

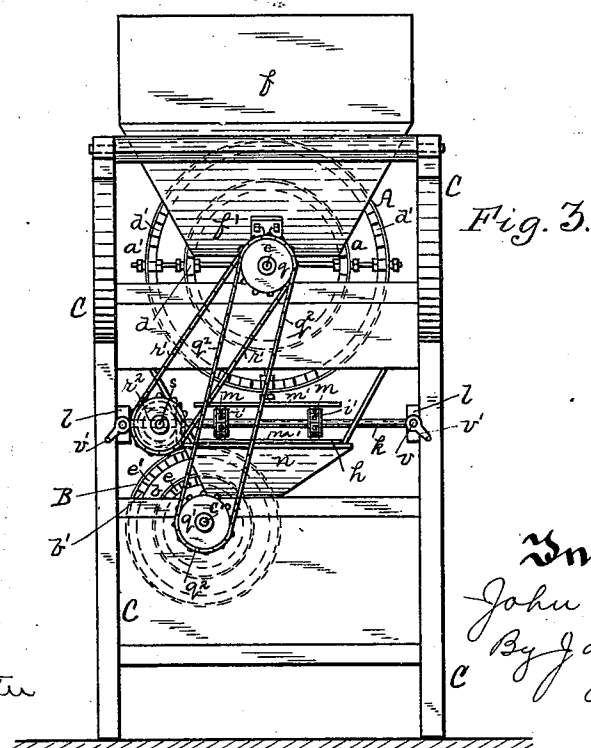
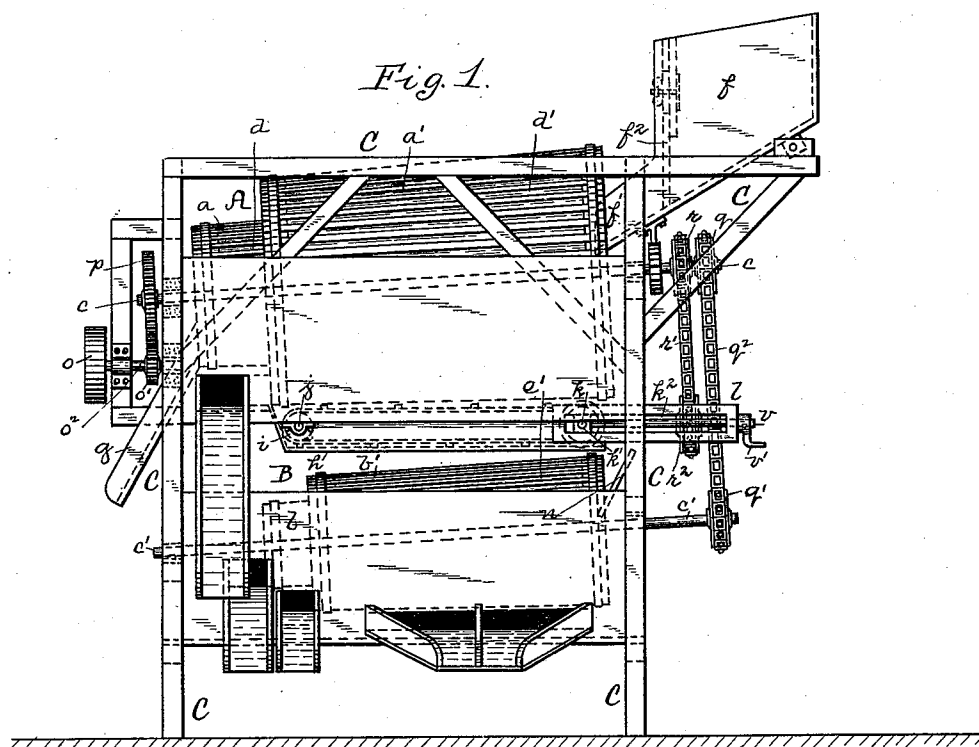
(No Model.)

2 Sheets—Sheet 1.

J. H. HEINZ.
VEGETABLE ASSORTER.

No. 545,689.

Patented Sept. 3, 1895.



Witnesses:
J. R. Cook
Robt. D. Gotten

Inventor:
John H. Heinz.
By James D. May
attorney

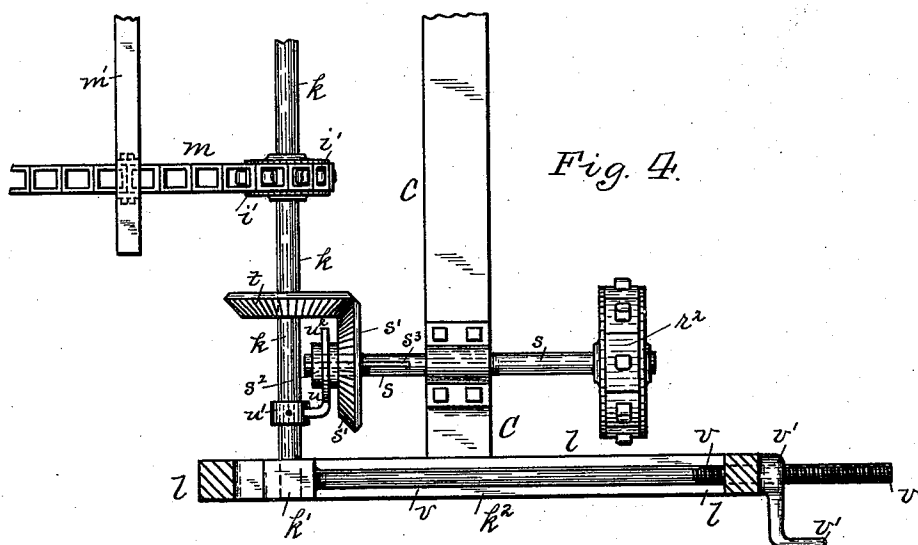
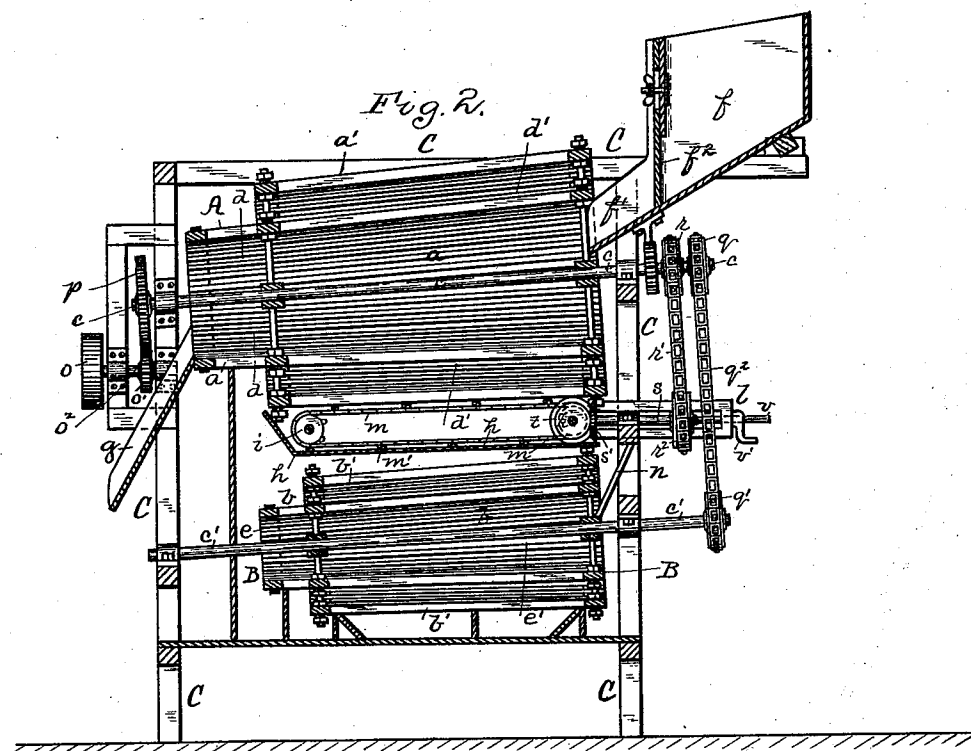
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2 Sheets—Sheet 2.

J. H. HEINZ.
VEGETABLE ASSORTER.

No. 545,689.

Patented Sept. 3, 1895.



Witnesses:

J. H. Booker
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Inventor

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UNITED STATES PATENT OFFICE.

JOHN H. HEINZ, OF SHARPSBURG, PENNSYLVANIA.

VEGETABLE-ASSORTER.

SPECIFICATION forming part of Letters Patent No. 545,689, dated September 3, 1895.

Application filed December 17, 1890. Serial No. 375,020. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HEINZ, a resident of Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Vegetable-Assorters; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to what are commonly known as "vegetable-assorters"—that is, to a form of apparatus by which the several grades or sizes of the vegetables or fruits to be assorted may be classified and divided into separate receptacles according to their classification.

My invention relates more particularly to certain improvements over the apparatus described in Patent No. 212,000, granted to me February 4, 1879, and relating to apparatus of the above-described form.

In the several devices shown and described in the above-mentioned patent provision is only made for assorting the vegetables or fruits into three grades or sizes, while very often it is desirable to assort them into many different grades. To accomplish this result by the employment of the apparatus described in the above-mentioned patent it is necessary to first obtain three grades or sizes and then to assort by hand the smaller of these three grades or sizes, it being impracticable to provide for the assorting of all the sizes in one set of cylinders, the one within the other, for the reason that as the vegetables pass through the openings they also pass longitudinally through the machine, and hence, unless an exceedingly-long machine were employed, they would only enter the outer cylinder near the lower or discharge end thereof. This operation as heretofore practiced required a great amount of time and hand labor, which is expensive.

The object of my invention, therefore, is to diminish the time and labor heretofore required and to provide a form of apparatus in which the several grades of vegetables may be assorted by one continuous operation.

To these ends my invention comprises, generally stated, two or more cylindrical sorters arranged in a frame, the one above the other, said sorters consisting of a cylindrical screen of two or more sections, having a series

of longitudinal slots therein and apparatus for automatically conveying the unclassified residue of one sorter to the sorter directly below adapted in the same manner to assort the residue according to their several grades.

To enable others skilled in the art to make and use my invention I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, a sectional view; Fig. 3, an end view, and Fig. 4 an enlarged view of mechanism for driving the conveyor and tightening the same.

Like letters indicate like parts.

The sorters A and B are similar in construction to the form of apparatus shown in the above-mentioned patent, No. 212,000. Accordingly said sorters are composed of the assorting-cylinders *a a'* and *b b'*, respectively, mounted on the inclined shafts *c c'*, journaled in the frame C, the said shafts *c c'* being inclined in order that certain grades of the vegetables or fruits fed into the several cylinders will be discharged from the lower ends thereon into suitable receptacles prepared to receive them, as will more fully hereinafter appear.

The cylinders *a a'* and *b b'* are constructed of longitudinal bars or slats arranged at intervals apart to provide the slots *d d'* and *e e'*, respectively, in said cylinders and to permit of the passage from the inner cylinders *a* and *b* to the outer cylinders *a'* *b'* of the smaller grades of the vegetables or fruits fed thereto, the said cylinders *a* and *b* having the largest slots *d e*, and so retaining only the vegetables or fruits of the largest size fed thereto.

The feeding-hopper *f* is secured to the frame C at the upper end of the sorter A, said hopper having a chute *f'* leading to the inner cylinder *a*, said chute being provided with a slide gate or door *f²* to regulate the supply of the vegetables to said cylinder. A chute *g* is secured to the lower end of the frame at the outlet of the inner cylinder *a* to carry off to any suitable receptacle below the vegetables or fruits of a size which will not permit of their escape through the slots *d* to the outer cylinder *a'*. The lower end of the said outer cylinder *a'* may be also supplied with a chute similar to the one leading from the inner cylinder *a*.

The assorters A B are preferably journaled in the frame C in the manner shown in Fig. 3—that is, the lower assorter B is journaled slightly to one side of and below the upper assorter A. The fact that the upper assorter A receives all grades and sizes of the fruits or vegetables to be assorted, while the lower assorter B receives only those not assorted by the assorter A, the said assorter B is constructed of a smaller diameter. Between the assorter A and the assorter B is the platform *h*, supported in any suitable manner and extending from the lower end of the outer cylinder *a'* to the upper end of the outer cylinder *b'*. At each end of said platform *h* are the sprocket-wheels *i i'*, the sprocket-wheel *i* being secured to the cross-shaft *j* journaled in the frame C, while the sprocket-wheel *i'* is secured to the cross-shaft *k*, journaled in bearing-blocks *k'*, adapted to travel within the guiding-slots *k²*, formed within the guide-frame *l*, secured to the frame C on both sides thereof. An endless chain belt *m* passes around the sprocket-wheel *i i'*, said endless chain having conveyer-bars *m'* secured at intervals thereon, and adapted to convey the vegetables or fruits deposited on the platform *h* to the discharge end thereof. Situated at the upper end of the assorter B is the chute *n*, leading to the inner cylinder *b* of the assorter B, and the outlet of said cylinder B may be also provided with a chute for carrying off the vegetables ejected from the lower end thereof.

To provide for the revolution of the assorters A and B power is applied to the driving-pulley *o* and transmitted thence by the pinion *o'* on the shaft *o²* to the gear-wheel *p*, mounted on the lower end of the inclined shaft *c*. This construction provides for the revolution of the assorter A. On the upper end of the inclined shaft *c* is the sprocket-wheel *q*, connected to the sprocket-wheel *q'* on the inclined shaft *c'* of the assorter B by the chain belt *q²*, thereby transmitting like rotary movement to said assorter B.

In order to drive the endless chain *m* a second sprocket-wheel *r* is mounted on the shaft *c* of the assorter A, from which power is transmitted by the chain belt *r'* to the sprocket-wheel *r²*, mounted on the shaft *s*, journaled in the frame C. At the inner end of the shaft *s* is mounted the beveled pinion *s'*, having the collar *s²* formed integral therewith, both said pinion and collar being adapted to slide to and fro on the feather *s³* on the shaft *s*, said feather fitting in a corresponding groove within the pinion *s'*. Mounted on the lower cross-shaft *k* is the beveled pinion *s*, which meshes with the pinion *s*, and in order to retain said pinion *t* in engagement with the pinion *s* when it is found necessary to tighten the endless belt *m* an arm *u* connects the shaft *k* to the pinion *s*, said arm having the collar *u'* thereon loosely mounted on said shaft *k*, the other end *u²* of said arm being bifurcated and encircling the collar *s²*

on the pinion *s*, said bifurcated arm fitting in an annular groove in said collar to permit of the rotation of said collar together with the pinion *s*.

To provide for the longitudinal adjustment of the cross-shaft *k* in tightening the endless chain *m*, threaded bars *v* are secured to the journal-boxes *k'* of the cross-shaft *k*, said bars passing out through the ends of the guiding-frame *l* and having crank-nuts *v'*, through which the threaded bars *v* pass. Upon the rotation of said crank-nuts *v'* engaging with the threaded bars *v* the cross-shaft *k*, carrying the sprocket-wheels *i'*, is advanced, with its bearing-blocks *k'* moving in the guide-slots *k²*, thus tightening the endless belt *m*. At the same time the pinion *t* also moves with said shaft *k*, and to provide for this movement on the part of said pinion, which meshes with the pinion *s'*, the said pinion *s'* likewise travels along the shaft *s* a corresponding distance, the arm *u* acting to still retain the pinion *t* in engagement with the pinion *s'*, which supplies the power to drive the shaft *k* and the endless belt *m*.

In the practical operation of my improved apparatus the vegetables or fruits to be assorted are first introduced into the hopper *f*, and, power having been applied to operate the several parts of the apparatus in the manner described, the said vegetables or fruits are permitted to escape to the chute *f'* leading to the inner cylinder *a* of the assorter A. The revolution of the assorter A will cause all the smaller grades of the vegetables or fruits to escape through the slots *d* to the outer cylinder *a'*, the largest sizes of the vegetables with no possibility of escape open to them through the slots *d* will be carried to the lower end of the cylinder *a*, whence they escape through the chute *g* to a suitable receptacle below. Meanwhile the smaller grades of vegetables have escaped into the larger outer cylinder *a'*, which, having the same rotary movement imparted to it, will act in a manner similar to the cylinder *a* to separate the next larger size, for the slots of the outer cylinder *a'* being smaller than those of the cylinder *a* all vegetables small enough to escape through the slots *e'* will fall upon the platform *h*; but such of the vegetables as are too large to escape through the slots *d'* are carried to the lower end of the cylinder *a'* and ejected therefrom. In this manner two different grades of the vegetables have been obtained, while the residue—that is, all small enough to escape through the slots *d'*—pass through said slots onto the platform *h*, whence they are carried by the conveyer-bars *m'* on the endless chain *m* along said platform until they are ejected therefrom onto the inclined chute *n*, whence they are carried to the inner cylinder *b* of the assorter B. The slots *e* of said cylinder *b* are smaller than the slots *d'* of the outer cylinder *a'*, and accordingly another grade of the vegetables pass out from the lower end of the said cylinder *b*, while such as are small enough

to escape through the said slots *e* pass into the outer or larger cylinder *b'*, where another division takes place, one grade passing out the lower end of said outer cylinder *b'* and the remainder passing through the slots *e'* of said outer cylinder to suitable receptacles to receive them below. In this manner I am enabled by a continuous operation to provide for the assorting of the vegetables or fruits into six different grades, thereby doing away with the labor involved heretofore in first passing the vegetables through one assorter and then assorting the remainder by hand to bring about the desired result. The number of assorters may be increased to three or more confined within the same frame, thereby correspondingly increasing the number of grades to which the vegetables may be assorted.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the frame, of the endless chain belt *m* passing around the sprocket wheel *i i'*, the said sprocket wheel *i'* being secured to the sliding shaft *k* journaled in guideways in the frame, a pinion *t* on said

shaft *k* meshing with the sliding pinion *s'* mounted on the power shaft *s*, and connections between said sliding shaft *k* and pinion *s'* to preserve the engagement of the said pinion *s'* with the pinion *t* when the sliding shaft *k* is moved, substantially as and for the purposes set forth.

2. The combination with the frame of the endless chain belt *m*, the sprocket-wheels *i i'*, the sliding shaft *k* journaled in the bearing blocks *k'* traveling in the guideways *l*, the pinion *t* meshing with the sliding pinion *s'* having the collar *s²* thereon, the power shaft *s*, and the arm *u* secured to the sliding shaft *k* and to the collar *s²* of the sliding pinion *s'*, and the threaded bar *v* and crank arm *v'*, substantially as and for the purposes set forth.

In testimony whereof I, the said JOHN H. HEINZ, have hereunto set my hand.

JOHN H. HEINZ.

Witnesses:

ROBT. D. TOTTEN,
J. N. COOKE.