Nov. 14, 1944. F. J. BILEK 2,362,532

APPARATUS FOR USE IN COOLING OFFAL AND THE LIKE

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Fig. 2

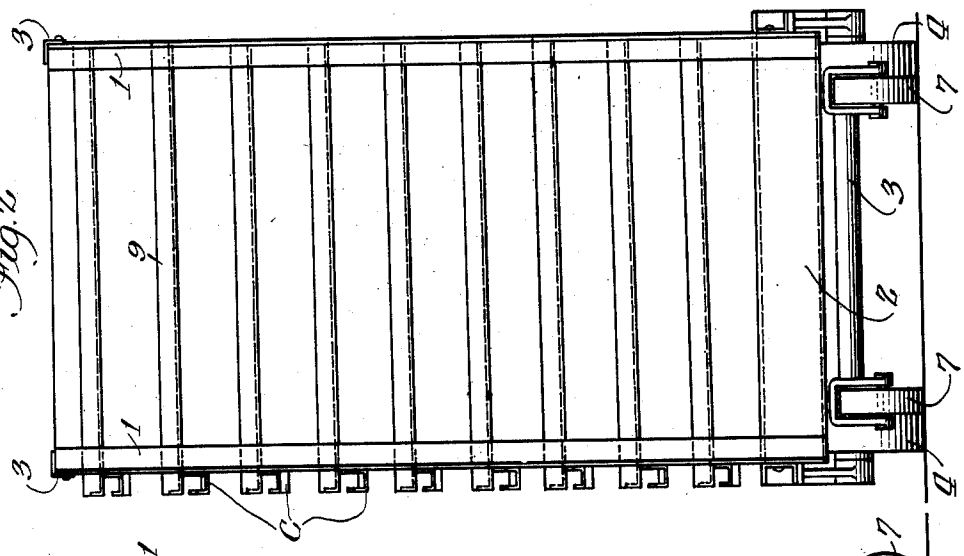
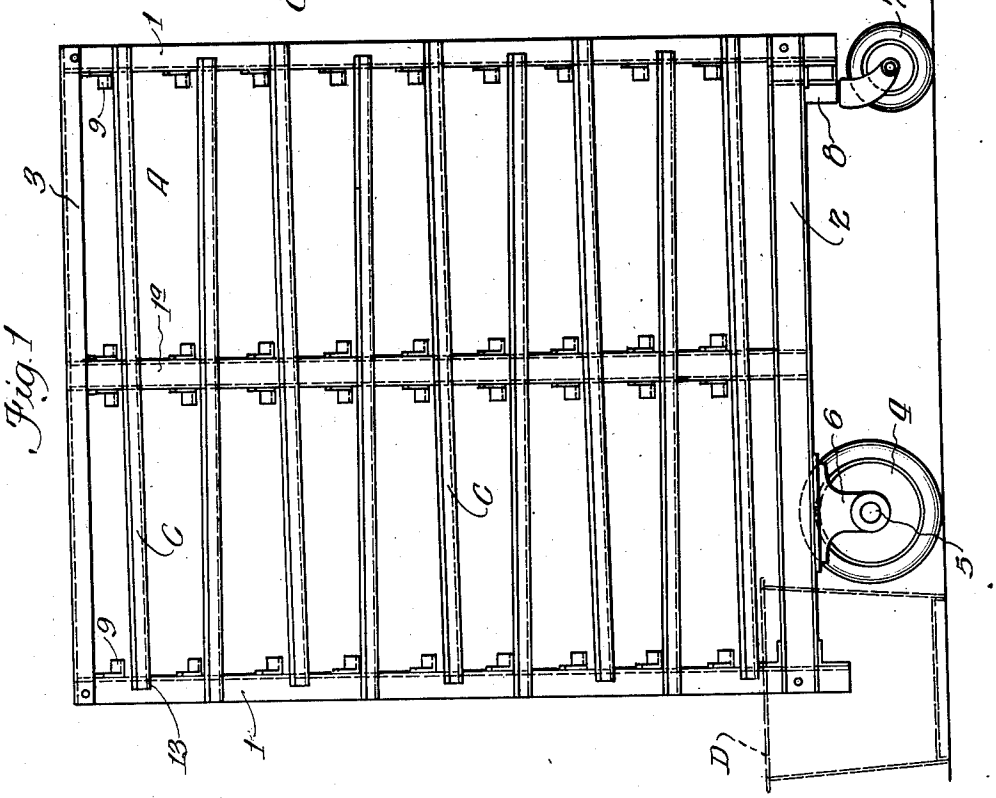


Fig. 1



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Fig. 3

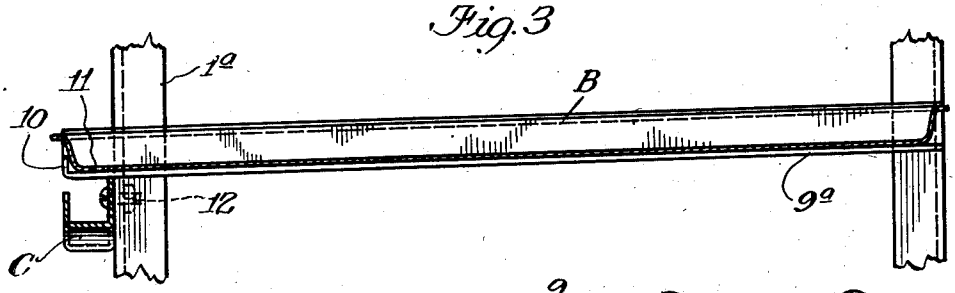
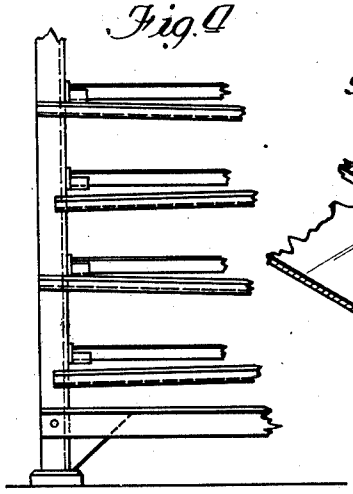


Fig. 4



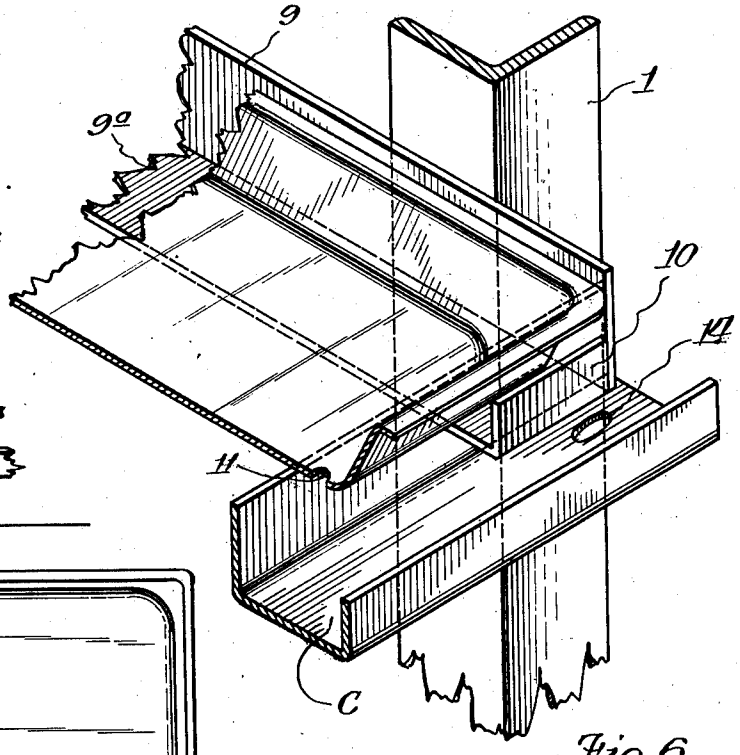


Fig. 6

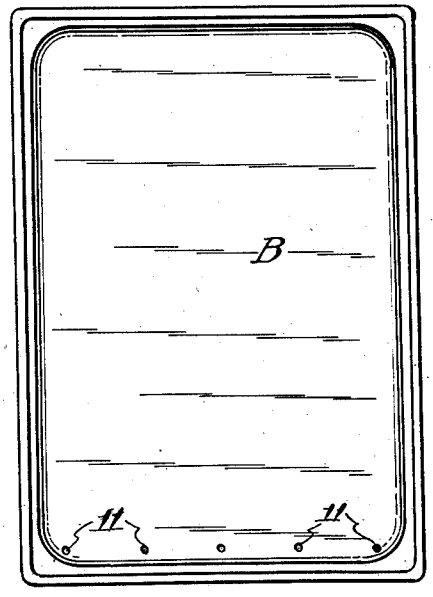


Fig. 5

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UNITED STATES PATENT OFFICE

2,362,532

APPARATUS FOR USE IN COOLING OFFAL AND THE LIKE

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Application April 7, 1943, Serial No. 482,207

8 Claims. (Cl. 211—126)

The present invention relates generally to apparatus useful in cooling offal in meat packing plants, such offal including meat trimmings, tongues, hearts, sweetbreads and the like.

More particularly, the invention relates to an apparatus for use in a cooling room and includes a rack of skeleton form arranged to support a plurality of pans or trays in rows and tiers, the pans or trays being supported in an inclined position in one direction with the bottoms of the pans adjacent the lower ends perforated to provide drainage means. The trays are supported so that the lower ends project beyond the plane of the adjacent side of the frame. Attached to the frame and underlying the projecting ends of the pans are gutters arranged with one gutter to a row and disposed so that the drainage from all of the pans will pass downwardly by gravity in a zig-zag path to some sort of disposal means at or near the bottom of the frame.

An object of the present invention is to provide an apparatus of the character described in which efficient drainage is secured from all of the pans in the several rows so that the drainage from the pans in an upper row will not discharge into pans in a lower row.

Another object is to dispose the gutters in a manner to individually drain the several pans and so that the gutters may be very readily cleaned by washing with hot water from a hose.

Another object of the invention is to provide an apparatus of the mentioned character which is an improvement over previously designed apparatus and over the apparatus in use at the present time. An advantage of the present invention resides in the provision of means whereby drainage from individual pans will not spill onto the floor of the cooling room.

The above, other and further objects of the present invention will be apparent from the following description and accompanying drawings.

I have chosen to illustrate my invention as a portable wheel supported rack. It is to be understood that the invention is capable of use with a fixed or stationary rack.

The accompanying drawings illustrate the chosen exemplification of the invention and the views thereof are as follows:

Figure 1 is a side elevational view of the frame or rack of the present invention, with the trays removed, showing the disposition of the gutter means and in dotted lines showing one form of disposal means, for example a pail;

Figure 2 is an end view of the rack of Figure 1 looking at the right hand end of the figure;

Figure 3 is a fragmentary enlarged view, partially in section and partially in elevation, through a pan or tray and showing the relationship between the overhanging end of the tray and the underlying gutter;

Figure 4 is a fragmentary elevational view showing the trays in place and their relationship to the gutters;

Figure 5 is a top plan view of one of the trays of the present invention; and

Figure 6 is an enlarged fragmentary view, partially in elevation and partially in section, showing the construction pertaining to the attachment of the tray ledges and gutters to the frame uprights.

The drawings will now be explained.

In Figure 1 a rack, designated generally as A is constructed of upright members 1 and 1a, a rectangular base structure 2 of commercial steel shapes, top connecting members 3, all of which are preferably welded together. The rack is carried by a pair of wheels 4 mounted on an axle 5 supported in journals 6. Another pair of rollers 7 are carried by the rack, these rollers being formed as casters to swivel about housings 8.

Viewing the rack as illustrated in Figure 1, for convenience the face there shown will be termed the front face or side. In Figure 2 the face or side there shown will be sometimes termed an end face or side.

Welded to the end uprights 1, as may be seen in Figure 2, are angle bars 9 welded so as to slant downwardly from right to left. The lower ends of these bars project outwardly or beyond the plane of the front face or side, as may be observed in Figures 2 and 3. The angle bars have their vertical webs welded to the uprights and their horizontal webs 9a (Figure 6) in horizontal planes, the angle bars 9 between two adjacent uprights such as 1 and 1a of Figure 1 being arranged with their horizontal flanges extending toward each other to form ledges for supporting the trays B.

Stop means are provided for engaging the lower ends of the trays to limit the outward movement thereof when in place on the angle bars. The stop means illustrated comprise upturned portions 10 of the lower ends of the horizontal flanges 9a of the angle bars. It is to be understood that other stop means might be provided.

The trays B are of uniform depth and contour, as may be observed in Figures 3 and 5. These trays are stamped from sheet metal of appropriate thickness.

Through the bottoms of the trays adjacent the

lower ends thereof when in place in the rack are provided drainage openings such as the perforations 11 shown in Figures 3 and 5.

Attached to the front face or side of the rack A are gutters C arranged with one gutter to a row of trays, the lengths of the gutters being substantially that of the width of the front face of side as viewed in Figure 1.

The gutters C (Figure 6) are of channel shape and are welded or otherwise attached to the uprights 1 in such manner as to underlie the projecting ends of the trays B when the same are in place in the rack. These gutters may be attached by welding or by bolts 12, or by rivets.

In order to convey the drainage from the trays in the tiers and rows of the rack in a circuitous manner from top to bottom the gutters are inclined lengthwise with alternate gutters inclined in a direction opposite to the gutters next above and below, as may be readily observed in Figures 1 and 4.

It will thus be noted that the drainage from the several rows of trays will pass downwardly in a circuitous or zig-zag path, running out of the lower end of the lowermost gutter into a disposal receptacle such as a pail D which when nearly filled may be removed and replaced by an empty one.

In order that the drainage from an upper gutter may fall into the upper end of the one next below it, without spilling onto the floor, the lower end of the gutter might be shortened as at 13 in Figure 1 or an opening, such as the elongated hole 14 in Figure 6 may be provided. With such an arrangement drainage will pass downwardly without spilling onto the floor of the cooling room while allowing the use of gutters with open ends to enable quick cleaning of the gutters by hot water from a hose.

The present invention lends itself very readily to a portable rack as the rack may be moved anywhere in a cooling room and a pail or other drainage disposal receptacle may be placed under the lower end of the lowermost gutter without spilling any of the drainage onto the floor of the room. If the present invention were used with a fixed rack or a plurality of fixed racks it is to be understood that means would be provided for conducting the drainage from the lowermost of the gutters into a sewer.

The structure of the present invention is simple, strongly made, satisfactory in use, and is one which may be thoroughly cleaned. The use of open-ended gutters makes possible the flushing of the gutters quickly and easily.

In connection with chilling animal offal, such as hearts, brains, sweetbreads and the like a certain amount of blood or fat drainage from the meat products takes place after the articles have been put in the pans for cooling. It is necessary to drain away such blood and fat in order to obtain palatable appearing food products.

The arrangement of the gutters in the manner described, creates a zig-zag path of travel for the drainage, thus preventing accumulation of drainage in any part of the path of travel and also prevents any of the drainage from spilling on the floor of the cooling room.

It is to be understood that my invention is not limited to the specific construction shown and described except so far as certain of the claims may be so limited, as it will be apparent to those skilled in the art that changes may be made in the construction and arrangement of parts, and equivalents may be substituted, without departing from the principles of my invention.

I claim:

1. In an apparatus of the class described, in combination, a rack, a plurality of trays, means on said rack for supporting said trays in rows and tiers and all inclined in one direction, means preventing downward sliding movement of said trays and retaining the trays with the lower ends thereof projected outwardly at one side of said rack, said trays having drainage openings in the bottoms thereof adjacent their lower ends, and means secured to said rack for receiving the drainage from the trays in the several rows and directing it downwardly in a zig-zag path to a disposal means.

2. In an apparatus of the class described, in combination, a supporting frame, a plurality of trays, means on said frame for supporting said trays in rows and tiers with all of the trays inclined in one direction, means on the lower ends of said tray supporting means to maintain the trays in place, said trays having drainage openings in the bottoms thereof adjacent their lower ends, gutters secured to said one side of said frame and underlying said lower ends of said trays with one gutter to a row of trays, said gutters being alternately inclined and being formed to allow drainage from the lower end of each gutter into the upper end of the gutter next below for conducting the drainage from said rows of trays in a zig-zag path to a place of disposal.

3. A structure as described in claim 2 in which the lower ends of the gutters which are inclined in the same direction are shortened to allow drainage into the upper ends of the gutters inclined in the opposite direction.

4. A structure as described in claim 2 in which the lower ends of the gutters inclined in one direction are perforated to allow drainage into the upper ends of the gutters at a lower level inclined in the opposite direction.

5. Apparatus for use in cooling or storing offal, comprising a rack having means for supporting a plurality of trays in tiers and rows, a plurality of trays carried by said rack, means supporting said trays in inclined position with all of the trays inclined in one direction and with the lower ends of the trays projecting at one side of said rack, and means attached to said one side of said rack for receiving the drainage from each of said trays and conducting it in a zig-zag path to a disposal receptacle adjacent the lower end of the lowest of said conducting means, the lower ends of the trays being perforated for drainage into said last mentioned means.

6. In an apparatus of the class described, in combination, a supporting rack, a plurality of trays, means on said rack for supporting said trays in tiers and rows with the trays inclined in one direction, stop means engaging the lower ends of said trays to position them against downward sliding movement, said lower ends of said trays being formed to permit drainage therefrom, and a plurality of open-topped gutters secured to one side of said rack one of said gutters being disposed beneath each row of trays to receive drainage from said lower ends the length of the gutters extending substantially widthwise of said side and inclined in zig-zag manner so that drainage from an upper gutter will fall from its lower end into the upper end of the gutter next below it, whereby the drainage is all conducted to the lower end of the lowermost gutter.

7. In an apparatus of the class described, in combination, a rack, a plurality of trays, means on said rack for supporting said trays in tiers and rows with the trays inclined in one direction, stop means engaging the lower ends of said trays to position them against downward movement, said lower ends of said trays being formed to permit drainage therefrom, a plurality of open-topped gutters secured to one side of said rack, one of said gutters being disposed beneath each row of trays to receive drainage from said lower ends, the length of the gutters extending substantially widthwise of said side and said gutters disposed one below another in side surface alinement and in inclined lengthwise arrangement with certain of said gutters shorter than others to allow drip from said certain of said gutters into the others of said gutters to thereby direct drainage from all of the trays to the lower part of the frame for discharge into suitable disposal means.

8. In an apparatus of the class described, in combination, a frame comprising corner uprights, a plurality of angle bars secured to said uprights in inclined relation to constitute ledge supports for trays, stop means on said angle bars for abutment by the lower ends of trays to retain the trays in position on said angle bars, a plurality of trays supported by said angle bars and having drainage openings adjacent the lower ends thereof, open-topped gutters secured to said uprights and extending widthwise of the frame to underlie the lower ends of the trays, said gutters being alternately inclined to the horizontal and having the lower end of each gutter constructed for drainage into the upper end of the gutter next below to allow drainage flow by gravity from the uppermost to the lowermost gutter.

FRANK J. BILEK.