

April 12, 1938.

H. J. GOLDBLATT ET AL

2,113,916

CULINARY APPLIANCE

Filed March 30, 1936

4 Sheets-Sheet 1

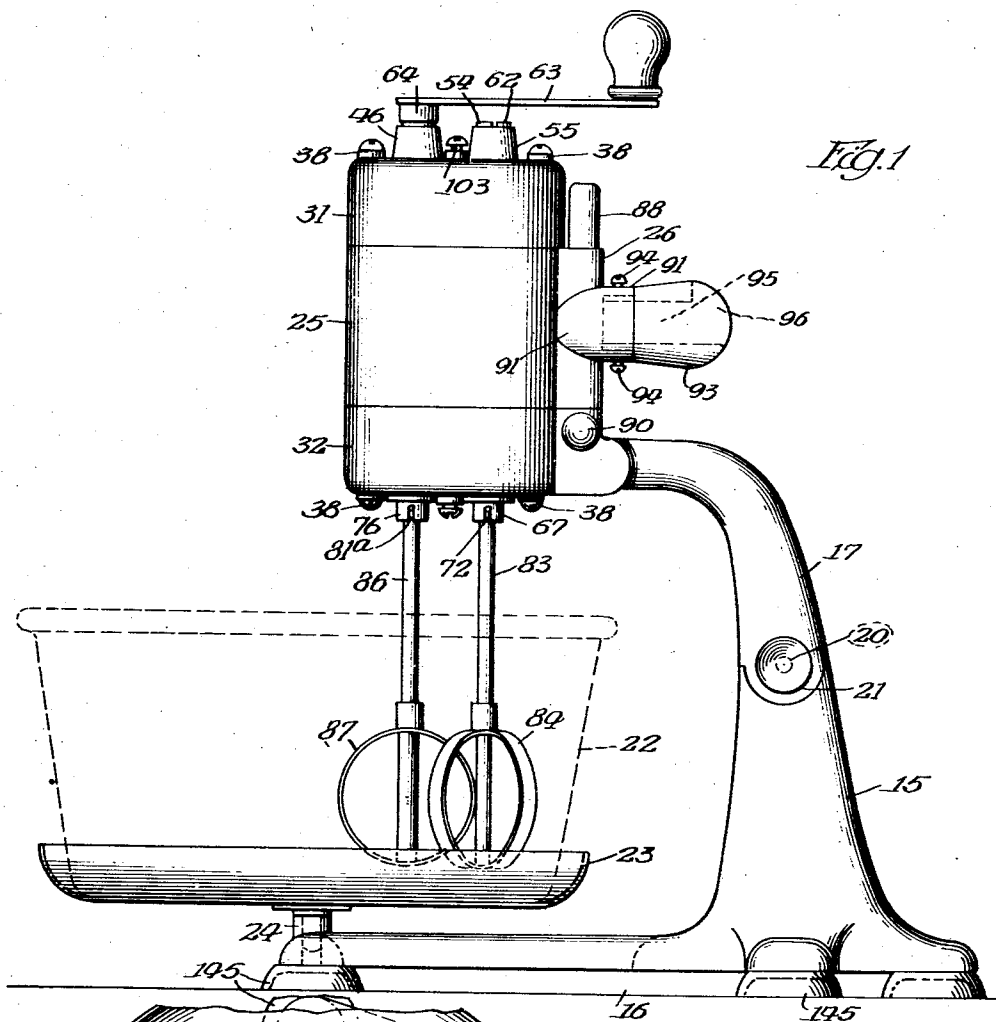


Fig. 1

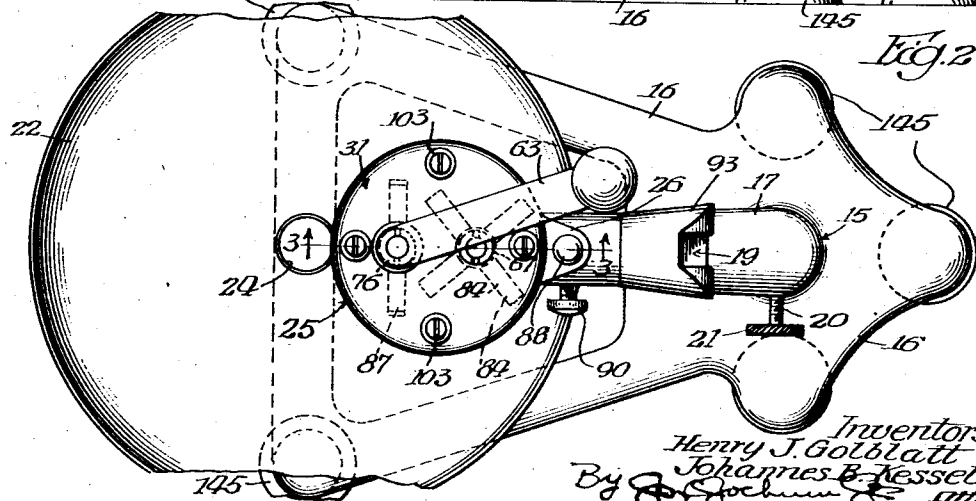


Fig. 2

Inventors
Henry J. Goldblatt
Johannes B. Kessel
By *J. Goehmann & Alty*

April 12, 1938.

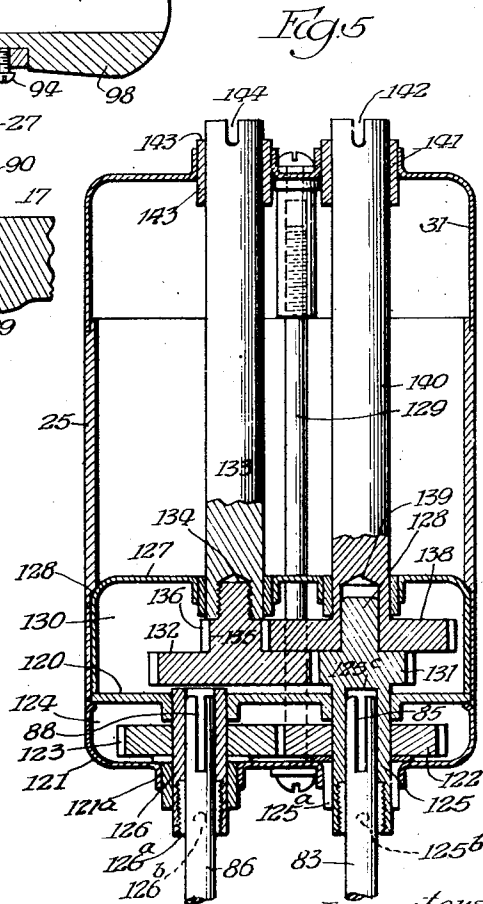
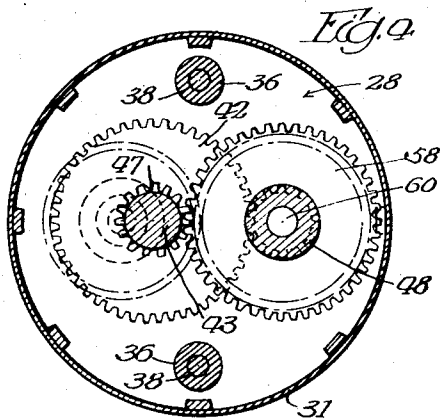
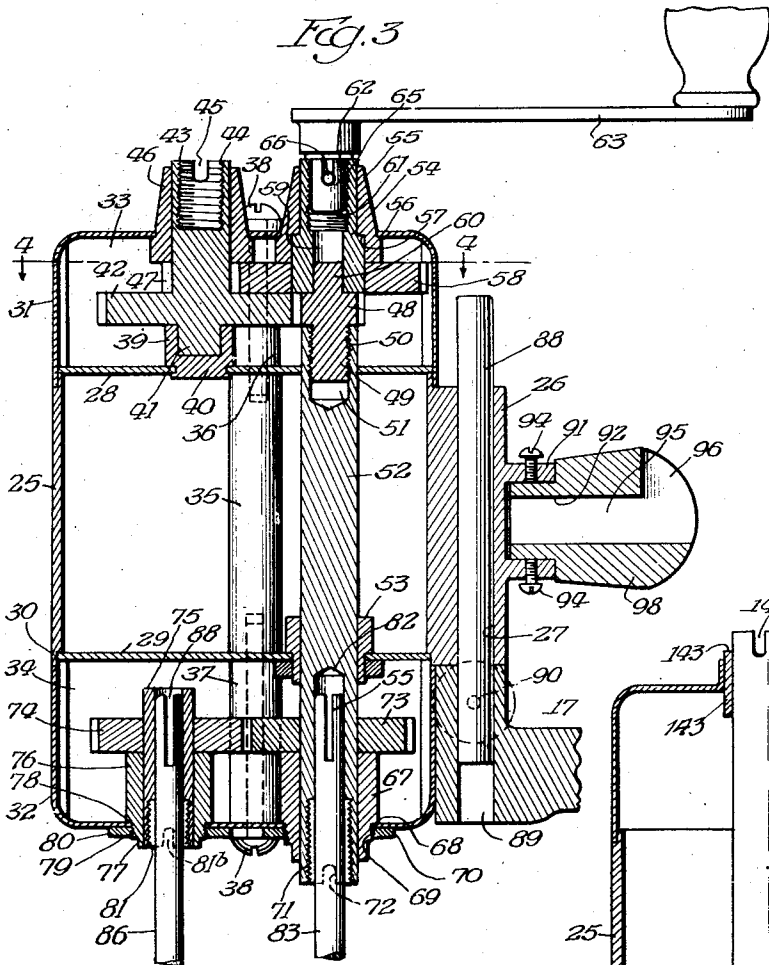
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4 Sheets-Sheet 2



Inventors
Henry J. Goldblatt
Johannes B. Kessel
By *[Signature]* Att'y

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CULINARY APPLIANCE

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4 Sheets-Sheet 3

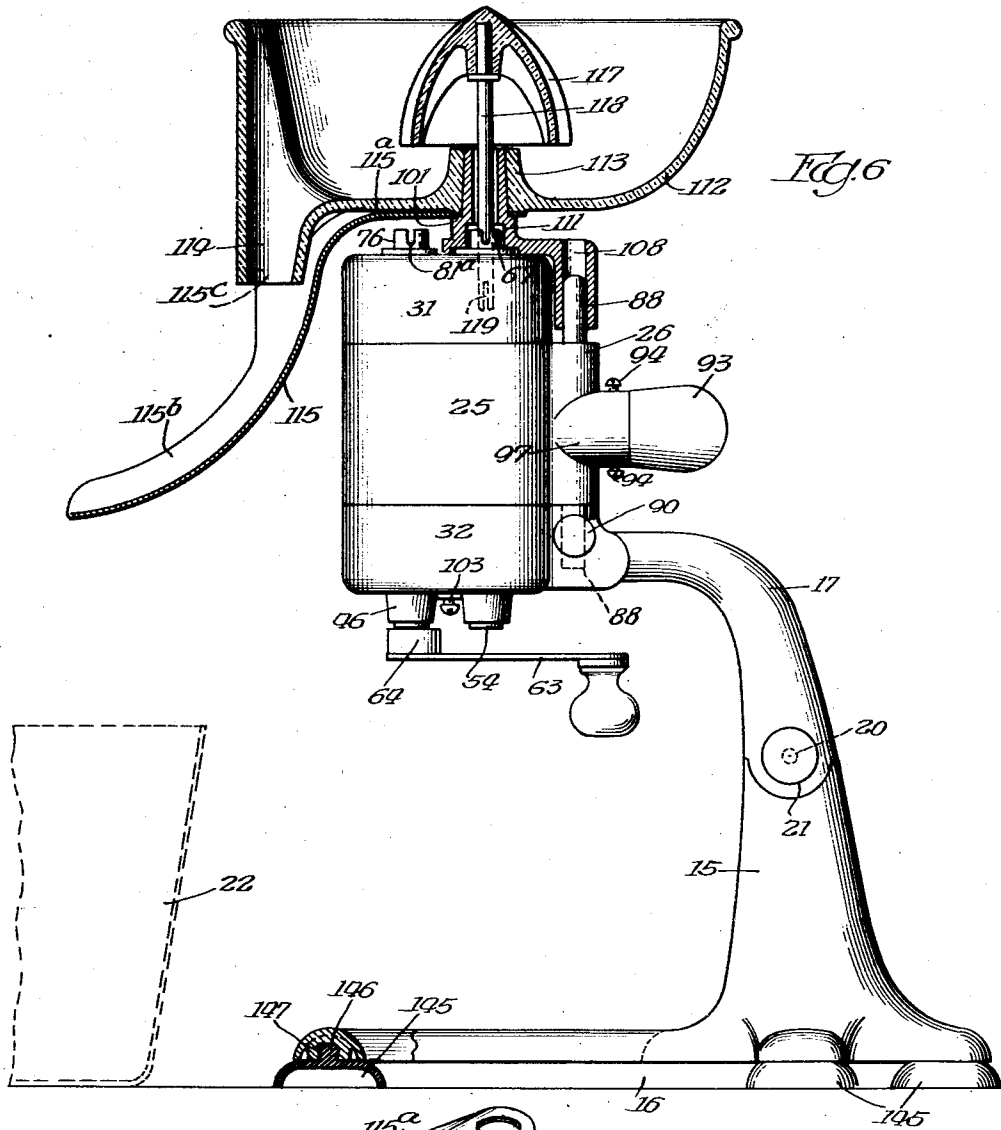


Fig. 6

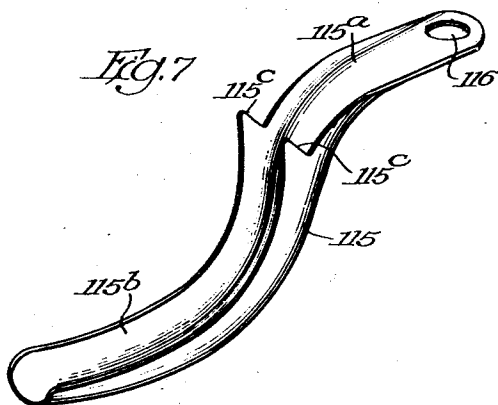


Fig. 7

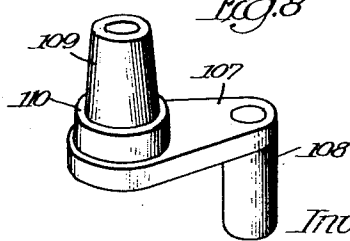


Fig. 8

Inventors
Henry J. Goldblatt
Journes B. Kessel
By *[Signature]* Atty.

April 12, 1938.

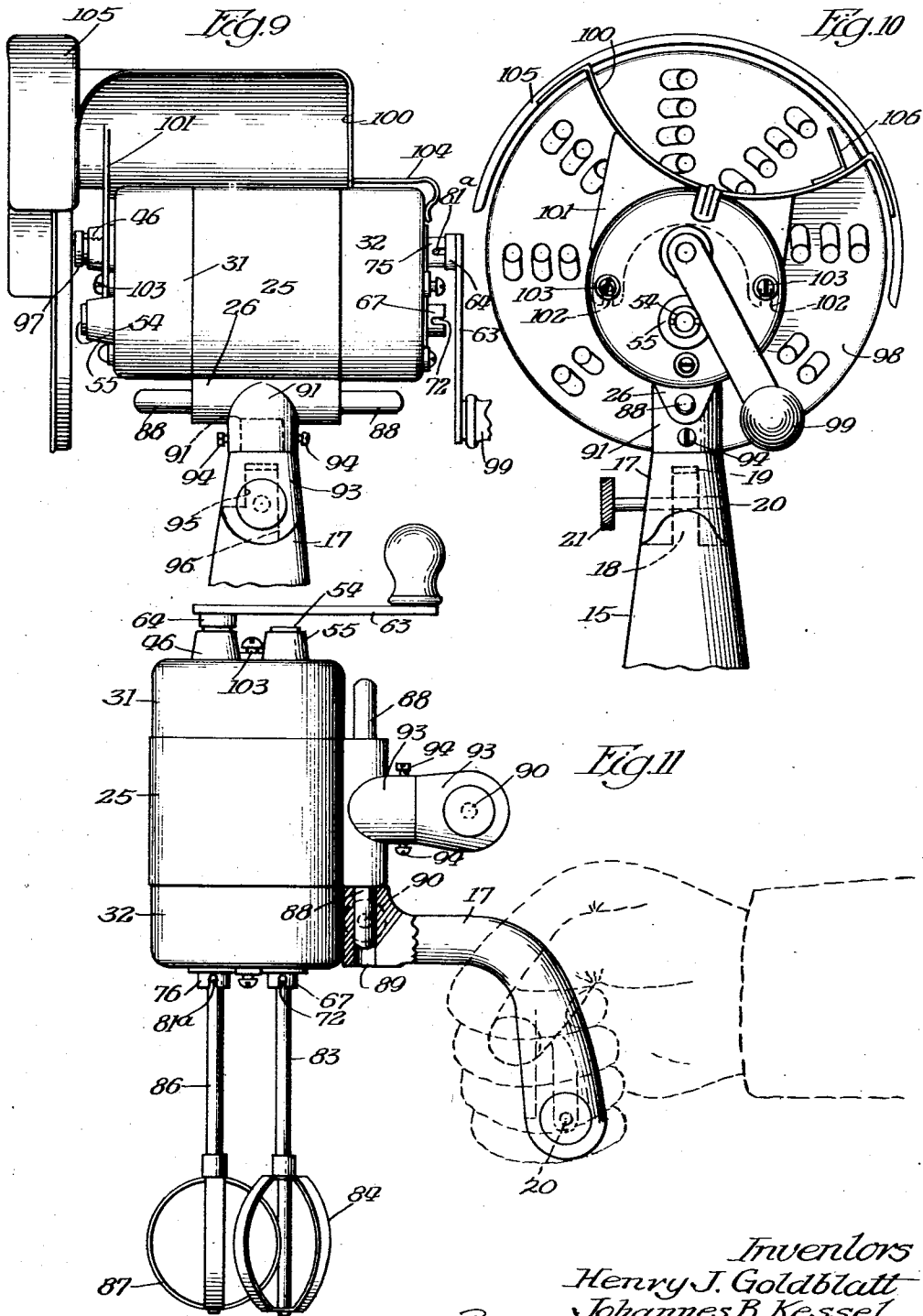
H. J. GOLDBLATT ET AL

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CULINARY APPLIANCE

Filed March 30, 1936

4 Sheets-Sheet 4



Inventors
Henry J. Goldblatt
Johannes B. Kessel
By *[Signature]* Atty.

UNITED STATES PATENT OFFICE

2,113,916

CULINARY APPLIANCE

Henry J. Goldblatt and Johannes B. Kessel, Chicago, Ill., assignors to Vidrio Products Corporation, Chicago, Ill., a corporation of Illinois

Application March 30, 1936, Serial No. 71,648

18 Claims. (Cl. 74-16)

This invention relates in general to a culinary appliance, but more specifically it has reference to the driving or actuating mechanism therefor, and one of the objects of the invention is to provide an improved driving or actuating mechanism by means of the use of which various speeds may be obtained by shifting the point of power application with respect to the point of connection of the mechanism or implement to be driven, according to the nature of the work being performed and the speed desired.

A further object is to provide an improved actuating mechanism of this character, as a unitary structure, of universal adaptation, in that the same may be actuated in any desired position or at any angle, or may be inverted so that the power may be applied at one end and the work at the other end, or vice versa, or may be employed as a hand supported mechanism.

A further object is to provide an improved means for mounting or supporting the mechanism.

A still further object is to provide improved connection means whereby various tools or implements may be attached to the actuating mechanism.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a side elevation of a beating or mixing apparatus, constructed in accordance with the principles of this invention.

Figure 2 is a top plan view in Figure 1.

Figure 3 is a vertical, sectional view taken on line 3-3, Figure 2, on an enlarged scale, and with parts omitted and parts broken away.

Figure 4 is a detail sectional view taken on line 4-4, Figure 3.

Figure 5 is a view similar to Figure 3 of another form of the invention.

Figure 6 is a view similar to Figure 1, partly in elevation, partly in section and partly broken away, showing the mechanism as used in connection with another culinary implement, the implement being in section.

Figure 7 is a detail perspective view of a spout used in connection with the form of the invention shown in Figure 6.

Figure 8 is a detail perspective view of a brack-

et or mounting for the implement shown in Figure 6.

Figure 9 is a side elevation showing a portion of the supporting mechanism and of the driving mechanism used in connection with a slicing implement.

Figure 10 is a left hand end elevation of Figure 9.

Figure 11 is a side elevation, partly broken away and partly in section, showing the driving mechanism with stirrers or beaters connected thereto, and showing the manner in which the invention may be used as a hand supported apparatus.

Referring more particularly to the drawings, 15 the numeral 15 designates a supporting standard having a base 16, each constructed of any suitable material and being of any desired size and configuration.

To the top of the standard 15 is connected an arm or bracket 17 in any suitable manner, preferably by means of a pivot formed by a projection 18 on the standard 15 entering a recess 19 on the arm or bracket 17 and shaped to form a saddle, the two being pivotally connected together by means of a transverse pin or screw 20 having an operating head 21 by means of which the pin may be removed when desired.

Obviously, the parts will be so constructed that they may be held in any desired position with respect to each other so as to permit the bracket 17 to be swung about the pivot for the purpose of removing or inserting the implements which are actuated by the driving mechanism into and out of a receptacle or container 22 for the material being operated upon. This receptacle or container is adapted to rest upon a support 23, the latter being removably held in position by means of a suitable detachable connection 24 between the support 23 and the base 16 of the apparatus.

The driving or actuating mechanism is constructed as a unitary element adapted for universal use in that it may be used in one position, inverted and used in another position or may be employed in any angle of inclination with respect to the vertical.

To that end there is provided a casing of any desired size and configuration, and the casing may comprise a hollow body portion 25 provided with a laterally projecting portion 26 extending parallel to the longitudinal axis of the body and having an aperture or opening 27 passing there-through.

Extending across the ends of the body are par-

titions 28 and 29, the partition 28 may rest against the end of the body 25, while the partition 29 may rest against a shoulder 30 formed in the wall of the body.

5 End or cap members 31—32 are provided adjacent the extremities of the body and these cap members co-operate with the respective partitions 28—29 to form chambers 33—34.

10 The parts thus formed and assembled may be held together in any desired or suitable manner preferably by means of a spacer member 35 arranged between the partitions 28 and 29 and engaging the same and spacer members 36—37 arranged in the respective chambers 33 and 34 to abut the respective partitions 28 and 29 and the tops of the respective cap or end members 31—32. These spacer members are arranged in alignment, and fastening or anchoring screws or bolts 38 pass through the ends of the respective end members 31 and 32, through the spacer members 36—37 and into the spacer member 35, thereby securely but separably holding the parts of the casing in assembled relation.

15 Obviously, any number of these anchoring or fastening means may be provided, as may be desired.

20 Within the chamber 33 is arranged a stepped bearing 39 held in position in any suitable manner, preferably by means of a reduced portion 40 entering an opening in the partition 29 that receives a trunnion 41 of a gear 42. Extending from the other side of the gear 42 is a shaft 43 which is provided with an open seat 44 at its upper end, and any desired number of open recesses 45 in the wall of the hollow portion 44. This shaft 43 is of a length to extend through and for a substantial distance beyond the end of the end member 31, and is journaled in a suitable bearing 46 that may be held in position by resting upon a gear 47 that is connected with the gear 42 for rotation therewith. The gears 42 and 47 together with the shaft 43 are loosely mounted in their bearings.

25 Arranged also within the chamber 33 is a loose pinion gear 48 which meshes with the gear 42 and is of a diameter considerably less than the diameter of the gear 42. One end of a shaft 49 of the gear 48 is provided with threads 50 to engage the threads in the wall of an opening 51 in a shaft 52, which latter passes through the partition 28 into the chamber 33, and is journaled in a suitable bearing 53 in the partition 29 and also in a bearing in the end of the end member 32, in a manner to be later described.

30 A stub shaft 54 is journaled in a suitable bearing 55 in the end of the end member 31, and the bearing may be provided with a shouldered portion 56 to prevent displacement of the same, while the shaft 54 may also be provided with a shouldered portion 57 to prevent its displacement with respect to the bearing 55.

35 Keyed or otherwise secured to the shaft 54 for rotation therewith and located within the chamber 33, is a gear 58 which meshes with the gear 47, and the gear 58, together with the shaft 54 may be supported and held in position by resting upon the gear 48. The end of the shaft 54 in proximity to the gear 58 is hollow at 59 to receive the end 60 of the shaft of the gear 48.

40 The other end of the shaft 54 is also hollow and is provided with screw threads 61, and recesses 62 open through the end of the shaft.

45 The numeral 63 designates a crank or handle provided at one end with a hub 64 having a reduced extremity 65 so as to fit within the hollow

end of the shaft 54. Lugs or projections 66 are provided on the reduced portion 65 of the handle 63 so as to enter the recesses 62 and thereby operatively connect the handle 63 with the shaft 54 so that by actuating the handle 63 the gear 58 will be rotated. This in turn will rotate the gear 47, which motion will be transmitted to the gear 42, and the gear 42 in turn meshing with the pinion gear 48 will rotate the latter, and as the gear 48 is connected to the shaft 52 by the threaded connection 50, it will be manifest that the shaft 52 will be rotated at one rate of speed.

5 However, the handle 63 may be detached from the shaft 54 by lifting the same therefrom and attached to the shaft 43, so that when power is applied to the shaft 43 by the handle 63, motion will be transmitted directly from the shaft 43, through the gear 42 and thence to the gear 48 for driving the shaft 52 at a different rate of speed.

10 Within the chamber 34 at the other end of the casing 25 is arranged a bearing 67 held in position in any suitable manner, such as by passing through the end of the end member 32 and being provided with a shoulder 68 to abut the member 32. The projecting portion of the bearing 67 may be provided with screw threads 69 to receive a collar 70 which co-operates with the shoulder 68 to clamp the wall of the member 32 and thereby hold the bearing 67 in position. The shaft 52 is journaled in this bearing 67 and passes therethrough and beyond the end thereof, the projecting end of the shaft 52 being hollow and provided in its wall with screw threads 71. Notches or recesses 72 are provided in the wall of the threaded opening 71 in the shaft 52 and extend through the end of the shaft.

15 Secured to the shaft 52 for rotation therewith and located within the chamber 34, is a gear 73 which meshes with a gear 74, also within the chamber 34, that is secured to a shaft 75. This shaft 75 is journaled in a bearing 76, which latter is held in position in any suitable manner, preferably by means of the end 77 thereof projecting through the end member 32 and having a shoulder 78 abutting the wall of the said end member 32, the projecting portion being provided with threads 79 with which a collar 80 engages, and which collar co-operates with the shoulder 78 to clamp or secure the bearing 76 in position.

20 The shaft 75 is hollow and at its outer end is provided with a recess 81 opening through the outer end thereof, the wall of the recess being threaded. Notches 81^a are provided in the wall of the recess 81 and open through the end of the shaft. The shaft 52 is also provided with a recess 82 which communicates with and forms a continuation of the threaded recess 71 in the end thereof.

25 Within the opening 82 is secured the end of the shaft 83 of a beater or mixing device 84, the end of the shaft 83 being preferably bifurcated as at 85 to cause the shaft to frictionally bind the wall of the recess 82.

30 Projecting into the shaft 75 is the end of a shaft 86 of another beater or mixer member 87, and the end of the shaft 86 is also bifurcated so as to cause the shaft to be frictionally bound or seated within the shaft 75.

35 It will therefore be manifest that with this improved construction and when the handle 63 is connected to the shaft 52 through the medium of the shaft 54, both of the shafts 83 and 86 of the beater or mixer members 84—87 will be rotated at one rate of speed.

40 When, however, the handle 63 is detached from

from the shaft 54 and connected to the shaft 43, the implements 84 and 87 will be rotated at a different rate of speed by reason of the gear connection between the shafts 43 and 54.

The casing 25—31—32 housing this transmission mechanism is supported by the arm or bracket 17 by means of a pin or shaft 88 which is secured thereto by passing through the opening 27 in the lateral projecting portion 26 on the casing 25. This pin or shaft 88 is of a length substantially greater than the length of the portion 26 of the casing so as to project beyond both ends thereof.

One end of the pin or shaft 88 is adapted to enter a socket or recess 89 in the arm 17 so as to hold the parts in the position shown in Figures 1 and 3.

When, however, the handle 63 is detached and the elements 84 and 87 also detached, the unit may be reversed or inverted so that the other end of the shaft or pin 88 may be seated in the socket or recess 89 in the arm 17.

In this position the shafts 54 and 43 will be lowermost, while the shaft 75 and the end of the shaft 52 will be uppermost, with the result that the crank or handle 63 may be then attached either to the shaft 75 or the shaft 52, while other implements may be attached to the shafts 54 and 43, and the implements will then be rotated at a rate of speed different from the rate of speed at which they could be actuated when the parts are in the position shown in Figure 3.

It is also possible with this form of the invention to detach the arm or bracket 17 from the standard 15 and then employ the bracket 17 as a handle to convert the mechanism into a hand holding device as shown in Figure 11.

If desired, a fastening screw 90 may be employed to hold the handle 17 in position.

Obviously the handle 17 may be detached and the unit inverted or reversed so that the other end of the shaft 88 may be inserted into the socket 89.

The portion 26 on the casing 25 may be provided with a socket 91 into which the reduced end 92 of a connection member 93 may be inserted, and these parts held together by means of fastening screws 94. The connection member 93 may be provided with a socket 95 which opens through the end thereof and with a lateral opening 96 so as to enable the member 93 to be secured to the end of the arm or bracket 17, so as to support the unit by its side for use in the position shown in Figure 9.

The threaded sockets in the ends of the respective shafts are provided for receiving a connection member 97 so that a form of tool or implement other than that shown in Figures 1 and 3 may be attached to the unit, and which connection 97 may be of any desired construction.

In Figures 9 and 10, there is shown a cutting device 98 of any suitable construction, which is adapted to be rotated by means of a handle 99.

In connection with this implement 98, there is provided a trough shaped support 100, having depending therefrom an extension 101, the lower portions of which are bifurcated as at 102, and these bifurcations are adapted to stand astride of screws 103, so that the same may be held in position. A spring or clip 104 connected to the support 100 may be provided to engage over one edge of the casing or unit, and a hood 105 is also provided which is adapted to extend over the implement 98. A guide or stop 106 may also be provided on the support 100.

When in this position it will be manifest that the unit may be used for shredding or cutting vegetables and the like according to the nature of the cutter or implement used, and in that event the article is placed within the trough or support 100 and advanced toward the cutter as the latter is rotated.

As shown in Figure 6, the unit is used in connection with a juice extracting mechanism, and to that end either end of the unit may be disposed upright and secured to the arm or bracket 17.

A connection bracket 107 is provided with a depending tubular portion 108 and an upwardly projecting portion 109, the latter being provided with a shoulder 110. The projection 109 is hollow and is provided with an enlarged portion 111 opening through the lower end thereof, and which portion 111 is adapted to receive the projecting end of the shaft 52, while the tubular depending portion 108 telescopes over the adjacent end of the shaft of the rod or pin 88. A bowl or receptacle 112 is provided with a thickened portion 113 to form a hub which is hollow and is adapted to telescope over the portion 109 of the connecting member 107, so that the bottom of the receptacle 112 will rest upon the shoulder 110. A discharge outlet 114 is provided in the receptacle 112. A spout 115 of any desired shape is adapted to be positioned to receive the material from the discharge outlet 114. This spout 115 is preferably constructed to provide a substantially flat portion 115^a having an opening 116 in one end through which the portion 109 of the connecting member 107 extends and one end of the spout rests upon the shoulder 110. The spout also is provided with a substantially trough shaped portion 115^b and shoulders or lips 115^c are arranged between the portions 115^a and 115^b which rest against the end of the outlet 114 of the receptacle 112 to hold the parts in proper position with respect to each other.

An extracting member 117 is connected to a shaft 118, which latter is bifurcated at the lower end as at 119, and the shaft projects through the portion 109 of the connecting member 107 and into the end of the shaft 52 to be frictionally connected thereby and so that the extracting element 117 will be rotated when the shaft 52 is rotated. In this form of the invention the handle 63 may be connected to either of the shafts 43 or 54, so that motion will be imparted to the element 117 from below the unit.

In Figure 5 there is shown another form of unit and in this form of the invention a partition 120 is disposed in closer proximity to the end of the end member 121, and the gears 122 and 123, which correspond with the gears 73 and 74 in the form of the invention shown in Figure 3, are arranged within the chamber 124. These gears are connected respectively to the shafts 125—126 that correspond with the shafts 52 and 75. One end of the shaft 126 extends through but terminates in close proximity to the partition 120. The other end of the shaft extends through a suitable bearing 121^a and projects beyond the end member 121. This end of the shaft 126 is hollow as at 126^a and the wall thereof is threaded, open notches 126^b being provided in the wall of the recess 126^a. The shaft 125 projects through the partition 120 and the other end thereof projects through a bearing 125^a and through and beyond the end member 121. This end of the shaft 125 is hollow and is provided with internal threads 125^b. Notches 125^b open through the end

of the shaft and a recess 125^c is provided in the shaft 125 to communicate with the recess 125^a.

A second partition 127 is arranged within the unit and may be of substantially inverted cup shaped formation, one edge thereof resting upon the partition 120 and a portion of the opposite edge resting against a circumferential shoulder 128 in the wall of the chamber 25.

The parts may be held together by means of tie rods or bolts 129 of any suitable construction.

Within a chamber 130 formed by the partitions 120 and 127 are arranged another set of gears. One of the gears 131 is connected to the shaft 125 for rotation therewith, and this gear meshes with another gear 132 which is secured to the end of a shaft 133 preferably by means of a threaded connection 134. Mounted upon the hub 135 of the gear 132 for rotation therewith, is a pinion gear 136 which meshes with a gear 137 that is loosely mounted upon the hub 138 of the gear 137. The hub 128 of the gear 131 extends loosely into a recess 139 in the end of a shaft 140, and the shaft 140 passes through a bearing 141 in a wall of the end member 31 of the casing of the unit. The end of the shaft 140 is hollow and is provided with recesses 142 in the walls opening through the ends thereof.

The shaft 133 passes through a bearing 143 in the wall of the end member 31 of the unit and the end of the shaft 133 is hollow and is provided with open recesses 144 in the wall thereof.

With this form of the invention it will be manifest that the gears will be more compactly arranged and the same results may be obtained with this unit as with the form shown in Figure 3. That is to say, the unit shown in Figure 5 may be used in the position as is shown and driven from either the shafts 133 or 140, according to the rate of speed desired, or the unit may be inverted and driven from the shafts 125—126 in a manner similar to that shown in Figure 3.

As a means for anchoring the support 16 to prevent it from moving across its supporting surface as a result of vibration, suitable anchoring devices 145 in the form of suction cups, are provided, and these cups may be of any desired size and configuration, and any number of the same may be employed, the cups being fastened to the bottom of the base 16 in any suitable manner, such as by means of projections or stems 146 on the cups entering recesses 147 and secured in any suitable manner.

With this invention it will be manifest that there is provided a universal driving unit which may be arranged in any desired position for use and there is also provided a plurality of driving and driven elements. Each of the driving elements may be employed as driven elements, while each of the driven elements may be employed as driving elements.

In other words, each of the rotatable elements may be employed either as a driving or as a driven element, according to the speed desired.

It will also be manifest that there is provided a simple and compact construction which is adapted for universal use and in which all of the parts are not only compactly arranged, but they are arranged in such a manner that access may be readily had thereto. At the same time, there is provided a simple, durable and cheap construction, which will be effective and efficient in operation.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made

in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A culinary appliance of the character described embodying an actuating unit, means for supporting the unit for use, said unit embodying a plurality of rotatable elements, operative connections between said elements, and means whereby an actuator and an implement may be selectively and individually and detachably connected to said elements.

2. A culinary appliance of the character described embodying an actuating unit, means for supporting the unit for use, said unit embodying a plurality of rotatable elements, operative connections between said elements, each of said elements adapted to be selectively employed as a driving or driven element, and means whereby an actuator and an implement may be individually and selectively and detachably connected to said elements.

3. A culinary appliance of the character described embodying an actuating unit comprising a casing, a plurality of rotatable elements housed within the casing, operative connections between said elements and also housed within the casing, each of said elements adapted to be selectively employed as a driving or driven element, means whereby an actuator and one or more implements may be individually and selectively and detachably connected to said elements, and means for supporting said unit in position for use, said unit also adapted to be inverted with respect to such position.

4. A culinary appliance of the character described embodying an actuating unit, said unit embodying a casing, a plurality of rotatable elements housed within said casing, operative connections between said elements and also housed within said casing, each of said elements adapted to be selectively employed as a driving or a driven element, means whereby an actuator and one or more implements may be selectively and detachably connected to said elements at opposite ends of the casing, and means whereby said casing may be supported with one end in proximity to the work, the last recited means adapting said casing to be inverted to position the opposite end thereof adjacent the work.

5. A culinary appliance of the character described embodying an actuating unit, means for supporting the unit for use, said unit embodying a plurality of rotatable elements, operative connections between said elements, and means whereby an actuator and an implement may be selectively and individually and detachably connected to said elements, said operative connection between the elements operating to impart different rates of speed to said elements according to the speed of rotation of the element to which said actuator is connected.

6. A culinary appliance of the character described embodying an actuating unit, said unit embodying a casing, a plurality of rotatable elements housed within said casing, operative connections between said elements and also housed within said casing, each of said elements adapted to be selectively employed as a driving or a driven element, means whereby an actuator and one or more implements may be selectively and detachably connected to said elements at opposite ends of the casing, and means whereby said casing may be supported with one end in proximity to

the work, the last recited means adapting said casing to be inverted to position the opposite end thereof adjacent the work, said operative connections between the said elements operating to impart different rates of speed to the elements according to the speed of rotation of the element to which said actuator is connected.

7. A culinary appliance of the character described embodying an actuating unit, said unit embodying a casing, a plurality of rotatable elements housed within said casing, operative connections between said elements and also housed within said casing, each of said elements adapted to be selectively employed as a driving or a driven element, means whereby an actuator and one or more implements may be selectively and detachably connected to said elements at opposite ends of the casing, means whereby said casing may be supported with one end in proximity to the work, the last recited means adapting said casing to be inverted to position the opposite end thereof adjacent the work, and means adapting said unit to be supported in position for use in a plane intersecting the plane of the unit in its first said position for use.

8. A culinary appliance of the character described embodying an actuating unit, said unit embodying a plurality of driving and a plurality of driven elements, means for selectively and detachably connecting one or more implements to the driven elements for operation upon the work, means for selectively and detachably connecting an actuator to said driving elements, and means whereby different rates of speed will be imparted to the driven elements, the rate of speed thus imparted being controlled by the driving element to which the said actuator is connected.

9. As a unitary structure an actuating unit embodying a plurality of rotatable elements maintained in fixed positions with relation to each other, means operatively connecting said elements, an actuator, one or more implements for operation on the work, and means individual to the said elements whereby the actuator and the said implements may be selectively connected to said elements, whereby said elements may be selectively employed as driving or driven elements.

10. As a unitary structure a casing, a plurality of rotatable elements in the casing and accessible from the outside of the casing adjacent opposite ends thereof, a plurality of sets of gears within the casing operatively and separately connecting said elements whereby different rates of speed may be imparted to said elements according to which of the elements an actuator is connected, means for supporting the casing with certain of said elements adjacent the work, the said means also adapting said casing to be inverted to selectively position any of said elements adjacent the work, an actuator, one or more implements for operation on the work and adapted to be selectively connected with said elements, and means for selectively and detachably connecting said actuator to said elements.

11. As a unitary structure a casing, a plurality of rotatable elements in the casing and accessible from the outside of the casing adjacent opposite ends thereof, a plurality of sets of gears within the casing operatively and separately connecting said elements whereby different rates of speed may be imparted to said elements according to which of the elements an actuator is connected, means for supporting the casing with certain of said elements adjacent the work, the

said means also adapting said casing to be inverted to selectively position any of said elements adjacent the work, an actuator, one or more implements for operation on the work and adapted to be selectively connected to said elements, and means for selectively and detachably connecting said actuator to said elements, a portion of the said supporting means for the casing adapted to serve as a hand hold whereby the unit may be manually supported.

12. As a unitary structure a casing, a plurality of rotatable elements in the casing and accessible from the outside of the casing adjacent opposite ends thereof, a plurality of sets of gears within the casing operatively and separately connecting said elements whereby different rates of speed may be imparted to said elements according to which of the elements an actuator is connected, means for supporting the casing with certain of said elements adjacent the work, the said means also adapting said casing to be inverted to selectively position any of said elements adjacent the work, an actuator, one or more implements for operation on the work adapted to be selectively connected with said elements, means for selectively and detachably connecting said actuator to said elements, and means adapting said casing to be mounted in another operative position upon said support, with the plane of the axes of the said rotatable elements intersecting the plane of the axes of said elements when the casing is mounted in the first recited position.

13. As a unitary structure an actuating unit embodying a plurality of rotatable elements, certain of said elements being operable as driving elements when certain others of said elements are operating as driven elements, means operatively connecting the elements whereby different rates of speed may be imparted to the driven elements, an actuator, an implement adapted to operate upon the work, means whereby said actuator may be selectively and detachably connected to any of said driving elements, and means for selectively connecting said implement to the elements constituting the driven elements.

14. As a unitary structure an actuating unit embodying a plurality of rotatable elements, certain of said elements being operable as driving elements when certain others of said elements are operating as driven elements, means operatively connecting the elements whereby different rates of speed may be imparted to the driven elements, an actuator, an implement adapted to operate upon the work, means for adapting said unit to be selectively positioned with respect to the work to be performed, whereby any predetermined one of said elements will operate as a driven element, means for detachably connecting said implement to the driven element, and means for selectively and detachably connecting said actuator to any of the other of said elements.

15. As a unitary structure an actuating unit embodying a casing, a plurality of rotatable elements in said casing and accessible from the outside of said casing at points adjacent opposite walls thereof, certain of said elements constituting driving elements and certain of the elements constituting driven elements, an actuator, an implement for operation on the work, means for supporting the casing to position the driven elements for use adjacent the work, said means adapting said casing to be inverted, whereby the position of the driven elements may be interchanged with the driving elements, and means

for respectively and selectively connecting the actuator and the said implement to the said elements in any position of the said unit.

5 16. As a unitary structure an actuating unit
 10 embodying a casing, a plurality of rotatable elements in said casing and accessible from the outside of said casing at points adjacent opposite walls thereof, certain of said elements constituting driving elements and certain of the elements
 15 constituting driven elements, an actuator, an implement for operation on the work, means for supporting the casing to position the driven elements for use adjacent the work, said means
 20 adapting said casing to be inverted, whereby the position of the driven elements may be interchanged with the driving elements, means for respectively and selectively connecting the actuator and the said implement to the said elements in any position of the said unit, and gear connections between said elements, whereby different rates of speed may be imparted to the implement according to the element to which the
 25 said actuator is attached.

17. As a unitary structure an actuating unit
 25 embodying a casing, a plurality of rotatable elements in said casing and accessible from the outside of said casing at points adjacent opposite walls thereof, certain of said elements constituting driving elements and certain of the elements
 30 constituting driven elements, an actuator, an implement for operation on the work, means

for supporting the casing to position the driven elements for use adjacent the work, said means adapting said casing to be inverted, whereby the position of the driven elements may be interchanged with the driving elements, means for
 5 respectively and selectively connecting the actuator and the said implement to the said elements, in any position of the said unit, and additional means for supporting said unit in another and
 10 different position.

18. As a unitary structure an actuating unit
 15 embodying a casing, a plurality of rotatable elements in said casing and accessible from the outside of said casing at points adjacent opposite walls thereof, certain of said elements constituting driving elements and certain of the elements
 20 constituting driven elements, an actuator, an implement for operation on the work, means for supporting the casing to position the driven elements for use adjacent the work, said means
 25 adapting said casing to be inverted, whereby the position of the driven elements may be interchanged with the driving elements, means for respectively and selectively connecting the actuator and the said implement to the said elements, in
 30 any position of the said unit, and an adaptor interposed between said implement and said casing whereby a portion of said implement will be supported by said casing.

HENRY J. GOLDBLATT. 30
 JOHANNES B. KESSEL.