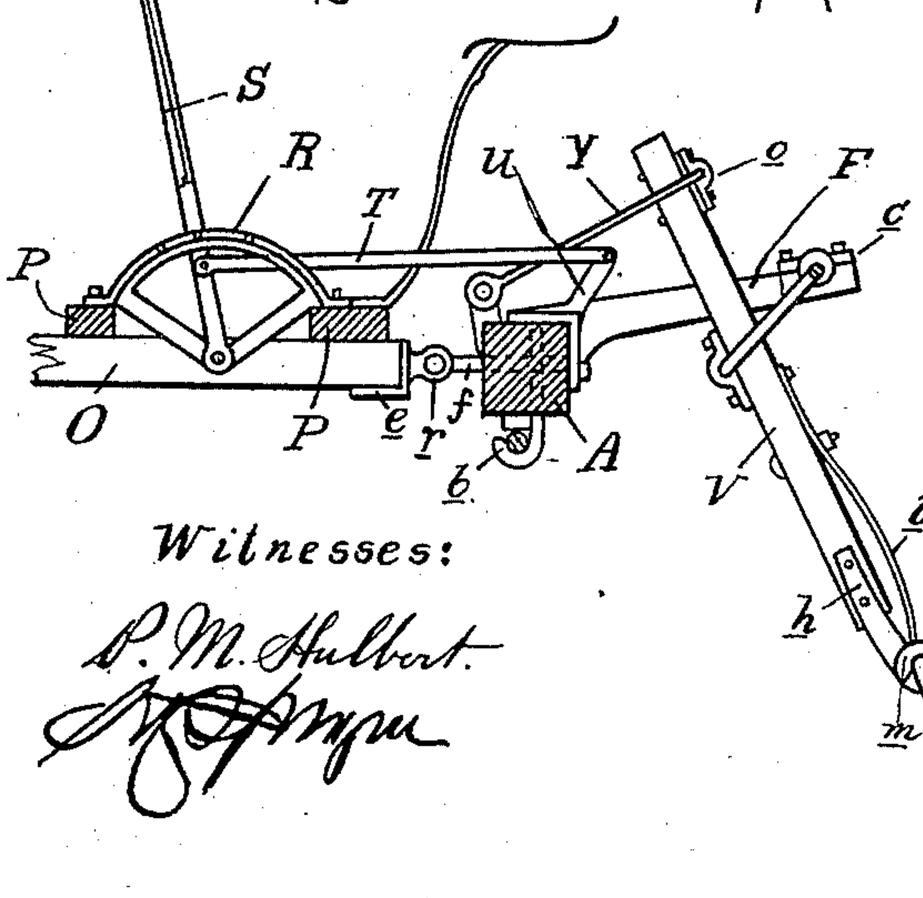

Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

AUGUST ARNDT, OF ALBION, MICHIGAN.

TEDDER.

SPECIFICATION forming part of Letters Patent No. 395,307, dated January 1, 1889.

Application filed October 18, 1887. Serial No. 252,650. (No model.)

To all whom it may concern:

Be it known that I, AUGUST ARNDT, a citizen of the United States, residing at Albion, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Hay-Tedders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in hay-tedders; and the invention consists in the peculiar construction of the different parts, all as more fully hereinafter described.

Figure 1 is a plan view of my improved hay-tedder with some of the forks omitted. Fig. 2 is a front elevation, with the wheels and thills omitted. Fig. 3 is a vertical longitudinal cross-section on the line *x x* of Fig. 1. Fig. 4 is a detached side elevation of one of the forks, with the tines of the fork depressed against the action of the spring of the fork. Fig. 5 is a detached perspective view of the handle of the fork. Fig. 6 is a detached perspective view of the ratchet and lever for throwing in and out of gear.

In the accompanying drawings, which form a part of this specification, A is a wooden axle-tree, to the outer ends of which are secured the stub-axles B in any suitable manner, preferably by casting them integral with the flanged heads C, which fit against the ends of the axle-tree and permit of securing the stub-axles to the axle-tree by means of bolts D, and in connection therewith a truss-rod, E, passes through the stub-axles and is secured upon the ends thereof in any suitable manner—such as by means of nuts *a*—and this truss-rod passes underneath the axle-tree and is connected thereto at one or more points, *b*, in the ordinary manner of constructing trussed axle-trees. On top of the axle-tree, and projecting rearwardly and preferably slightly upwardly, are secured the metallic arms F, which support at their outer ends, in suitable boxes, *c*, the actuating crank-shafts G of the forks. There are two of these crank-shafts, the inner ends of which abut against each other in the central bearing, and the other ends of which are provided with the drive-pinions H, one for each crank-shaft, and which mesh with internal gear, I, of the wheels J. Each of the pinions H is provided with a clutch, *d*, the inner member of which is fast upon its respective crank-shaft and the outer member of which is fast on the pinion and is engaged by the free ends of the levers K, which are fulcrumed to the outer arms, F, and to the inner ends of which are secured the connecting-rods L. These connecting-rods L are secured to a lever, M, which works in connection with a ratchet, N, secured upon the axle-tree in convenient proximity to the seat, all so arranged that the driver can easily operate that lever in the longitudinal direction of the axle-tree, and thereby throw the pinions, which slide endwise upon their crank-shafts in and out of gear with the fast members of their respective clutches. The lever M is held from accidental disengagement with the ratchet N by means of a spring, *g*, the tension of which keeps the lever in its notch. This arrangement dispenses with the usual spring-bolt connection, as the driver has merely to throw this lever slightly forward to disengage it from its notch.

O are the thills, rigidly connected together by means of the cross-bars P, and are hinged at their rear ends to the front of the axle-tree by means of suitable hinges, preferably consisting of a draft-iron, *e*, provided with an eye, *r*, at its rear end, engaging with a hook-bolt, *f*, passing through the axle-tree and secured therein by means of nut, as shown.

Upon the cross-bars P, transversely thereof, is secured a segmental ratchet, R, in the center of which is fulcrumed the hand-lever S, which carries a spring-bolt adapted to engage with the notches of the ratchet at the will of the driver. This lever has pivotally secured to it one end of the connecting-bar T, the opposite ends of which are pivotally secured to a rock-arm, U, secured to the axle-tree, all so arranged that the driver upon his seat has control of the lever S, and by setting it forward or backward he can rock the axle-tree A in any desired degree to increase or diminish the distance of the crank-shafts G from the ground, and thereby pass over obstructions or regulate the work of the forks.

The construction and arrangement of the forks are as follows: V are the handles or holders of the forks, and to the lower ends are se-

cured the bearing-plates *h*, the free ends of which extend beyond the holders and have the eyes *i* formed therein, which form bearings for the forks W. These forks have offsets *j*, which engage with the eyes *i* of the bearing-plates, and between these offsets a rearwardly-projecting crank, *k*, is formed, against which the tension of the flat spring *l* operates to keep the fork in working position. To the outer face of the bearing-plates *h*, around the eyes *i*, are formed bosses, which, as shown in Fig. 5, form two supports or shoulders, *m* *m*, which limit the play of the fork.

It will be noticed that when the fork is depressed, as in Fig. 4, the upper ends of the tines of the fork rest against the shoulders *m* and *m*, which prevent any further depression.

Y are bail-shaped connecting-rods, pivotally secured in suitable bearings, *o*, at the upper ends of the fork-holders and with their lower ends pivotally secured to the axle-tree by means of the couplings *p*.

In practice motion is communicated to the forks in the usual manner by means of the device described, and by means of the levers S M the driver on his seat has perfect control of the operation of the forks.

The tines of the forks, when deflected, are directly supported at their upper ends by the shoulders *m* and *m* of the bearing-plates, while in other constructions these stops are beyond the offsets after the tine has passed through its bearing, and therefore the strain on the fork is brought in its weakest point—that is, its bearing or offset—and the strain acting in a torsional way on said offsets is frequently the cause of breaking even the best and strongest steel forks, while in my construction a much lighter fork is able to withstand a larger strain without damage. As these kind of forks are in common use with hay-tedders, my improvement is designed to form a large saving.

What I claim as my invention is—

The combination of a fork-holder, V, a spring, *l*, thereon, bearing-plates *h*, having bearing-eyes *i i* and provided on their outer sides above the eyes with bosses, forming shoulders *m*, a fork having a crank, *k*, offsets *j j*, forming journals, and tines W, the latter adapted to contact against the shoulders *m* to avoid torsional strain on the offsets *j j* when meeting obstructions, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses this 7th day of September, 1887.

AUGUST ARNDT.

Witnesses:
H. S. SPRAGUE,
P. M. HULBERT.