

(No Model.)

J. E. WILSON.
MACHINE FOR CUTTING BONES.

No. 489,774.

Patented Jan. 10, 1893.

Fig. 1

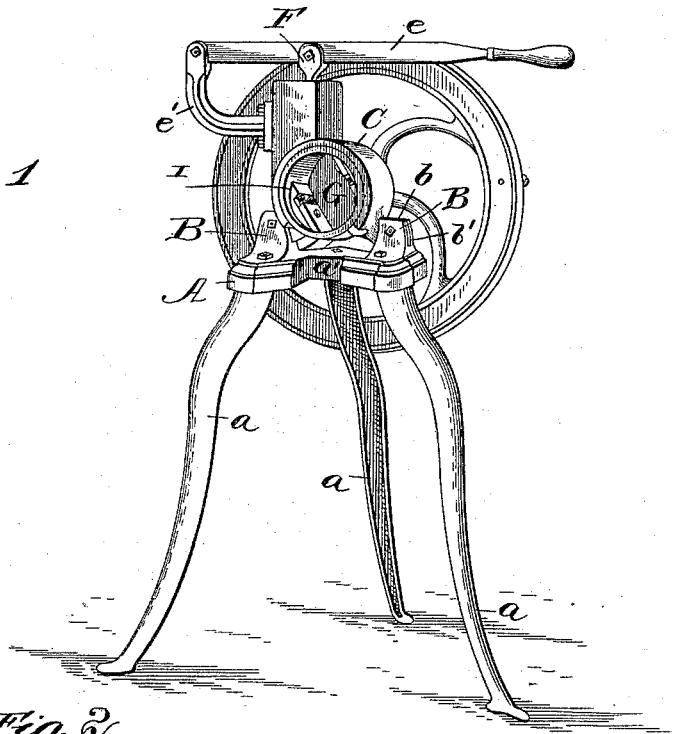


Fig. 2.

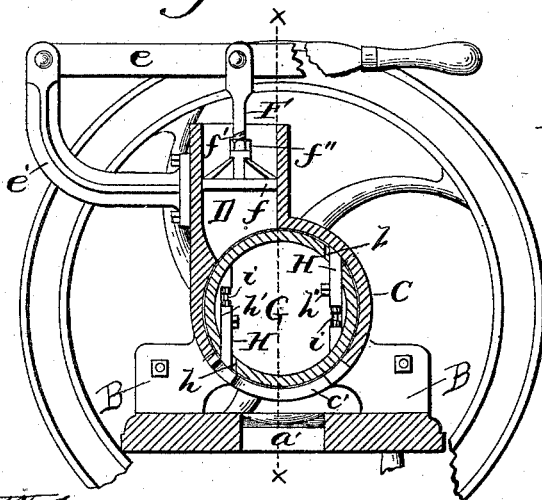
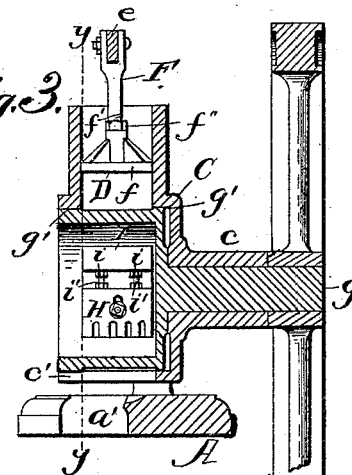


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES E. WILSON, OF EASTON, PENNSYLVANIA.

MACHINE FOR CUTTING BONES.

SPECIFICATION forming part of Letters Patent No. 489,774, dated January 10, 1893.

Application filed May 3, 1892. Serial No. 431,632. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WILSON, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Cutting Bones; 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.

My invention relates to machines particularly designed and adapted for cutting or reducing bones to a comminuted condition; and the object is to provide a simple, strong and compact machine.

My invention consists in the peculiar construction and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings—Figure 1 is a perspective view of my improved machine; Fig. 2 is a transverse vertical sectional view on the line $y-y$ of Fig. 3; and Fig. 3 is a sectional view on the line $x-x$ of Fig. 2.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which—

A designates the bed or base plate of a machine constructed in accordance with my invention and said plate is adapted to be supported on legs or standards a , which are preferably attached to said plate on opposite sides of an aperture or opening a' formed in said plate A for a purpose to be hereinafter pointed out.

To the base or bed plate A are rigidly connected, or cast integral therewith, two or more lugs B, to which are connected, by bolts or other suitable means, lugs or ears b cast integral with or firmly attached to a shell or casing C to support said shell firmly on the bed. I, preferably place a washer b' of soft metal between the lugs b , b' , to insure a firm connection of the shell C and base plate A.

The shell C is preferably made cylindrical as shown and said shell is open at one end and provided at its other end with a central projecting tubular bearing c . A hopper D is permanently attached to the shell C, preferably near one side thereof as shown, and communicates with the interior of said shell. In the

shell C, adjacent to the base or bed plate A is formed a longitudinal slot or opening c' .

Within the fixed shell C is arranged a cutting cylinder G which cylinder is open at one end and is provided at its opposite closed end with a projecting driving shaft g which extends through the bearing c on the shell C and is adapted to be connected to and driven by any suitable means to rotate the cylinder G. The cylinder G is provided at or near both ends with peripheral bearing flanges or raised portions g' which bear snugly against the inner surface of the shell C and provide a central depressed portion between them.

On the inner surface of the cylinder G are cast integral seats h' on which rest knives or cutters H which extend or project through slots h formed in the periphery of the cylinder G and into the space between the peripheral bearing flanges g' ; and said knives or cutters are secured in position on the seats h' by means of bolts h'' which extend through slots formed in said knives and into the solid seats. The seats h' terminate at their inner ends in shoulders i against which the rear ends of the knives or cutters may be fitted; but I preferably arrange between said shoulders I and the knives or cutters adjusting screws i which are provided at one end with enlarged heads that bear against the rear ends of the knives or cutters, the other ends of said adjusting screws being screwed through nuts i' into the shoulders I. By means of the screws i the cutters which are held firmly in any desired position by tightening the bolts h'' , can be easily and readily adjusted.

I preferably employ but two cutters or knives H which are arranged within the cylinder G at diametrically opposite points and secured in position in the manner hereinbefore described.

An arm or bracket e' is firmly attached to or formed integral with the hopper D and said arm extends upwardly and laterally from said hopper and is bifurcated at its outer end. A lever e has one end fitted in the bifurcation at the outer end of the arm or bracket e' and is pivotally connected to said arm. The lever e extends across the open end of the hopper and to said lever is pivotally connected a rod f' the lower end of which is threaded and on

said threaded end is screwed a head block *f* which fits snugly within the hopper *D*. A nut *f''* is arranged above the head and is adapted to be screwed against the head *f* to hold the
 5 same in position on the rod *f'*. The pivoted or swiveled connection between the rod *f'* and the lever *e* adapts the head *f* to be easily operated within the hopper to force bones or other substances, placed therein, against the
 10 surface of the cutting cylinder and into the path of the knives or cutters carried thereby.

The operation of my invention may be briefly stated as follows:—The hopper is filled with bones or other solid substance which it is
 15 desired to reduce to a comminuted condition and such substance is pressed against the revolving cylinder *G* into the path of the knives or cutters carried thereby. The cut bone passes into the cylinder *G* through one of the slots *h*
 20 formed therein to allow the knives or cutters to project and said cut bone escapes from the cylinder through the open end thereof and falls through the opening in the base or bed plate *A* into a suitable receptacle arranged
 25 below said plate. Should any small particles adhere to the outer surface of the cylinder *G* and not pass through one of the peripheral slots *h* formed therein, such particles would be carried around by the cylinder *G* until the
 30 opening in the shell *C*, adjacent to the bed or base plate *A*, is reached, when they will fall through such opening and the opening in the bed plate into the receptacle arranged below said plate. The fact that the central portion
 35 of the cutting cylinder is out of contact with

the shell *C* prevents the motion of the said cylinder from being retarded or the machine clogged by small particles of bone which do not pass through one of the slots *h*.

Besides serving the purpose above indicated the opening in the shell *C* adjacent to the bed or base plate enables a person to readily see the distance the edges of the cutting blades or knives project beyond the surface of the body of the cutting cylinder and adjust said
 4 knives or cutters as may be desired.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

In a machine of the character described, the
 5 combination of a fixed shell or casing open at one end, a rotatable cutting cylinder arranged within the shell, a hopper carried by and communicating with the interior of the fixed shell, an arm attached to the hopper and extending
 5 laterally and upwardly therefrom, a lever fulcrumed on said arm and extending across the upper open end of the hopper, a rod pivotally connected to said lever and having its lower
 6 portion threaded, a head screwed on said rod and fitting snugly within the hopper and an adjusting nut arranged on the rod above the head, substantially as described.

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

JAMES E. WILSON.

Witnesses:

C. S. ROHY,
 W. A. KEMMERER.