(No Model.)

P. A. SPICER.

HAY TEDDER.

No. 307,347. Patented Oct. 28, 1884.

Fig. 1

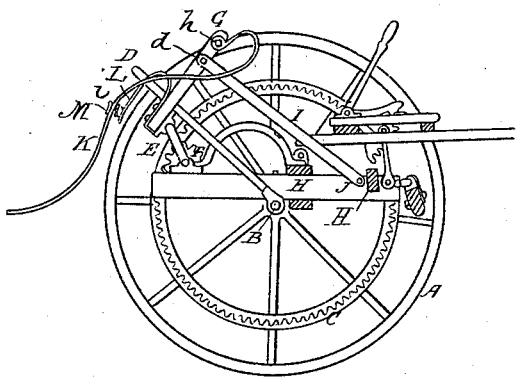


Fig. 2

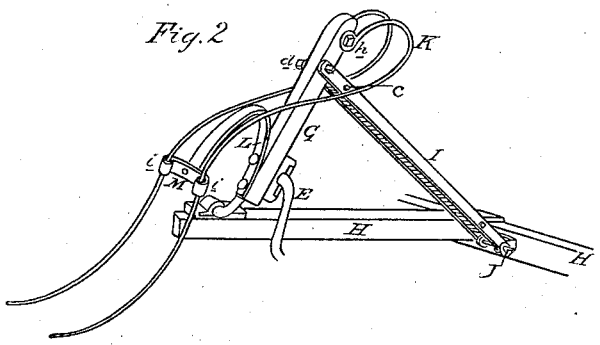
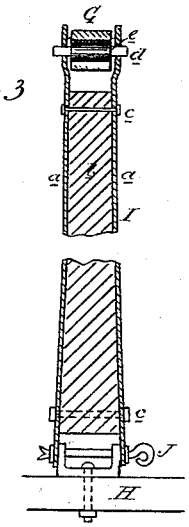


Fig. 3



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PRATT A. SPICER, OF MARSHALL, MICHIGAN.

HAY-TEDDER.

SPECIFICATION forming part of Letters Patent No. 307,347, dated October 28, 1884.

Application filed October 16, 1883. (No model.)

To all whom it may concern:

Be it known that I, PRATT A. SPICER, of Marshall, in the county of Calhoun and State of Michigan, have invented new and useful Improvements in Hay-Tedders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction of hay-tedders, and is especially designed as an improvement upon Patent No. 280,873, issued to me July 10, 1883, although I do not desire to limit the present invention to the tedder so patented.

The invention consists in the peculiar construction of some parts, and in their combination and operation, as more fully hereinafter described.

Figure 1 is a side elevation of the tedder. Fig. 2 is a perspective view, on an enlarged scale, of one of the forks with its attachments. Fig. 3 is an enlarged sectional plan of one of the links which connect the upper portions of the arms which carry the tedder-forks with the main frame.

In the accompanying drawings a hay-tedder is shown constructed substantially like that shown in the aforesaid Letters Patent, and hence a description of such construction is not deemed necessary in this specification; therefore I confine myself, principally, to the description of improvements which I have made thereon.

A are the supporting-wheels; B, the axle; C, the cogged ring; D, the lever rigidly fixed to the axle; E, a crank-shaft in rear of the axle; F, a pinion for engaging and disengaging the cog-ring. G are rigid arms secured at their lower ends to the cranks of said shaft, and H the main frame of the machine, all constructed substantially as shown and described in said Letters Patent.

I are the links connecting the upper portions of the arms with the main frame, being pivotally secured to such frame at one end by means of a bolt, J, or in any other suitable manner. The construction of these links is as follows: Two iron bars, *a*, one on each side of a wooden filling or bar, *b*, secured together by bolts *c*. A round shaft or bolt, *d*, with squared, rectangular, triangular, or irregularly shaped ends passes through similarly-shaped coincident holes in the iron bars *a*, so as to allow the link I to partially rotate the bolt *d* in the fork-arm. Although not necessary, this round hole through the rigid arm G, in which the bolt rotates, may be bushed or metallically lined to secure less wear of the parts. In setting up and attaching these links the bolts *d* are inserted through the rigid arms so that the ends project on either side. The two iron bars *a* are then engaged one upon each end of said bolt, and the opposite ends of said bars are pivotally secured to the main frame H. Then a wooden bar, *b*, is placed between the two iron bars and secured in place by means of the bolts *c*, so that no nuts or other fastenings are required to secure the pivot-bolt *d* connecting such links and the rigid arms.

K are the tedder-forks, arranged as and made in the form shown, and secured one on each side of each of the rigid arms G by means of the bolt *h*. From these bolts the forks curve toward the front of the machine, with a return-bend, as shown. To the rear face of each of the rigid arms is secured a stiff U-shaped spring, L, to the free end of which is secured a lateral bar, M, each end of which is formed into a socket, *i*, each one of which embraces a tine of the fork, passing through such socket diagonally, as shown. These springs L are of such stiffness that they will not give undue pressure upon the forks until just before the breaking-point of the tines of such forks would be reached.

It will be seen that the peculiar form of the forks and the method of securing them is such that should the ends of the forks strike an obstruction, their curvatures will allow them to spring in the direction of their length. Should the tines of either of the forks strike an obstruction like a stone or small stump, the peculiar method of securing such tines would allow them to spread apart at their free extremities to pass such obstruction by straddling it. Further, should the obstruction be of that character that neither one of the two movements described would overcome the difficulty, the spring L, embracing each of the tines of the forks, would next receive the strain,

and giving under it would allow the forks to pass such obstruction without danger of breaking them.

I prefer to pivotally secure the links I to the main frame by similar means which I employ in securing the opposite ends of such links to the arms which carry the tedder-forks. In the ordinary method employed for connecting these parts together the friction is so great that the bolts, rivets, &c., employed are either cut off or they wear an elongated hole in the ends of the links. These difficulties I avoid by giving a large bearing-surface on the bolts in the fork-arm, thereby preventing the great liability to wear at these points. Again, where ordinary bolts are employed to pivotally secure these parts together, as the parts wear the operator will attempt to remedy the difficulty by tightening the nuts on the bolts, which does not cure the defect, but has a tendency to increase the friction, and consequently the wear, while the means employed by me let the parts work freely without binding, and with a minimum of friction and wear, and with no nuts to work loose or off.

While I have described these improvements in connection with the aforesaid Letters Patent, I do not desire to confine myself to that connection, as the improvements may be employed upon hay-tedders of many other constructions with advantage, and therefore could not be used without being brought within the spirit of my invention.

What I claim as my invention is—

1. The combination, with a frame, cranks, and the arms connected to the cranks and provided with forks, of links connecting said frame and arms, each of said links being provided with sides projecting at their ends, one of said sides adapted to be removed, and the cylindrical pins having angular ends, which latter rest within the projecting ends of the links, substantially as set forth.

2. The combination, with the fork-carrying arms, of the links I, each consisting, essentially, of a wooden block with metallic sides, the ends of which sides project beyond the blocks and provided with angular openings, and the cylindrical pins provided with angular ends, substantially as set forth.

3. In a hay-tedder, the combination, with a frame, cranks, arms connected to the cranks, and links connecting the arms and frame, of forks secured at their upper ends to the arms, and springs secured to the arms and supporting the forks at or approximately at their centers, substantially as set forth.

4. In a hay-tedder, the combination, with a suitable fork-carrying arm, and the fork secured to the arm, of a spring secured to the arm and provided with a cross-bar for supporting the teeth of the fork, substantially as set forth.

5. In a hay-tedder, the combination, with a suitable fork-carrying arm, and the spring-teeth secured to said arm, of a spring secured to the arm and provided with a cross-bar having sockets or openings formed in its opposite ends for the passage of the spring-teeth, substantially as set forth.

6. In a hay-tedder, the combination, with a frame, cranks, and arms connected at their lower ends to the cranks, and supported near their upper ends by links, of the spring-teeth firmly secured at their upper ends to the upper ends of the arms, and U-shaped springs rigidly secured to the arms near the lower ends thereof, and each provided with a cross-bar constructed and arranged to support said spring-teeth, substantially as set forth.

7. The combination, with a frame, cranks, and the arms connected to the cranks, and provided with forks, of links each consisting of a wooden filling and metallic sides, the latter projecting at the ends beyond the wooden filling, and provided in said projecting portions with openings, and pins for connecting the links to the frame and arms, substantially as set forth.

PRATT A. SPICER.

Witnesses:
E. SCULLY,
H. S. SPRAGUE.