

April 6, 1954

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2,674,535

METHOD AND MEANS FOR SHIPPING OR STORING HOPS

Filed July 13, 1951

2 Sheets-Sheet 1

Fig. 1

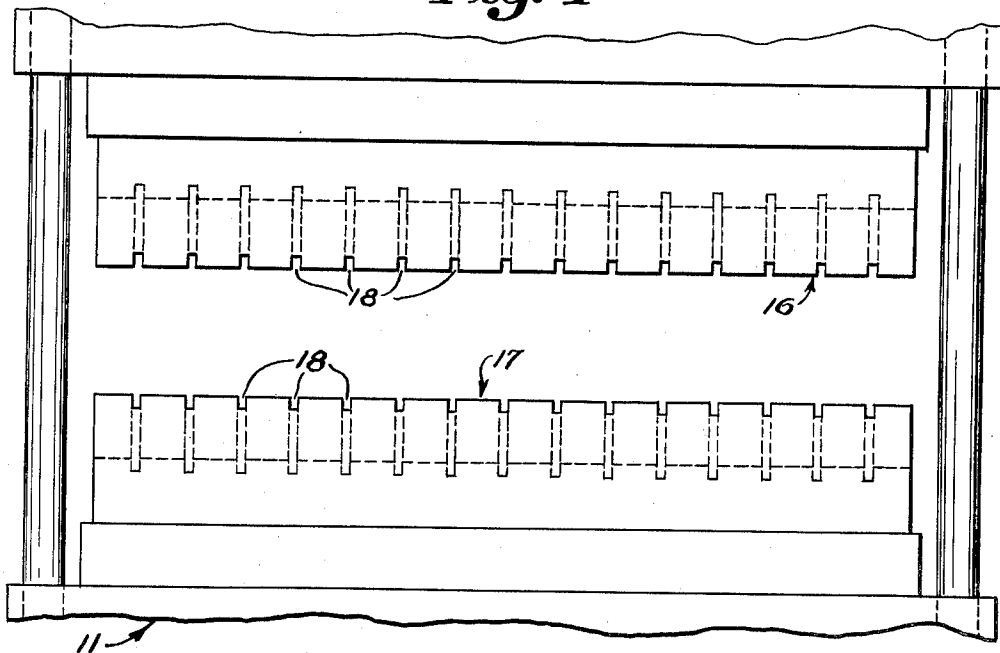


Fig. 2

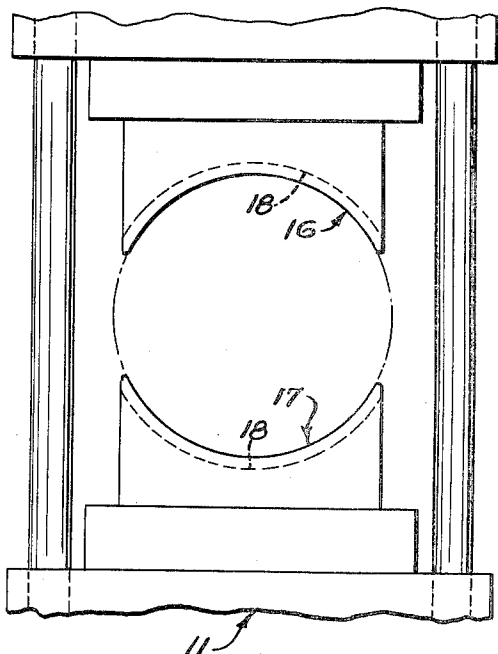


Fig. 3

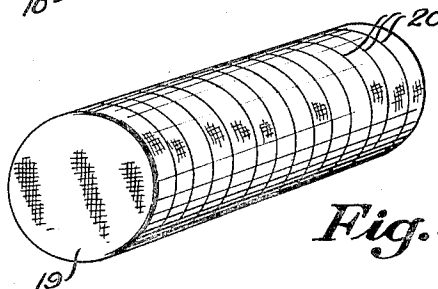
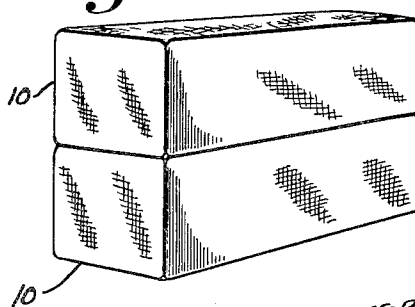


Fig. 4

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Fig. 5

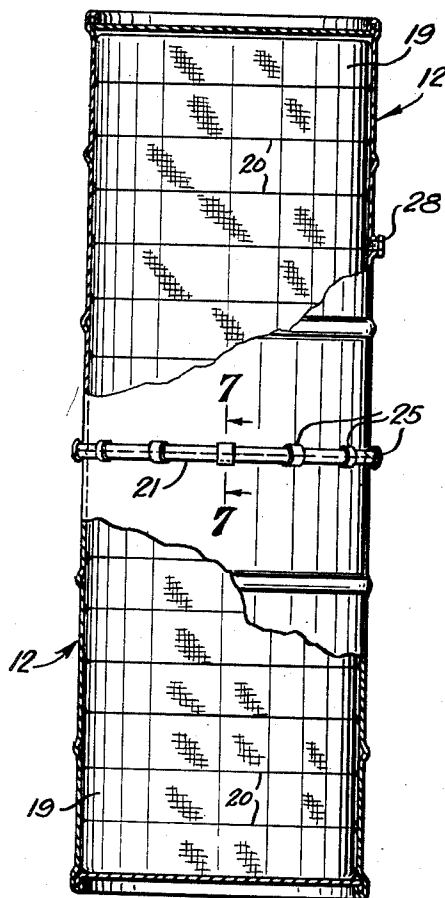


Fig. 6

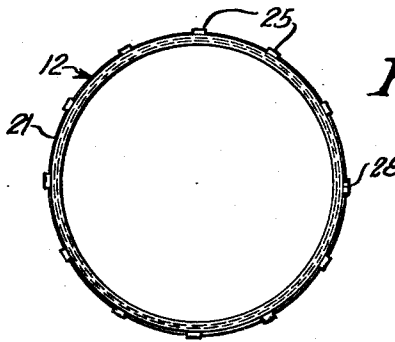


Fig. 7

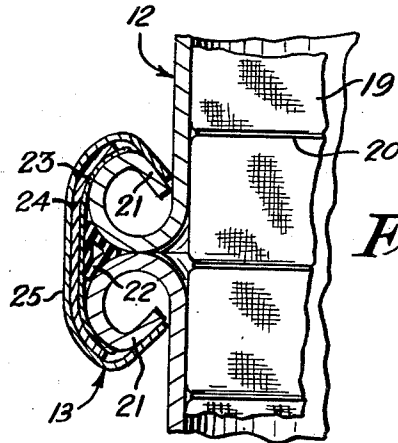


Fig. 8

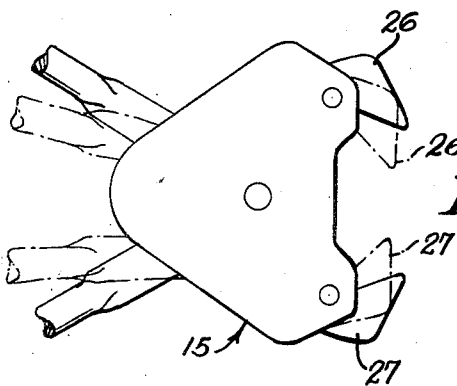
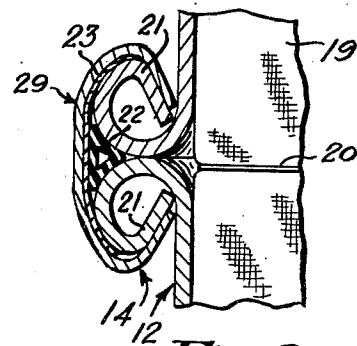


Fig. 9



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METHOD AND MEANS FOR SHIPPING OR
STORING HOPS

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9 Claims. (Cl. 99-189)

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This invention relates to a method and means for shipping or storing hops.

At present, hops are shipped in burlap sacks of rectangular cross section measuring around 60" x 22" x 30" and weighing from 180-200 lbs. Two sacks are placed one on the other and inserted in a press having flat top and bottom sections. Under pressure in the press, the height of the two sacks is reduced from 60" to 12" while the length and width is increased about 4 inches. After being compressed, the superposed sacks are bound and fastened with wire whereupon the pressure is released, the bales expanding to 60" x 23" x 18". Upon removal from the press, the two bales are placed in a custom built metal lined case, custom built because of a constant variable in all the dimensions.

It is an object of the instant invention to provide better packing which will be impervious to weather, negligent handling, and poor storing in the holds of ships where other cargos may contaminate the hops with odors, moisture, acids, etc., the hops being easily damaged.

Another object is to conserve material in the shipment of hops.

Other objects of the instant invention will become apparent in the course of the following specification.

In the attainment of these objectives, two standard bales of hops, 60" x 22" x 30", are inserted in a press which reduces the two rectangular bales to one of circular cross section. By applying the pressure to the top and bottom and sides of the superposed bales rather than to the top and bottom only as presently done, the resultant single bale of circular cross section can be maintained within reasonable variations in dimensions using substantially 50% less energy than at present, which permits the use of standard steel containers in place of the custom built metal lined wooden containers now in use. The compressed bale of circular cross section is then fastened with wire and hermetically sealed in two standard steel drums. The air may be exhausted from the drums and replaced with inert nitrogen whereupon the new bale can be shipped and stored without refrigeration. In place of inert nitrogen, sulphur dioxide may be inserted under pressure in the drums to maintain the color of the hops and preserve the resins.

The invention will appear more clearly from the following detailed description when taken in conjunction with the accompanying drawings showing by way of example a preferred embodiment of the inventive concept.

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In the drawings:

Figure 1 is a front elevational view of the press with the dies assembled;

Figure 2 is an end view of the press shown in Figure 1;

Figure 3 is a perspective view of two superposed bales being compressed in the press shown in Figure 1;

Figure 4 is a perspective view of the bales shown in Figure 3 after being compressed and bound together in a single unit in the press shown in Figure 1;

Figure 5 is an elevational view in part section of the bales shown in Figure 4 packed in standard steel drums for shipment;

Figure 6 is a plan view of the drums shown in Figure 5;

Figure 7 is a sectional view along 7-7 of Figure 5 but on an enlarged scale;

Figure 8 is a side elevational view of the tool used to seal the drums shown in Figure 5; and

Figure 9 is similar to Figure 7 but showing another form of the seal.

Referring now in greater detail to the drawings where like reference numerals indicate like parts, reference numeral 10 indicates a bale of hops as usually prepared for marketing; 11 indicates the press in which two bales 10 are compressed and changed from rectangular to circular cross section; 12 indicates the two steel drums in which the resultant bale of circular cross section is inserted for shipment; 13 indicates one form of seal for the drums; 14 indicates a second form of seal for the drums; and 15 indicates the tool for securing either seal around the flanges of the drums.

Each superposed bale of hops 10 is wrapped in burlap and has a height of 30", a width of 22", and a length of 60", approximately, and is of rectangular cross section as illustrated.

The two superposed bales of rectangular cross section are placed in the press 11 which has the stationary upper die section 16 and the movable lower die section 17. Each section is in the form of a circular arc and is provided with the spaced slots 18 which are used for inserting the wire strands around the bales after being compressed as later shown.

The two bales 10, after being placed in the press 11 between the dies 16 and 17 are compressed from the rectangular form to the circular form 19 (Fig. 4). In this way and in contrast with the present method in which only the top and bottom surfaces are compressed, the width of the resultant bale of circular cross section is held

substantially uniform and the cubical contents reduced from 17 cu. ft. under the old method to 14.5 cu. ft. under the method of subject application. The resultant bale under compression is then fastened with the wire strands 20 passed through the slots 18, the strands passing transversely around the bale with the free ends secured in a known manner.

The resultant bale of circular cross section is then inserted in two standard 55 gallon steel drums 12 with the outwardly and downwardly directed flanges 21 circumferentially formed around each open top superposed. Between the superposed flanges 21 a rubber tube 22 or the like is inserted, the abutting ends of which need not be fastened. Over the tube 22 and adjacent outer surfaces of the flanges is an adhesive strip 23, both the tube and adhesive strip running around the circumference of the drum flanges. Over the adhesive strip 23 and contiguous outer surface portions of the flanges is a strip or band of steel 24. The band of steel 24, the adhesive strip 23, and the rubber tube 22 are held in place by the transversely spaced clips 25 secured under pressure by the tool 15.

The tool 15 is of known construction except that the jaws 26 and 27 have been altered for adaptation to the particular problem.

In the second form of seal shown in Figure 9, the rubber tube 22 is the same as the rubber tube of Figure 7 and the adhesive strip 23 is the same as the adhesive strip of Figure 7. But, in place of the steel band and clips shown in Figure 7 and previously described, a continuous steel channel member 29 is inserted around the adhesive strip and flanges and forced into position and sealed by the jaws 26 and 27 of the tool 15.

In operation, the two bales 10 of rectangular cross section are superposed and placed between the dies of the press 11. One operator of the two required sets the press into motion by any suitable means not shown. After compression, and with one operator on each side of the press, wires are inserted through the slots 18 and fastened around the resultant single bale. The resultant bale is then removed from the press and placed into one of the two steel drums 12. Of course, one end of the bale will protrude beyond the drum and over the protruding end the second steel drum is placed so that when the bale is completely enclosed, the flanges around the open top of each drum are superposed. The rubber tube 22 is then inserted in the outer recess formed by the flanges. Next, the adhesive strip 23 is put on over the rubber tube and the contiguous surface portions of the flanges and over the adhesive strip the steel band 24. The various elements of the seal are held in place by the spaced clips 25 attached by the tool 15. The air in the drums may then be exhausted in a known manner and replaced by inert nitrogen or the air may simply be exhausted. In lieu of exhausting the air and adding nitrogen, sulphur dioxide may be inserted in the drums through the cock 28 in a known manner or without exhausting the air activated alumina may be added to absorb moisture.

It is obvious that the method and means illustrated and described herein are subject to many variations and modifications within the scope of the appended claims.

What is claimed is:

1. A method for shipping hops comprising the steps of compressing at least one bale of hops of rectangular cross section into a bale of circular cross section, fastening the bale of circular cross

section with spaced flexible members disposed transversely therearound, placing the bale of circular cross section into two steel drums with the flanges around the open ends thereof superposed, and sealing the superposed flanges of the drum.

2. A method for shipping hops according to claim 1 in which the air in the drums is exhausted.

3. A method for shipping hops according to claim 1 in which the air is exhausted and replaced by inert nitrogen.

4. A method for shipping hops according to claim 1 in which the air is exhausted and replaced by sulphur dioxide.

5. A method for shipping hops according to claim 1 in which activated alumina is inserted.

6. A container for a bale of hops formed into a unit of circular cross section, the container comprising two drums with open ends, the open end of each drum having an outwardly and thence inwardly directed flange circumferentially formed therearound and the flanges being superposed to form an outer circumferential recess therebetween, a rubber tube disposed in the recess, an adhesive strip disposed over the tube and the contiguous outer surface portions of the flanges, a resilient band disposed over the adhesive strip and the contiguous outer surface portions of the flanges, a plurality of spaced clips transversely disposed around the resilient band and the contiguous outer surface portions of the flanges, and means for exhausting the air from the drums.

7. A container for a bale of hops formed into a unit of circular cross section, the container comprising two drums with open ends, the open end of each drum having an outwardly and thence inwardly directed flange circumferentially formed therearound and the flanges being superposed to form an outer circumferential recess therebetween, a rubber tube disposed in the recess, an adhesive strip disposed over the tube and the contiguous outer surface portions of the flanges, a continuous steel channel member disposed over the adhesive strip and the contiguous outer surface portions of the flanges, and means for securing the channel member around the flanges.

8. A method of shipping hops comprising the steps of superposing two bales of hops of rectangular cross section, placing the superposed bales in a press, applying pressure in the press to the sides and to the top and bottom of the superposed bales to compress said bales into a single bale of circular cross section and reduced cubical contents, securing the single bale with spaced and transversely disposed flexible members, releasing the single bale from the press, placing one end of the released single bale in a drum through the open end thereof with the opposite end of the single bale protruding beyond the drum, placing the open end of a second drum over the protruding end of the single bale with the rim of the open end of the second-mentioned drum abutting the rim of the open end of the first-mentioned drum, inserting a preservative for the hops in the drums, and sealing together the abutted rims of the drums.

9. A method of shipping hops comprising the steps of superposing two bales of hops of rectangular cross section, placing the superposed bales in a press, applying pressure in the press to the sides and to the top and bottom of the superposed bales to compress said bales into a

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single bale of circular cross section and reduced cubical contents, securing the single bale with spaced and transversely disposed flexible members, releasing the single bale from the press, placing one end of the released single bale in a drum through the open end thereof with the opposite end of the single bale protruding beyond the drum, placing the open end of a second drum over the protruding end of the single bale with the rim of the open end of the second-mentioned drum abutting the rim of the open end of the first-mentioned drum, sealing together the abutted rims of the drums, and replacing the air in the drums with inert nitrogen.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
5 75,203	Schoonmaker -----	Mar. 3, 1868
77,768	Schoonmaker -----	May 12, 1868
535,751	Campbell -----	Mar. 12, 1895
672,282	Munford -----	Apr. 16, 1901
754,340	Passarelli -----	Mar. 8, 1904
10 2,326,296	Harrison -----	Aug. 10, 1943
2,372,290	Pawelsky -----	Mar. 27, 1945