(No Model.)

S. G. MAJOR.

GRAIN DRILL.

No. 258,449. Patented May 23, 1882.

Fig: 1.

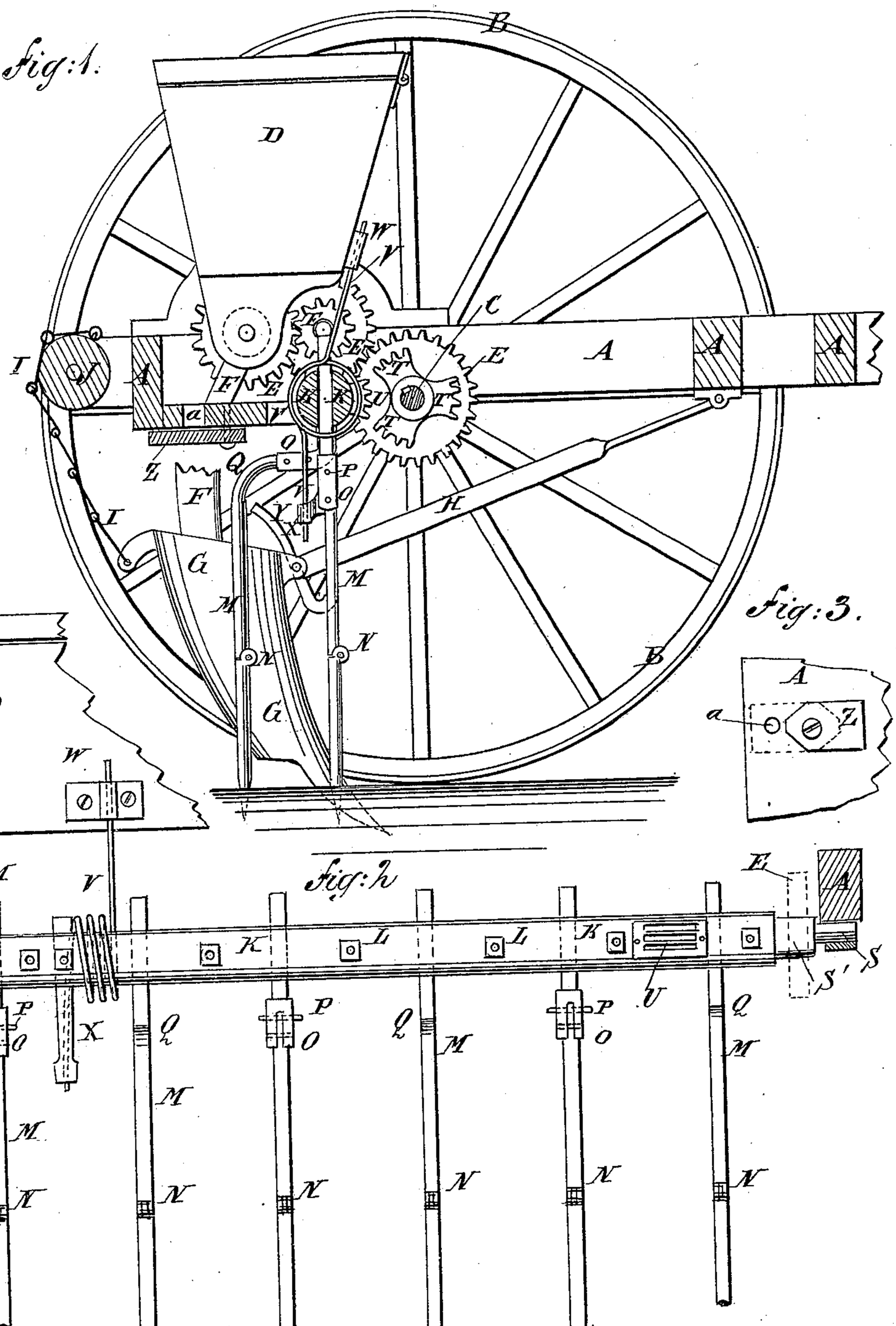
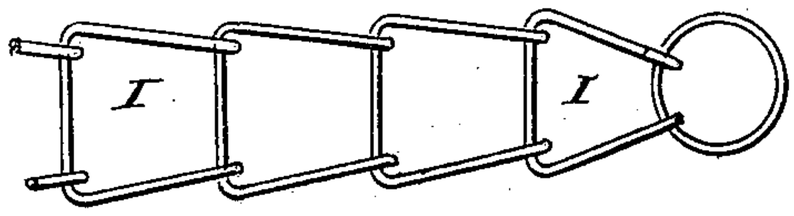


Fig: 3.

Fig: 2.

Fig: 4.



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GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 258,449, dated May 23, 1882.

Application filed February 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, SLAUGHTER GABRIEL MAJOR, of Haynesville, (Holt P. O.,) in the county of Clinton and State of Missouri, have invented a new and useful Improvement in Grain-Drills, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of a grain-drill to which my improvement has been applied. Fig. 2 is a front elevation of the improvement, the drill-frame being shown in section. Fig. 3 represents an adjustable stop-plate. Fig. 4 is a plan view of a part of the hoe-raising chain.

The object of this invention is to remove trash from in front of drill-hoes without its being necessary to stop the drill or raise the hoes from the ground.

A represents the frame, B the drive-wheels, C the drive-wheel shaft or axle, and D the seed-box, of an ordinary grain-drill.

E represents the gear-wheels for driving the seed-dropping mechanism.

F represents the seed-conducting spouts, G the hoes, and H the draw-bars.

I is one of the hoe-raising chains, which is connected at one end with a hoe, G, and at its other end with a shaft, J, journaled to the frame A, so that the hoes G can be raised from the ground and adjusted to work at any desired depth in the ground by turning the shaft J. The chains I are made with wide flat links, as shown in Fig. 4, to lessen the lateral play of the hoes when at work.

In the rear of the axle C, and parallel therewith, is placed a shaft, K, which is formed in two parts, secured to each other by bolts L, to receive and hold the upper ends of the teeth M, so that the said teeth can be adjusted to work at any desired closeness to the ground by loosening the said bolts L. In the lower parts of the teeth M are formed joints N, which are made in the manner of rule-joints, so that the lower parts of the teeth can swing forward freely, but cannot swing back any farther than to be in line with the upper parts of the said teeth. The sides of the lower ends of the teeth M next the hoes G are beveled to prevent the said teeth from rubbing against or catching upon the said hoes. In the upper parts of the teeth M are formed hinge-joints O, which are held rigid by pins P, of wood or other suitable material, and which are made of sufficient strength to support the strain under ordinary circumstances, but which, should the teeth M strike an obstruction, will break and allow the said teeth to swing back to prevent the teeth M from being broken. In case the drill-hoes are arranged in two rows the teeth M, corresponding with the rear hoes, should have a bend or offset, Q, in their upper parts to bring their lower parts into proper position, so that both rows of hoes can be cleared by the movements of a single shaft, K.

To and between the parts of the shaft K, at one end, is bolted a journal, R, which works in a bearing attached to a side bar of the frame A. To and between the other ends of the parts of the shaft K is bolted a journal, S, which works in a bearing attached to the other side bar of the frame A. The journal S is made long, so that the end of the shaft K will be at a little distance from the side bar of the frame A, and the part S′ of the said journal, between the bearing and the end of the shaft K, is made larger than the part that works in the said bearing to prevent the shaft K from having a longitudinal movement. By this construction a space is formed to receive the gear-wheels E, so that the shaft K and gear-wheels E will not interfere with each other, as indicated in dotted lines in Fig. 2.

To the axle C is attached a segmental gear-wheel, T, which is formed of three segments, and each segment is provided with four teeth to mesh into the four-toothed segment U, attached to the forward side of the shaft K, so that as the axle C is revolved the segments T will successively engage with the segment U and turn the shaft K forward, giving a forward movement to the lower ends of the teeth M and clearing off any trash that may have accumulated in front of the hoes G.

Around the shaft K is coiled a spring, V, one end of which is secured to the seed-box D by a keeper, W, and its other end is secured to

the end of an arm, X, attached to the shaft K, so that the said spring will turn the shaft K back to its former position as soon as the segment U is released from each segment T, the joints N of the teeth M allowing the said teeth in their rearward movement to readily pass over any trash that may be upon the ground. The rearward movement of the shaft K is limited by a bent arm, Y, attached to the said shaft, and which strikes against a plate, Z, of leather or other soft material, to prevent the spring V from turning the shaft K so far back that the successive segments T will not engage with the segment U. The plate Z is secured near one end to the frame A by a single screw, so that the said plate can be turned to one side to allow the end of the bent arm Y to enter a hole, *a*, in the frame A, and thus allow the shaft K to be turned so far back as to carry the segment U out of the way of the segments T when it is desired to prevent the teeth M from being operated. With this construction the teeth M will be vibrated three times at each revolution of the axle C, which number can be increased or diminished by using more or fewer segments T, and the swing of the teeth can be made longer or shorter by increasing or lessening the number of teeth in each segment. With this construction, also, it is not necessary to throw the clearing mechanism out of gear when the drilling mechanism is thrown out of gear when turning at the side of the field, as the said clearing mechanism will work with the same facility when turning as when running in a straight line.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a grain-drill, the combination, with the frame A and the axle C, of the shaft K, the jointed teeth M, the gear-segments T U, and the spring V, substantially as herein shown and described, whereby the said shaft and teeth will receive a reciprocating movement from the revolution of the said axle, as set forth.

2. The combination, with the hoes, arranged in two rows, and a single shaft, K, of teeth M, having the bend or offset Q in their upper parts, whereby both rows of hoes can be cleared by a single shaft, as described.

3. The combination, with the teeth M, rule-jointed at N, the shaft K, having spring V and arm Y, and the axle C, of the gear-wheel T, formed of three segments, each provided with four teeth, the four-toothed segment U on shaft K, and the leather plate Z on frame, as and for the purpose specified.

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Witnesses:
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