

Aug. 9, 1938.

J. W. SHAFF

2,126,583

COLLAPSING SHIPPING CRATE

Filed Nov. 27, 1936

4 Sheets-Sheet 2

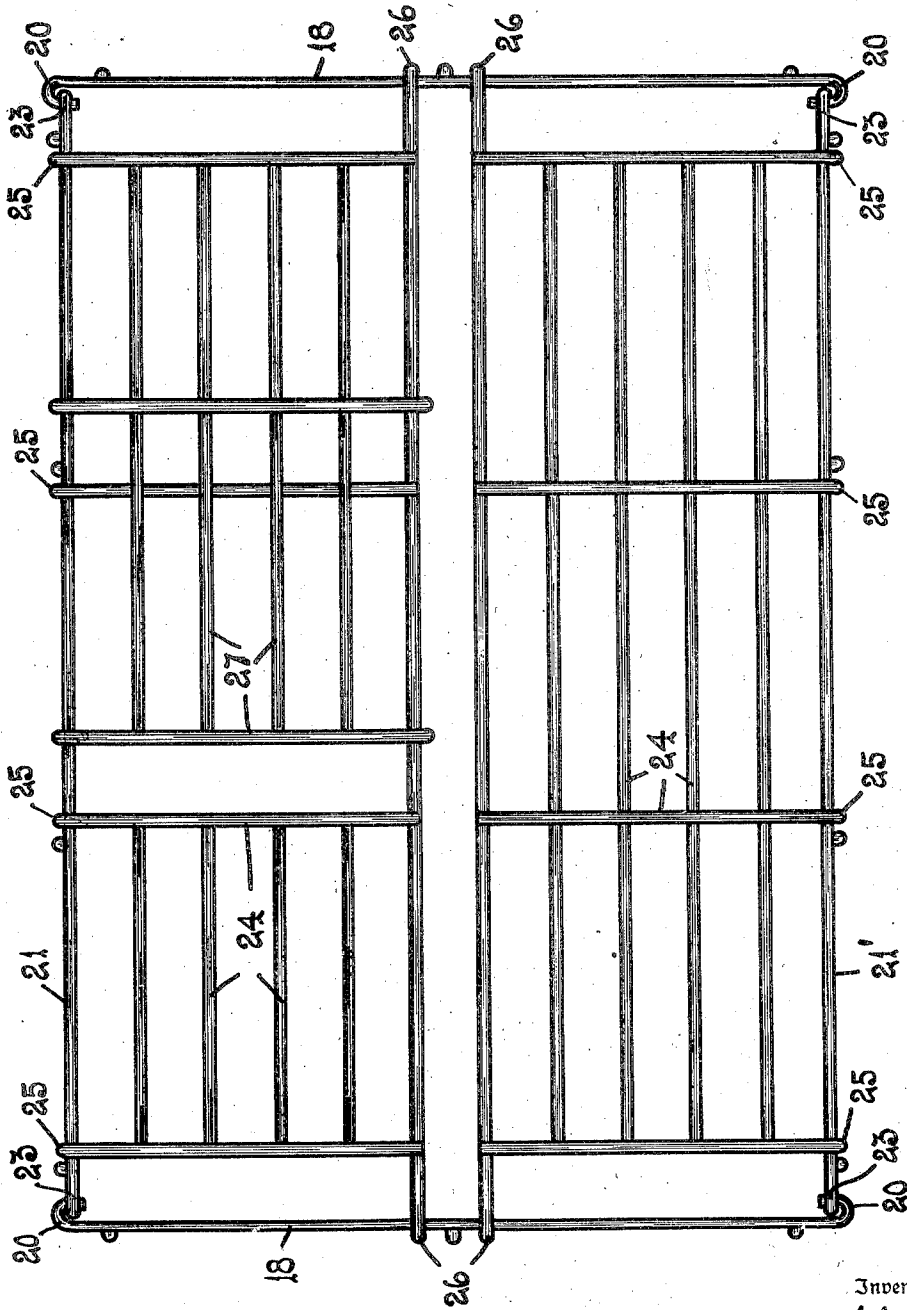


Fig. 7.

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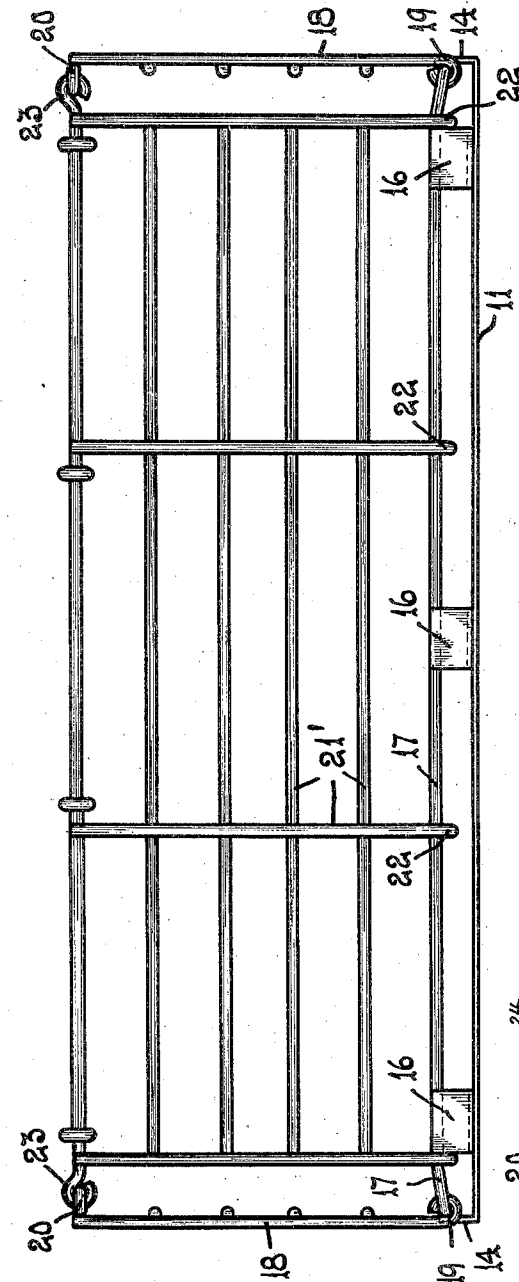


Fig. 8.

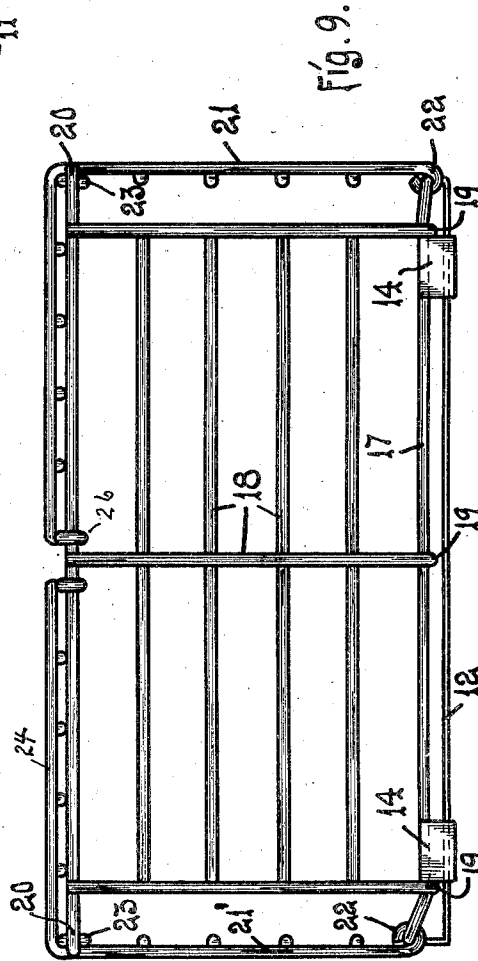


Fig. 9.

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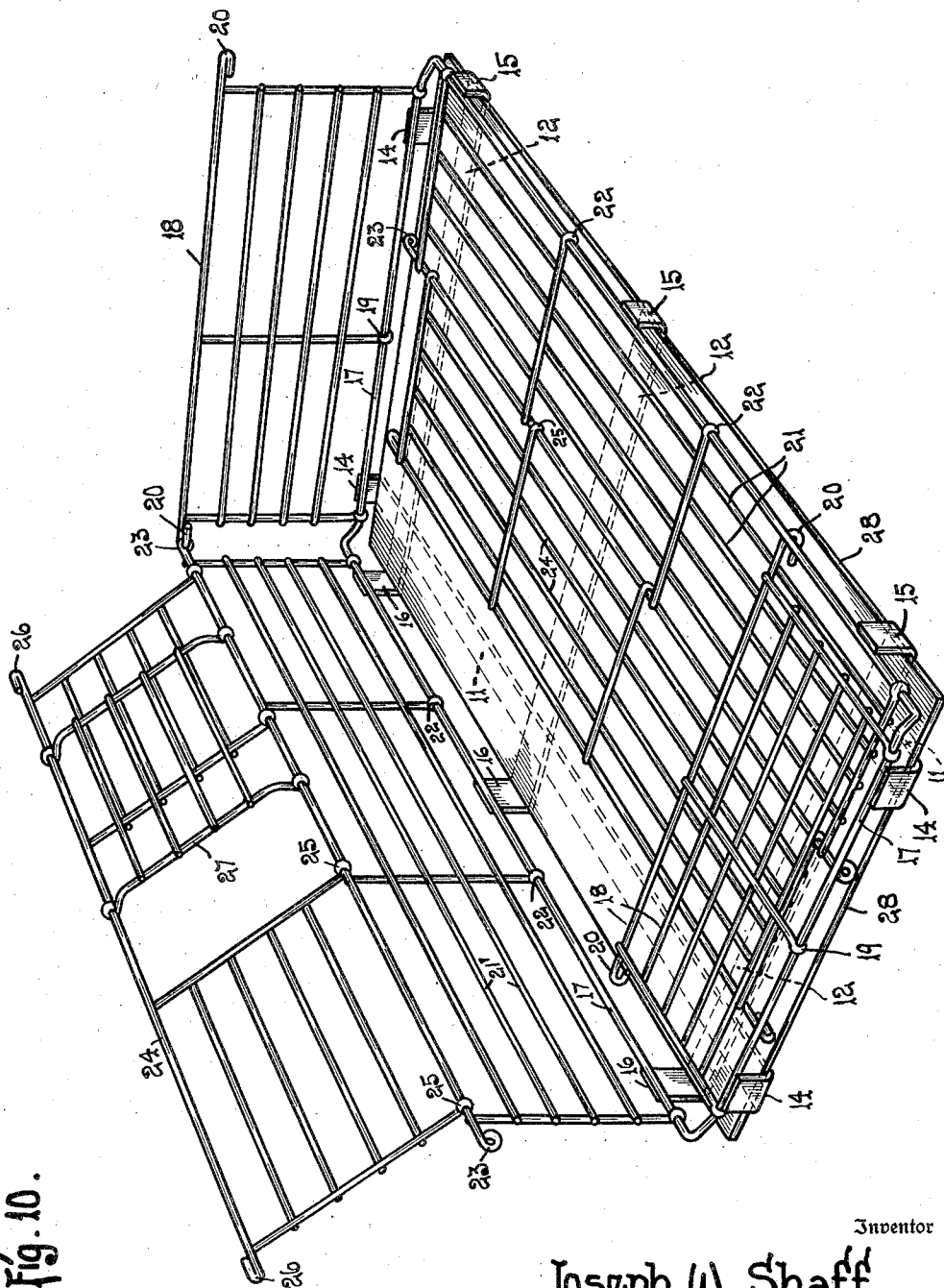
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Fig. 10.



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UNITED STATES PATENT OFFICE

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COLLAPSING SHIPPING CRATE

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1 Claim. (Cl. 220—6)

This invention relates to a collapsible shipping crate, and has for its object, broadly, to provide a crate consisting simply of a flat base and flat swingably connected wings which may be manufactured at a limited cost, said crate preferably being of elongated rectangular form in plan and elevation, and of such construction that it will adequately resist stresses for protecting the contents during shipments, and will be convenient in use while loading or removing its contents.

The invention includes a crate which, when collapsed, will permit the wings to lie relatively parallel upon the base and parallel with the base in compact form to occupy a limited space for shipment.

Other objects of advantage will appear in the following description of the invention, as claimed, and as illustrated in the accompanying drawings wherein,—

Fig. 1 is a plan view of the base of the crate. Fig. 2 is a transverse section on line 2—2 of Fig. 1, and Fig. 3 is a transverse section on line 3—3 of Fig. 1.

Fig. 4 is a longitudinal section on line 4—4 of Fig. 1 and Fig. 5 is a view in longitudinal section on line 5—5 of Fig. 1. Fig. 6 is a plan view of a floor or base-plate on a reduced scale.

Fig. 7 is a view showing the top of the crate when the parts are in normal position, the base being omitted.

Fig. 8 is a side view of the crate, and Fig. 9 is an end view of the same.

Fig. 10 is a perspective view showing the crate in partly folded position.

Referring now to the drawings for a more particular description, I provide a flat rectangular base 10 consisting of parallel supporting-strips 11 and cross-strips 12 secured rigidly to each other at their intersections 13 by welding or other suitable means, each end-portion of each strip being provided with an upwardly projecting spacing-element or ear, these spacing-ears varying in length or proportions for purposes to be described. The spacing-ears for the ends of the supporting-strips 11 are indicated at 14, and they are of uniform length.

The ears for the cross-strips 12, at one end, are indicated at 15, and they are of lesser length than the ears 14; and the ears 16 for the opposite ends of the cross-strips 12 are of greater length than the ears 14 of the strips 11.

Numeral 17 indicates a stabilizing rail of rectangular form in plan, and it is secured by welding or other suitable means to the upper ends of the spacing-elements or ears 14, 15 and 16.

I provide a pair of end wings 18, these being of flat rectangular form and of uniform size, and they are provided at their lower edges with loops 19 for swingable mountings on the rail 17, and each end wing is also provided at its top with fastening-members 20 having the form of hooks, and which project beyond its ends.

I provide a pair of rectangular wings 21 and 21' these being of uniform size and provided at their lower edges with loops 22 for swingable mountings on the stabilizing rail 17, each side wing being provided with a pair of fastening-members or outwardly projecting loops 23 adapted to be engaged by the hooks 20 of the end wings 18 after said end wings and side wings have been swung upwardly to vertical positions; and when thus secured said end wings and side wings will be maintained stationary at right-angles to the base 10.

Numerals 24 indicate a third pair of rectangular wings provided with loops 25 for swingable mountings on the side wings, whereby the wings of this third pair may be moved to positions above and parallel with the base 10, these wings 24 being provided with fastening-members 26 preferably having the form of hooks for engaging the upper parts of the end wings 18.

Among some of the advantages to be derived by use of the invention is the fact that the crates will be durable in use and will be of compact form for return shipments. They may have any desired size or proportions, and heavy or light material may be used in their construction, depending upon the kinds of products to be shipped. They may be produced at a very limited cost for the reason that each crate consists of simple separable parts, free from complications and may be conveniently assembled.

Numeral 27 indicates a slide door for one of the wings 24, useful when shipping poultry, and at 28 is indicated a base-plate of card-board or sheet metal to operate as a floor when laid upon the base strips 11 and 12.

When collapsing the crate, the side wing 21 and third wing are first swung over upon the base 10, and they may lie snugly upon and parallel with the strips 11 and 12 for the reason that the pivotal mounting of said wing 21 on the rail is disposed in a plane slightly above the horizontal plane of the said base-strips. The end wings 18 are then swung inwardly to lie upon the side wing 21 and a third wing 24 and parallel therewith.

The side wing 21' together with the third wing attached thereto are then swung to lie upon the

pair of end wings, and the hooks 26 of the third wing may then engage the stabilizing-rail at the ends of the base 10 for maintaining the crate in compact collapsed condition.

5 While metallic strands or wire has been shown in the drawings and is preferred in the construction of the wings, I do not limit myself to the material used nor to size or proportion of parts.

It will be noted that the stabilizing rail 17, 10 while of rectangular form in plan, is suitably bent to conform to the elevations or lengths of the spacing-members or ears 14, 15 and 16 upon which said rail is mounted.

As best shown in Fig. 7 of the drawings, the 15 hooks 20, which may engage in the loops 23 of the side wings, prevent collapsing of the crate after it has been filled with merchandise, and after the crate has been collapsed, the hooks 26 of a third wing which engage the stabilizing rail at 20 the opposed ends of the base, operate to maintain the crate in compact form for reshipment.

It will be understood that the wings 12, in a certain degree, are elastic and may be sprung inwardly without injury, to permit the hooks to be 25 released therefrom whenever collapsing of the crate is desired, and as shown in Fig. 10 of the drawings the parts 20 and 23 may be connected

since the parts 20 are of hooked form. When the several wings are hooked to each other to form a container for merchandise they will not become accidentally unhooked for the reason that the wires will resist pressure for bending.

I claim as my invention,—

In a collapsible shipping crate, an elongated, rectangular base provided at each edge with upwardly projecting spacing-ears, a rectangular rail above the base carried by the spacing-ears, a 10 pair of side wings swingably mounted on said rail each wing having a terminal strand projecting beyond its ends provided with loops, a pair of end wings swingably mounted on said rail each having a terminal strand projecting beyond its end 15 provided with hooks for detachable mountings in the loops of the side wings, and a pair of top wings swingably mounted on the side wings each having a terminal strand projecting beyond its ends provided with hooks for detachable mount- 20 ings on the end wings, the spacing-ears on said rail at one edge of the base being of greater height than the height of the spacing-ears at the opposed edge thereof to permit said wings to lie approximately parallel in overlapped relation 25 when moved to collapsed position.

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