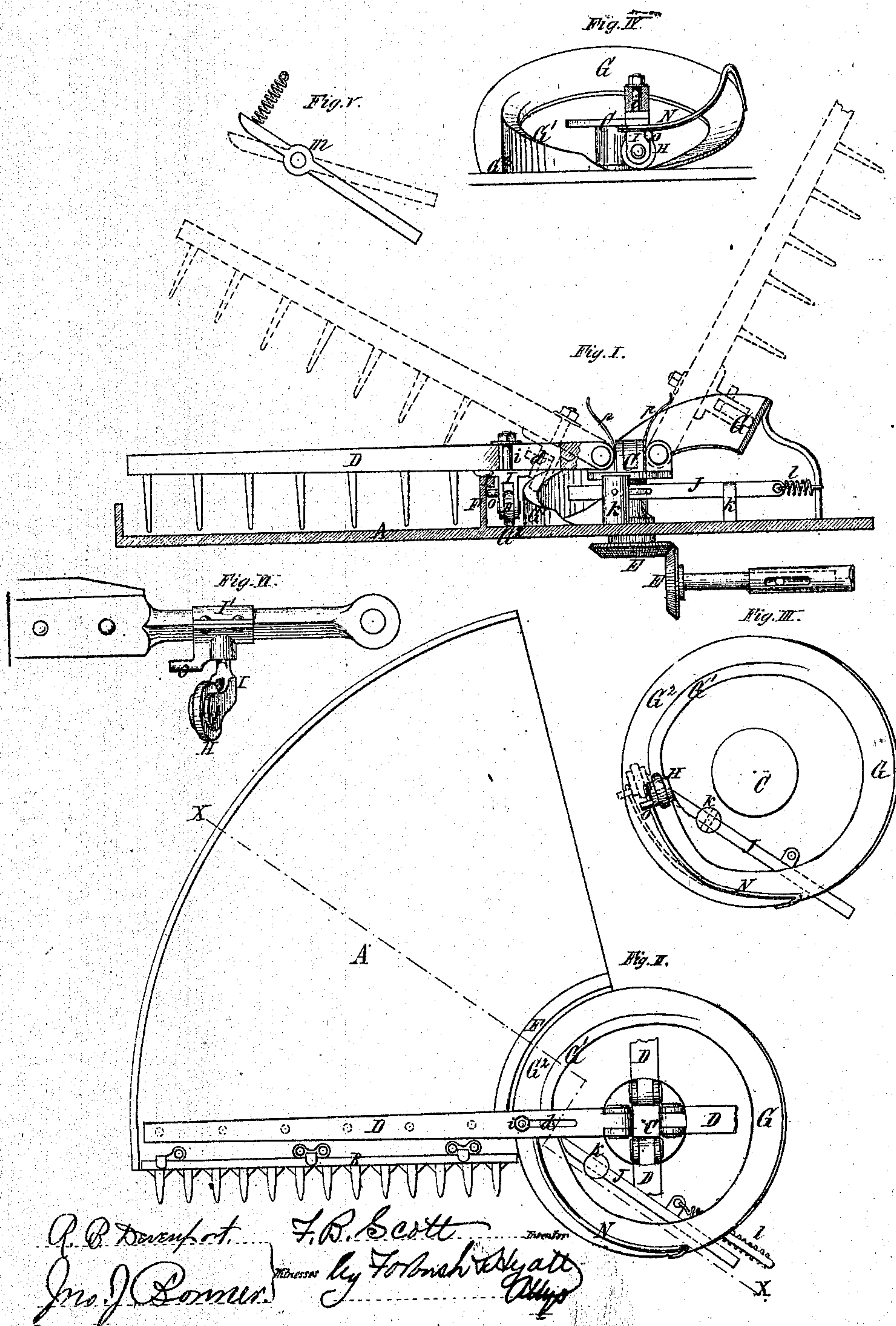


*F. B. Scott,  
Harvester Rake.*

*No. 112,289.*

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# UNITED STATES PATENT OFFICE.

FRANCIS B. SCOTT, OF LANCASTER, NEW YORK.

## IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **112,289**, dated February 28, 1871.

*To all whom it may concern:*

Be it known that I, FRANCIS B. SCOTT, of the town of Lancaster, in the county of Erie and State of New York, have invented certain Improvements in Self-Rakes for Harvesters, of which the following is a specification:

My improvements relate to that class of self-rakes in which the rakes are hinged to and radiate from a central hub, so as to revolve with it about a vertical axis, the requisite vertical movement of the several arms or rakes as they revolve, for avoiding the driver's head, and for elevating them above the grain on the table, except when required to sweep a gavel therefrom, being effected by means of a roller attached to the rake-arms, and traversing a camway which surrounds the head or central hub, which camway is so constructed as to permit the rakes, in their revolution, to sweep horizontally over the table when a gavel is required to be discharged therefrom, and at other times, during the collection of grain on the table, to elevate the rakes, so as to clear the same until another gavel is formed, which is then swept off by a change to a horizontal movement of the rake-arm.

The invention relates more particularly to the means for changing the motion of the rake-arms as they revolve over the table, so as to clear or sweep off the grain, as required. For this purpose I employ a side track, or a double track, on the side next to the table, and adjust the roller out on the shank of the rake-arm, so as to cause it to travel in the outer and horizontal track or way when a gavel is to be swept off.

The invention consists, first, in connecting the bearings of the roller to the shank of the rake-arm, so as to cause them, in shifting the roller, to slide back and forth along the same; second, the combination of a shifting-bar with said double track and adjustable roller, so arranged that, by thrusting the bar forward, it will guide the roller into the outer and horizontal track for sweeping off the grain; third, the arrangement of a spring-guide to retain the roller in the inner track or inner portion of the track, except when the strength of the spring is overcome by the roller being forced into the outer track by the shifting-bar above

referred to; fourth, in the arrangement of a horizontal guard, projecting as a flange from the upper edge of the fender, or secured at its ends to the camway, under which engages a pin or other projection from the outer bearing of the roller, so as to prevent the rake-arm rising during its horizontal movement in sweeping off the grain.

In the accompanying drawing, Figure I is a section in line *xx*, Fig. II, of the raking mechanism. Fig. II is a plan thereof. Fig. III is a plan of the camway, with the shifting-bar and one of the rollers detached, showing the manner of shifting the roller. Fig. IV is an elevation of the camway and one of the rollers, with the rake-arm to which it is attached, in cross-section, showing the operation of the spring-guard. Fig. V shows the shifting-bar in the form of a lever of the first class. Fig. VI is a detached view, showing a roller connected to the shank of a rake-arm by means of a sleeve designed to slide thereon.

Like letters of reference designate like parts in each of the figures.

A is the grain-table; B, the cutter and finger-bar; C, the central hub, to which the rake-arms D D are hinged, and which is rotated on a vertical axis by any suitable gearing; E E, in the ordinary manner. F is the fender, which separates the table from the rake-stand.

As my improvements relate only to the means for operating and directing the movements of the rake-arms, the other parts of the machine may be constructed in any of the well-known ways in use.

The circular camway or track which the rollers traverse in supporting and guiding the rake-arms consists of three parts, viz: first, an elevated portion, G, on the side next to the driver, for elevating the rake-arms, so as to cause them to avoid the driver's head during this portion of their movement, as shown in dotted lines at the right of Fig. I; secondly, an upwardly-inclined portion, G<sup>1</sup>, which elevates the rakes after they have performed their reeling action, so as to cause them to pass over the grain as it is being collected on the table, as shown in dotted lines at the left in Fig. I; and, thirdly, an outer horizontal branch track, G<sup>2</sup>, on which the rollers travel during the sweeping-off movement of the rakes.

The portions G G<sup>1</sup> are arranged and inclined



in the usual manner, the latter being made stationary instead of movable, as in most of the other devices in use. Both of the tracks  $G^1$  and  $G^2$  unite with the portion  $G$ , which forms a continuation thereof, as shown in Figs. II, III, and IV.

$H$  is the roller, mounted in any suitable bearing,  $I$ , which is connected with the shank of the rake-arms  $D$ , either by means of a loose sleeve,  $I'$ , as shown in Fig. VI, or by means of a bolt,  $i$ , passing up through a slot,  $d$ , in the arm, as shown in Figs. I and II, so as to permit of the bearing sliding back and forth along the arm for changing the position of the roller.

$J$  is the shifting-bar, arranged so as to slide horizontally in standards  $k$   $k$  from the rake-stand. It is arranged under the portion  $G$  of the track, with its inner end pointing toward the forward end of the track  $G^1$ , so that when it is thrust forward its beveled end will be flush with the outer edge of the track and form a guide, against which the inner bearing of the roller will strike as the latter approaches the track  $G^1$ , and thus force out the bearing along the rake-arm, and shift the roller into the outer horizontal track  $G^2$ , as shown in Fig. I, and in dotted lines, Fig. III.

The shifting-bar is provided with a recoil-spring,  $l$ , which, after the roller has been shifted, brings the bar back to its normal position, as shown. This bar, instead of being arranged as above described, may be pivoted, as shown at  $M$ , Fig. V, and operate as a lever, as represented in dotted lines in the same figure.

$N$  is the spring-guard, consisting of a rod or bar attached to the edge of the track  $G$ , and extending concentrically with the track till it reaches, or nearly reaches, the forward end of the elevated track  $G^1$ , so as to form an outer guard or guide to direct the roller onto said track  $G^1$ , as represented in Figs. II and IV.

When a gavel is required to be raked off, the shifting-bar  $J$  is thrust forward by the driver by any suitable means, as an arm or lever, which guides the roller into the outer and horizontal track  $G^2$ , the elasticity of the guard

$N$  permitting it to spring outward for the passage of the roller, as represented in dotted lines, Fig. III. As the roller passes into this track  $G^2$ , some means for holding the rake-arm down to its work becomes necessary. For this purpose I provide the upper edge of the fender  $F$  with an inwardly-projecting flange,  $f$ , and the outer bearing of the roller with an outwardly-projecting pin or lug,  $o$ , arranged so as to pass under said flange, which thereby prevents the arm rising during the raking-off movement.

Instead of constructing the fender with the flange  $f$ , a rod or bar having its ends secured to the outer edges of the camway, and otherwise braced and supported, may be employed.

In order to insure the rollers keeping on the track, I prefer to provide the elevated track  $G^1$  with a groove for the roller to run in, and the portion  $G$  with a ledge or flange on each edge to retain it thereon.

Each of the rake-arms may be provided with a spring,  $p$ , which operates to prevent the arm, when it has arrived at a nearly vertical position, from remaining in that position after they have passed the crown of the camway, when they should begin to decline.

What I claim as my invention is—

1. The roller  $H$ , when provided with sliding bearings  $I$ , arranged with the rake-arm  $D$  and tracks  $G^1$   $G^2$ , and operating substantially as hereinbefore set forth.

2. The combination of the shifting-bar  $J$  with adjustable roller  $H$  and tracks  $G$   $G^1$   $G^2$ , substantially as and for the purpose hereinbefore set forth.

3. The spring-guard  $N$ , arranged with the camway  $G$   $G^1$   $G^2$ , and combined and operating with the adjustable roller  $H$  and shifting-bar  $J$ , substantially as hereinbefore set forth.

4. The combination, with the laterally-adjustable roller  $H$ , of the projection  $o$  and flanged guard  $f$ , as hereinbefore specified.

FRANCIS B. SCOTT.

Witnesses:

JAY HYATT,  
JNO. J. BONNER.