

Oct. 9, 1923.

1,469,797

J. W. LESLIE

METHOD OF PREPARING GOODS FOR SHIPMENT

Filed Oct. 25, 1920

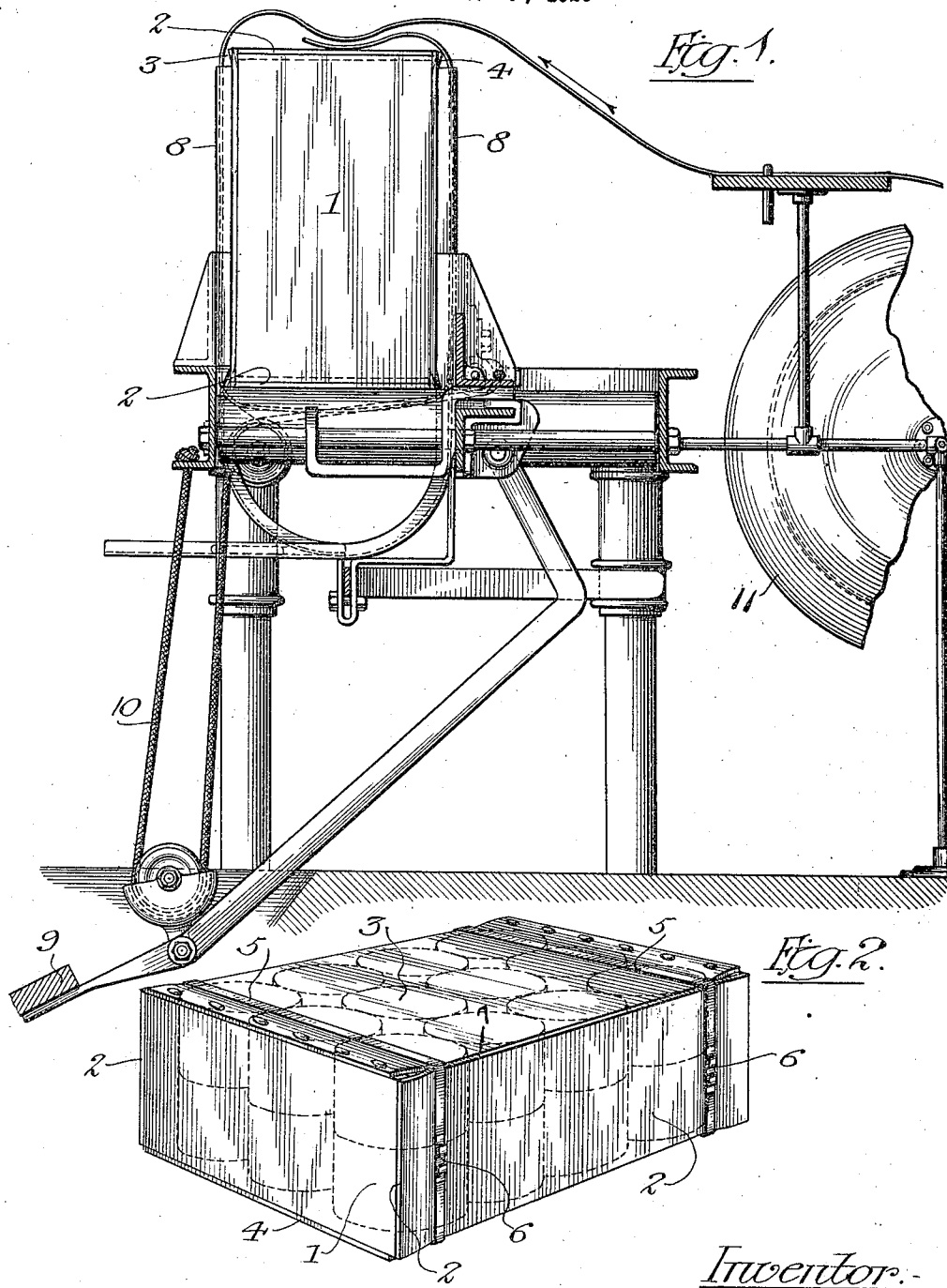


Fig. 1.

Fig. 2.

Inventor:
John W. Leslie

By: Offield, Poole & Hinton

Attys

UNITED STATES PATENT OFFICE.

JOHN W. LESLIE, OF EVANSTON, ILLINOIS.

METHOD OF PREPARING GOODS FOR SHIPMENT.

Application filed October 25, 1920. Serial No. 419,444.

To all whom it may concern:

Be it known that I, JOHN W. LESLIE, a citizen of the United States, and a resident of Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Preparing Goods for Shipment, of which the following is a specification.

This invention relates to a method of packaging goods for shipment, particularly applicable to such goods, as are shipped in wooden boxes or such similar containers, such for instance as canned goods.

It is an object of the invention to effect a desirable economy in the cost of the material of the container by providing a method of packaging the goods whereby the strength of the container is augmented and correspondingly lighter material may be employed for the construction of the container for a given weight of contents. Other objects and advantages of the invention will appear as the description to follow proceeds.

A great variety of goods are shipped in wooden boxes, which for the most part are used once and then destroyed. Up to within a comparatively few years, during the period when the price of lumber was low these boxes were made of well seasoned wood thick enough to withstand the exigencies of shipment when nailed together in the ordinary way, i. e. by nailing four sides onto a pair of rigid ends. For a number of years, however, the continually rising price of lumber has made it necessary to use for shipping boxes the thinnest possible wood of the poorest quality. During this period the use of "box strapping", i. e. tensional metallic bands applied, under a heavy tension, for reinforcing purposes about the intermediate portion of the box, between its ends, has become widespread and is rapidly increasing. By the use of this material a box can be reinforced at a nominal cost to have the strength of an ordinary nailed box made of considerably thicker wood.

The box strapping method is sometimes subject to the objection that the box, made of improperly seasoned lumber, shrinks substantially between the time it is packed and the time it is unpacked, which causes the binder to become loose, which reduces their efficiency and is otherwise objectionable.

In my copending applications Serial Nos. 419,443, and 419,446, both filed October

25, 1920, I have disclosed shipping packages comprising reinforced shipping containers of the box type, which substantially eliminate the difficulty just indicated and additionally provide important advantages, including the possibility of using still thinner material in shipping boxes. The present invention comprehends a method of packaging goods for shipment particularly useful in connection with containers of the rigid type (such as boxes as distinguished from bags), and particularly useful in connection with boxes of the general character disclosed in said copending applications.

By this method a container, having a resilient compressibility, is initially compressed or constricted into distorted condition of one or more of its sides, by mechanical means, such as a foot press. Thereafter a binder is applied about the container to hold one of its sides in distorted condition.

In such a package the reaction of the resilient side serves to keep the binder taut. In a preferred exemplification of the invention, (wherein cans are packaged) the compression of the box serves to compact the contents and squeeze the same between opposed sides of the box, which condition is maintained by the binder. In this arrangement the sides of the box rest solidly against and are supported by the rigidity of the box contents whose strength thus becomes an element of the strength of the box. Furthermore the box is provided with an inherent limit of constriction so that it is not possible to break it under ordinary compression such as would be the case when the box could be indefinitely compressed as can a bale or the like.

In the drawings, which disclose an illustrative embodiment of the invention:

Fig. 1 is an elevation of a convenient machine upon which the method herein disclosed may be carried out, and

Fig. 2 is a perspective view of a packed and strapped box.

Referring to Fig. 2, I employ a container, of the box or rigid type, having ends 1, sides 2, a top 3 and a bottom 4. The box faces, except the ends, are made of springy sheet material, in this instance wood. The box is shown as filled with cans, after which the top is applied, secured to the ends by nails or the like and the reinforcing binder or box strap 5 applied and secured by joints 6.

In the completed package shown in Fig. 2, the top 3 and bottom 4 have each been drawn inwardly until they rest solidly and with considerable pressure against the top and bottom of the block of cans, this condition being maintained by the binders. It will be noted that the top and bottom do not overlap the edges of the side 2, but are cut away so as to pass downwardly between the sides 2; and in this instance sufficiently cut away so that the sides 2 may also be drawn substantially inwardly to compact the cans and bear solidly against them, and at the same time close the cracks or spaces 7.

In the preferred condition of the parts, the top and bottom have been distorted inwardly until their outer surfaces are flush with the edges of the adjacent sides as shown at 7, this being obviously an ideal condition not necessarily completely realized in practice. The particular advantages of the type of package may be more fully appreciated from my copending application Ser. No. 419,443, in which the same is described and claimed.

It is extremely desirable, in forming packages of the general character of that herein described, to provide a method other than the mere tightening or stretching of the binder, in order accurately to put the parts properly in desired condition. Thus in the particular package shown in Fig. 2, it is desirable to distort the top and bottom 3 and 4 inwardly between the edges of the sides 2 before distorting the latter. This will insure the proper position of the parts, and prevent for instance a side 2 from passing under and obstructing the inward movement of the top 3 or bottom 4, as well as very considerably facilitating and increasing the efficiency of the strapping operation.

To this end, I make use of an initial compressing operation which may be effected by the strapping bench disclosed in operation in Fig. 1. This bench forms subject matter of application, Ser. No. 371,264, filed Apr. 5, 1920, by Arthur G. G. Guenther; it will therefore be unnecessary to describe the same in detail. Suffice to say here that it comprises a pair of telescoped strap guides 8, which may be forced together with very considerable pressure by the treadle 9, operating through the cord 10. A reel 11 supplies strapping which is guided around the box by the guides 8 as shown in the drawings.

In carrying out the method of this invention, a container such as shown in Fig. 2, before being strapped, is placed on the bench between the guides 8, the strapping is loosely passed therearound, thereafter the treadle is powerfully depressed. The result will be that the top 3 and bottom 4, will be distorted inwardly into contact with the cans, and until their outer surfaces are flush with the edges

of the adjacent sides 2. The operator holding the parts in this position next applies an appropriate stretching tool (well known in the art) to the strap, tightening the same forcibly about the box. This, in the particular illustrative container herein shown, draws the sides 2 inwardly and when the joints 6 are formed the package, as shown in Fig. 2, is complete.

The compression of the box between the guides 8, prevents obstruction or interference at the box corners, moves the top 3 and bottom 4 properly inward between the sides 2, and importantly facilitates the strapping operation, being markedly preferable to an operation wherein the distortion of the top 3 and bottom is effected by drawing the binder tight.

In conclusion it may be said that the term "top," "bottom," and "sides," associated with reference characters have been used in this specification merely to point out definitely certain particular parts; of course these terms are merely relative, and any face of the box may be considered to be its "side." The expression "side" as used in the claims is not therefore limited (unless by the context in the particular claim) to exclude the parts herein referred to as the top 3, bottom 4, or end 1.

Having described my invention, I claim:

1. The method of preparing goods for shipment; which consists in enclosing them in a container, having a face, or faces adapted to be distorted inwardly, made of springy side material, applying pressure to said face to distort the same inwardly and applying a tensional binder to the container to hold the said face in distorted position, whereby the reaction of said face will serve to maintain the binder taut, in spite of shrinkage or the like.

2. The method of preparing goods for shipment, which consists in enclosing them in a container having inherent, initial, resilient compressibility and an inherent limit of construction, compressing said container toward its limit of constriction and applying a tensional binder to maintain the same in substantially constricted condition.

3. The method of preparing goods for shipment, which consists in enclosing them in a container wherein a face, made of springy material, is adapted to be initially distorted inwardly and subsequently relieved of further distortion under continued pressure by adjacent faces, applying pressure to said face to distort the same inwardly and applying a tensional binder to maintain the same in distorted condition.

4. The method of preparing goods for shipment, which consists in enclosing them in a substantially rigid container, wherein a localized region is adapted to be compressed, compressing said localized region

and applying a tensional binder to said region to maintain the same under compression.

5 5. The method of preparing goods for shipment, which consists in enclosing them in a substantially rigid container, having a side made of resilient material, adapted to be distorted inwardly intermediate its ends, applying localized pressure to an intermediate portion of the side to so distort the same, and applying a tensional binder around said intermediate portion to maintain the side in distorted condition.

10 6. The method of preparing goods for shipment, which consists in enclosing them in a substantially rigid container, having a side made of springy material and adapted to be bowed inwardly intermediate its ends, applying compressing pressure by a channelled compressing element to a localized region of said side to bow the same inwardly, and maintaining the bowed condition therein by applying a tensional binder applied in said channel.

20 7. The method of packaging goods for shipment, which consists in enclosing the same in a box having rigid ends and sides of springy sheet material secured upon said ends, pressing a portion of one of the sides between the ends, inwardly into a distorted condition, and applying a tensional binder about said intermediate portion of the side to hold the same in distorted condition.

30 8. The method of packaging goods for shipment, which consists in enclosing the same in a box having rigid ends and sides of springy sheet material secured upon said ends, one of said sides being cut away at its lateral edges to permit the same to pass inwardly between the adjacent sides, pressing an intermediate portion of said sides inwardly between the adjacent sides and applying a tensional binder about the box to maintain said side in distorted position.

45 9. A method of packing substantially incompressible contents in a container of the

rigid type, which consists in arranging said contents in a box having rigid ends and sides of springy material, pressing one of said sides into distorted condition whereby this side and the one opposed to it will bear upon and be supported by the contents, and applying a tensional binder to maintain the parts in the condition described.

50 10. A method of packing for shipment goods adapted to be compacted under pressure, and substantially rigid when compacted, which consists in arranging said goods in a box having rigid ends and springy sides, applying pressure to distort one of said sides inwardly, until the goods are compacted and squeezed between said side and the one opposed to it; then applying a tensional binder to maintain the parts in the condition described.

60 11. A method of packing for shipment cans or the like, which consists in arranging the same in a container having rigid ends and sides made of springy material, pressing one of said sides into distorted position at an intermediate region thereof, so as to compact the cans vertically, and squeeze the same between said side and the one opposed to it, applying a tensional binder about the region of distortion to maintain the parts in the condition described.

70 12. A method of packing cans which consists in arranging the cans in a box having rigid ends and a top of springy material secured thereon, said top being cut away at its lateral edges to permit it to be distorted inwardly between the adjacent sides, applying pressure to said top to bow the same inwardly and distort an intermediate portion thereof until the cans are compacted vertically and squeezed between the top and bottom of the box, and applying a tensional binder to maintain the parts in the condition described.

80 In witness whereof, I hereunto subscribe my name this 23rd day of Sept., A. D., 1920.

JOHN W. LESLIE.