

Patented July 22, 1879.

A diagram of a screw thread. The label  $a$  is at the left end of the thread. The label  $a'$  is at the right end of the thread. The label  $e'$  is at the top of the thread.

W. E. Bowen

Geo. S. Simpson  
by E.E. Masson  
att'y.

# UNITED STATES PATENT OFFICE.

GEORGE S. SIMPSON, OF DECATUR, ILLINOIS.

## IMPROVEMENT IN CHECK-ROW ATTACHMENTS TO SEED-PLANTERS.

Specification forming part of Letters Patent No. **217,751**, dated July 22, 1879; application filed October 18, 1878.

*To all whom it may concern:*

Be it known that I, GEORGE S. SIMPSON, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Check-Row Attachments to Seed-Planters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the improved check-row attachment to seed-planters. Fig. 2 represents a longitudinal vertical section of the same. Fig. 3 represents a transverse vertical section of the same. Fig. 4 represents, in perspective, a detached view of the main shaft. Fig. 5 represents the check-row attachment in top view, with some parts in section. Fig. 6 represents an enlarged view of the artificial knot or metal ring placed upon a check-row cord in position to be closed and secured thereto. Fig. 7 represents, in section, the same metal ring open and closed.

My invention relates to that class of check-rowers which are automatic in their operation, and are acted upon by a rope having knots at equal distances apart.

My invention consists in a novel construction of a revolving device or double crank, each crank having four arms formed or bent to constitute together a funnel to guide the check-row-cord knots, and two pockets to receive the knots upon the cord by which it is intermittently revolved.

It consists, also, in rollers or circular projections placed in the interior of each double crank and adjoining the main shaft, to assist, in connection with the cord, in completing each half-revolution of the crank.

It consists, also, in the form of the main shaft, in connection with a spring-platform to accelerate the motion of the crank and retain it intermittently immovable or stationary.

It consists, also, in the combination, with the said double crank and shaft, of adjustable levers and cranks to vary the throw of the seed-slide.

It consists, also, of artificial knots to be attached to the check rope or cord, said knots being made of malleable metal, first in the form of a crescent or half-ring hollowed in its

interior and provided with a radial pin to pass between the strands of the rope, and, second, closed as a ring and compressed around the cord.

In the drawings, A represents the frame-bar of the check-rower attachment, upon the ends of which are mounted the pulleys *a*, used for guiding the check-row cord B. This bar carries also the frame A' and parts employed to actuate the seeding devices. The part upon which the knots of the check-row cord operate consists of the double crank C, attached to the shaft *d*, with which it revolves. Each crank is formed of two pairs of arms, *c*, placed parallel to each other and about three-eighths of an inch apart, so formed and bent as to constitute together a funnel, *c'*, to guide the check-row-rope knots *b* in the interior of pockets *c''*, and the interior edges of the arms are chamfered to better accommodate these knots. The double crank C, with its eight arms, can be cast in one piece, or in two or more pieces. It is secured to the shaft *d*, and the latter is pivoted to the frame A', located preferably midway of the length of the bar A. The shaft *d* carries upon its rear end a crank, *e*, that transmits a reciprocating motion to the slide of the seed-boxes by means of the connecting-rod *f* and rocking arm *g*, attached to the lever G, the latter rocking into bearings G', attached to the bar A. The crank *e* being held in a groove of the shaft and secured thereto by a screw, *e'*, its length can be changed to vary the length of motion and feed of the seed-box slide. The arm *g* is also slotted for the same purpose where it receives the crank-pin *g'* of said arm. The double crank C having a funnel-shaped entrance and pockets *c''* above and under the pivot *d*, it will operate well whatever the direction the cord is moving, and whatever the height of the guides or pulleys directing it.

The operation is as follows: Supposing the cord is passing over the guide-pulleys *a*, as indicated by the arrow, it will slip between and pass the arms of the crank C without moving it until one of the knots *b* enters into the funnel *c'* and lodges in one of the pockets *c''*. Then the crank will be carried partly around until it assumes the position shown in Fig. 2, when

the cord itself, having been pressed down by one of the rolls or rounded internal projections  $c^3$ , will press it upward, and thus return the double crank C to the position shown in Fig. 1. This motion is also facilitated or accomplished by two springs,  $h$ , resting upon a portion of the frame  $A'$ , sustaining a platform,  $i$ , that bears up against the main shaft  $d$ . For this purpose this shaft is cut out on each side at  $d'$  to form a flat rectangular body, against the edge of which the spring-platform  $i$  presses, as shown in Fig. 2, and revolves it until it assumes the position shown in Fig. 1, where it retains it until moved again by the following knot on the cord.

To operate this class of check-rowers it is desirable to have the knots upon the cord of uniform size and of metal, so that they will not become jammed in passing through it. This artificial knot  $b$  is made of malleable metal, first in the form of a crescent or half-ring hollowed in its interior and provided with a radial pin,  $b'$ , to pass between the strands of the cord, as shown in Fig. 6. The free ends of the crescent are then compressed around the cord until they meet, thus inclosing the cord and the central pin, the edges of the crescent being indented for the reception of the latter, although it is not absolutely necessary that it should extend clear through the cord and one side of the now closed ring. The cord being clasped tightly by the ring a small additional friction caused by the pin upon its strands retains the ring immovable where it has been first set.

Having now fully described my invention, I claim—

1. In a check-row planter, the revolving de-

vice or double crank C, having upon each side four arms formed or bent to constitute together a funnel to guide the check-row-cord knots, and two pockets to receive said knots, substantially as and for the purpose described.

2. In combination with the cord of a check-row planter and a series of arms,  $c$ , arranged in double pairs and operating as a crank to the shaft  $d$ , the internal rolls or projections  $c^3$ , located on two sides of said shaft, substantially as and for the purpose specified.

3. The combination of the double crank C and shaft  $d$ , having a part removed on opposite sides at  $d'$ , with a spring-platform,  $i$ , to accelerate the motion of the crank and retain it intermittently stationary, substantially as shown and described.

4. The combination of a revolving double crank operated by a check-cord, the adjustable crank  $e$ , mounted upon the shaft  $d$ , the connecting-rod  $f$ , and adjustable rocking arm  $g$  upon the lever operating the seeding device, substantially as shown and described.

5. The artificial knot  $b$ , made of malleable metal, first in the form of a crescent or half-ring hollowed in its interior, and provided with a radial pin,  $b'$ , to pass between the strands of a check-row cord, substantially as shown and described.

6. The artificial knot  $b$ , of malleable metal, closed in the form of a ring hollowed in its interior, provided with a diametrical pin,  $b'$ , and compressed around a rope, substantially as described.

GEO. S. SIMPSON.

Witnesses:

CHAS. P. HOUSUM,  
JOHN S. BIXBY.