

W. R. SANFORD.  
GREEN BONE CUTTING AND OYSTER SHELL CRUSHING MACHINE.

APPLICATION FILED APR. 6, 1904.

2 SHEETS—SHEET 1.

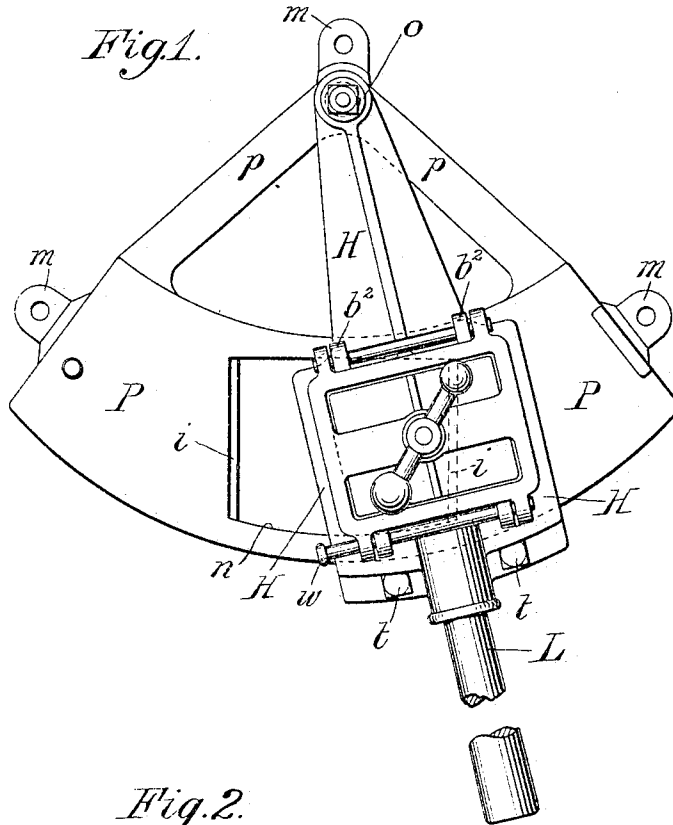
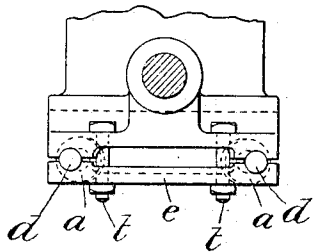


Fig. 2.



Witnesses:  
*Medwin Stadelman*  
*John J. Haley*

Inventor  
*William Rogers Sanford*  
 by *William A. Walling,*  
 Attorney

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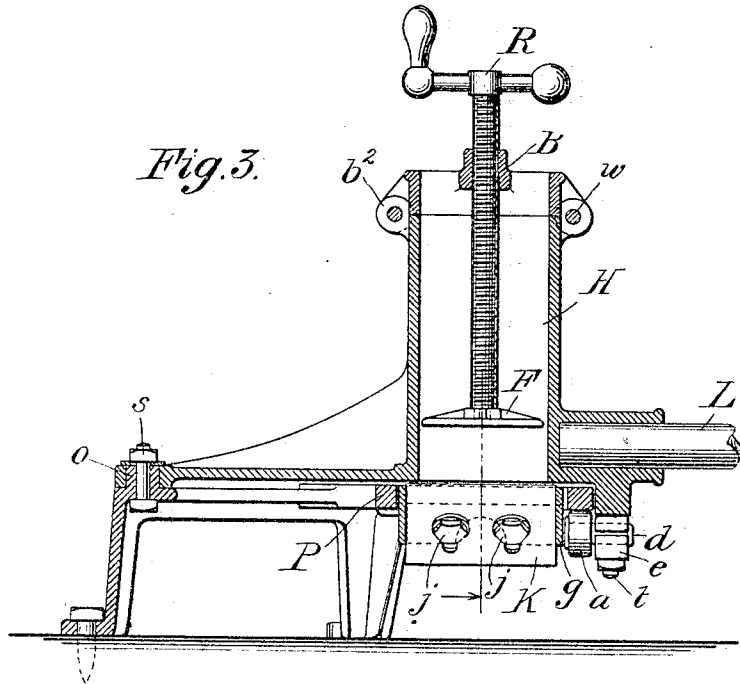


Fig. 3.

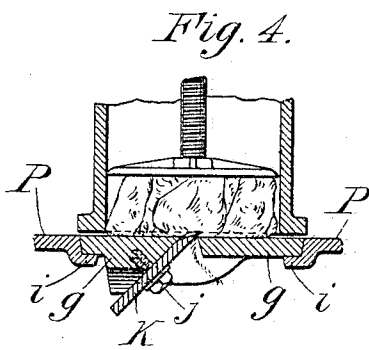


Fig. 4.

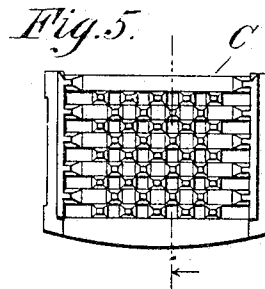


Fig. 5.



Fig. 6.

Witnesses:  
 Frederic Sadelman  
 John J. Haley

Inventor  
 William Rogers Sanford  
 by  
 William A. Walling,  
 Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM ROGERS SANFORD, OF NEW YORK, N. Y., ASSIGNOR OF SEVENTENTHS TO WILLIAM A. WALLING, OF NEW YORK, N. Y.

## GREEN-BONE-CUTTING AND OYSTER-SHELL-CRUSHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 781,848, dated February 7, 1905.

Application filed April 6, 1904; Serial No. 201,942.

*To all whom it may concern:*

Be it known that I, WILLIAM ROGERS SANFORD, a citizen of the United States, residing in the borough of Brooklyn, in the city and State of New York, have invented a new and useful Green-Bone-Cutting and Oyster-Shell-Crushing Machine, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The invention has for its object the manufacture of a cheap, practical, and simple machine for the cutting of either green bones or the crushing of oyster-shells for poultry-food, thereby combining two machines in one; and to this end the invention consists in various details of construction to be hereinafter described, and particularly pointed out in the claim.

Figure 1 shows a horizontal plan of machine embodying this invention. Fig. 3 shows a vertical section of the same with knife-holder with knife in position for cutting bone. Figs. 2, 4, 5, and 6 represent details hereinafter explained.

The main framework consists, essentially, of the segmental bed-plate P P P, Fig. 1, which has its axis at the center thereof at boss O. This bed-plate is supported upon three legs *m m m*, by which it can be conveniently fastened to a bench. In the bed-plate is the opening *u*, with seats *i i*, which support the removable knife-holder *g*, with knife attached, K, Fig. 4, or oyster-shell-crusher grate C, Fig. 5. Above this bed-plate is the hopper H, containing the follower F, and means for raising and lowering the same. The hopper is pivoted at axis O, and attached to it is a long lever L, by which the hopper is reciprocated in the arc of a circle about the axis O across the knife or crusher-grate.

Fig. 2 shows the end view of the lower part of movable hopper, displaying details of rollers *a a*, which roll along the under side of the bed-plate adjacent to the periphery, Fig. 3. These rollers overcome the tendency of the hopper to become separated from the bed-plate when the rotatable rod R is screwed down in order to press the follower against

the material contained in the hopper. This follower pushes the material down beneath the edge of the knife or the teeth of the crusher-plate. For this purpose the rod R is given a turn after each stroke, for at each stroke the material is reduced by the removing of a portion from the under side thereof. The rollers *a a* rotate on studs *d d*, which are held in position by clamp *e*, which in turn is secured by bolts *t t* to the hopper.

Fig. 3 shows details of hopper H, reciprocating in the arc of a circle in a horizontal plane about a fixed axis at boss O and secured in position by bolt and nut *s*. At the top of the hopper is hinged the threaded bearing B, secured in position during operation by pin *w*. By rotating the rod R, thereby raising the follower F, and then removing the pin *w* the bearing B, with the rotatable rod R and the follower F, can be thrown back on its hinges *b' b'* when filling the hopper with material.

Fig. 4 shows details of holder *g*, bearing knife K, in position on seats *i i*, with material partly cut through. In this figure the operation was stopped before making a full stroke to show the position of knife to the material. Slots in the knife make it adjustable to take a deeper or shallower cut, as may be desired. The knife can be removed for grinding when dull by taking out the screws *j j*, by which the knife is secured to the holder.

Fig. 5 shows the removable oyster-shell-crusher grate C. This grate is the same size as the knife-holder *g*, so that when *g* is removed from the seats *i i* in the bed-plate P the crusher-grate C can be dropped into position on the seats *i i*. This crusher-grate consists of chilled plate having teeth with apertures between them. These teeth crush the oyster-shells as they pass over them. When the shells are thus broken, they pass by gravity, through the apertures, into a pan or other vessel placed beneath the bed-plate.

Fig. 6 shows a cross-section of crusher-grate C, showing ribs to strengthen it.

The operation of the machine is as follows: First. To cut green bone, place the knife-holder *g*, to which is attached the knife, on the

seats *i i*; put green bone in the hopper; close and fasten the bearing B; rotate the rod R until the follower F is pressing the bone against the bed-plate P; take hold of lever L and reciprocate the hopper over the knife, which cuts or planes off the bone as it travels across the edge of the knife.

Second. To crush oyster-shells, replace the holder *g* by the crusher-grate C, replace the bone by oyster-shells, and repeat the operation performed for cutting bone.

I claim—

A bone-cutting and oyster-shell-crushing machine comprising in its construction a stationary segmental bed-plate P, having seats *i i*, and the boss O at its axis, a comminuting device carried by said bed-plate; a movable hopper H, fulcrumed to the bed-plate at boss

O and adapted to reciprocate in the arc of a circle in a horizontal plane above the bed-plate, an operating-lever L, secured to said hopper, the rollers *a, a*, suitably fastened to the hopper at its outer and lower end adjacent to the bed-plate, and extending beneath its edge and which are adapted to rotate and guide the hopper by rolling along the under side of the bed-plate adjacent to its periphery, a follower F, with means to raise it up and down, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two witnesses, this 5th day of April, 1904.

WILLIAM ROGERS SANFORD.

Witnesses:

JOHN J. HALEY,  
RICHARD RUPPEL.