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Samuel Gantz.

Mach. for Separating Wheat

Garlic.

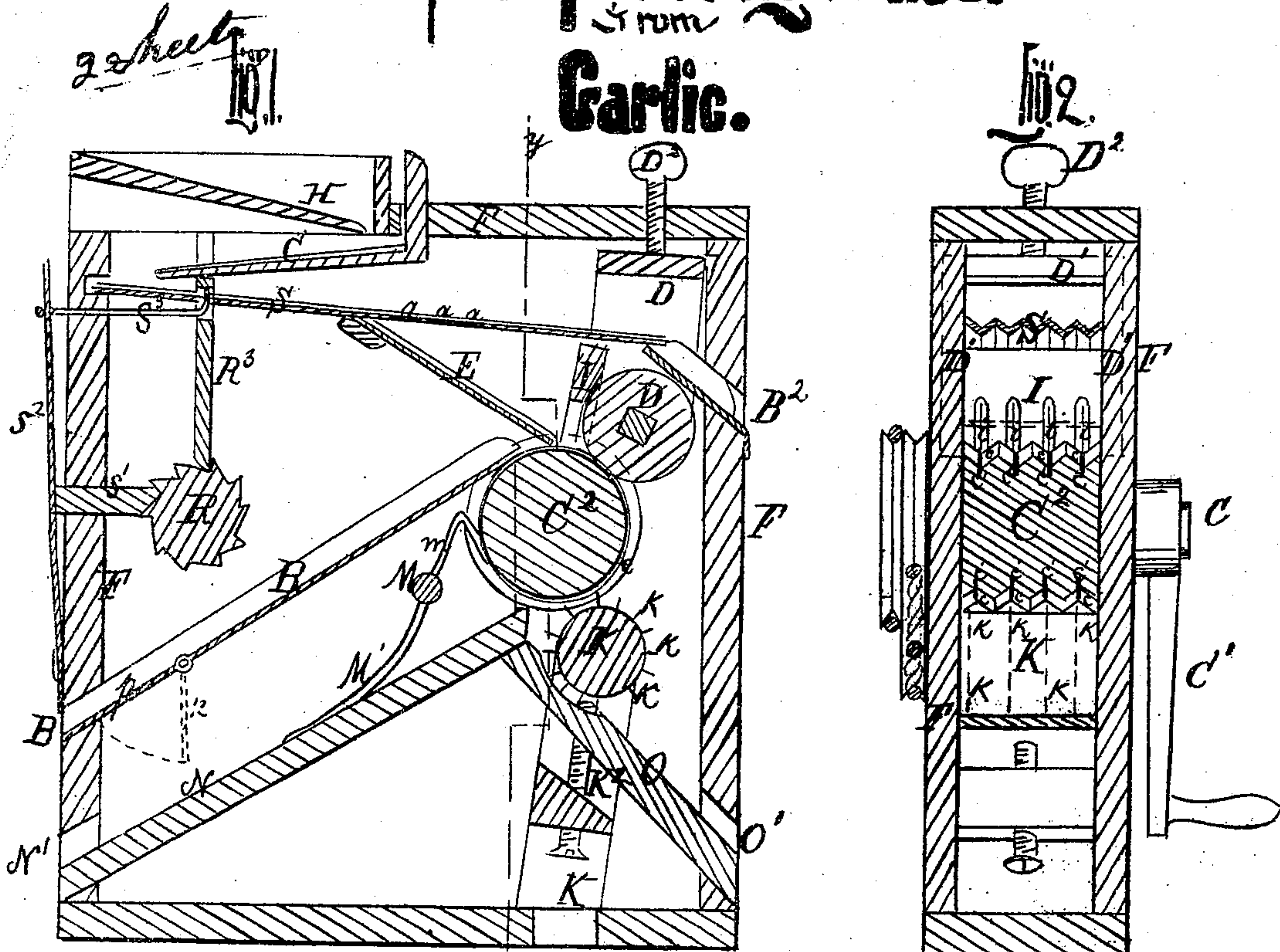
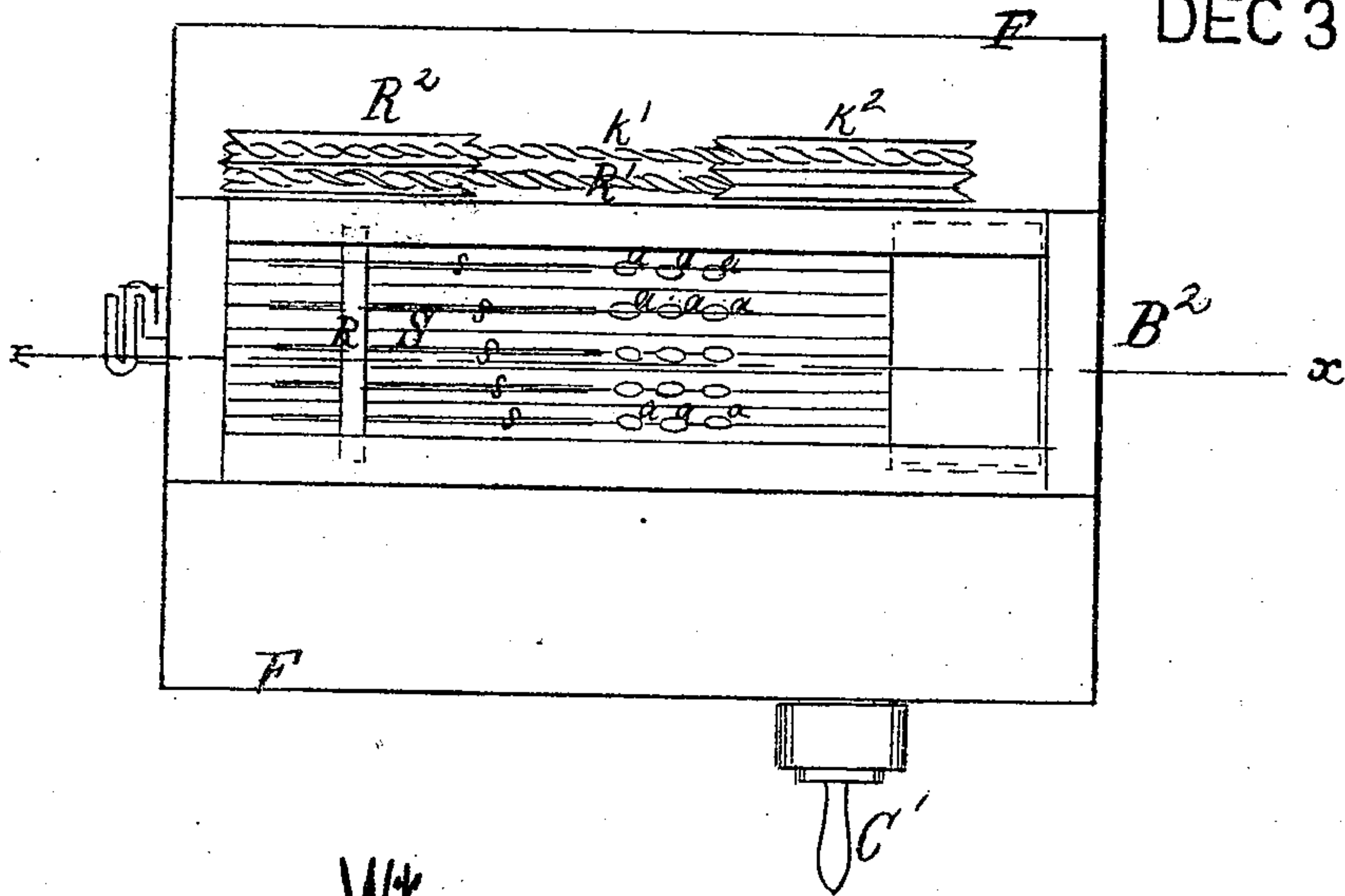


Fig. 3

PATENTED

DEC 31 1867



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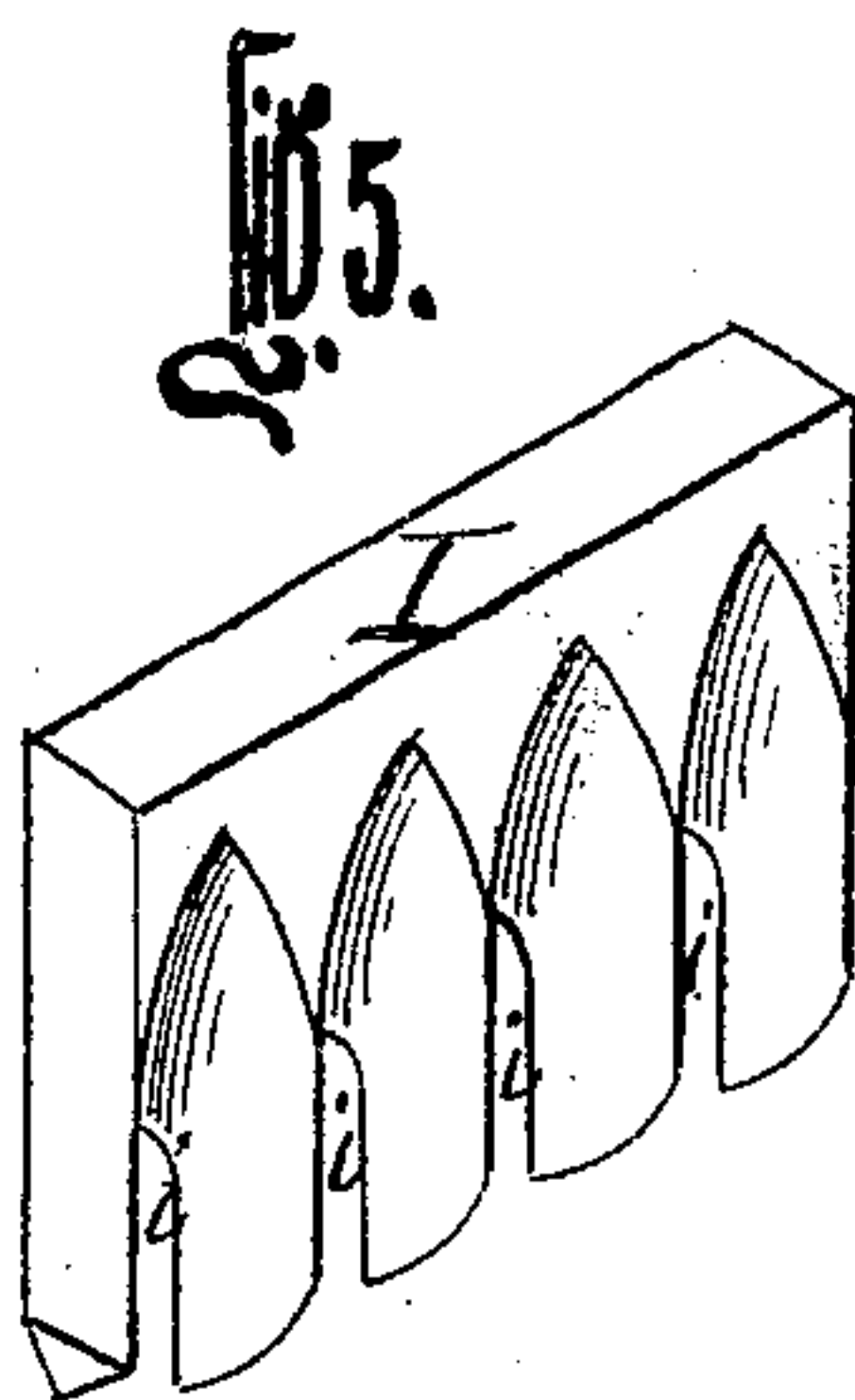
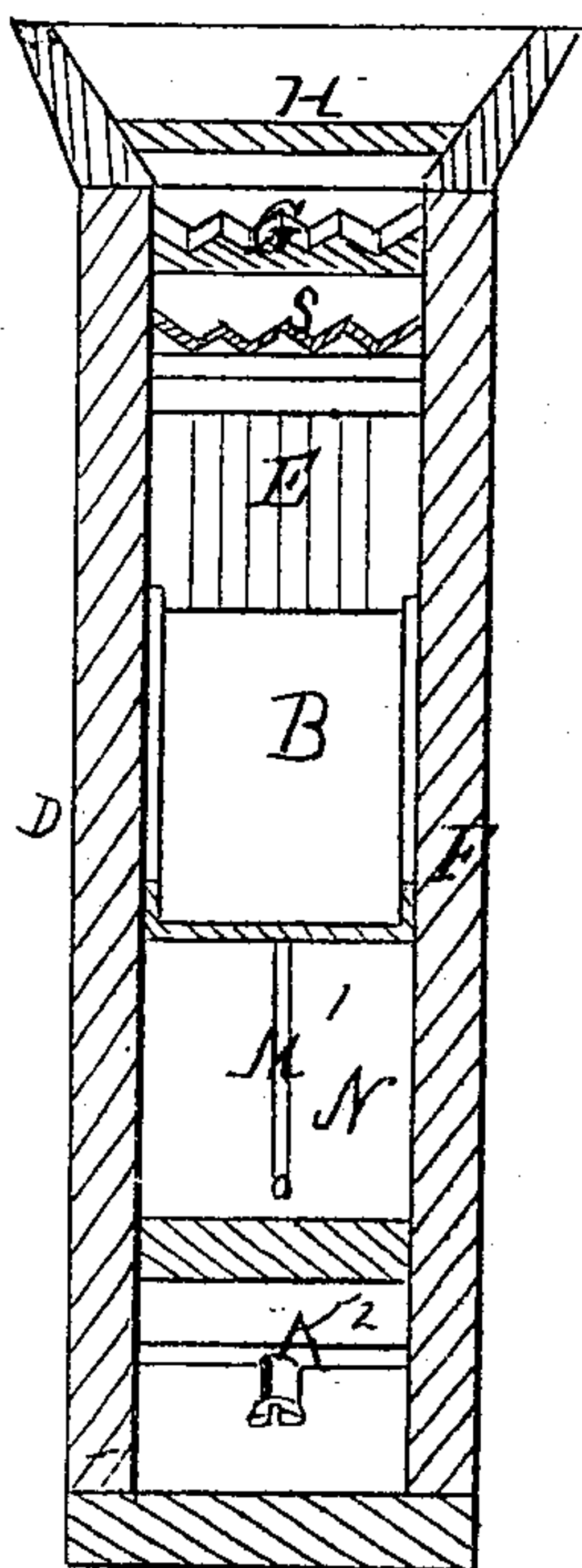
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Mach^g for Sep^g Wheat from Carlic.

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SAMUEL GANTZ, OF BEAVER CREEK, MARYLAND.

Letters Patent No. 72,834, dated December 31, 1867.

IMPROVEMENT IN MACHINE FOR SEPARATING WHEAT FROM GARLIC.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL GANTZ, of Beaver Creek, in the county of Washington, and State of Maryland, have invented a new and improved Machine for Separating Wheat from Garlic; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a longitudinal vertical section of my invention through the line *x x* of fig. 3.

Figure 2 is a vertical transverse section of the same through the line *y y* of fig. 1; and

Figure 3 is a top view of the same, the hopper being removed.

Figure 4 is a vertical cross-section through the line *z z* of fig. 1; and

Figure 5 is a view of the guide-block I detached.

This invention is a simple, compact, and cheap portable machine, operated by hand or other power, by means of which wheat can be thoroughly and easily cleansed from garlic, rye, and other similar impurities.

Similar letters of reference indicate corresponding parts in the drawings.

In the drawings, *F F* represent the frame of my machine. *H* is a hopper, resting upon the top of the frame, and delivering the impure grain upon a grooved incline, *G*, by which it is carried to the left end of the machine, as seen in fig. 1, and thrown upon an inclined grooved screen, *S*. *R* is a cam-wheel, receiving motion from the driving-shaft by means of the belt *R¹* and pulley *R²*, and serving to give the incline *G* a vertical vibrating or shaking motion, by means of the plate *R³*, sliding up and down in a groove in the frame of the machine, and also to give the screen *S* a horizontal shaking motion by means of the reciprocating rod *S¹*, spring *S²*, and connecting-rod *S³*. The grain having fallen upon the screen *S*, and being immediately agitated by the motion of the screen, commences to slide down its inclined surface, the smaller impurities falling through the slots *s s*, along the bottom of the grooves, and dropping upon a spout, *B*, by which they are discharged from the machine at *B¹*. The larger impurities pass with the wheat along over these slots, until the apertures *a a* are reached, which are also at the bottom of the grooves, and large enough to admit the grains of wheat, garlic, &c., but too small to admit other larger impurities, which continue to travel along the screen, and are finally discharged from the machine at *B²*. In this manner the grain is thoroughly sifted and separated from the impurities, except those existing in the state of kernels or grains of the size of full merchantable grains of wheat. *C* is the working-shaft of the machine, actuated by power applied at *C¹*, and bearing a grooved drum or wheel, *C²*, the grooves of which, *c c*, are many in number, deep, and of the form shown clearly in fig. 2. Into these grooves the grain is conducted by the grooved incline *E*, which receives it from the apertures *a a*, and delivers it upon the top of the wheel. *D* is a large gum roller, working on a shaft hung in a frame, *D¹*, sliding in a guide slot or groove in the frame *A*, and adjustable vertically or nearly so by means of the gauge-screw *D²*. The face of the gum roller is grooved, the ridges between the grooves having a rounded surface, and being so situated that each ridge plays into one of the grooves *c* of the wheel *C²*, filling that groove as far as the bottom of its expanding or V-shaped walls, but not entering the narrow parallel-sided channel *c'*, at the bottom of those walls. This roller is to be set so as to press strongly against the wheel, and is turned by the motion of the wheel. The force with which it acts against the surface of the wheel can be adjusted at pleasure from the outside of the machine, by means of the gauge-screw *D²*. *I* is a guide-block, fixed in a nearly vertical position over the wheel *C²*, and between the lower end of the incline *E* and the frame *D¹*, and provided with vertical guide-channels *i i*, in shape like Gothic arches, one corresponding to each groove of the wheel *C²*. At the bottom of each of the arches is an opening through which the grain passes after leaving the incline *E*. The front side of the arches is turned towards the incline to receive the grain from it. The back of the guide-block, or the side towards the roller *D*, may be of any shape. Beneath the wheel is another frame *K*, sliding and adjustable in the same manner as the frame *D¹*, but in the opposite direction, and bearing a revolving roller *K¹*, armed with rows of teeth *k k*, so situated as to come nearly in contact with the salient edges of the ridges between the grooves of the wheel *C²*, one row of teeth corresponding to each ridge. This roller moves in the same direction as the wheel *C²*, through the operation of the belt *k¹* and pulley *k²*, connecting it with the pulley *R²*. *K²* is the gauge-screw, by which the position of the frame *K* and roller *K¹* is regulated. On the left side of the wheel *C²*, as shown in fig. 1, is a rake, employed to clear the narrow channels at the bottom of the grooves *c c*, and consisting

of a small roller M, provided with a set of hooked teeth, *m m*, one projecting to the bottom of each of said channels, and thoroughly cleaning it, as the wheel C² revolves, from any obstructions that may lodge in it. M' is a spring which operates upon the roller and presses the teeth into the channels. N and O are spouts, which deliver, the former the garlic, the latter the pure cleansed wheat from the machine.

The operation of the machine after the wheat has been carried to the wheel C², as above described, is as follows: The guide-block I directs the grain accurately into the grooves *c c*, and holds it there until it comes under the gum roller. The latter pressing powerfully against the wheel, and into its grooves *c c*, forces the seeds of garlic, which are softer than the kernels of wheat, into the narrow channels *c' c'*, at the bottom of the grooves *c c*, and causes them to adhere to the surface of the wheel in the grooves. It does not have this effect upon the wheat, for the reason that its kernels are too large to enter the channels *c' c'* without being previously crushed, and are too firm to be crushed by the gum roller. Some of the wheat-kernels do, however, present their folded or seam side to the edges of the ridges of the wheel in such a manner that the gum roller forces them to open their seams, and clasp the ridges, so as to adhere to the wheel after passing from under the roller. These grains are removed by the teeth of the roller K¹, which is specially designed for that purpose. The grains of wheat thus removed, together with all the other grains of wheat, fall from the right side of the wheel C², (fig. 1,) upon the incline O, whence they are delivered through the port O' into suitable measures. The grains of garlic, rye, &c., adhering in the grooves *c c* and channels *c' c'*, are carried round under the wheel to its left side, (fig. 1,) where, as they rise, they come in contact with the rake-teeth *m m*, and are detached from the wheel, falling upon the incline N, down which they slide to the discharge-port N'. The discharge-port B' of the incline B is situated over the port N'. By this means the impurities discharged may be allowed to fall together in a heap, or they may be kept separate by a conducting-spout leading from either port. A small gate or trap, *p*, may be provided at the lower end of the incline B, if desired, and inside of the frame A, through which the refuse matter, conveyed by both inclines, can be discharged together from the port N'.

The operation of this machine is in practice found to be thorough and effective, cleansing the grain rapidly and completely. But little power is required to run it, and its cheapness places it within the reach of every agriculturist. It may be operated by any convenient motive-power.

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

1. The grooved incline S, having the slots *s s*, and the apertures *a a*, arranged as shown, and the whole constructed and operating substantially as and for the purpose described.
2. The guide-block I, having the arches *i i*, substantially as and for the purpose specified.
3. The grooved gum-roller D, when used in a separating-machine, substantially as and for the purpose set forth.
4. The wheel C², having the grooves *c c* terminating in the channels *c' c'* substantially as and for the purpose shown.
5. The combination of the incline G, guide I, gum roller D, wheel C², and rake M M' *m*, substantially as and for the purpose described.
6. The combination of the wheel C² and toothed roller K', substantially as and for the purpose shown.

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Witnesses:

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