This invention relates to bone-cleaning machines, primarily for removing meat from the bones of slaughtered animals. It has in the past been necessary for this meat to be cut off manually, and such an operation has been found to be both laborious and inefficient.

It is therefore an object of this invention to provide a machine for carrying the operation out in a speedy and efficient manner.

Thus, in accordance with one aspect of the invention, there is provided a bone-cleaning machine comprising: a member having an endless surface for rotational movement about at least one axis; a plurality of cleaning strips or scrapers mounted on such surface; a hopper for holding bones to be cleaned and formed with at least one opening in the lower part thereof; and means for driving said member having said surface in rotation so that said cleaning strips or scrapers move continuously past the opening in said hopper, said cleaning strips or scrapers being arranged to project through said opening into the interior of the hopper as they move past the latter, so as to engage and clean the bones therein.

Preferably, and in accordance with a further feature of the invention, the cleaning strips or scrapers may be mounted on said surface in resilient fashion; alternatively, or in addition, such strips or scrapers may be formed of resilient material. Desirably, each cleaning strip or scraper will be sharpened at its outer edge.

Each such cleaning strip or scraper may conveniently be of strip form, and may be secured to said surface at one of its ends on a substantially tangential fashion.

Very conveniently, said surface on which said cleaning strips or scrapers are mounted may be formed by a drum mounted for rotation about its longitudinal axis.

The said hopper may be formed with a plurality of longitudinal openings in the lower part thereof, such openings being mutually aligned in a direction perpendicular to the longitudinal axis of the drum and thus parallel to the planes of the cleaning strips. Preferably, that part of the hopper in which the said openings are provided will be of concave form and arranged so as to embrace a part of the curved surface of the drum.

In order that the invention may be more readily understood, one embodiment of the same will now be described by way of example and with reference to the accompanying drawings, in which:

FIGURE 1 is a front elevation of a machine according to the invention;
FIGURE 2 is a section on the line A—B—C—D of FIGURE 1; and
FIGURE 3 is a perspective view of the hopper and rotatable drum of the machine of FIGURES 1 and 2.

Referring to the drawings, the machine shown therein comprises a steel or cast-iron housing 1 of upright rectangular form open at its front side and provided with a door 2.

The upper part of one of the side walls 11 of the housing 1 is formed with an opening 12 to the lower edge of which is pivotally secured by means of hinges 10 a hopper 3.

A hollow drum 4 by means of a hub or boss 13 and radial walls 14 is mounted for rotation about a horizontal shaft 15 extending centrally of the housing 1 from back to front of the latter. To the curved surface of the drum 4 are secured a number of cleaning strips or scrapers 5, each fixed to the drum at one of its ends and extending substantially tangentially thereof. The free end 17 of each scraper 5 is bent outwardly away from the drum and the outer edge 18 of each scraper 5 is formed with a sharpened surface.

The lowermost inner portion 19 of FIG. 1 the hopper 3 is concave in shape and is formed with a plurality of parallel elongated openings 9, each of which openings being aligned with a row of scrapers 5 extending around the entire periphery of the drum 4. As may be seen, the concave portion 19 of the hopper 3 is arranged so as to partially embrace the surface of the drum 4 so that the scrapers 5 on the latter project through the openings 9 into the interior of the hopper 3.

Thus, as the drum 4 rotates, in a counterclockwise direction as seen in FIGURE 1, the scrapers project in turn into the interior of the hopper so as to engage the bones therein and scrape them clean of meat.

The meat scraped from the bones then drops onto a guide 6, secured to the side walls 11 of the housing by brackets 7, and thence into a container 8 resting on the floor of the housing.

The shaft 15 on which the drum 4 is mounted has secured thereto at its rear end, externally of the housing 1, a pulley wheel 20 by means of which the shaft may be driven in rotation, for example by means of a belt drive. Obviously, the wheel 20 may be rotated manually, if so desired.

It will be understood that bones placed in the hopper 3 for cleaning will be engaged by the sharpened edges 18 of the scrapers 5 as they pass through the openings 9, and are continually moved about in the hopper so that substantially the whole of the meat is eventually scraped off. The resiliency of the scrapers 5 facilitates their engagement in the deeper corners of bones of varying shape, and at the same time prevents the bone substance itself from being seriously damaged.

I claim:

1. A bone-cleaning machine comprising side walls, a drum having an endless surface, said drum being mounted for rotary movement about a horizontal axis, a plurality of scraper strips mounted on said surface, one of said side walls having an opening, a hopper in the upper part of said opening, a pulley mounted on the drum, a drive for rotating the drum, and scraper strips being so disposed that said scraper strips move substantially upwardly continuously over said opening in said hopper, said scraper strips being arranged for projecting through said openings in said hopper into the inside of said hopper wherein said strips move past said hopper in order to engage and to clean said bones therein, moving simultaneously about during the cleaning process so that substantially all of the said material can be scraped off by said scraper strips.

2. A bone-cleaning machine, according to claim 1, said scraper strips being resiliently mounted on said surface of said drum and having sharp outer edges, the arrangement being such that at least said sharp outer edges of each one of said scraper strips projects through said opening.

3. A bone-cleaning machine, according to claim 1, having a plurality of said scraper strips secured resiliently and substantially tangentially at one of their ends to said surface and having sharp outer edges, the arrangement being such that at least said sharp outer edge of each one of said scraper strips projects through said opening.
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4. A bone-cleaning machine, according to claim 1, said plurality of resilient scraper strips being tangentially mounted on said curved surface of said drum and having sharp outer edges, said hopper being formed with a plurality of longitudinal openings in the lower part thereof, said openings being parallelly aligned in a direction perpendicular to the axis of said drum, and said sharp outer edge of each one of said scraper strips projecting through one of said openings into the inside of said hopper when said strips move past said hopper.

5. A bone-cleaning machine, according to claim 4, the free end portion of each one of said scraper strips being curved outwardly away from said surface of said drum.

6. A bone-cleaning machine, according to claim 1, said hopper being pivotally secured by means of hinges to the lower edge of said opening formed in said upper part of one of said side walls of said housing.

7. A bone-cleaning machine, according to claim 4, said hopper being pivotally secured by means of hinges to the lower edge of said opening formed in said upper part of one of said side walls of said housing.

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