(No Model.)

P. H. SMITH.

GRAIN DRILL ATTACHMENT.

No. 266,325. Patented Oct. 24, 1882.

Fig. 1.

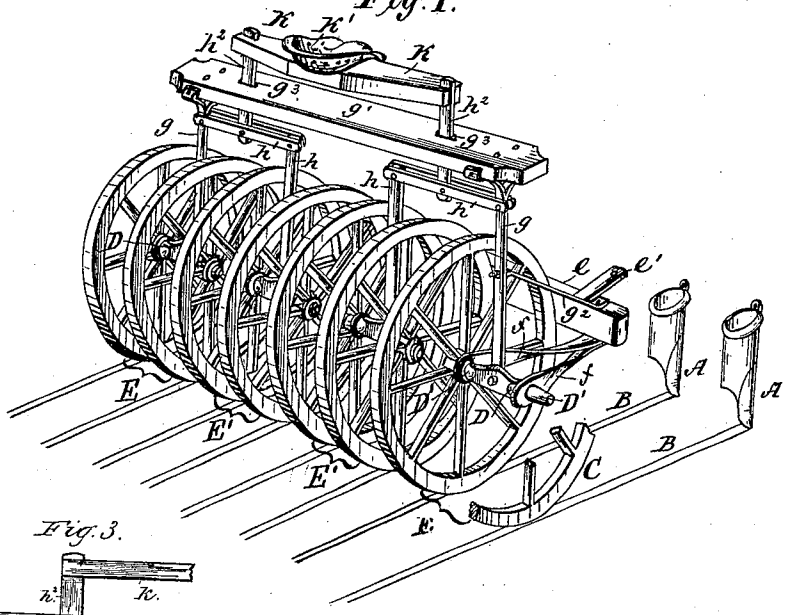


Fig. 3.

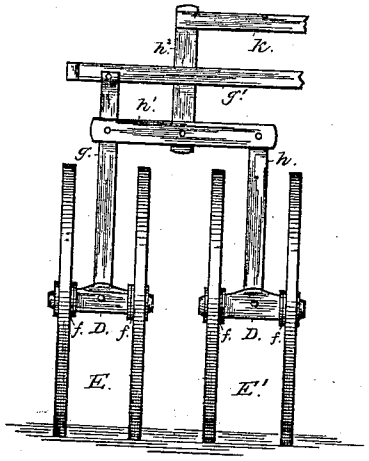
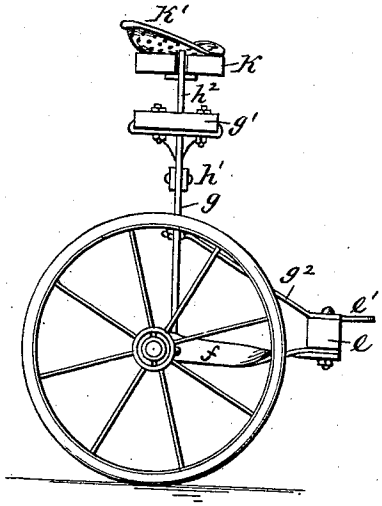


Fig. 2.



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UNITED STATES PATENT OFFICE.

PERRY H. SMITH, OF TOPEKA, KANSAS.

GRAIN-DRILL ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 266,325, dated October 24, 1882.

Application filed February 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, PERRY HARRISON SMITH, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Grain-Drill Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish a roller attachment for the various kinds of seed-drills known as "hoe-drills," whereby a separate roller will be provided to follow in the furrow formed by each hoe.

The invention consists in arranging the rollers in pairs, the rollers of each pair being on opposite ends of an axle pivoted at its center, so that it has a rocking or seesaw movement, whereby the two rolls readily adjust themselves to an uneven surface.

It consists, further, in the arrangement of the several pairs of rolls, in combination with the frame, whereby each pair will have an independent vertical movement or adjustment, so that it will readily pass over knolls or other obstructions.

It consists, further, in having the driver's seat and the arms or levers which support the pairs of rolls so combined that the weight of the driver is equally distributed over all the rolls.

It consists, further, in the combination and arrangement of the several parts hereinafter fully described.

In the drawings, Figure 1 is a perspective of my attachment having a portion of the first roll removed. Fig. 2 is a side elevation of the same; and Fig. 3 is a rear elevation, showing two pairs of the rollers with their coupling devices.

This invention is intended to be attached to any ordinary drill. I have not therefore shown a drill in the drawings, but show two hoes, A A, in position in front of the rolls, together with the furrows B B, opened by said hoes, and the wheels C C, composing one of the pairs supported on their axle D and running in the furrows B.

e is a head-bar having a length about equal to the width of the ordinary drill. It has fastened to it in suitable position two or more coupling-arms, *e'*. Only one of these coupling-arms is shown. The others are arranged at proper distances apart, and by them the head-bar is coupled to the drill-carriage.

f f are two arms, which have their forward ends attached to the head-bar *e*, and their opposite ends extended to the rear and provided with bearings adapted to slip onto the spindles D' D' of the axle D and retain the latter in proper place. The arms *f f* may be provided from a single bar of metal having its rear end bifurcated; or they may be separate bars, as shown. I have shown but a single pair of the arms *f f* as applied to one of the outer pairs of rolls. It will be understood that arms are provided for each pair of rolls, and arranged in same manner as the arms *f f*. The axle D has its spindles put through the bearings in the rear ends of the arms *f f*. The hubs of the wheels *c c* ordinarily bear against the arms or against a washer first placed on the spindle against the ends of said arms. The axles of the two end pairs of rolls are pivoted at their centers to the lower ends of vertical standards *g g*, so that they will have an oscillating or seesaw movement, whereby either one of the rolls in said pairs may be drawn over a clod, knoll, or other slight elevation without raising the other roll in said pair. The bars *f f* are suitably connected at their forward ends to the head-bar *e*, so as to permit this oscillating movement of the axles D. The standards *g g* have their upper ends carried above the peripheries of the rolls, and have placed on them a cross-beam, *g'*, the latter being secured so that it will have a slight tilting movement on its fastenings. The object of this tilting movement is to permit the pair of rollers at one end of the series to be lifted over any little knoll, clod, or other slight elevation without disturbing the position of the pair of rollers at the other end of the series, and also relieve the vertical standard from the strain which would result if the cross-beam *g'* were

fixed rigidly thereto. The standards g are supported by braces g^2, which extend to and are made fast to the head-bar e, as shown.

The device shown in the drawings has four pairs of rollers. The pairs E E are placed at the ends, and the pairs E′ E′ are arranged immediately in the series, forming two sets of four rollers, each set being composed of one end pair and one intermediate pair. The end pair of rollers is supported as hereinbefore explained. The intermediate pair next the end has its axle held in bearings in arms $f f$, similar to the supporting of the axle of the end pair. To the middle of the axle of the next intermediate pair the lower end of a vertical bar, h, is pivoted. The upper end of the bar h extends nearly to the cross-beam g', room being left for the vertical play hereinafter explained. The upper end of the bar h is pivoted to one end of a horizontal equalizing-bar, h', and the other end of the equalizing-bar is pivoted near to the upper end of the standard g. The equalizing-bar h' is preferably made in two pieces arranged parallel to each other, with their ends embracing the bar h and standard g, as shown. When the intermediate pair of rollers is thus coupled to the end pair it will be seen that either pair can have a vertical movement independently of the other. There is pivoted to the bar h', at the middle point between the bar g and the bar h, the lower end of the support h^2, the upper end of which is carried upward through a slot, g^3, in the cross-beam g'. The end of the seat-bar K rests on the top of the support h^2. I have described one set of two pairs of rollers. It will be seen that the construction, arrangement, and coupling together of both sets is exactly the same, and that the seat-bar rests on the ends of the two uprights or supports h^2, and that the pressure made by any weight placed on and at the middle of the bar K will be distributed equally to all four of the pairs of rollers. This equal distribution is effected by the peculiar construction and arrangement of the several parts hereinbefore described. The driver's seat K′ is fixed at the middle of the bar K; but in case more pressure be needed on one set of four rollers than on the other the driver can easily transfer his weight for the time being from the seat K′ along the bar K and over the rollers requiring increased pressure.

It will be seen that by the construction and arrangement of the several parts, as hereinbefore described, I secure an adjustment of the two rollers in each pair by means of the oscillating axle, a vertical adjustment of each pair of rollers independently of all the other rollers, and an adjustment of one set of four rollers independently of the other like set.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the frame for carrying the rollers, of an axle provided at its opposite ends with spindles and pivoted at its middle to the framing, and the two rollers placed on the spindles of the oscillating axle, and arranged in rear of and so that they will travel in the furrows formed by the shovels on the seeder-frame, substantially as set forth.

2. In a roller attachment for grain-drills, the combination, with the frame, of a series of rollers arranged in pairs, each pair being coupled to an adjacent pair, and having an independent vertical movement or adjustment, substantially as set forth.

3. The combination of the pair of rollers E, the standard g, cross-beam g', having slots g^3, of the pair of rollers E′, support h, equalizer h', support h^2, and seat-bar K, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PERRY H. SMITH.

Witnesses:

FREDK. FRITSHE,

SAMUEL DALTON.