

(No Model.)

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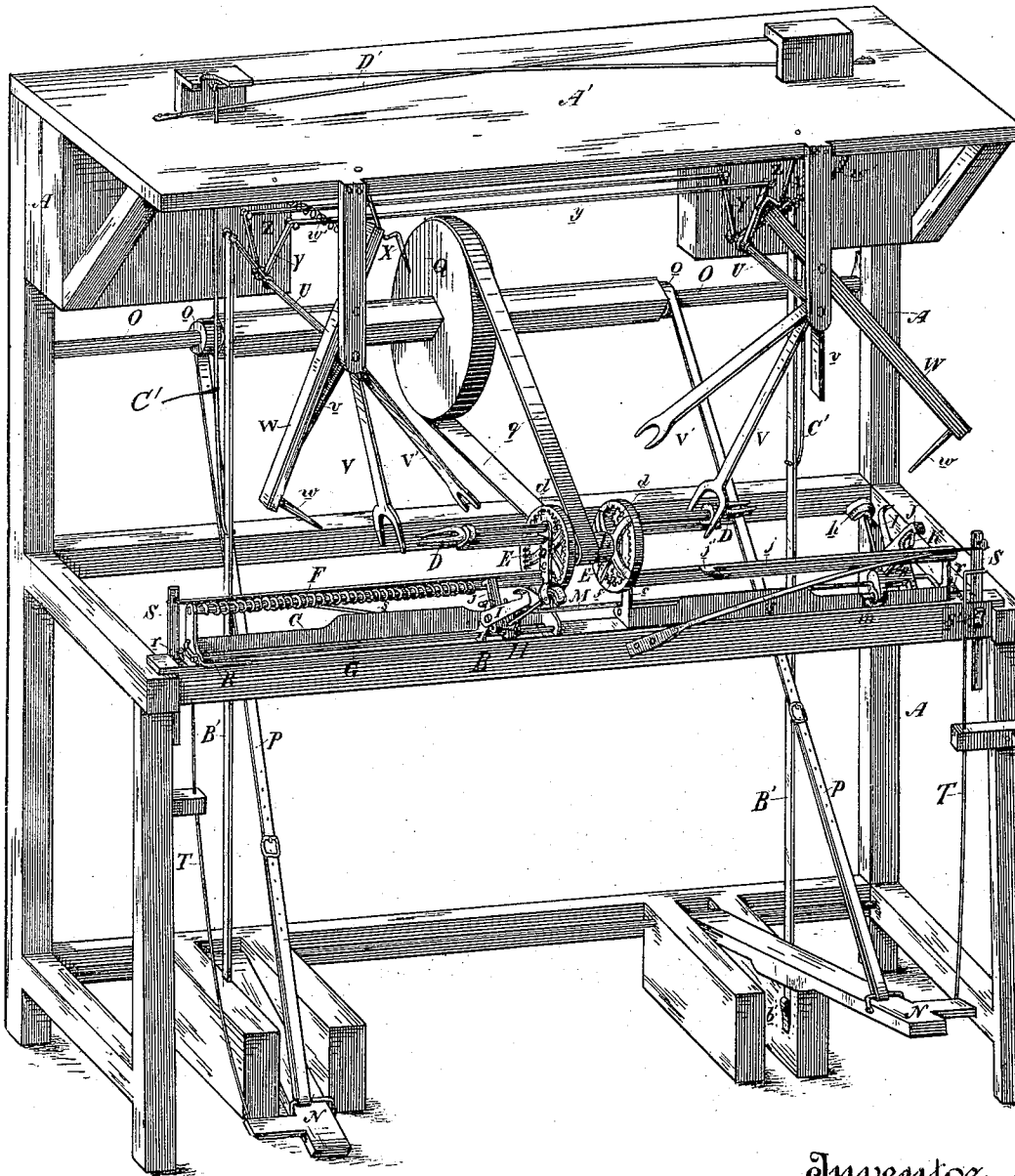
W. W. McMILLAN.

APPLE PARER, SLICER, AND CORER.

No. 334,130.

Patented Jan. 12, 1886.

Fig. 1.



Witnesses,
Geo. H. Strong
J. H. House

Inventor,
W. W. McMillan
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(No Model.)

3 Sheets—Sheet 2.

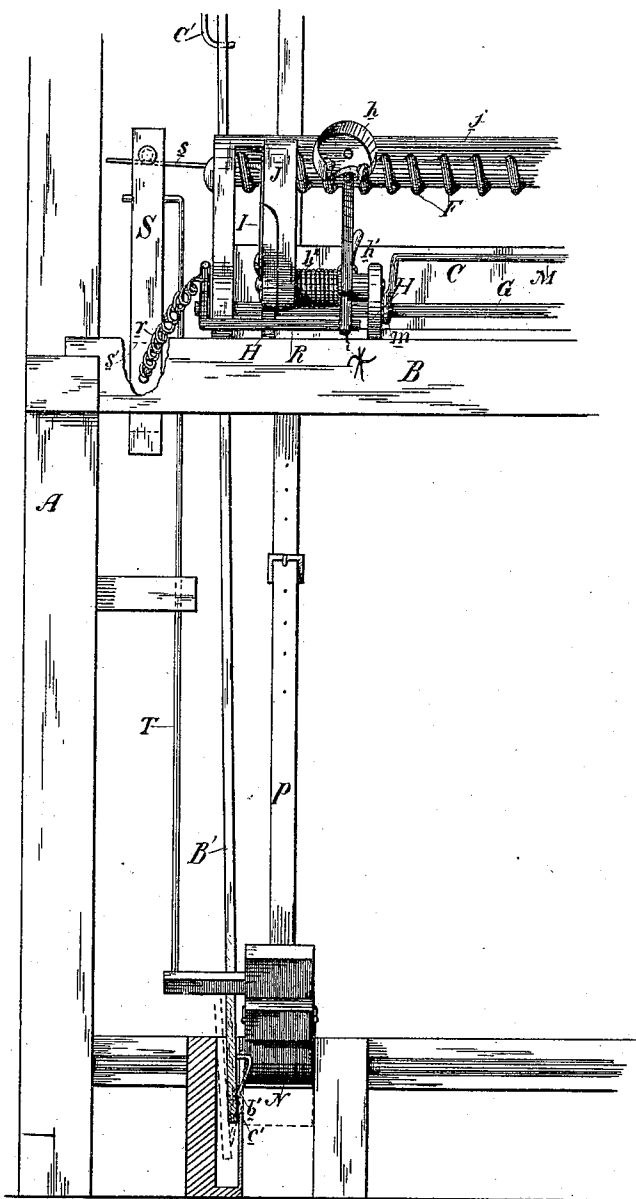
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Fig. 2.



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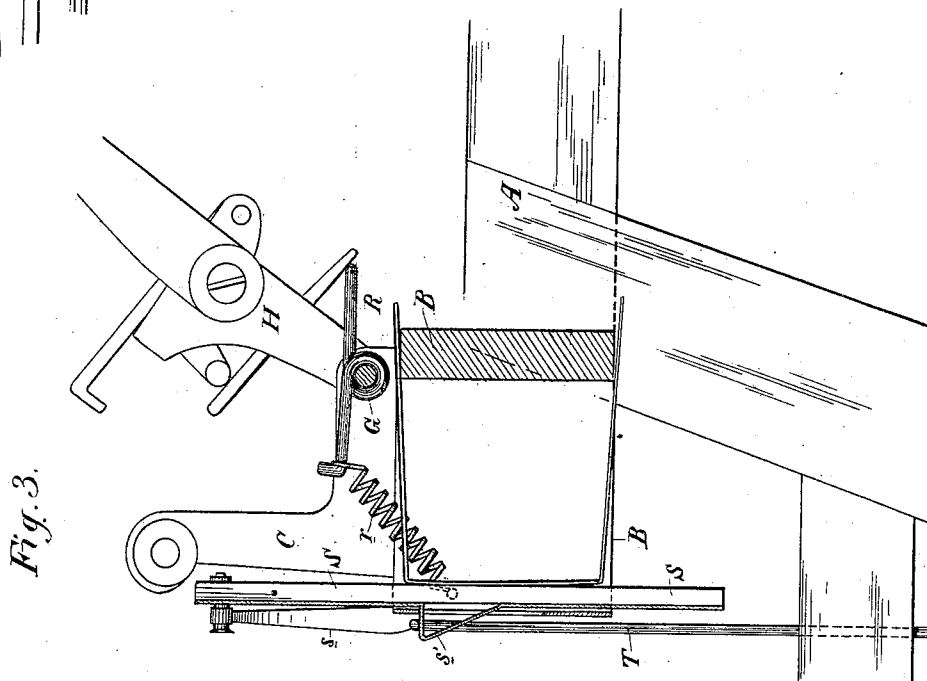
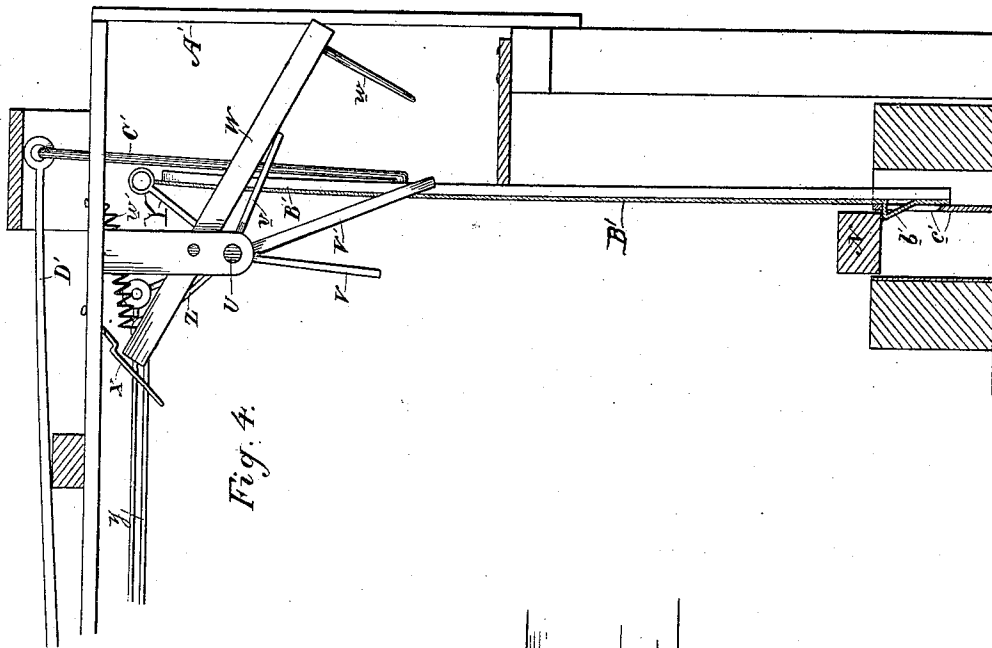
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UNITED STATES PATENT OFFICE.

WILLIAM W. McMILLAN, OF HURLETON, CALIFORNIA.

APPLE PARER, SLICER, AND CORER.

SPECIFICATION forming part of Letters Patent No. 334,130, dated January 12, 1886.

Application filed December 29, 1884. Serial No. 151,490. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. McMILLAN, of Hurleton, county of Butte, and State of California, have invented an Improvement in Apple Parers, Slicers, and Corers; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful apple parer, slicer, and corer of that class in which a carriage carrying the knives for paring and slicing is advanced against and past a rotating apple, which is afterward removed, independently of its core, by a swinging arm, said core being also discharged; and my invention consists in the devices which I shall hereinafter describe, and specifically point out in the claims.

The object of my invention is to provide a machine capable of doing more work in less time than any now in use.

Referring to the accompanying drawings, Figure 1 is a perspective view of my machine. Fig. 2 is a front elevation of one side of the machine. Fig. 3 is a view showing in detail the operation of the lever-rod R, slide S, and pawl-rod T. Fig. 4 is a view showing the treadle engagement with the beveled catches *b'* of the strips *B'*, and the contact of the short arm *v* with the pivoted lever W.

A is the frame or stand of the machine. At its front is a cross-bar, B, on which are secured firmly two paring and slicing machines of the ordinary form, well known on the market, and illustrated in United States Patent No. 93,574, August 10, 1869. The two machines are placed in line and have corresponding parts, but are in a reversed position, as shown.

A description of one of the machines will answer for the other. It consists of a rigid frame, C, having a standard, *c*, in the top of which is journaled the apple-holding fork D, which is rotated by means of a pinion, *d*, on its stem, which engages with a driving-wheel, E, internally geared. A longitudinal screw, F, is driven by means of a pinion, *f*, meshing with the gear E. Upon a longitudinal track or slide-rod, G, is mounted the carriage H, on which is secured the parer-knife *h*, which is adapted to have a movement on its pivot to

conform itself to the curvilinear surface of the apple by means of a cross-pin, *h'*, by which its shank is journaled in the carriage H, and a spring, *h''*, by which it is held to its position.

The carriage H also carries the slicer-knife I, of the usual pattern, and a locking pawl or holder, J, which is adapted to engage with a longitudinal bar, *j*, on which the screw is mounted. The carriage also has the stud K, which engages with the screw, and by means of which the said carriage, with its appurtenances, is caused to travel upon its slide-rod. The movements of said carriage are therefore a longitudinal one, and also one through an arc of a circle, which takes place when the holder is thrown back from its engagement at the inner limit of its stroke, by reason of the end of the holder coming in contact with an inclined lug, *j'*, on the back of the track *j*.

The operation of the device as far as described is well known, the results being the paring and slicing of the rotating apple.

It will be observed that the two machines thus described are seated in a reverse direction—that is to say, their driving-wheels are adjacent. These are connected by means of a pulley, L, whereby the two are enabled to act simultaneously, as I shall hereinafter describe.

It is usual, where a single machine is used, that when the parer and slicer are thrown from their engagement at the completion of their work to move them back to the beginning of their stroke by hand; but I intend in this complete machine to cause this movement to be effected by means of such a connection between the two carriages as that when one is coming up to its work it shall cause the other to move back to the beginning of its stroke; and for this purpose I have the rod M, the ends of which are bent and have loops *m*, by which they are fitted, and are adapted to travel on the slide-rods, on which the carriages H are mounted. This rod M acts as a strut-connection between the two carriages, whereby the movement of the carriage which is coming up to its work transmits movement to the carriage which is thrown out of its engagement, whereby said latter carriage is moved back to the beginning of its stroke. It is also usual, in the

ordinary use of these machines, to move the holder J to its engagement again at the beginning of its stroke by hand; but here again I propose to accomplish this result by the same treadle movement which operates the entire machine. This I shall hereinafter, in its proper place, fully describe.

Pivoted to the base of the frame are two treadles, N. Mounted in the back of the frame is a shaft, O, carrying two small pulleys, o. Attached to these pulleys and wound in opposite directions are straps P, which extend down to and are connected, respectively, with the treadles. This strap-connection is of such a character that the downward movement of one of the treadles rotates the shaft O in one direction, while the downward movement of the other treadle rotates it in the other direction, and in each direction of rotation one strap is unwound from its pulley, while the other strap is wound thereon. The center of shaft O has a large pulley, Q, from which an endless belt, q, extends to the pulley L, which connects the driving-wheels of the two machines in front. The respective dimensions of the pulleys o and Q and the pulley L between the driving-wheels are of such a nature that by a single downward stroke of the treadle the driving-wheels are rotated a sufficient number of revolutions to effect a complete stroke of the carriage.

Pivoted upon the outer ends of each slide-rod G is a lever-rod, R, one arm of which is bent and lies for a short distance parallel with the slide-rods, and the other arm behind its pivot-point is connected by a spring, r, with a vertical moving slide, S, seated and guided in the frame A, and which is influenced to remain to its position by springs s. Upon the slides S are beveled catches s', with which the tops of pawl-rods T engage. These pawl-rods have their lower ends connected with the treadles and pass through suitable guides on the frame. When a treadle is raised, the upper end of its pawl-rod T rises above the catch s'; but when the treadle is pressed down the pawl-rod engages with the catch s', pulling down the slide S, and thus through the spring r oscillates or throws up the lever-rod R. This rod, acting against a small lug or heel, x, extending from the carriage H, swings said carriage forward, so that its holder J falls to its engagement. This takes place at the beginning of the stroke, and immediately preceding the propulsion of said carriage to its work. There is one of these devices operating upon each side, and being dependent upon the treadles, their operation is alternate, whereby each of the carriages H at the proper time is thrown to its engagement.

In addition to the slicing and paring of the apple I propose to remove the pared and sliced apple and force it upon a receiver, from which it is discharged into a suitable receptacle, and to follow up such a disposition of the apple by the complete removal and discharge of its core. The following is the mechanism by

which these results are effected: The frame A is provided with a hood, A', in which are pivoted the shafts U. On the ends of these shafts are secured the arms V V'. The arm V is in advance of the arm V', and the lower ends of both arms are forked or grooved to enable them to straddle the pared and sliced apple and the core, respectively. In addition to these arms is a short arm, v, which operates against a pivoted lever or arm, W, the lower end of which has a pin, w, at right angles, and which acts as a receiver for the pared and sliced apple. The upper ends of the arms W are influenced to throw their lower ends down by means of springs w', and spring-catches X hold said arms in an elevated position when not in use. The arms V V' have an oscillating movement imparted to them by the following means: Each set of arms is operated by the opposite treadle; and to accomplish this I have the bell-crank or elbow-levers Y, pivoted at their angles upon the shafts U, and each connected by a bar or strap, y, with a crank, Z, firmly fixed on the opposing shaft. The bell-crank levers have connected with their other arms the vertical strips B', the lower ends of which pass down through suitable grooves in the base of the frame, whereby they are guided. On their lower ends are beveled catches b', with which the treadles are adapted to engage, and which are thrown from their engagement by means of guide-strips c' in their grooves. The upper ends of the strips B' are connected by rods C' with springs D' on the top of the hood, and which serve to return the rods B' to their position.

The full operation of the device is as follows: When at a state of rest, the knife-carriage of one of the machines is at the limit of its inner stroke (having completed its work) and is thrown backward out of engagement with its operating-screw, its heel resting on the cross-bar B, while the other knife-carriage is at the beginning of its stroke, and is also thrown back at an angle, its heel resting upon the bent lever-rod R. A fresh apple is now placed upon the holding-fork of the machine to which the latter knife-carriage belongs, while the pared and sliced apple still remains on the fork of the first machine. The raised treadle is now pressed down. The first effect of this pressure is, through the pawl-rod T, slide S, and the bent lever-rod R, to throw the knife-carriage into engagement with its screw, and the next effect, through the straps P, pulleys o, Q, and L, and belt q, is to rapidly rotate the screw, whereby the knife-carriage is advanced to its work, while by reason of the strut-connection M between the two carriages the carriage of the other machine is forced over to the beginning of its stroke. When the treadle reaches a point at its stroke where it comes into engagement with the catch b' on the foot of the strip B', it presses down said strip, which, through the bell-crank lever Y, the connecting-strap y, and crank Z, communicates an oscillating

movement to the opposite shaft, U, whereby the arms V V' of the opposite machine are made to describe their arc. In this movement the arm V in advance comes down upon and embraces the pared apple which still remains upon the machine and forces said apple off the retaining-fork upon the receiving-pin *w* of the arm W. The continued movement then causes the short arm *v* to force said arm W upward, carrying the receiving-pin with its apple upward away from the machine until the upper end of the arm W is engaged by the catch X and is held. At the same time the rear arm, V', comes down upon and straddles the core and forces it off, when the operation of one treadle is complete. By this time the other treadle is raised and is pressed down for a repetition of the operation on the other machine. Before each stroke the receiver-arm W is released from catch X, when it moves down to position.

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

1. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, travelling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the pivoted bent lever-rod R, acting under the heel or edge of said carriage to throw its holder and stud to their engagement, the treadle N, and a connection between said treadle and the pivoted bent lever-rod, whereby said rod is oscillated, substantially as herein described.

2. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, traveling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the pivoted bent lever-rod R, acting under the heel or edge of said carriage to throw its holder and stud to their engagement, the treadle N, a connection between said treadle and the pivoted bent lever-rod, whereby said rod is oscillated, and a connection of power-transmitting devices between said treadle and the driving-gear of the machine, whereby its parts are operated, substantially as herein described.

3. The apple parer and slicer mounted on a suitable stand, and consisting of the frame C, with its fork D, screw F, traveling knife-carriage H, having holder J and stud K, and driving-gears, as described, in combination with the treadle N, the power-transmitting devices between the treadle and the driving-wheel of the machine, consisting of the strap P, shaft O, having small pulley *o* and large pulley Q, the pulley L on the driving-wheel, and the endless belt *q*, whereby the machine is operated, the pivoted bent lever-rod R, acting under the heel or edge of the carriage H to throw its holder and stud to their engagement, and the mechanism by which said lever-rod is operated, consisting of the spring-slide S,

having catch *s'*, and connected with the lever-rod by a spring, *r*, and the pawl-rod T, connected with the treadle and engaging the catch *s'* of the slide S, substantially as herein described.

4. The apple parer and slicer, as herein described, mounted on a suitable stand, in combination with the pivoted and swinging arm V, overhanging the fork of the machine, and adapted to remove therefrom the pared and sliced apple, the short arms *v*, and the pivoted spring-arm W, having pin *w*, adapted to receive said apple, substantially as herein described.

5. The apple parer and slicer, as herein described, in combination with the pivoted and swinging arm V, overhanging the fork of the machine, and adapted to remove therefrom the pared and sliced apple, the short arm *v*, acting with arm V, the pivoted spring-arm W, against which the arm *v* bears to raise it, said arm having a pin, *w*, adapted to receive said apple, and a catch, X, to hold said arm in an elevated position, substantially as herein described.

6. The apple parer and slicer, as herein described, and a treadle by which it is operated, in combination with the pivoted double arm V V', overhanging the fork of the machine, and a connection between said arm and the treadle, by which a swinging movement is imparted to it to remove the apple and core, substantially as herein described.

7. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, whereby they act together, in combination with a treadle, and power-transmitting devices between said treadle and the pulley L, whereby the knife-carriage of one machine is advanced to its work, while that of the other is carried to the beginning of its stroke, substantially as herein described.

8. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, in combination with the mechanism by which they are simultaneously operated, consisting of the independent treadles N, straps P, shaft O, with small pulleys *o* and large pulley Q, and belt *q* from said large pulley to the pulley L, substantially as herein described.

9. The two apple parers and slicers mounted in line on a stand and reversed in position, having their driving-wheels united as described, and driven simultaneously by a common power, said machines consisting each of the frame C, with its fork D, screw F, slide-rod G, traveling knife-carriage H, having holder J and stud K, and an inclined plane or lug, *j*, by which the carriage is thrown back at the end of its stroke to disengage its holder and stud, in combination with the sliding bar or rod M, fitted on the slide-rods G, and acting between the two carriages, where-

by one carriage on its advance stroke forces the other carriage to the place of beginning, substantially as herein described.

10 The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the bent lever-rods R, pivoted at the outer ends of the frames of the machines and acting under the
15 heel or edge of the carriages, for the purpose described, in combination with the mechanism by which the machines are driven, consisting of the independent treadles N, the shaft O, having pulleys o and Q, straps P, and belt
20 q, arranged as described, and the mechanism by which the bent lever-rods R are operated, consisting of the spring-slides S, having catches s', connecting-springs r, and pawl-rods T, connected with the treadles, substantially as herein described.

11. The two apple parers and slicers, as herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the mechanism by which these machines are driven, consisting of the independent treadles N, pulley-shaft O, straps P, and belt q, arranged as described, in combination with the pivoted double arms V V', overhanging the forks of the
30 machines, and a suitable connection between each set of double arms and the opposite treadle, whereby said arms are operated, substantially as herein described.

12. The two apple parers and slicers, as
35 herein described, mounted in line on a stand and reversed in position, having their driving-wheels united by a pulley, L, and the mechanism by which these machines are driven, consisting of the independent treadles N, pulley-

shaft O, straps P, and belt q, arranged as described, in combination with the pivoted double arms V V', overhanging the forks of the machines, and the mechanism by which each set of arms is operated by the opposite treadle, consisting of the shafts U, the pivoted bell-crank levers Y, the cranks Z, connecting-straps
45 y, and the spring-strips B', connected with the bell-crank levers and having catches b' on their feet, with which the treadles engage, all arranged and operating substantially as herein described.

13. An apple parer, slicer, and corer, consisting of the two parers and slicers, as herein described, mounted in line on a stand, A, and reversed in position, having their driving-wheels E united, the pivoted bent lever-rods R, by which the knife-carriages are thrown to their engagement, the swinging double arms V V', and swinging spring-arm W, having receiving-pin w, all arranged with relation
60 to each other, as described, in combination with the independent treadles N, a connection between said treadles and the driving-wheels E of the machines, whereby they are operated simultaneously, a connection between said
65 treadles and the bent lever-arms R, by which they are operated, and a connection between said treadles and the double arms V V', by which they are swung and act upon arm W, all arranged to operate substantially as herein
70 described.

In witness whereof I have hereunto set my hand.

WILLIAM W. McMILLAN.

Witnesses:

J. V. PARKS,

ALBERT S. HAMILTON.