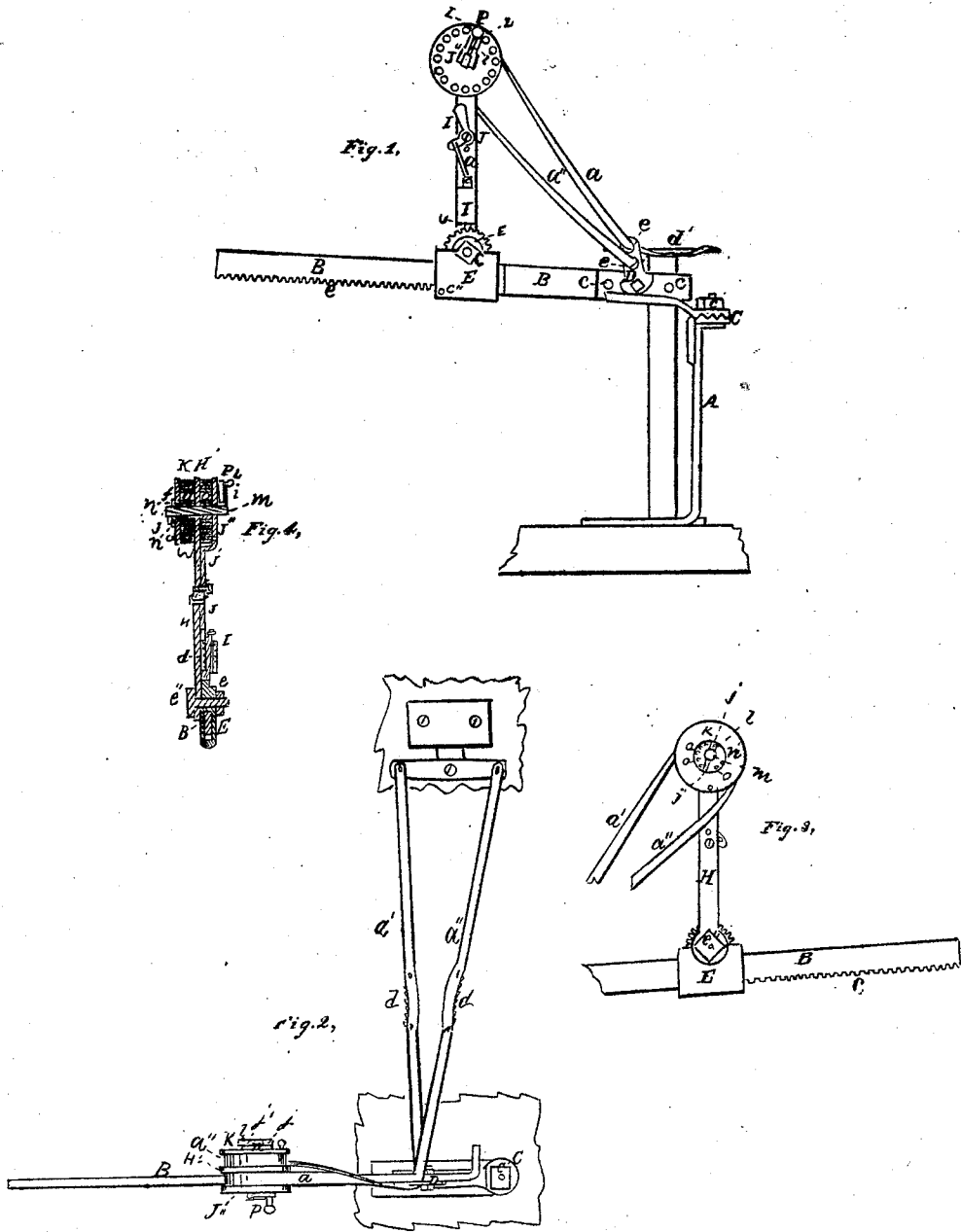


*W. Needham,
Mower.*

No 57,552

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Inventor } Witnesses.
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UNITED STATES PATENT OFFICE.

WALES NEEDHAM, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 57,552, dated August 28, 1866.

To all whom it may concern:

Be it known that I, WALES NEEDHAM, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in an Apparatus for Driving Harvester-Teams; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the apparatus. Fig. 2 is a plan view. Fig. 3 is a view of the side opposite from Fig. 1. Fig. 4 is a vertical section.

Like letters of reference refer to like parts in the different views.

My improvement relates to an arrangement of devices connected to a harvester, whereby the person raking off the grain can at the same time drive the team, avoiding the necessity of having another person for this purpose, besides relieving the machine of the weight and the team of drawing a driver.

The apparatus is attached to a support or standard, A, secured at the lower end to any convenient part of the harvester. B is a horizontal arm, connected to the upper end of the support by means of a serrated or toothed coupling, C, that consists of two notched faces, one on top of the standard and the other attached to the arm, that fit into each other, as shown in Fig. 1, and are secured together by a bolt, C'. By means of this coupling the arm B can be adjusted laterally, as may be desired.

The end of the arm next the coupling is turned at right angles, as shown in Fig. 2, in which there is a hole, and there is a series of holes, *e*, round on the side, (seen in Fig. 1,) for the purpose of attaching a terret, D, by passing a bolt through a hole in the lower end and one of the holes in the arms. The terret can be bolted in an inclined position to the arm and to any of the holes, being thus rendered adjustable. In the terret are holes *e'*, one above the other, through which the reins are passed, as represented in Fig. 1.

The arm B passes through a rest, E, which is of a suitable shape inside for this purpose. In one corner of the arm there is a key-hole, *e''*, that, by means of the lower edge of the arm

being notched, as at *e*, by putting a key through the hole in the rest and between two of the notches in the arm, the rest is secured in any desired place on the arm. The upper part of the arm is semicircular, and notched round to receive a tooth, *e'*.

On one side of the circular portion of the rest is secured the lower end of a neck, H, that is formed into a head, H', at the upper end. The lower end is fastened to the rest by a bolt, *e''*, as shown in Fig. 4.

On one side of the neck, near the lower end, is a case, I, in which is arranged a spiral spring, *d*, round the upper part or arm of the tooth *e'*. The spring rests at the lower end on a projection on the tooth, and the upper end comes against the top of the case. By the action of this spring the tooth is held down in the notches of the rest.

To the arm of the tooth, at the upper end, is attached a rod, *a*, that is connected to a hand-lever, I', which is pivoted to the neck near the head. By this lever the tooth *e'* can be raised and held out of the rest until the head is adjusted either way, and then allowed to spring into one of the notches between the teeth of the rest, where it will be securely held, retaining the head in the desired position.

To the neck is bolted an arm, J, that is turned outward at J', and then extends up in the form of a circular face, J'', the same size of the head and parallel with it, such a distance from the head as to receive a rein between it and the rein.

m is an arbor passing through and revolving in the center of the face and head, and is supported by them. The arbor projects from the head such a distance as to receive and support a half-spool, K, which is retained on the arbor by a pin, *j*, being put through a hole in the end. There is a hook on the arbor, between the head and face, bent in the opposite direction from a hook on the spool, to which the rein *a'* is attached and wound on the arbor in the opposite direction from the rein *a''*, wound onto the half-spool.

The half-spool consists of a hub, *n*, and one flange, *n'*, in which there are holes *o* in a circular form. (Seen in Fig. 3.) At one end of the pin *j* that secures the spool on the arbor is a large head, *j'*, which has a hole through

it opposite the holes in the flange, in which there is a spring-key, *l*, that enters one of the holes in the flange, whereby the flange is fastened to the arbor and turns with it. By removing the spring-key from the flange the half-spool can be revolved independent of the arbor.

P is a forked crank on the outside of the face J'', secured to one end of the arbor. At the outer end of the crank there is a pin, *z*, opposite the holes in the face, which is retained in one of the holes by a spring, *i*, attached to the end of the arbor and pressing on the crank at the outer end, holding it against the face. On the end of the pin *z* there is a knob or handle, by which the pin can be readily adjusted into any hole in the face, for holding the arbor stationary, or held out to allow the arbor to revolve for winding on the rein.

There is attached to each rein a coiled spring, *d'*, to render the reins more elastic and to soften the action of the bits upon the mouths of the horses. When the reins are drawn very tight the springs will yield to such a degree as to bring the entire reins into use.

This apparatus as constructed is adjustable in many of its parts, as described, the object of which is to bring it within reach of the operator and to give the reins such direction and position that they will not come in contact with any parts of the harvester. In attaching the reins from the team to it the rein *a'* is passed through one of the holes in the terret, and the end placed on the hook on the arbor, between the head and face; then the arbor is turned by the crank P in the direction that will wind the rein on the upper side of the arbor, and when it is wound on sufficiently the pin *z* in the end of the crank springs into one of the holes in the face, holding the arbor stationary and the rein in place. The other rein, *a''*, after passing through a hole in the terret, is attached to the hook on the spool K, and wound on by the spring-key *l*, being held out of the holes in the flange in the opposite direction from the other rein. When the desired amount of rein is wound

on the spring-key couples the spool to the arbor, holding it stationary. If it is found when the team starts that the reins are too tight, they can be lengthened by raising the tooth *e'* from the notches of the rest and moving the head toward the terret; or if the reins are too loose, move the head, with the reins, in the opposite direction.

In some harvesters raising and lowering the cutting apparatus changes the distance from the operating part, lengthening or shortening the reins, and to adjust the reins to the required length or tension required to guide the team, the rest is moved either way on the horizontal arm, as the case demands. It is necessary that the person using this device must understand which is the "haw" and which the "gee" rein, that when it is desired to haw the team, he will turn the crank that will wind on the haw-rein, and likewise to gee the team. If the team inclines to travel too near the standing grain, shorten the rein that will cause them to walk farther from it; or, if they are inclined to travel too far from it, shorten the other rein. The reins are easily adjusted in this way by means of the spring-keys and holes round in the face and flange of the spool, whereby they can be turned, loosening or tightening the reins more or less, and held securely when the desired tension is obtained.

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

1. The head H', spool K, face-plate J'', in combination with the arbor *m*, crank P, spring *i*, reins *a' a''*, arranged as and for the purpose set forth.

2. The arm B, rest E, lever I', tooth *e'*, spring *d'*, in combination with the spool and reins, arranged as and for the purpose specified.

3. The standard A and arm B, in combination with the serrated coupling C and rest E, as and for the purpose set forth.

WALEs NEEDHAM.

Witnesses:

C. S. HORSMAN,
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