

No. 686,139.

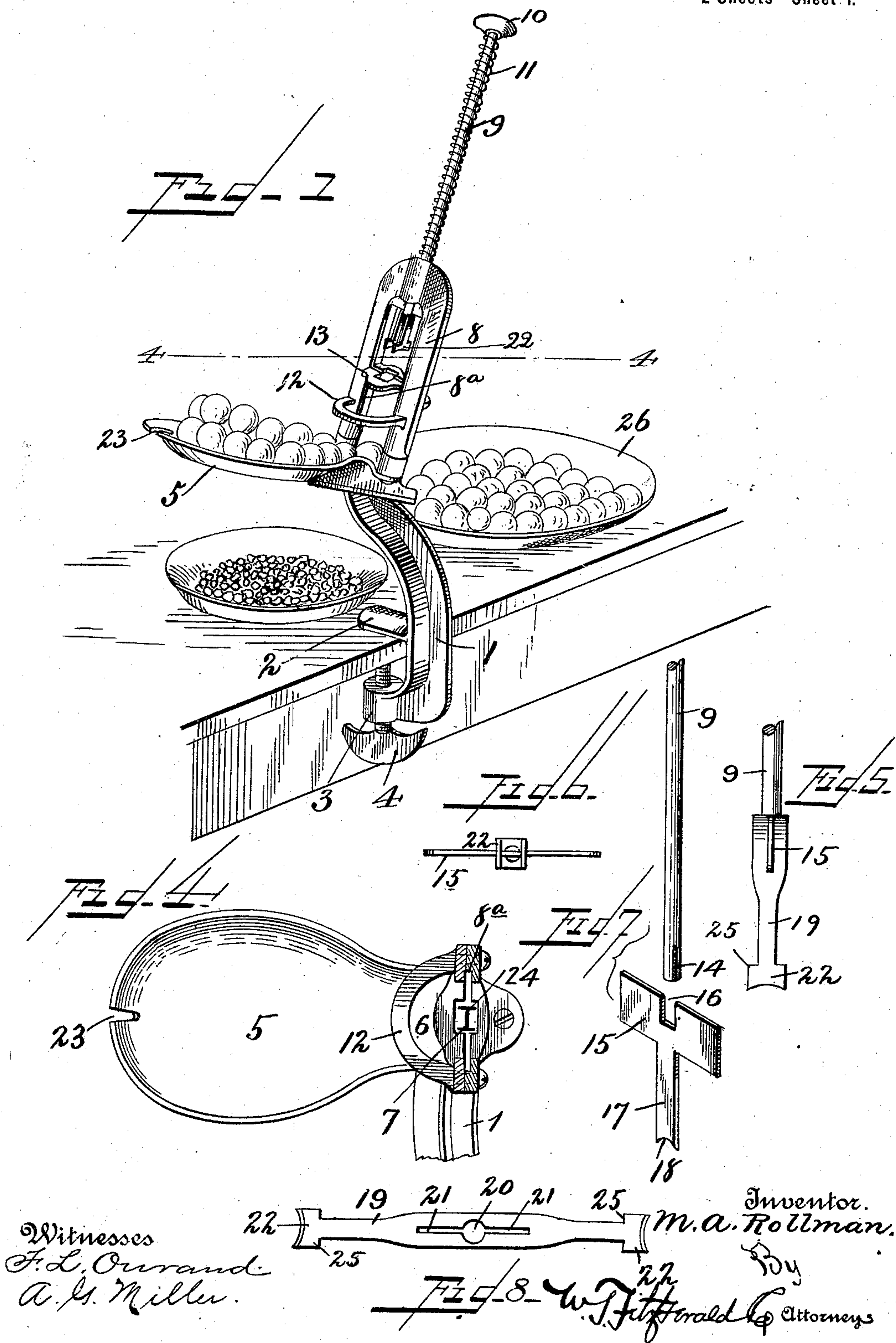
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M. A. ROLLMAN.
CHERRY STONING MACHINE.

(Application filed Jan. 21, 1901.)

(No Model.)

2 Sheets—Sheet 1.



UNITED STATES PATENT OFFICE.

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ROLLMAN MANUFACTURING COMPANY, OF MOUNT JOY, PENNSYLVANIA,
A CORPORATION.

CHERRY-STONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 686,139, dated November 5, 1901.

Application filed January 21, 1901. Serial No. 44,166. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL A. ROLLMAN, a citizen of the United States, residing at Mount Joy, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Cherry-Stoning Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

As will be hereinafter fully described and claimed, my invention relates to what is commonly called a "seeding" or "stoning" machine, designed especially for removing the seeds or pits from cherries and similar fruit.

The preferred construction involved in materializing my improved machine of the character specified is set forth in the following specification, it being understood that I desire to comprehend herein all substantial equivalents and substitutes which may be considered to fall fairly within the scope of my invention, and I therefore do not wish to be confined strictly to the exact showing submitted.

The prime object of my invention is to provide a cherry-seeding machine which will not only extract the seed from the pulp without excessive injury to the latter, but will deliver the seed in a different receptacle from that designed for the reception of the pulp.

In the accompanying drawings, Figure 1 illustrates in perspective my complete cherry-stoning machine as applied to use. Fig. 2 is central section thereof. Fig. 3 is a detail showing the rear side of my machine complete. Fig. 4 is a top plan view of the cherry-receptacle from which the cherries are fed to the knife. Figs. 5, 6, 7, and 8 illustrate in detail and upon a slightly-enlarged scale parts of the knife and of the plunger-shaft therefor. Fig. 9 illustrates the shape or general outline of the knife employed to drive the seeds from the cherries.

In order to conveniently refer to the various features of my invention and cooperating accessories, numerals will be employed, of which 1 designates the main standard, designed to provide a support for the operating

parts of my cherry-stoning machine, said standard being provided with the clamping-jaws 2 and 3 and the locking-screw 4, mounted in the lower jaw, whereby the standard may be securely anchored in its operative position, as upon the edge of a table or other convenient support.

I prefer to separably form with respect to the standard 1 (though it may be otherwise constructed) the hopper or cherry-receptacle 5, so disposed relatively to the standard that it will occupy an inclined position, as more clearly illustrated in Figs. 1 and 2, the object of the inclination being to insure that the cherries will be fed down by gravity into the recess 6, provided in the inner or narrow end of said receptacle. The recess 6 is provided centrally with a suitable aperture, in which is located a stripper-bed 7, preferably formed of some suitable tough though yielding substance, as properly-prepared rubber. The stripper-bed 7 is properly held in its operative position in any preferred way, as by wedging the same in the recess provided for its reception, and said stripper-bed is provided with a centrally-disposed opening, which is H-shaped in character and designed to receive the H-shaped knife, (illustrated in Fig. 9,) it of course being understood that other forms of knives may be employed, in which case a corresponding opening must be provided in the stripper-bed.

It is found in practice that the seed may be removed from the cherry with a minimum amount of injury to the pulp by providing the form of knife illustrated in Fig. 9, which is substantially H-shaped, as will be seen by reference to said view and other illustrations in the drawings.

The prime requisite of the machine designed for removing seeds from cherries is that the pulp or fruit proper shall be left as nearly as possible in its original condition after the seed has been removed, thus preserving the appearance of the fruit and also avoiding the extraction of the juices, and it is for the accomplishment of said purposes that I have provided the special construction herein disclosed.

Upon the inner end of the hopper-section

I erect the inverted substantially U-shaped standard 8, designed to provide bearings for the reciprocating plunger-shaft 9, to the lower end of which I secure the seed-extracting knife, as will be hereinafter specifically referred to. I prefer to form the standard 8 in two complementary sections, which may be reliably secured in coöperative relationship by screws, rivets, or the like, and it is obvious that by so forming the two sections the inner edges thereof may be reduced in thickness or cut away a groove 8^a will be cheaply provided, said groove being utilized by the outwardly-extending ends of a knife-holding guide-plate, as will be hereinafter pointed out. By forming the standard 8 in two sections and reducing the inner edges thereof the expensive process of machining the inner edges to form the guideway 8^a is obviated, an important desideratum to the manufacturer.

The upper end of the plunger 9 is provided with any suitable form of handle 10, and in order to hold the standard in a normally-elevated position I provide the spring 11, so disposed around the shaft as to be out of the way. The lower ends of the standard are provided with the guard or shield section 12, designed to hold the fingers of the operator away from the path of the knife during its reciprocation. The bearing provided in the standard 8 for the plunger 9 is of sufficient extent to hold the said shaft against undue lateral movement and to insure that the knife carried by the lower end of the plunger will be directed into registration with the H-shaped opening provided in the stripper-bed. Before reaching the stripper-bed the knife-section enters an aperture provided in the pulp-stripper 13, which latter is secured to the standard 8 in any preferred way or may be integrally formed therewith, as preferred. I have found in practice that the knife may be most cheaply and expeditiously constructed and attached to the lower end of the plunger 9 in the following-described manner: The lower end of the plunger 9 is provided with the centrally-disposed slit or opening 14, adapted to receive the central part of the guide-plate 15, said plate being preferably provided upon its upper edge with a recess 16 to receive a portion of the plunger 9, thereby extending the soldering or brazing surface by which the plate 15 and said plunger are permanently united together.

The inner edges of the standard 8 are provided, as hereinbefore stated, with suitable guideways 8^a, adapted to receive the ends of the plate 15, and thereby hold said ends from lateral movement and prevent the knife from rotating during the reciprocation thereof.

As will be seen by reference to Fig. 7, the guide-plate 15 is provided at a central part upon its lower edge with the depending section 17, the lower edge of which is preferably concave and sharpened, as indicated by the numeral 18, said sharpened portion forming the central portion of the H-shaped knife, as

illustrated in Fig. 9. The outer portions of the knife may be formed from a single piece 19 of sheet-steel or other preferred material, as illustrated in Fig. 8. The central portion of the strip 19 is provided with an aperture 20, designed to receive the plunger 9, and also with laterally-extending slots 21, through which extend the ends of the guide-plate 15, as illustrated in Fig. 5. The knife-section proper, 22, which is preferably an integral part of the body portion 19, is of sufficient width to insure that it will perform its office properly in extracting a seed from the cherry. The width of the knife being greater than the body portion 19, the offsets or shoulders 25 are provided, said shoulders being designed to perform a very important and valuable function, as will be hereinafter specifically referred to. I prefer to so sharpen the cutting edges of the knives that they will be concave, the prime object being to direct the seed toward the center of the knife and insure that it will be received by the central portion of the aperture provided in the stripper-bed 7. By providing the concave edges the knife will also conform to the surface of the cherry and, furthermore, tend to prevent the fruit from spreading under pressure, inasmuch as the extreme points or outer ends of each knife will gather and direct the pulp toward the central portion, as will be readily apparent.

My improved cherry-stoning machine will be found to possess great capacity, inasmuch as the limit or extent of the amount of work possible to be performed by the machine is measured only by the ability of the operator to rapidly reciprocate the plunger 9 by pressing upon the handle 10. By reference to Fig. 4 it will be observed that the hopper-section 5 is provided upon its outer edge with a narrow notch or recess 23, designed to enable the operator to strip the cherries from the stem.

I desire to call special attention to Fig. 2, wherein it will be observed that I have not only inclined the hopper-section 5, but have also inclined the standard 8, so as to dispose the reciprocating plunger 9 at an angle relative to the vertical plane of the standard 1, the stripper-bed 7 preferably being disposed substantially at right angles with respect to the axial alinement of said plunger. Very important and valuable results follow the adoption of this construction for said parts, inasmuch as while I have inclined the standard 8 I have disposed the stripper-plate 13 in a horizontal plane.

In Fig. 2 the knife is illustrated in its normally-elevated position, and it is clear by reference to said view that a perpendicular line drawn from the opening in the stripper-plate 13 will lie almost entirely out of contact with the hopper-section, and thereby insure that the cherry-pulp as it is stripped off of the knife by said plate will readily drop into a conveniently-placed receptacle. I am, however, not compelled to rely wholly upon grav-

ity to insure that the pulp will be directed into the receptacle, as it will be clearly apparent that since the plate 13 is disposed at an oblique angle to the path traversed by the knife the impetus of the moving pulp will also be utilized to insure that the same will be directed outward. The knife being forced downward will act upon the cherry and direct the seed downward and outward at an angle with respect to the vertical plane of the standard 1, and thus deliver the seed into a receptacle placed contiguous to said standard, when the knife will spring upward after extracting the stone and will carry the pulp of the cherry with it by means of the shoulders 25, thereby giving the cherry a lateral movement equal to the distance between perpendiculars extending through the stripper-bed and plate 13, bringing the pulp to bear against the under side of the stripper-plate at an oblique angle, and thereby deflected outward by said lateral travel of the knife plus the momentum. While the plunger 9 may be disposed perpendicularly and the stripper-plate disposed at an oblique angle thereto without greatly impairing the efficiency of my cherry-seeding machine, yet by constructing the parts as illustrated in Fig. 2 it is thought that much more desirable results will follow. The inclination, therefore, of the standard 8 is not a mere incidence of the disposition of the hopper-section 5, but possesses a functional importance of great value, and I therefore wish to secure in this application said combination and construction of parts, together with substitutes and equivalents.

I am aware that it is common to provide various kinds of machines designed for removing the seeds from cherries, &c.; but so far as my knowledge extends said machines so act upon the fruit that the pulp portion is greatly macerated and large quantities of the juice extracted during the operation of removing the seeds. Furthermore, many of said machines do not separate the seeds and the pulp at the same operation, leaving said separation for a subsequent operation or process.

It is obvious that one of the advantages in utilizing a knife which is substantially H-shaped in outline is that the seed will be directed to the center of the knife and will not slip out of engagement therefrom, whereas if the knife consisted of a single blade the seed would be more liable to move laterally during the cutting process. In some instances it may be desirable to provide a plurality of reciprocating shafts and knives, in which case the hoppers and stripper-beds may be multiplied accordingly, it being understood that said shafts in series may be disposed into co-operation with a common operating-shaft connected with any suitable source of power.

Having thus described the construction of my improved cherry-seeding apparatus, the operation thereof may be stated to be as follows: The cherries are placed in the recepta-

cle or hopper 5 and by the inclination thereof are fed downward into the bottom of the recess 6, and as said recess is of proper size to hold a cherry the cherry will be directed by gravity immediately over the H-shaped opening 24 in the stripper-bed 7, and the descending knife will engage said cherry and force the seed through said H-shaped opening 24 downward into the receptacle provided to receive it. The pressure is then released from the handle 10, when the spring 11 will force the plunger 9 upward, when the pulp portion of the cherry will cling to the shoulders 25, formed upon the knife-blades 22, until the pulp-stripper 13 is reached, when the pulp will drop sidewise downward into the receptacle 26, and the knife will travel upward through the opening in the pulp-stripper 13, ready to be again driven downward at the next operation thereof. As one cherry is operated upon another will take its place from the inclined hopper, it being understood that the downward travel of the fruit may be facilitated, if necessary, by proper attention of the operator.

It will be understood that various modifications may be made in the construction without departing from the spirit or scope of my invention.

Having thus fully described the construction and operation of my improved cherry-stoning machine, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cherry-seeding machine, the combination with standards, base-plate and plunger, of a shield or guard on the standards in position to protect the fingers of the operator, as set forth.

2. In a seeding-machine, the combination with standards having a shield projecting from the standards and a pulp-stripper obliquely disposed with respect to the plane of said standards, of a knife adapted to extend through said stripper-plate and having means to pick up the cherry-pulp and additional means to reciprocate the knife as set forth.

3. In a seeding-machine, the combination with a suitable supporting-frame of an inclined fruit-receiving hopper; an inclined U-shaped standard having a groove upon its inner edges; a plunger reciprocatingly mounted in said standard and disposed in the same plane of inclination therewith; a knife provided with pulp-engaging devices and a stripper-plate carried by said standard and disposed substantially in a horizontal plane whereby the pulp carried by the knife will be stripped therefrom by said plate and directed laterally as the knife passes upward through the opening in the plate, all substantially as specified and for the purpose set forth.

4. In a cherry-stoning machine, a knife comprising the plunger 9 having a slit in its lower end; and a guiding-plate 15 having a recess 16 adapted to receive the end of said shaft, in combination with the plate 19 bent to form parallel arms and sharpened knives at the

- ends thereof, said plate having a central opening 20 adapted to receive said plunger and also having laterally-extending slits to accommodate the guiding-plates 15 when said strip-
 5 per 19 is bent to bring the knives parallel with each other and suitable means to firmly secure said parts in union and thereby provide a substantially H-shaped cutting edge as and for the purpose set forth.
- 10 5. In a seeding device of the characters specified, standards comprising two complementary sections, one of said sections having its edge reduced in thickness whereby when said sections are brought together a guiding-groove
 15 will be formed, one of said sections being provided with a shield to protect the fingers of the operator, in combination with a knife having wings working in said groove and means to reciprocate the knife, as set forth.
- 20 6. In a seeding-machine, a suitable frame and standard in combination with a plunger-shaft having a slit in its lower end; a knife having a recess to receive the slitted end of
 25 said plunger and also having laterally-extending blades 15 designed to cooperate with said standard and an auxiliary knife-section comprising the plate 19 bent to form parallel arms and sharpened knives at the end thereof and
 30 also having a central aperture and slits extending therefrom, said aperture being adapted to receive said plunger, while said slits will accommodate said laterally-extending blades and suitable means to hold the parts
 35 of said knives in union with each other and with said plunger, as and for the purpose set forth.
7. In a seeding-machine, a standard having a stripper-plate provided with a central opening and lateral slits extending from said
 40 opening, in combination with a reciprocating plunger, having a knife adapted to move through said opening and provided with wings cooperating with said slits as and for the purpose set forth.
- 45 8. In a seeding-machine, a seed-extracting knife; a suitable frame in which to reciprocate said knife and means carried by the knife to pick up the pulp and a stripper-plate obliquely disposed in the path of the pulp
 50 whereby said plate will deflect the pulp laterally as and for the purpose set forth.
9. In a cherry-seeding machine, a suitable frame; a plunger carrying a knife reciprocatingly mounted in said frame, said knife being
 55 provided with means to pick up the cherry-pulp, in combination with additional means

carried by the standard and obliquely disposed in the path of the knife adapted to strip the pulp therefrom and deflect it laterally as and for the purpose set forth. 60

10. The combination in a cherry-seeding machine, of a plunger, a standard forming a support and guide for said plunger, and a stripper-plate supported by the standard at an angle oblique to the line of movement of
 65 the plunger as set forth.

11. In a cherry-seeding machine, a plunger and a knife, said knife comprising the depending portion 17, and a plate 19 bent to form parallel arms and having sharpened
 70 knives at each end, said knives being designed to lie at each end of the knife formed on said depending section and means to connect said knives and plunger whereby the cutting edge of the knife thus provided will
 75 be substantially H-shaped as and for the purpose set forth.

12. In a cherry-seeding machine, a reciprocating seed-extracting knife comprising the depending portion 17 having a beveled cutting edge combined with a plate having at
 80 each end a broadened cutting-blade 22 whereby the shoulders 25 will be formed, said blade being bent near its middle portion thereby bringing said knives parallel with each other
 85 upon each side of said depending portion and means to unite said parts, as set forth.

13. In a seeding-machine, a standard having a pulp-stripper, disposed at an oblique angle to the plane of the standard and a plunger
 90 reciprocatingly mounted in said standard and means to hold the plunger against rotation as set forth.

14. In seeding-machines, a standard, a knife comprising the plate 19 bent to form the parallel arms and broadened knives having concave edges at the ends thereof combined with
 95 a depending portion 17 having a concave cutting edge upon its lower end; a reciprocating plunger connected to said parts and means
 100 carried by the knife to hold the plunger against rotation, substantially as specified and for the purpose set forth.

15. The combination with seeding devices, of an inclined hopper formed with a recess in
 105 its edge, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL A. ROLLMAN.

Witnesses:

CORA LEIB,
 HENRY M. STAUFFER.