

(No Model.)

2 Sheets—Sheet 1.

J. POULSON.
BONE CUTTING MILL.

No. 508,528.

Patented Nov. 14, 1893.

FIG. 6.

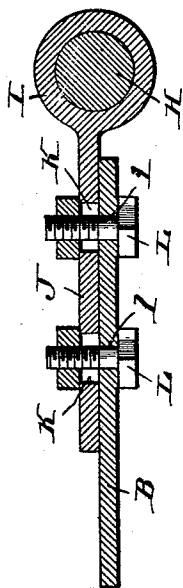


FIG. 2.

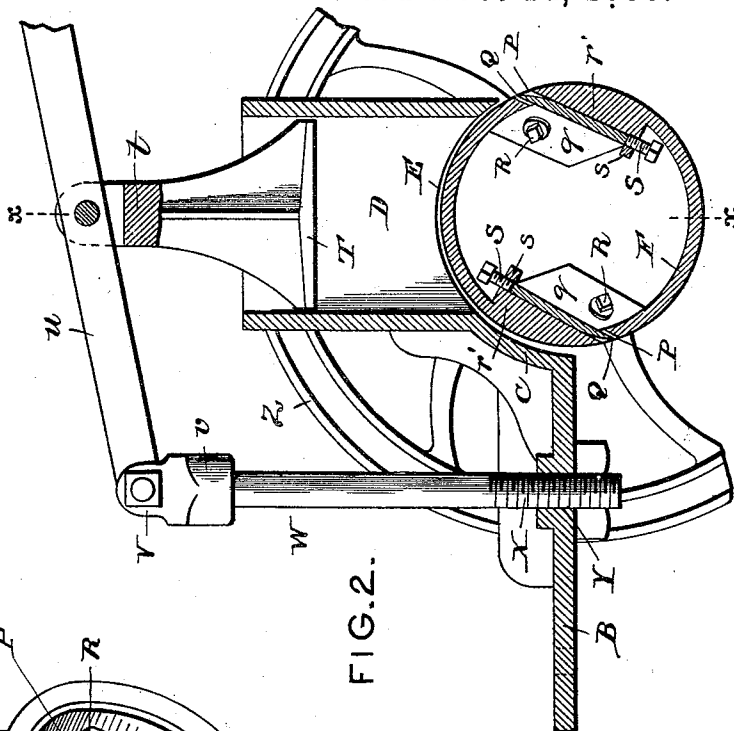
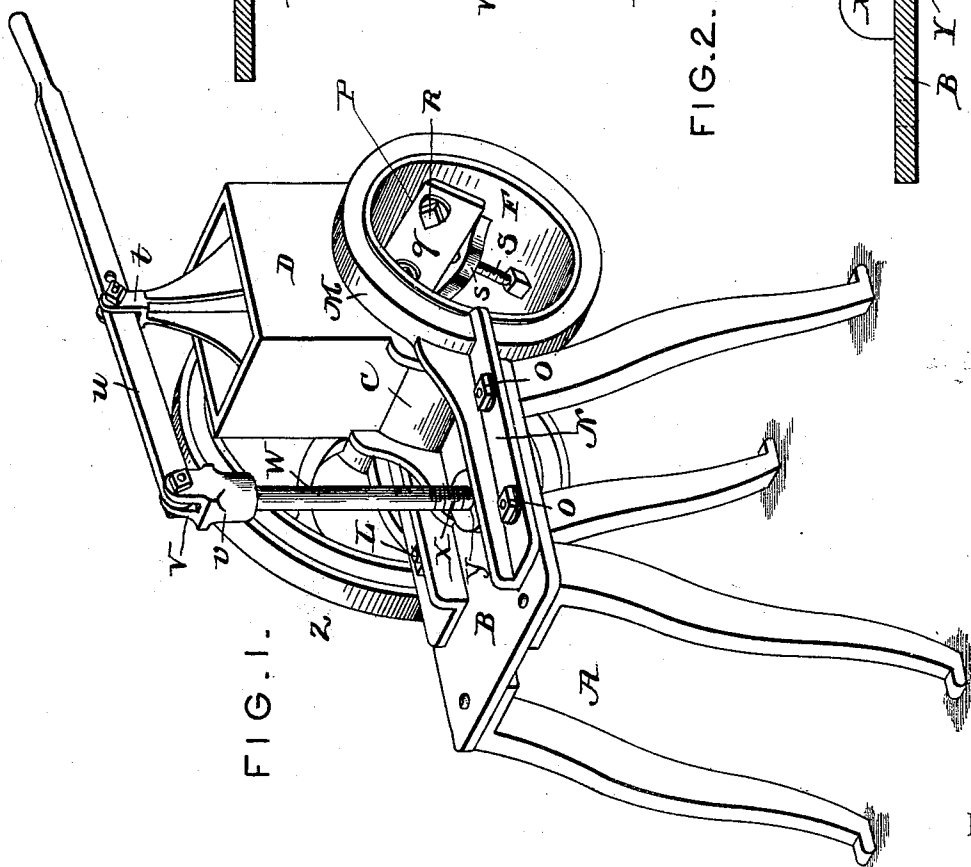


FIG. 1.



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Witnesses

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(No Model.)

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FIG. 4.

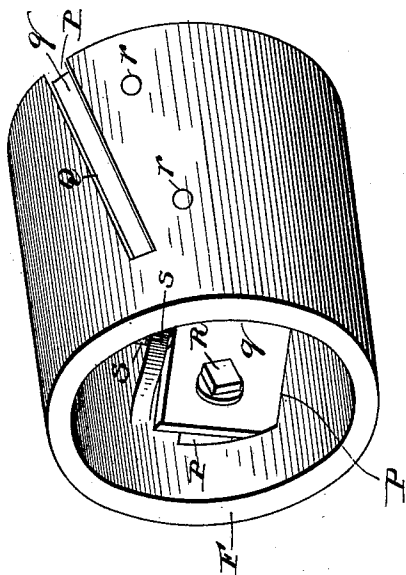


FIG. 5.

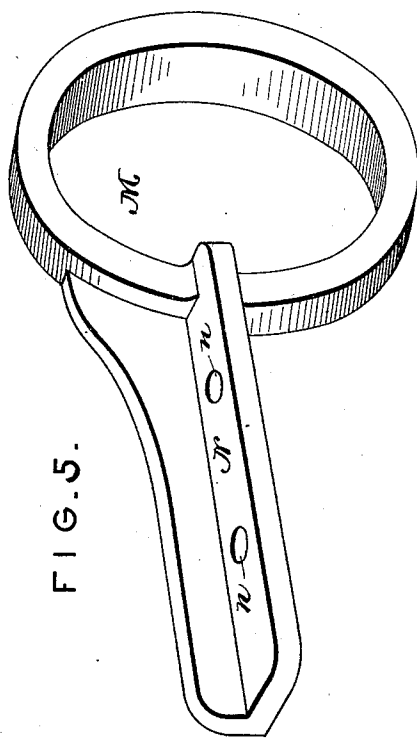
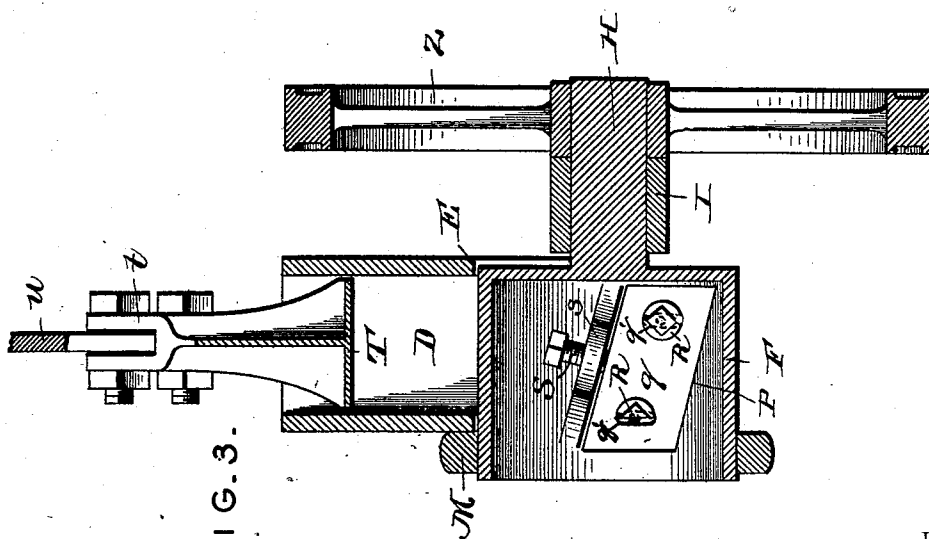


FIG. 3.



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UNITED STATES PATENT OFFICE.

JOHN POULSON, OF PHILLIPSBURG, NEW JERSEY.

BONE-CUTTING MILL.

SPECIFICATION forming part of Letters Patent No. 508,528, dated November 14, 1893.

Application filed June 14, 1893. Serial No. 477,573. (No model.)

To all whom it may concern:

Be it known that I, JOHN POULSON, a citizen of the United States, residing at Phillipsburg, in the county of Warren and State of New Jersey, have invented a new and useful Bone-Cutting Mill, of which the following is a specification.

This invention relates to bone cutting mills; and it has for its object to provide certain improvements in mills or machines for cutting or reducing bones to a finely divided state, for poultry or other uses, whereby the mill will be rendered much more available for practical use, and shall be so constructed as to provide for an efficient operation.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a bone cutting mill constructed in accordance with this invention. Fig. 2 is a central vertical longitudinal sectional view of the mill. Fig. 3 is a vertical transverse sectional view on the line $x-x$ of Fig. 2. Fig. 4 is a detail in perspective of the hollow cutting cylinder. Fig. 5 is a similar view of the enlarged bearing ring and the adjustable attaching plate thereof. Fig. 6 is a detail sectional view showing the adjustable connection of the spindle bearing arm with the base plate.

Referring to the accompanying drawings, A represents a suitable leg, stand or support on which is mounted the base plate B, of the herein-described bone cutting mill. The base plate B, has integrally cast therewith at one edge the curved casing flange C, which is an arc of a circle, and is adapted to form a short partial casing for the cutting cylinder to be presently described.

The short curved casing flange C, which extends upwardly and out from one edge of the base plate B, has arising from the upper outer edge thereof the open rectangular hopper box D. The open rectangular hopper box D, projects above the plane of the short casing flange C, and is a part of the same casting, together with such casing flange and the

base plate of the mill, and said rectangular hopper D, is provided with lower curved bearing edges E, which form a part of the same circle as the casing flange C, and are adapted to snugly receive the top portion of the circular periphery of the hollow cutting cylinder F. The hollow cutting cylinder F, is closed at one end as at G, and is open at the opposite end thereof to provide for the free discharge of the cut material, which falls inside of the cylinder during the operation of cutting, and said cutting cylinder F, has projected from the closed end thereof the lateral off-standing drive spindle H, which is mounted in the bearing collar I, at the outer end of the adjustable bearing arm J. The bearing arm J, is provided with the slotted openings K, adapted to receive the clamping and adjustment bolts L, which also pass through perforations l , in the base plate, and provide means whereby the bearing arm and its bearing collar can be adjusted on the base plate to take up the wear on the bearing edges of the hopper, and also to properly adjust the cutting cylinder to the short casing flange C. The open end of the hollow cutting cylinder F, projects slightly beyond one side of the open rectangular hopper D, and works inside of the enlarged bearing ring M. The enlarged bearing ring M, snugly encircles the open projected end of the cutting cylinder, so as to form a strong bearing for that end of the cylinder, and thereby providing means for holding the same firmly to its work. The enlarged bearing ring M, is arranged at the outer end of the adjustable attachment plate or arm N. The attachment plate or arm N, is provided with the enlarged openings or slots n adapted to receive the clamping or adjusting bolts O, which also pass through the base plate and provide means for adjusting the bearing ring in the same manner as the bearing for the spindle of the cutting cylinder.

The hollow cutting cylinder F, is provided with two or more inclined knife openings P, through which project the beveled cutting edges Q, of the inclined knife plates q . The knife plates q , are provided with slotted openings q' , which receive the binding screws R, passing through such slots and engaging perforations r , in said cylinder, so as to securely

bind the knife plates onto the shoulders r' , inside of the cylinder. The projection of the cutting edges of the inclined knives, through the knife slots or openings in the cylinder, is regulated by means of the adjusting set screws S, engaging threaded lugs s, arranged beyond the inner edges of the knife plates. It will be apparent that by reason of disposing the cutting knives at an incline or angle to the vertical center of the hopper, a draw cut is secured which renders the cutting of the material much more certain and efficient, and it may be observed at this point that the cutting cylinder and its projecting knives travel out of contact with the short casing flange C, so that the machine or mill will not choke, but will give an opportunity for its knives to have a play on the material which has been carried out of the hopper.

The open rectangular hopper D, is arranged directly above the center of the cutting cylinder which works directly thereunder, and by such disposition also materially assists in preventing the bones from wedging or choking on the cylinder, and such bones or other material to be cut, are pressed onto the top of the revolving cutting cylinder by means of the rectangular follower plate or block T. The rectangular follower plate or block T, fits snugly within the open rectangular hopper and is provided with a bifurcated arm t , adjustably bolted to the hand lever U, at a point intermediate of its ends. The hand lever U, is pivoted at one end between the lugs V, of the pivot casting v , secured to the upper extremity of the vertical adjustable and turning lever standard W. The vertically adjustable lever standard W, is provided with a lower threaded end X, adapted to adjustably engage and turn in the threaded socket or opening Y, formed in the base plate B, of the machine, and it will be observed that by reason of the lever standard turning in said threaded socket or opening, the follower plate or block, after being lifted out of the hopper, can be swung around out of the way if found necessary or convenient when refilling the hopper or adjusting the machine.

An operating hand wheel Z, is fastened to the outer extremity of the drive spindle H, of the cutting cylinder and provides means for operating the mill. Now it will be clear that by grasping the hand lever with one hand and pressing the material onto the cutting cylinder, and by turning the hand wheel Z, with the other hand, the mill can be easily and rapidly operated by a single person.

From the foregoing it is thought that the construction, operation and many advantages of the herein-described bone cutting mill will be readily apparent to those skilled in the art without further description, and I will have it understood that changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a bone cutting mill, the base plate having an integral off-standing open hopper, bearings arranged at each side of the hopper and attached to opposite sides of the base plate a rotating cutting cylinder arranged to work directly under said hopper, and having projected end portions journaled in the opposite side bearings and a lever controlled follower plate adapted to work inside of said hopper, substantially as set forth.

2. In a bone cutting mill, the base plate having an integral off-standing open hopper box provided with lower curved edges, an adjustable cutting cylinder arranged to work directly under said hopper and in the curved edges thereof, and a hand controlled follower plate fitting inside of the hopper, substantially as set forth.

3. In a bone cutting mill, the base plate having an integral short curved casing flange and an open rectangular hopper extended above and beyond said casing flange, and an adjustable cutting cylinder arranged to work directly under said hopper in close proximity to said casing flange, substantially as set forth.

4. In a bone cutting mill, the base plate having an integral short curved casing flange at one edge and an open rectangular hopper box extended above and beyond said casing flange and provided with lower curved bearing edges forming a part of the same circle as said casing flange, an adjustable cutting cylinder arranged to work directly under said hopper in the curved bearing edges thereof and in close proximity to said casing flange, and a feeding follower for the hopper, substantially as set forth.

5. In a bone cutting mill, the base plate having an off-standing hopper box, bearings adjustably attached to the base plate at each side of the hopper box, and a rotating cutting cylinder arranged to work directly under said hopper box and journaled in said adjustable bearings, substantially as set forth.

6. In a bone cutting mill, the base plate having an off-standing open hopper, a bearing arm adjustably attached to the base plate at one side of the hopper and having a bearing collar at one end, an opposite plate or arm adjustably attached to said base plate at the other side of the hopper box, and having at one end an enlarged circular bearing ring, and a cutting cylinder arranged to work directly under said hopper and provided at one end with an off-standing drive spindle journaled in said bearing collar and having one side projected beyond the other end of the hopper and journaled in said bearing ring, substantially as set forth.

7. In a bone cutting mill, the combination with the cutting devices and the open hopper arranged directly thereover; of the base plate at one side of the cutting devices and hopper

and provided with a threaded socket or opening, a vertically adjustable and turning lever standard having a lower threaded end turning in said threaded socket or opening and
5 carrying a bifurcated pivot casting at its upper end, a hand lever pivoted at one end to said pivot casting, and a follower plate or block working inside of the hopper and having an arm pivotally and adjustably connected to said hand lever, said follower plate or
10 block being adapted to be swung around out

of the plane of the hopper, when lifted therefrom, by turning the vertically adjustable lever standard in its threaded socket or opening, substantially as set forth.

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

15

JOHN POULSON.

Witnesses:

F. F. DRINKHOUSE,
WM. WALTERS.