No. 791,650. PATENTED JUNE 6, 1905.

K. T. RIKERT.

FRUIT PITTING MACHINE.

APPLICATION FILED APR. 4, 1904.

2 SHEETS—SHEET 1.

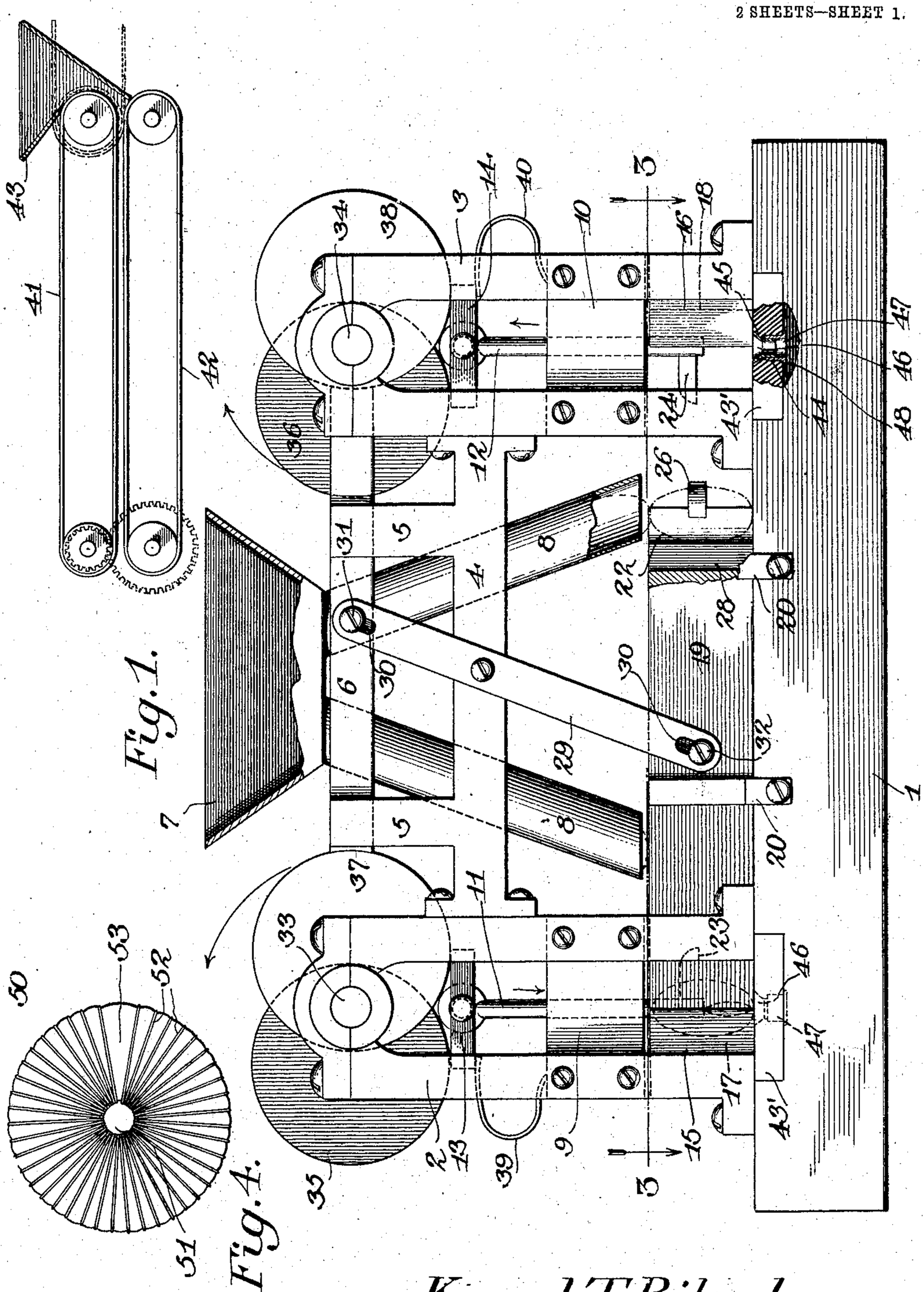

Fig. 1.

Fig. 4.

Witnesses
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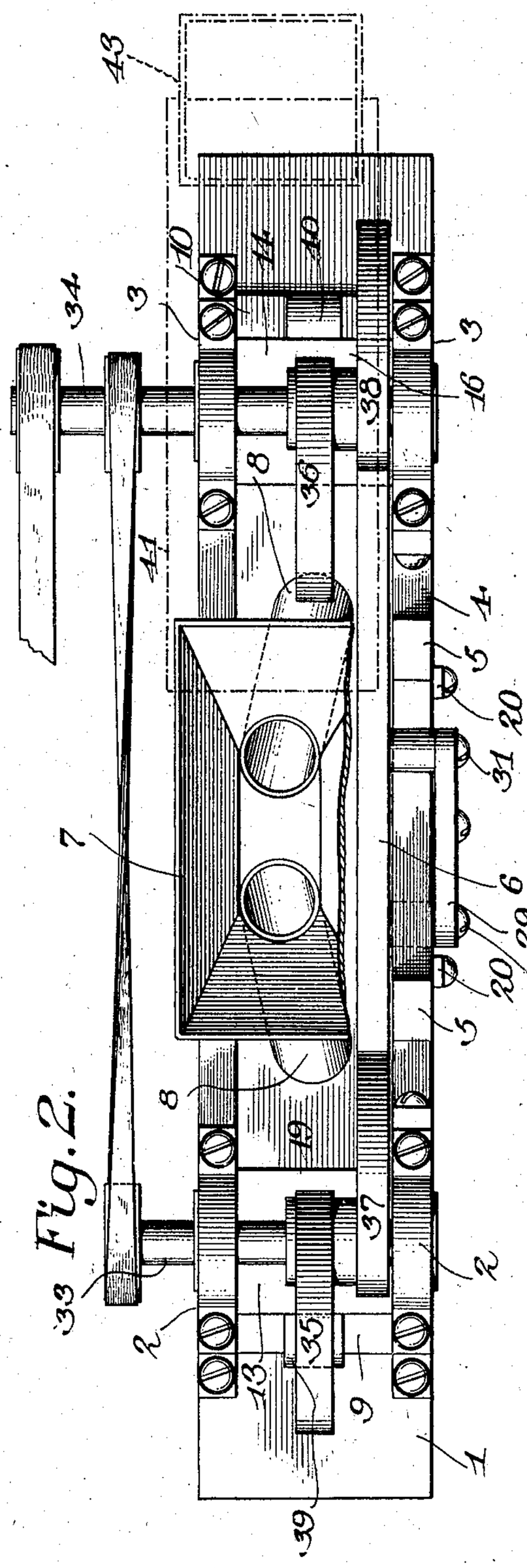

Fig. 2.

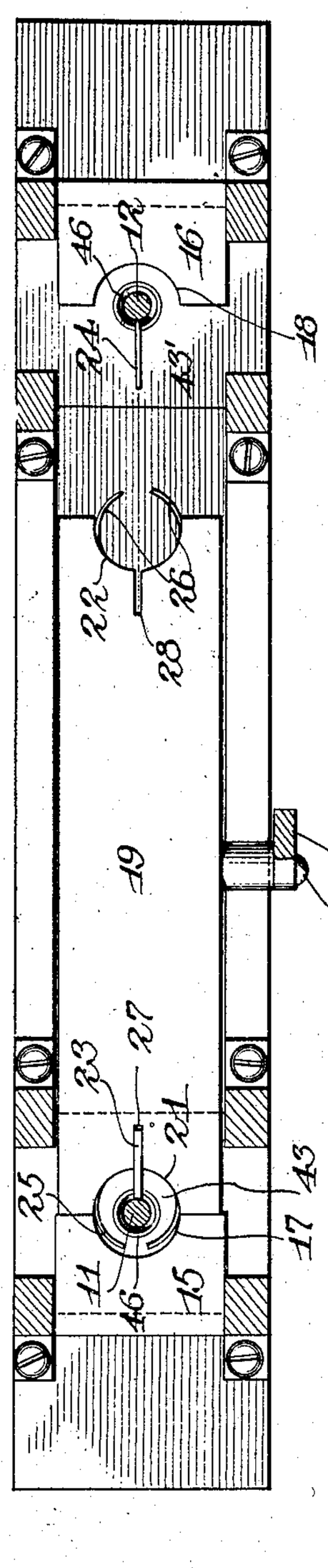

Fig. 3.

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UNITED STATES PATENT OFFICE.

KERNEL THEODORE RIKERT, OF SAN JOSE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO EBENEZER C. STOWE, OF SAN JOSE, CALIFORNIA.

FRUIT-PITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,650, dated June 6, 1905.

Application filed April 4, 1904. Serial No. 201,610.

To all whom it may concern:

Be it known that I, KERNEL THEODORE RIKERT, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented a new and useful Fruit-Pitting Machine, of which the following is a specification.

This invention relates to machines for pitting fruits, such as dried prunes; and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these and other ends in view, which will appear as the nature of the invention becomes better understood, the same consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being understood, however, that changes and modifications may be made in the same within the scope of the invention and without departing from the spirit or sacrificing the advantages of the same, especially with regard to size, proportion, and exact manner of assemblage of the parts of the device.

In said drawings, Figure 1 is a side elevation, partly in section, of a fruit-pitting machine constructed in accordance with the principles of the invention. Fig. 2 is a top plan view of the same. Fig. 3 is a horizontal sectional view taken on the line 3 3 in Fig. 1. Fig. 4 is a plan view illustrating a modified construction of the compressible fruit-supporting plate.

Corresponding parts in the several figures are indicated by similar numerals of reference.

The base 1 of the machine supports two pairs of uprights 2 2 and 3 3. A brace 4 connects one of the uprights 2 with the proximate upright 3, and said brace is provided with upwardly-extending brackets 5 5, forming guides for a reciprocatory slide 6. A suitably-supported hopper 7 is provided with discharge-tubes 8 8, which diverge in the direction of the uprights 2 2 and 3 3, respectively.

The uprights 2 2 and 3 3 are connected in pairs by means of transverse braces 9 10, which form bearings for vertically-reciprocating plungers 11 and 12, the upper ends of which are provided with cross-heads 13 and 14, having bearings in the respective uprights. Supported upon the base adjacent to the outermost uprights 2 and 3 are blocks 15 16, having semicylindrical cavities 17 18. A reciprocatory slide 19, guided upon the base 1 by means of keepers 20, is provided at the ends thereof with semicylindrical cavities 21 and 22, which coöperate with the cavities 17 18 in the blocks 15 and 16, as will be presently understood.

The plungers 11 12 are provided near their lower ends with inwardly-extending cutters 23 24 for the purpose of slitting the fruits that are to be pitted by said plungers which constitute the pitters and which are disposed concentrically with the walls of the recesses 17 and 18. The ends of the slide 19 are provided with curved springs 25 and 26, extending outwardly from the edges of the cavities 21 and 22. At the bottom of said cavities are formed vertical recesses 27 and 28 for the reception or passage of the points of the cutters 23 and 24.

Connected pivotally with the brace 4 is a rocking lever or member 29, the ends of which have slots 30, engaging studs or projections 31 32 upon the slides 6 and 19, respectively.

33 and 34 are shafts journaled transversely at the upper ends of the pairs of uprights 2 2 and 3 3, each of said shafts carrying a pair of cams or eccentrics 35 36 and 37 38, the cams 35 and 36 being disposed to operate against the cross-heads 13 14 of the plungers 11 12, while the cams 37 and 38 are disposed to operate upon opposite ends of the slide 6. The shafts 33 and 34 will be driven in unison by any suitable well-known means, and the cams will be timed to move the parts operated thereby at the proper moments.

Springs 39 and 40 are suitably disposed below the cross-heads 13 14 for the purpose of

elevating the plungers carried by said crossheads during the upgoing movement of the cams, whereby they are operated.

Suitably disposed above the hopper 7 and discharging thereinto are a pair of endless carriers 41 and 42, the former disposed above the latter and the proximate leads of said carriers traveling in the same direction, (in the direction of the hopper 7,) as indicated by arrows. A hopper 43 is disposed to feed the dried fruits that are to be operated upon between the said endless carriers, which may be operated at different rates of speed, thus subjecting the fruits to a rolling movement, whereby they will be rendered approximately equal in transverse diameter. The base 1 supports below each pair of uprights 2 2 and 3 3 a block 43, which is made of flexible material, preferably of a good quality of rubber. Each of these blocks 43 is provided with an opening 44, disposed directly below the respective plungers, said openings being tapering at their upper ends, as shown at 45. In these tapering upper ends are placed funnel-shaped guides 46, preferably of highly-polished non-corrodible metal, said funnels being provided with telescoping extensions 47, which are provided with flanges 48, extending under the elastic blocks 43, and thereby held in position. When in operation a plunger descends to force a pit out of a fruit disposed in the cavity above the flaring upper end in said opening, the funnel 46 will serve as a guide to direct the pit in a downward direction through the discharge-opening, and the telescoping members 46 and 47 will permit the flexible block 43 to yield to such pressure as may be exerted against it. This device is an important feature of the present invention, since by reason of the presence thereof the machine is enabled to operate upon fruits of various sizes with an equal degree of efficiency, and since it becomes practically impossible for a pit or seed to escape in any manner except through the opening provided for the purpose. The polished surfaces of the telescoping-tubes will also prevent the pits from hanging in, and thereby choking the escape-openings.

In operation the fruits are fed to the hopper 7 and pass through the discharge-tubes 8 alternately to the recesses 21 22 at the ends of the reciprocatory slide 19, which latter also forms a cut-off for the supply-tubes. The fruit which is fed to one of the cavities 21 or 22 will be retained therein by means of the springs 25 or 26 while it is being carried in the direction of the blocks 15 or 16. It will be observed that the slide 19 is actuated by means of the lever 29 from the slide 6, which in turn derives its motion from the cams 37 and 38. The movement will be so timed that when the slide 19 reaches the limit of its inward movement the plunger will have commenced to descend and that while the said slide completes its movement in one direction the fruit carried thereby will be subjected to the action of the cutter 24, which lays open the upper part thereof. While the slide 19 withdraws the plunger continues to descend and serves to disengage the fruit from the spring-clamp of the slide, which, while the plunger is continuing its downward movement, moves in the direction of the oppositely-located pitting mechanism. The descending plunger presently engages the pit of the fruit, forcing it through the opening in the elastic block 43, from which it is conveyed in any suitable manner to some place of deposit. The pitted fruit when the plunger ascends may be removed from the cavity in the block 15 or 16 between the uprights 3 3.

In Fig. 4 of the drawings has been illustrated a modified form of the compressible or elastic fruit-supporting plate of this invention. This has been already described as being preferably formed of a piece or block of rubber or similar elastic compressible material provided with an opening or pit-passage and with a lining for said opening. Under the construction illustrated in Fig. 4 this part of the device is composed of a circular block 50, of rubber, having a central opening or pit-passage 51. This block is provided with a winding-wire 52, which is alternately threaded through the central perforation 51 and wound upon the block, the alternate windings being suitably spaced apart at their outer ends, while the inner ends of the wire loops are disposed closely together, so that they will coact with or coöperate with each other to form a metallic-lined pit-passage. At one point, however, (indicated at 53,) the wire-windings are spaced apart, so as not to be in the way of the slitting knife or cutter 23 or 24, as the case may be. This construction is obviously simple and inexpensive and may under some conditions be considered preferable.

Having thus described my invention, I claim—

1. In a fruit-pitting machine, a frame including a base and pairs of uprights at the ends of said base, a hopper supported intermediate said uprights, parallel shafts supported by the uprights, pairs of cams upon said shafts, a slide disposed between and driven by two of the cams on said shafts, vertically-reciprocatory pitting-plungers disposed below and driven by other two cams on said shafts, a reciprocatory fruit-carrier mounted on the base, and a lever connecting said carrier with the reciprocatory slide.

2. In a fruit-pitting machine, a pair of parallel driven shafts, cams upon said shafts, a reciprocatory slide disposed between and driven by two of said cams, a feed-hopper disposed between the shafts and having divergent feed-tubes, a reciprocatory carrier hav-

ing a cavity at either end disposed below and constituting a cut-off for said feed-tubes, an operating-lever connecting said carrier with the reciprocatory slide, stationary blocks disposed in the path of the carrier and having cavities corresponding with cavities at the ends of the carrier, pitting-plungers mounted to reciprocate at an angle to the movement of the carrier, and cams upon the driven shafts engaging and operating said pitting-plungers.

3. In a fruit-pitting machine, a reciprocatory carrier having a vertically-disposed recess or cavity and a vertical slit at the bottom or inner portion of said recess, converging springs extending from the walls of the recess, a stationary block having a cavity corresponding with that of the carrier and disposed at the limit of the movement of the latter, a pitting-plunger mounted to reciprocate at an angle to the movement of the carrier and timed to enter the pitting-receptacle prior to the withdrawal of the carrier, and a slitting-knife carried by the plunger and accommodated in the slit at the bottom of the cavity in the carrier.

4. In a fruit-pitting machine, an elastic fruit-support consisting of a plate of rubber having an opening for the passage of the pit and a collapsible lining for said passage, consisting of telescoping tubes provided at their outer ends with flanges engaging the surfaces of the rubber plate to thereby prevent displacement of said tubes and preventing pits from sticking.

5. In a fruit-pitting machine, a yieldable fruit-support having a pit-passage and a lining for said passage composed of telescoping members.

6. In a fruit-pitting device, a yieldable fruit-support having a pit-passage, flaring at its upper end, and telescoping guiding members seated in said passage, the upper member being funnel-shaped to fit the upper end of the passage.

7. In a fruit-pitting machine, a compressible fruit-support having a pit-passage and telescoping guide members seated in said passage.

8. In a fruit-pitting machine, a base, uprights supported upon said base, a hopper having feed-tubes disposed intermediate of said uprights, a carrier mounted for reciprocation upon the base and adapted to receive charges from the feed-tubes and to cut off the supply from the latter, holding-blocks mounted at the limits of the movement of the carrier, fruit-supports having pit-passages at the lower ends of the fruit-receptacles formed by said blocks, and a reciprocating carrier, spring-actuated pitting-plungers mounted for vertical movement, shafts mounted at the upper ends of the uprights and having cams, cross-heads at the upper ends of the pitting-plungers engaged by said cams, a slide mounted for reciprocation, cams upon the shafts adapted to be engaged by opposite ends of said slide, and a suitably-supported lever connecting said slide with the reciprocatory carrier.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

KERNEL THEODORE RIKERT.

Witnesses:
C. W. COBB,
GEORGE W. WALDORF.