A. B. THOMPSON.

Improvement in Corn Shellers.

No. 120,549. Patented Oct. 31, 1871.

Fig. 1.

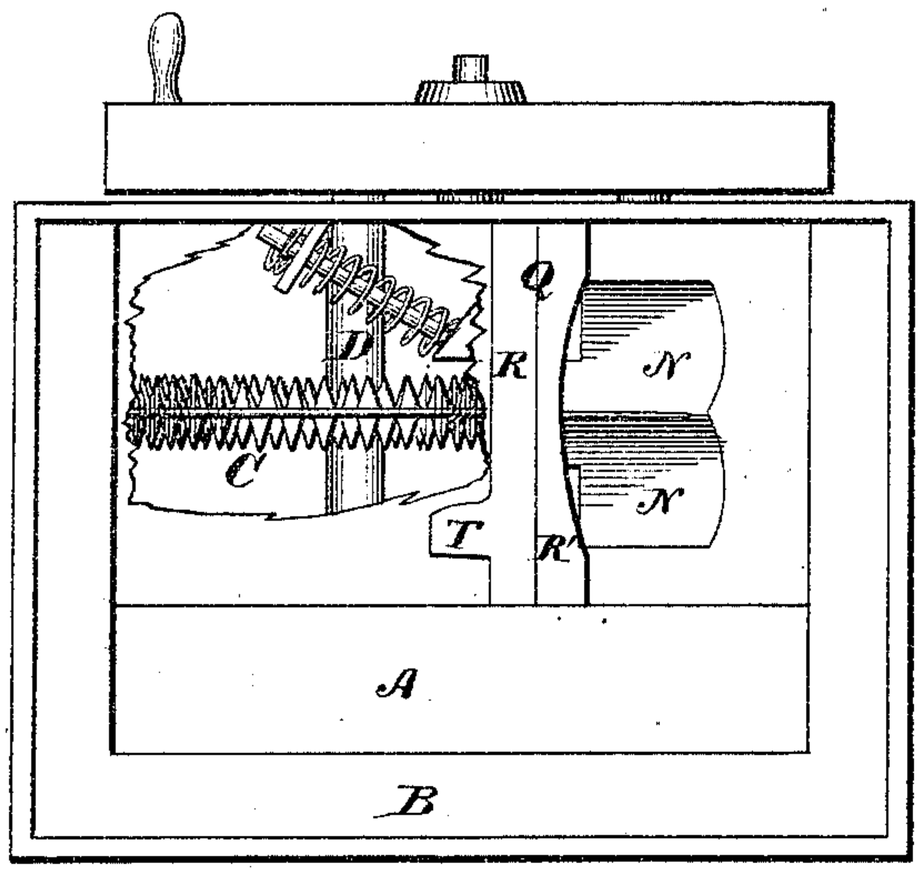


Fig. 2.

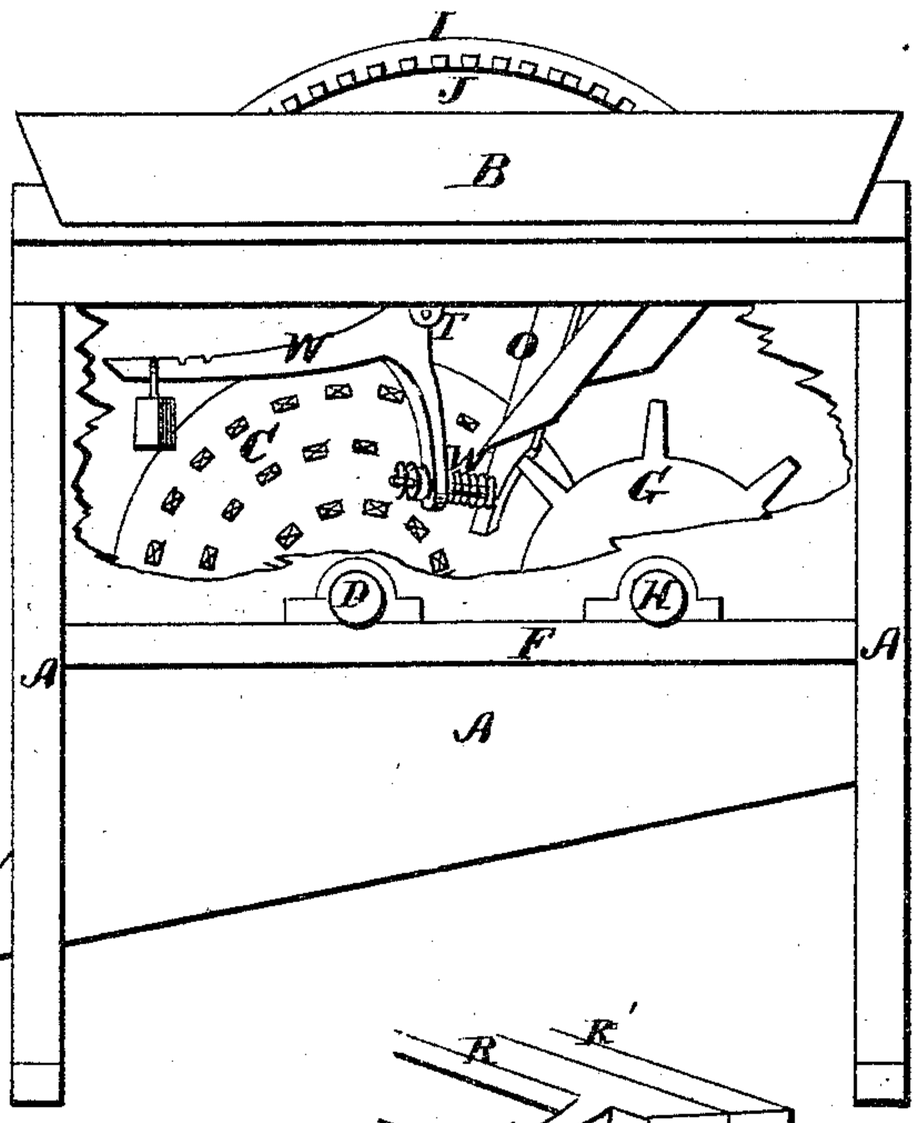


Fig. 3.

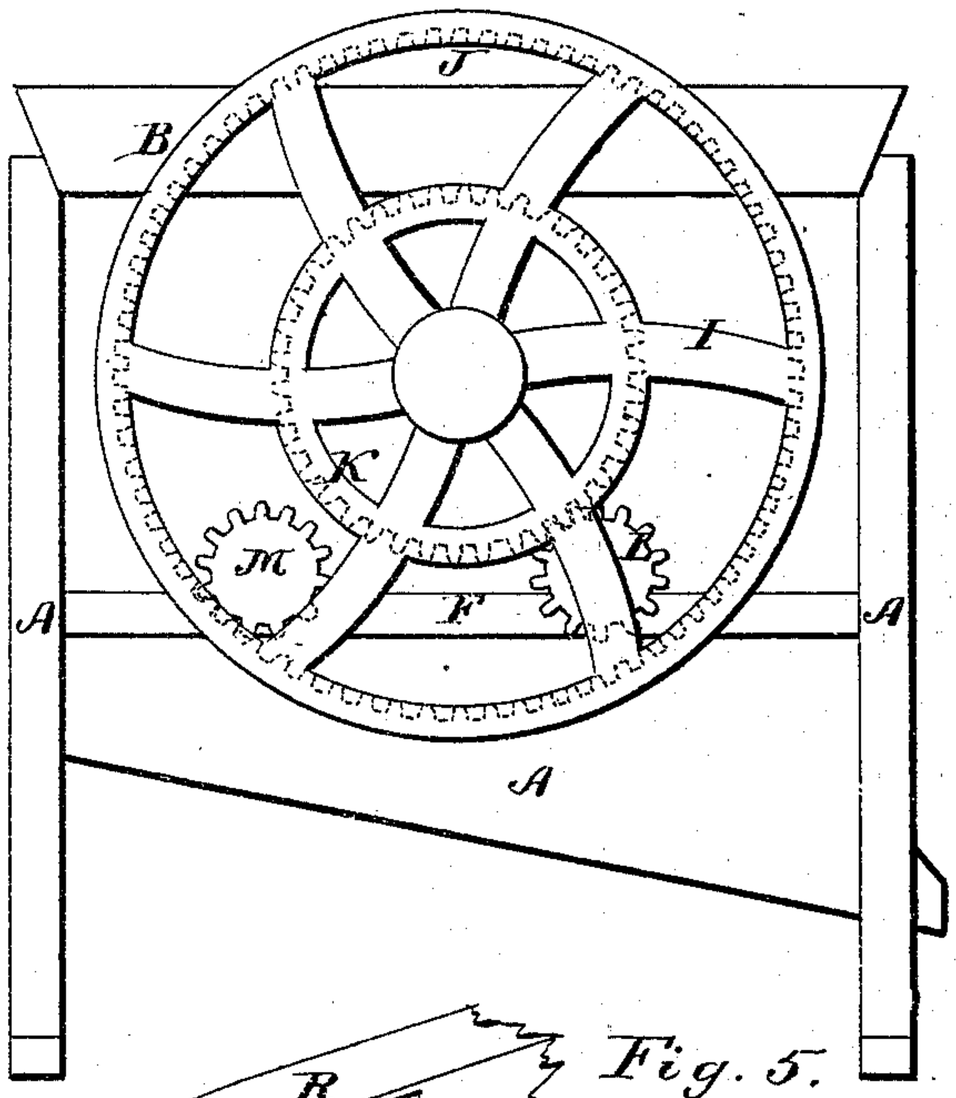


Fig. 4.

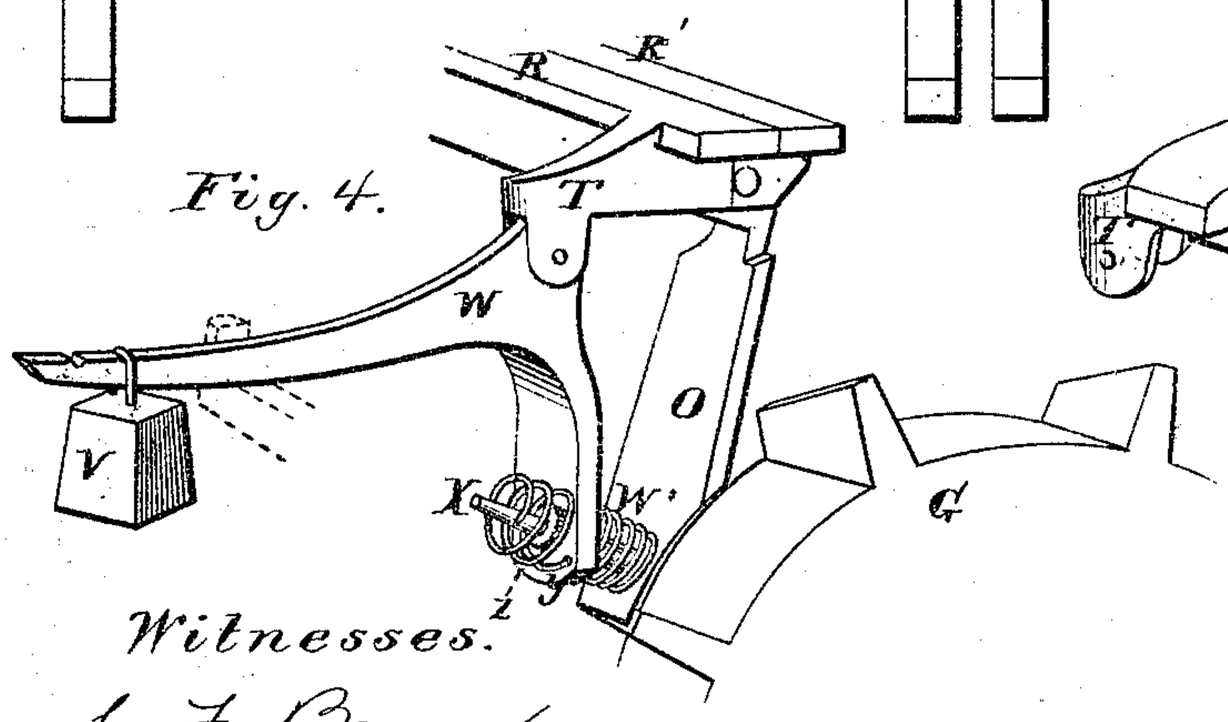
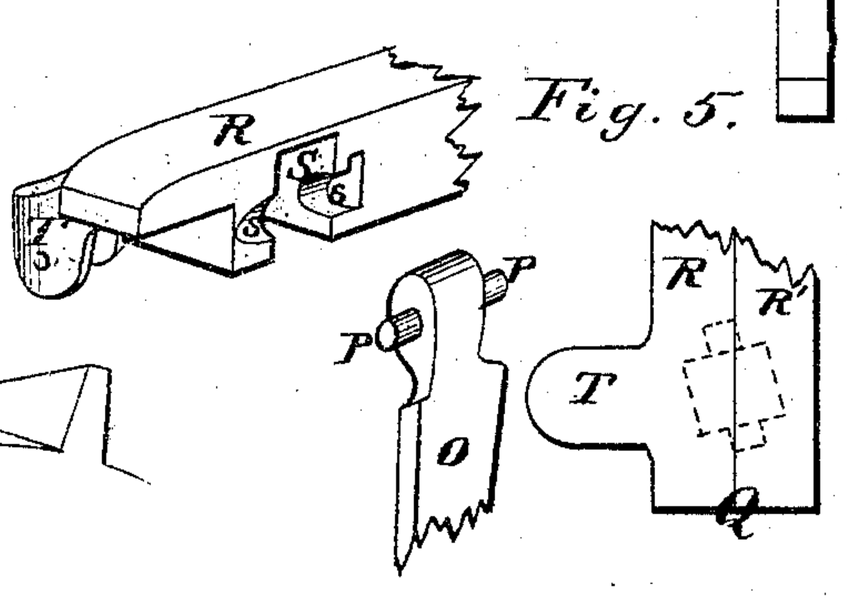


Fig. 5.



Witnesses.

C. F. Brown.
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Inventor.

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UNITED STATES PATENT OFFICE.

AMBROSE B. THOMPSON, OF OWEGO, NEW YORK.

IMPROVEMENT IN CORN-SHELLERS.

Specification forming part of Letters Patent No. 120,549, dated October 31, 1871.

To all whom it may concern:

Be it known that I, AMBROSE B. THOMPSON, of Owego, in the county of Tioga and State of New York, have invented an Improved Corn-Sheller; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a top plan view of my improved corn-sheller, part being broken away. Fig. 2 is an elevation of the same, showing the side opposite the driving-wheel, and partly broken away. Fig. 3 is a similar view, showing the opposite side of the machine. Fig. 4 is a perspective view of the spring-jaws and a portion of one feed-wheel; and Fig. 5 is a perspective view of detached parts, showing the method of attaching the spring-jaws to their supports.

Similar letters of reference in the accompanying drawing denote the same parts.

My invention has for its object to improve the construction of corn-shellers, and adapt them to perform their work in a more thorough and efficient manner than those now in use.

My invention consists, first, in the arrangement of the gearing for the purpose of dispensing with the complicated arrangement which has heretofore been employed, and which renders the manufacture of corn-shellers of this class so expensive. My improvement, in this respect, reduces the cost of manufacture materially and requires less expenditure of power to operate the machine, because the power applied to the gearing is not as much absorbed as it is in the more complicated system before its effect is felt upon the shelling and feed-wheels.

The invention further consists in the construction of the supports from which the clamping-jaws are suspended, and in the method of hinging said jaws thereto. These supports are usually made in the form of brackets, provided with ears and secured to the hopper above the shelling-wheel, the jaws being hung in said brackets, between the ears, upon bolts which pass transversely through the latter. Inasmuch as the bolt-holes through the ears must be drilled, much labor is necessarily expended in fitting the jaws; and as each bracket must be drilled separately, the holes cannot always be drilled alike. It is, therefore, necessary to fit each bracket to its machine, and drill the bolt-holes so that the clamping-jaws shall occupy the proper position in such machine, conforming to its peculiarities. This is absolutely essential, as a very slight change in the position of the jaws, with respect to the shelling-wheel, either causes the machine to perform good work or passes the ears through unshelled. My improvement, in this feature, consists in casting the supports in the form of two bars, each containing recesses to receive the heads of the clamping-jaws, so that when the bars are placed together and secured to the machine the jaws are held suspended therefrom. The supports can all be cast from one pattern, and are therefore uniform and capable of general application.

The invention further consists in the combination of a spring and weight with the clamping-jaws, so arranged that the spring shall bear upon the jaw and the weight upon the spring. By this arrangement the weight presses constantly upon the jaw with a yielding pressure, thereby overcoming the jerking or pounding action, when the machine is in operation, incident to the use of a weight applied to the jaws without an interposed spring.

The invention consists, finally, in the method of adjusting the tension of the spring and the pressure of the weight.

In the accompanying drawing, A is the frame of the machine, constructed in the usual manner and provided with a hopper, B. C is the shelling-wheel, provided with spurs upon both faces and mounted upon a transverse shaft, D, having its bearings in the longitudinal bars F of the frame, a little in front of the center. G G are the feed-wheels, of the usual form, mounted upon a transverse shaft, H, also having its bearings in the bars F, a little in rear of the center of the machine, so that the wheels G shall overlap the shelling-wheels slightly upon each side. This shaft is also provided with a balance-wheel outside the frame, as shown in Fig. 3. I is the driving-wheel, from which motion is communicated to the shelling and feed-wheels, mounted upon a short shaft projecting from the side of the frame A. The wheel I is cast in one piece, with two sets of cogs, the former, J, upon the inner surface of the rim, and the latter, K, constituting the perimeter of an interior rim, arranged concentrically to the hub. Upon the outer ends of the shafts D H are mounted pinions L M, re-

spectively, the former gearing with the cogs K to drive the shelling-wheel, and the latter gearing with the cogs J to drive the feed-wheels. By this simple arrangement of gearing the acting-surfaces of the feed and shelling-wheels are brought near that end of the frame from which the driving-wheel is operated, so that the feed-openings N shall be within reach of the operator while driving the machine. It also increases the motion of the feed and shelling-wheels to a considerable extent, whereby the machine is adapted to perform a greater amount of work than by the ordinary arrangement of gearing. O are the metal jaws, by which the ears of corn are held in contact with the shelling and feed-wheels. They are each cast with an enlarged head, having trunnions P. Q is the support for the clamping-jaws, secured to the top of the frame A in front of the feed-openings N. This support is cast in the form of two bars, R R′, each having recesses S in their proximate faces, so that when put together and secured to the machine they hold the heads of the clamping-jaws in such recesses and permit them to turn upon their trunnions. By this construction the supports can all be cast from one pattern, and thereby adapted to fit all machines without alteration. The front of the bar R is cast with ears T, to which are pivoted the angular levers W, as shown in Fig. 4, the longer arms of which levers are provided with an adjustable weight, V, and the shorter arms bear against spiral springs W′ attached to the lower ends of the clamping-jaws, surrounding short studs X, which project from said jaws through openings formed in the short lower arms. The coils of the springs pass separately through holes *y* formed in the shorter arms of the levers, and by turning the springs either to the right or left their tension is regulated. For example, if the springs are turned to the right, the coils are passed through the holes *y*, increasing the number of coils between the lever-arms and the clamping-jaws, and, consequently, increasing the tension. The studs X are provided, upon their outer ends, with nuts Z, by which the springs are prevented from forcing the clamping-jaws too near the feed and shelling-wheels. By adjusting the nuts the jaws are held at the requisite distance from these wheels, and by adjusting the springs the pressure of the jaws upon the corn is regulated. By this arrangement, no matter what the tension of the springs may be, the jaws are, under all circumstances, held against the ears of corn with a yielding pressure. The pressure of the angular lever upon the springs is regulated by adjusting the weights upon the longer arms of said levers, as will be readily understood.

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

1. The arrangement, in a corn-sheller, of the double-cogged driving-wheel I and of the pinions L M upon the shafts of the shelling and feed-wheels, substantially as described and shown, and for the purpose specified.

2. The supports Q for the clamping-jaws O, constructed in two parts, R R′, as described, each provided with corresponding recesses in their proximate faces, as and for the purpose specified.

3. In combination with the supports Q, the clamping-jaws O O, cast with trunnions upon their enlarged heads, substantially as described, for the purpose specified.

4. The arrangement of a weight and spring with the hinged clamping-jaw of a corn-sheller, substantially as described, whereby the force exerted by the weight acts directly upon the spring alone, which spring holds the jaw against the corn, for the purpose specified.

5. In combination with the clamping-jaws O, the spiral springs W′, adapted for adjustment through the short arms of the weighted levers W, substantially as described, and for the purpose specified.

6. In combination with the clamping-jaws O, the weighted levers W, and the adjustable spiral springs W′, the studs X and nuts Z, substantially as described, for the purpose specified.

7. In combination with the jaw-supports Q and with the clamping-jaws O, the weighted angular levers W, substantially as described, for the purpose specified.

AMBROSE B. THOMPSON.

Witnesses:
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