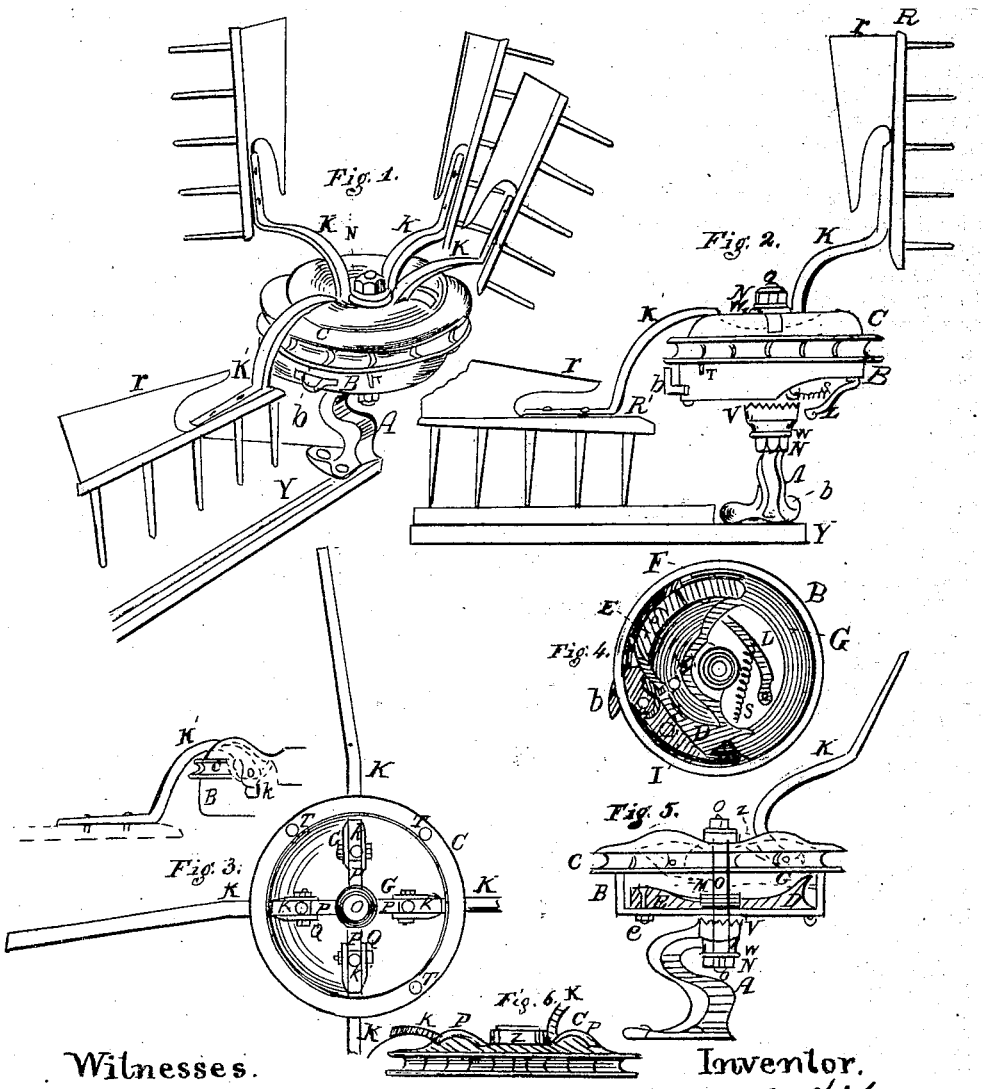
D. B. Shirk

Harvester Rake.

No. 108839. Patented Nov. 1. 1870.



Witnesses.

J. B. Niles

Jacob Stauffer

Inventor.

David B. Shirk

UNITED STATES PATENT OFFICE.

DAVID B. SHIRK, OF BRUNNERVILLE, PENNSYLVANIA.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **108,839**, dated November 1, 1870.

To all whom it may concern:

Be it known that I, DAVID B. SHIRK, of Brunnerville, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in the Construction of Automatic Rake and Reel Combined, for Harvesters, of which the following is a specification:

The invention relates to that class of raking attachments in which the rakes act also as reel-arms and rotate about a vertical shaft, but differs in having the raking-track always open, but so as to close it automatically, according to adjustment, or at the option of the driver; and also in the manner of suspending the rake-arms under a cap or slotted cover, constituting, also, a chain-pulley, and which is rotated by connecting it with the driving-gear of the machine, and in its revolution not only carries the rake, but actuates or closes the switch when the rake is to act as a blind or reel only, said cap revolving on a stationary box-like top, made adjustable on the supporting-standard.

The drawings illustrate the construction, in which—

Figure 1 is a perspective view of the combined arrangement; Fig. 2, a rear elevation; Fig. 3, the under side of the cap or chain-pulley and brackets; Fig. 4, interior arrangement of the camway, switches, &c.; Fig. 5, out line of the interior of the cap and box combined. Fig. 6 shows a stout gum-elastic ring, Z, around the neck or hub of the cap *c*, to act as an elastic cushion, against which the rake-arms come when thrown up, while the cap on its raised slotted edge also sustains the arm K when down.

On a standard, A, erected on and secured to the platform Y of a harvester, is mounted a circular box, B, which has centrally an annular toothed flange, the teeth of which mesh into teeth on the top of the standard A, at V. A vertical shaft, O, with a collar, M, is supported within the box B, and passes through the annular toothed flange and head of the standard A, and is held in place by a nut, N, and washer W. A portion of this box B has the bottom raised and partially open, to allow matter that may lodge to fall through, and so as to constitute a level camway, G, the other side being deeper, forming the lower camway for the rake, being lowered at the point of acting as a reel-arm, and continued when not intercepted by the closed switch, so as to rake off the platform. Within the box on the lower portion (the top rim of said box B being on a level plane) there is a raised curved spur, D, over the inclined plane from the upper to the lower track or camway. Said spur D deflects and holds the curved end of the rake-arm K with its terminal friction-roller *k*, and guides it to the lower track. There is also a lock-plate, *b*, held on a pivot. This plate is actuated by a pin, T, (fixed so as to be put on or off at pleasure,) in the flange of the revolving cap C, which cap also carries the rakes K in brackets Q on the under side, said arms passing out through slots P, Fig. 3, in said cap. One, two, or three of these pins T may be employed, so placed as to push the lock-plate *b* in against the switch E, which has a vertical pivot at the other end, so as to close the lower track, and hold it closed until the pulley *k* on the end of the rake-arms strikes it, so as to push the lock-plate out again, while at the same time the pulley is forced to climb up the beveled end of the switch E to the upper surface, which is on a level with a hinged bridge-plate or switch, F, over which it now passes onto the higher camway G, (on a level with the bridge-plate F, also,) so that, when three pins are used, only one of the four arms will not be arrested by the closing of the switch, and then perform the functions of a rake to clear the platform; but when only one or two pins are used in the cap and it is desirable to arrest the action of the rake, this is done by means of a cord in the hand of the driver, which cord is attached to a lever, L, connected with the pivot-bolt of the switch E, below the box or bottom, which closes the switch as when pushed in by the lock-plate *b*. There is a coiled spring, *s*, also connected with the lever-arm and bottom of the box, by which the switch is again drawn open on relaxing the pull on the cord. The object of hinging the bridge-plate or switch F by a horizontal pivot is to allow the end to be raised up when the rake-pulley *k* (after sweeping over the platform) comes to the inclined plane that carries it up to the upper camway G in its revolution.

The pins T are shown outside of the lower

flange or box B, as also the projecting end of the lock-plate *b*. These may all be on the inner side of the box B, and by elevating the one end of the lock-plate the pins may be made short, so as not to interfere with the higher camway or switches. Thus described, the operation is explained.

I am aware of numerous arrangements for operating revolving rake and reel attachments, but none in which the switches and camways are covered on the top and sides to prevent the straw from getting entangled in the machinery, so that the cap that revolves the rakes also forms the chain-pulley, and actuates the switch-lock or closing device, substantially in the manner specified.

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

1. The arrangement of the camway G, depressing-guide D, switches E and F, and terminal pulley *k* on the rake-arms K, all inclosed within a stationary box, B, (made also adjustable,) in combination with the revolving cap C, in the manner and for the purpose specified.

2. In combination with the revolving cap C and inclosing-box B, the pin T and switch E, constructed and operating as described.

DAVID B. SHIRK.

Witnesses:
WM. B. WILEY,
JACOB STAUFFER.