G. W. FITTS.

Corn Sheller.

No. 48,670.

Patented July 11, 1865.

Fig. 1.

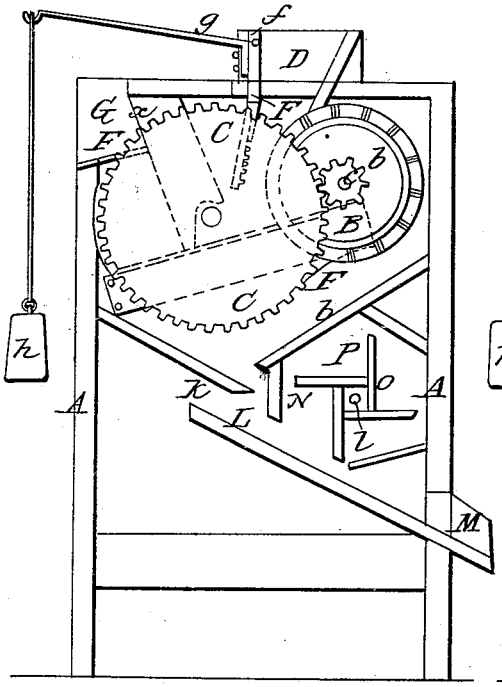


Fig. 4.

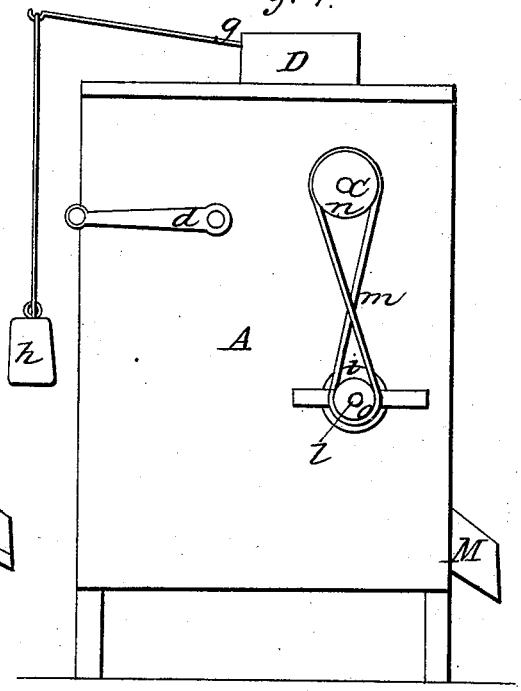


Fig. 2.

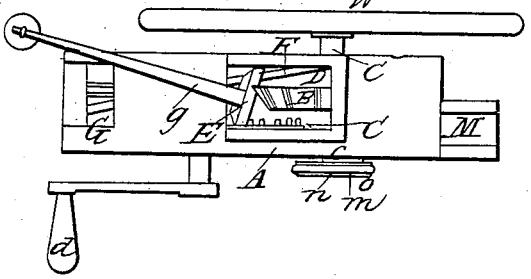
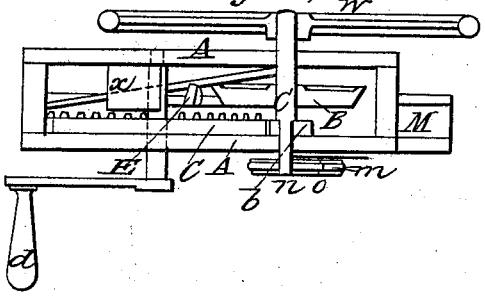


Fig. 3. Section.



Witnesses:
F. P. Hale Jr.
H. E. Fisher

Inventor:
George W. Fitts,
by his attorney
R. H. Eddy.

UNITED STATES PATENT OFFICE.

GEORGE W. FITTS, OF SOUTH HAMPTON, NEW HAMPSHIRE.

IMPROVEMENT IN CORN-SHELLERS.

Specification forming part of Letters Patent No. **48,670**, dated July 11, 1865.

To all whom it may concern:

Be it known that I, GEORGE W. FITTS, of South Hampton, of the county of Rockingham, of the State of New Hampshire, have invented an Improved Corn-Sheller, or machine for removing kernels of maize from the cob and separating them from the dust or extraneous matters created during the operation of detaching them from the cob; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical and longitudinal section of it. Fig. 2 is a top view, Fig. 3 a horizontal section, and Fig. 4 an elevation, of it.

In the said drawings, A denotes the frame or case of the machine. Within this frame are two shelling-wheels, B C, which are arranged with respect to each other as represented. The wheel B has a beveled circumference, which is provided with teeth. The wheel C has teeth or projections formed on its inner face, and it also has cogs on its periphery, such cogs being made to engage with a pinion, *b*, fixed on the shaft *c* of the wheel B.

There is a crank, *d*, and a fly-wheel, *w*, applied to the shaft *c* of the wheel B. By turning this crank the two wheels B C will be put in revolution. A hopper or mouth, D, is placed over the said two wheels B C, and has within it a presser or board, E, which extends down in front of the periphery of the wheel B and the grinding-face of the wheel C, and turns on a pin, *f*, extending through the upper part of the hopper. A spring, *g*, projects from the presser-board E, and has a weight, *h*, suspended from it, the same serving to press the board toward the two wheels B C.

There extends from the wheel B and alongside of the abrasive face of the wheel C a curved chute, F, which leads up to a discharging-throat, G, arranged as shown in Figs. 1 and 2.

In front of the wheel C, and over the chute F, and extending up into the throat G, is a board or presser, H, which is pressed toward the wheel C by means of a spring, *h*, and serves to keep the cob against the said wheel C while such wheel may be revolving. By this action of the chute F, the wheel C, and the presser H, the cob, after having its kernels separated from it by the conjoint operation of the two wheels B C and the presser E, will be driven into, through, and out of the throat G.

Below the two wheels B C and the curved chute F are three inclined planes or boards, I K L, which are arranged with respect to each other and the wheels, and in the case A, in manner as shown in Fig. 1. The lowermost of said boards—viz., L—inclines into a discharging-spout, M. Furthermore, a partition, N, extends down from the board I to within a short distance from the upper surface of the board L, and also to within a short distance from the lower end of the inclined board K. These boards I, K, L, and N extend quite across the case, from side to side of it.

A rotary fan wheel or blower, O, is disposed with respect to the three boards I, N, and L in manner as shown in Fig. 1, and within a chamber, P, formed in part by the partition N. This chamber opens over the board L, and has an air-inlet passage, *i*, through its side and about the shaft *l* of the fan-wheel. A crossed band, *m*, proceeding from a pulley, *n*, on the shaft of the wheel B, communicates motion to a pulley, *o*, fixed on the said shaft *l* of the fan-wheel, and thus revolves the fan-wheel in such manner as to cause it to draw air into the chamber P and discharge it in a stream upon and up the plane L.

In the operation of this machine the ear of corn or maize, on being dropped with its smaller end foremost into the receiving-hopper D, will be drawn around by the two wheels B C, which by their action on it will revolve it and strip from it its kernels, which, falling on the plane I, will be discharged therefrom upon the plane K, and from thence will fall down upon the plane L, and by it and the spout M be discharged from the case. In its passage from the plane K to the plane L the corn will meet the blast of air proceeding from the fan-wheel chamber. This blast of air, in passing through the current of corn, will separate from it the dust and extraneous matters, and drive such up and beyond the plane L, from whence they will fall out of the machine.

I would observe that by the employment of the spring or elastic arm *g* and the weight *h*, with the presser-board E, in manner as described, the board will operate much better than it would were a spring only used to press it toward the wheels B C, or were a simple stiff

lever and a weight suspended therefrom employed for such purpose. The weight exerts a constant pressure on the presser-board, which is requisite for its proper action, and, furthermore, the spring-arm enables the presser to move more quickly and easily than it would were the arm stiff and the presser-board to overcome the inertia of the weight. With the spring-arm and weight I have found the kernels are less liable to be cracked or broken by the wheels than they would be were a spring alone used with the presser, or were a weight and a stiff arm employed to force the presser up to the ear of corn and the latter up to the wheels B C. The cob, on reaching the curved chute, will be driven up the same by the wheel C, the presser-board H serving to keep the cob in contact with the wheel. In this way the cob will be discharged out of the throat G. Thus it will be seen that by the action of my machine not only will the kernels of corn and the cob be separated from each other, but the corn will be winnowed from dirt and dust or bran and the corn-cob or dust or bran will be disposed in separate piles or places. When the cob is driven up into the discharging-throat G the back board or part, *x*, of the throat will arrest the cob, and the wheel C will revolve it so as to remove from it any remaining kernels. At the same time the wheel will act so as to force the cob upward and drive it into and through the throat.

What I claim as my invention in the said machine is as follows:

The arrangement of the discharging-throat G and its back board or part, *x*, with the curved chute F and the wheel C, to operate as specified.

GEO. W. FITTS.

Witnesses:
R. H. EDDY,
F. P. HALE, Jr.