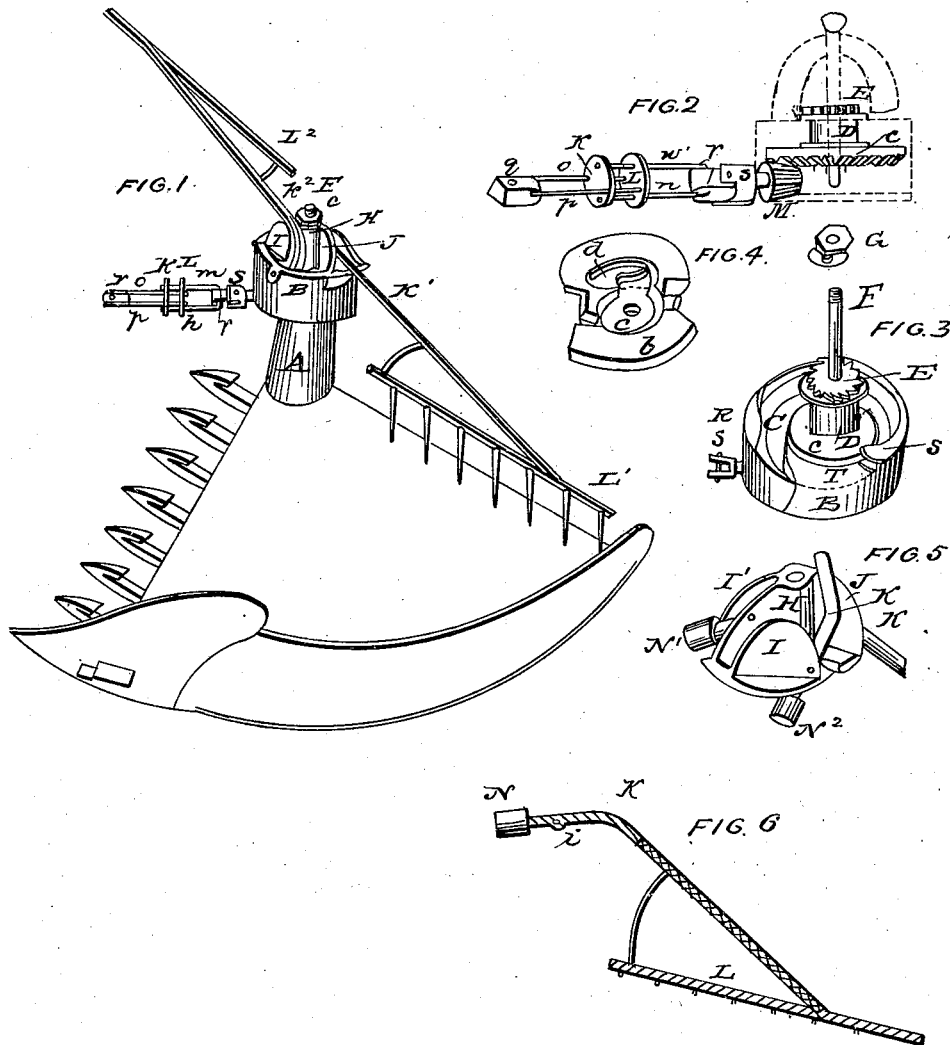


M. A. KELLER.

Harvester Rake.

No. 46,565.

Patented Feb. 28, 1865.



WITNESSES

David Ferry  
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## IMPROVEMENT IN RAKES FOR HARVESTERS.

Specification forming part of Letters Patent No. 46,565, dated February 23, 1865.

*To all whom it may concern:*

Be it known that I, MOSES A. KELLER, of Lower Windsor Township, in the county of York and State of Pennsylvania, have invented a new and improved combination for operating raking attachments adapted to any kind of reaping-machines in common use; and I do declare that the following is a full, clear, and exact 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 shows its relative position on the platform and position of the rake and gatherer, &c. Fig. 2 shows the construction of a self-adjusting universal-jointed shaft and its beveled pinion M and gearing C, with their bearings in the case B. Fig. 3 shows the case and central shaft and its surroundings. Fig. 4 represents the chambered bottom of (Fig. 5) the cap, the central circular chamber, *c*, for the affixed ratchet E on the drum-headed shaft D of the wheel C; also, a side chamber, *d*, containing the click-spring, which, being part of the cap, holds it up to its work in the forward motion of the machine, which, in a retrograde movement, suffers the click to slide over the teeth. Consequently the cap with its raking appurtenances remains stationary. Fig. 5 shows the cap detached from the shaft F, Fig. 3, its perforated central column, H, and double flanges I J, for the elbowed rake-handles. This cap is set over the shaft with its chambers and click-connection, and kept in place by a washer and burr, G, on the end of the shaft F. Fig. 6 shows the elbowed rake-handle, with its fulcrum *z*, friction-roller N, and toothed or toothless rake-head L.

The construction of the self-adjusting universal-jointed shaft for the beveled pinion M will be readily understood by inspecting Fig. 2. The lug *r* is held by a pivot in the slot of the shaft-head *s*, which is near the case B, in which case it has its proper bearing. There is also a lug, *q*, similarly attached to the driving power or gearing of the machine. These lugs are connected in manner following: A round iron rod is passed through the eye in each lug *q r* to its center. The two ends are then bent so as to bring both legs parallel to each other, forming a link open at one end. Two circular disks, K L, are provided, each having four holes at right angles to each other. Two

of these holes are countersunk in each. The legs *m n* are passed through two of the holes in the disk L and carried forward through the countersunk holes in the disk K, to which they are affixed by being riveted fast. The legs of the other link, *o p*, are passed in like manner through the remaining holes in the disk K and enter the pair countersunk in the disk L and riveted in like manner. This brings one pair of legs vertically parallel to each other, the other pair horizontally, each pair attached to its respective disk, while it has no connection with the other disk, so that both disks can be brought in close contact with each other or moved apart, thereby lengthening the shaft without interfering with its revolutions, (or contracting,) while the joints admit of any undulations of the machine, deflecting the shaft in any direction by any cause whatever, thereby adapting it to any kind of machine having either a rigid or jointed cutter-bar folding or otherwise.

The operation of the rake head or cap, in combination with the stationary case B, may be thus described. The case B has a central fixed shaft, F, around which all the parts within the case (namely, the horizontal cogged wheel with its drum-like shaft D and ledge and ratchet-toothed affixed wheel E, as well as the cap, Fig. 5, above the case) have their motion. The action of the click-spring on the under side of the chambered cap is already stated under the description of Fig. 4. The cap, Fig. 5, covering the ratchet-wheel E, Fig. 3, has a central elongated neck, H, through which the shaft F passes, and held in place by a washer and burr, G, on the upper end of said shaft. On opposite sides, diagonally, the cap H has a projecting flange, J, and another, I, externally to each, between which two flanges the elbowed rake-shafts K<sup>1</sup> and K<sup>2</sup> are held by a pivot, respectively. The stationary case B has two guides, S R, projecting from its upper rim, and one interior beveled guide, T, resting on the inner portion of the cogged wheel C, and carried outward with its inclined rim. The operation is such that the revolution of the cogged wheel C carries the cap and its appurtenances with it, while the machine goes in a forward direction, by the click and ratchet already explained. Thus the elbowed shafts K, with their friction-rollers N, respectively, are successively arrested by the guide S on the

case on one side and depressed, so as to come in contact with the inside of the case B, between that and the drum D of the wheel C, until the shaft is brought forward and the roller comes in contact with the inner guide, T, when it drops, bringing the rake onto the platform behind the cutter-bar, in which position it sweeps over the platform, effectually raking off its contents, while the roller N is passing over the inclined ledge T, to be again arrested by S, and elevated to repeat the operation. This motion is common to both shafts, one or both of which may be provided with teeth, or, indeed, four shafts (two provided with rakes or teeth and two without, interchangeably) could be employed by adding two more pair of flanges. This, however, is deemed unnecessary, as the arrangement here shown is amply sufficient for all ordinary purposes.

This rake, in its movements and adaptation to various classes of harvesters, together with the satisfactory manner it performs its office, and not subject to be deranged, is pronounced by those who have witnessed its operation in the field as a highly desirable improvement, substantial and compact in its construction.

I am aware that numerous devices are employed to operate raking attachments on har-

vesters, variously combined and arranged, in which inclined planes, eccentrics, trippers, revolving caps, or flanged columns are in use, operating one, two, or four shafts. I therefore do not broadly claim the gearing nor construction of the flanged cap and elbowed shafts or case independently considered, in its general principle of operation, not being new.

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

1. The self-adjusting universal-jointed shaft, with its jointed links *r m n* and *q o p*, sliding disks K L, constructed, applied, and operating as and for the purpose set forth.

2. The arrangement, in combination with the stationary case B, with its tripper-flange *s* and guide-slides R T, of the cap and its flanges I J, chambered bottom for covering the ratchet-wheel E, and containing the click-spring connecting it to the gearing, all surrounding a central fixed shaft, F, arising from the bottom of the case B, and operated by the beveled pinion M in the manner and for the purpose specified.

MOSES A. KELLER.

Witnesses:

DAVID FORRY,  
SAMUEL GILBERT.