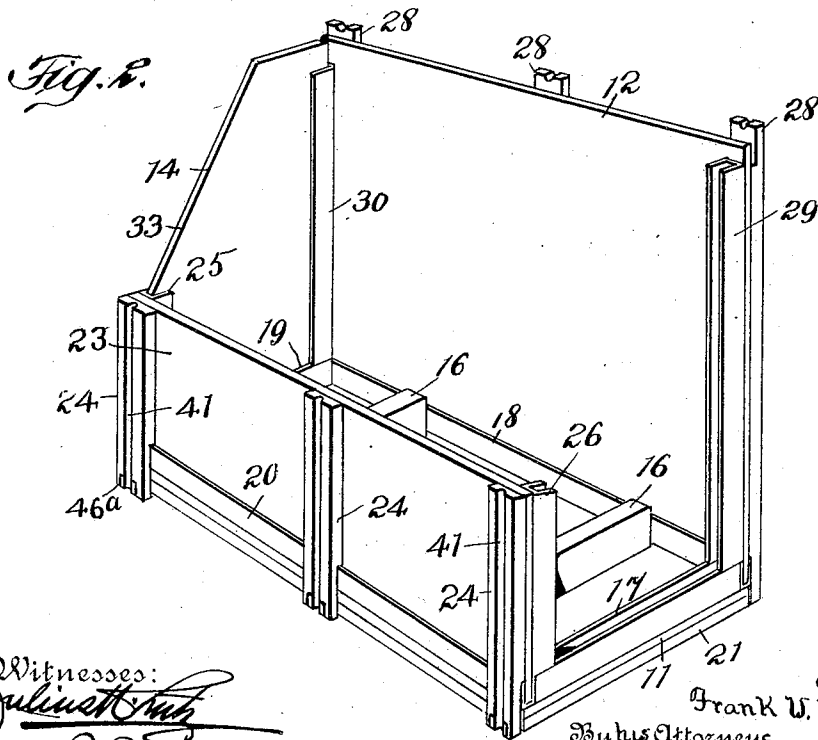
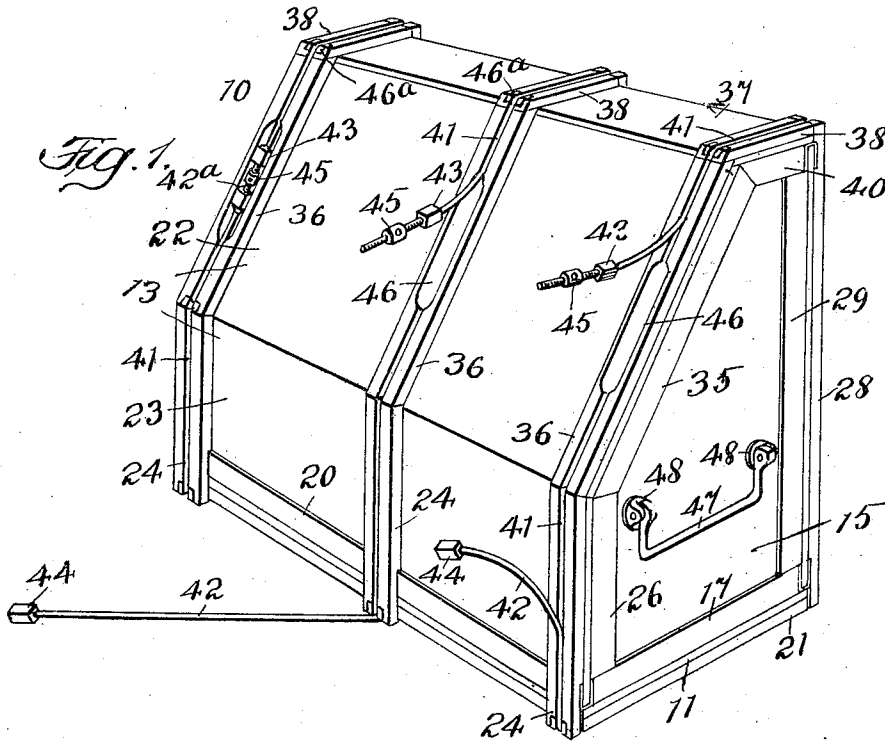


F. V. NEUVILLE.
 KNOCKDOWN GRATE.
 APPLICATION FILED JUNE 8, 1908.

944,146.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.



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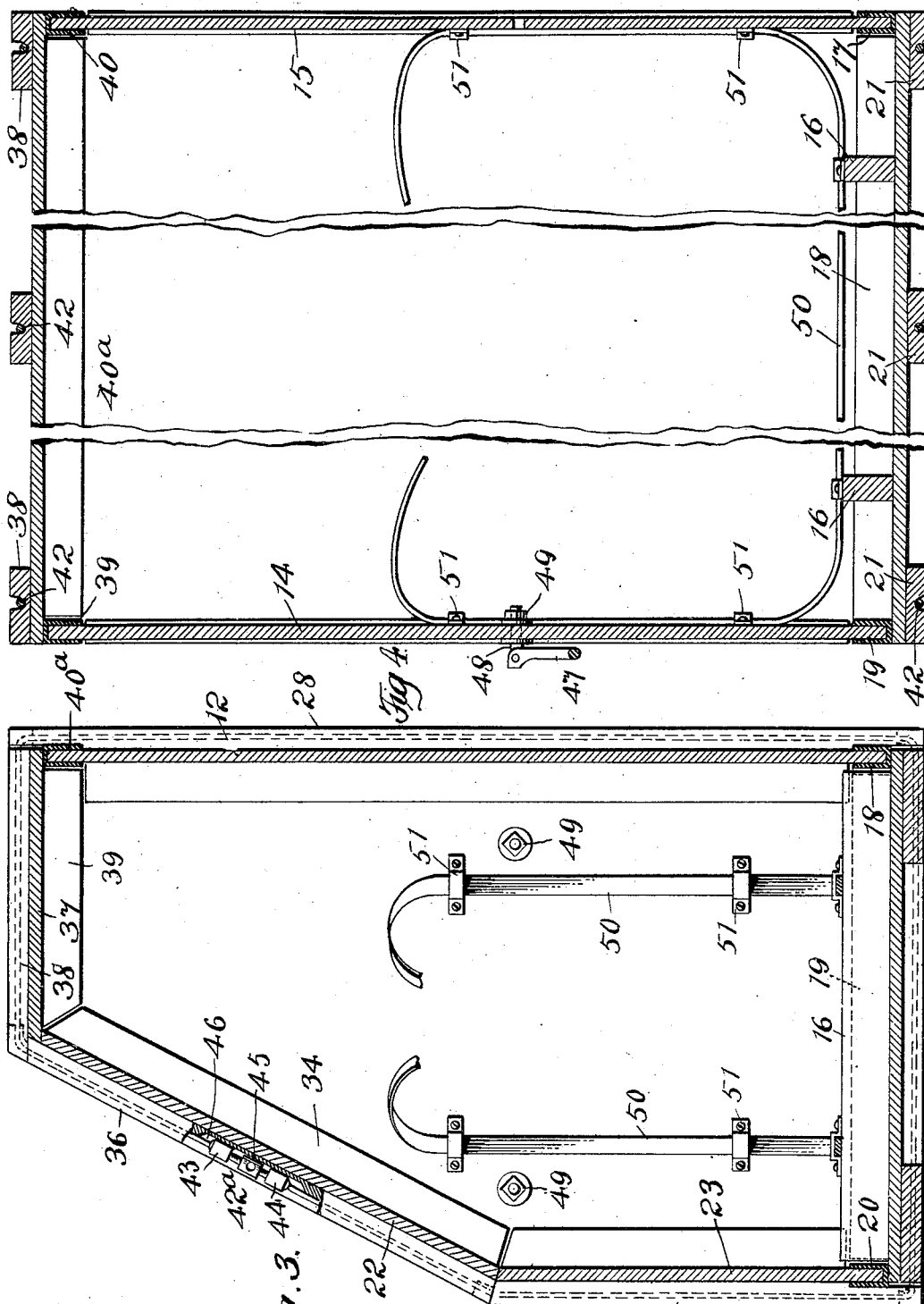
KNOCKDOWN CRATE.

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2 SHEETS—SHEET 2.

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Fig. 3.

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UNITED STATES PATENT OFFICE.

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KNOCKDOWN CRATE.

944,146.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK V. NEUVILLE, a citizen of the United States, and a resident of New Rochelle, county of Westchester and State of New York, have invented certain new and useful Improvements in Knock-down Crates, of which the following is a full, clear, and exact description.

This invention relates more particularly to a knock-down crate for the transportation of pianos and organs.

The primary object of the invention is to provide a simple and efficient device which is adapted to be readily assembled or taken apart and rigidly held together when assembled to adapt the same to hold a piano or other object therein so as to provide ready means for transporting the same; and after the piano has been removed from the crate to adapt the same to be quickly taken apart or knocked down to be returned to the manufacturer or person sending the crate and contents, to permit the same to be used over again; thus materially saving the expense of making a new crate each time a piano or like instrument is sold, and also by reason of it being knocked down to allow the same to be packed in a small space, thus saving transportation charges in returning the same.

Other objects are to provide effective means for bracing the parts of the crate while assembled, and to provide ready means whereby the parts when assembled may be quickly and rigidly held in position so that the parts or members comprising the crate cannot become separated and are not liable to injury while transporting the contents thereof.

A further object of the invention is to provide a crate which will be tight, and which may be more readily transported than the usual form of crate, and which is provided internally with means whereby various objects may be transported therein, and which is adapted to be made in various shapes.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claim at the end of the description.

In the drawings, Figure 1 is a detail perspective view of one form of crate embodying my invention adapted for shipping pianos and like instruments. Fig. 2 is a

fragmentary perspective view, showing the construction of some of the parts of the crate. Fig. 3 is a vertical section taken transversely of the crate in an assembled position; and Fig. 4 is a fragmentary longitudinal section through the crate.

While I have shown the crate as constructed in a particular manner and of a form substantially the form of the usual vertical piano, it will be understood that the form of the crate may be changed as well as certain features of the construction to adapt it for transporting various objects or articles.

The crate is ordinarily made of wood, and comprises a plurality of members according to its form and the use to which it is put. As shown the crate or container 10 is provided with a base bottom member 11, a rear or side member 12, a front member 13, and side or end members 14 and 15. The bottom member 11 may be provided with one or more cross-pieces or braces 16 on which the piano or other object may be supported, and projecting upward from the inner side of the bottom 11 are a plurality of channel irons or other devices 17, 18, 19 and 20. These devices may be substantially U-shaped in form to provide a groove, and are rigidly fastened to the bottom, and the devices 17 and 19 are arranged at the ends of the bottom member, and devices 18 and 20 at the front and rear thereof respectively, and are located adjacent to the edge of the bottom, the said bottom being braced underneath thereof by means of the cross-strips, bars or cleats 21 along the under surface thereof and near each edge thus rigidly bracing the bottom of the crate.

At the front of the crate is the member 13, which, as shown, comprises two members 22 and 23, and are arranged angularly with respect to each other so as to correspond substantially to the shape of the object to be held therein. The member or front piece 23 has its lower edge adapted to fit into the groove of the channel iron or device 20 fastened to the bottom, and along the outer surface thereof is provided with strengthening cleats or bars 24 which are adapted to fit over the U-shaped devices 20 and serve further to hold the member 23 in its proper position on the bottom member 11. This member 23 is provided with channel irons or grooved devices 25 and 26 at its ends which extend vertically when the member 23 is in

position and are adapted to have the groove thereof in alinement with the grooves of the devices 17 and 19 of the bottom member 11. The side or member 12 has its lower edge fitting into the groove of the bar or device 18, and at the rear thereof is provided with a plurality of cleats or strengthening strips 28 corresponding in position to the cleats 24 of the front member 23 and which are adapted to fit over the outside of the device 18. The rear member 12 is provided at its edges, and on the inner surface thereof, with the U-shaped bars or devices 29 and 30 which are secured to the inner surface thereof and have their grooved portions in alinement with the grooves of the devices 17 and 19 of the bottom member 11, and adapted to fit into the grooves of the devices 29, 17 and 26 are the end-pieces 14 and 15. The end pieces 14 and 15 are cut away at one edge so as to be angularly disposed with respect to the other edges, as at 33, and fitting over the edges 33 of the end-pieces are the bars or U-shaped devices 34 and 35 which are secured to the inner surface of the member 22 of the front at the ends thereof, and said member 22 is provided with cleats or bars 36 on the outer surface thereof, and is cut away at its lower and upper edges to properly fit the member 23 and the top member 37. This member 37 is also provided with cleats or bars 38 corresponding in position to the cleats or bars of the other members to provide a plurality of sets of said cleats, and said member is provided at its ends with devices 39 and 40 which are adapted to fit over the upper edges of the side or end-pieces 14 and 15, and at the rear of the top-piece or member 37 is a channel iron or device 40^a which is adapted to fit over the upper edge of the rear member 12. It will thus be seen that the several U-shaped channel irons or devices form a substantially continuous groove for the side or end-pieces 14 and 15, and provide means for properly holding the several parts or members together, and the cleats serve as additional means for bracing and properly holding the parts, thus making the crate very strong and adapting it to be quickly assembled or knocked down.

To hold the members of the crate together when they are assembled various means may be employed. As shown each member is provided with three cleats forming three sets, which, when the parts are assembled are in alinement with the cleats of the other members, and in each cleat is a groove 41 which is substantially continuous around the crate, and fastened to the bottom of the crate is a plurality of cables or other flexible connections 42. These cables may have a suitable turn buckle 42^a one member of which as 43 is fastened to one end of the cable, and a second member 44 to the other end of the cable. A screw member 45 may

be made to engage the member 43 and 44 whereby the cable or other flexible connection may be readily tightened, and the several members of the crate rigidly held thereby.

The number of sets of cleats, and a number of flexible connections or fastening means may vary, and any suitable form of device may be employed to secure the ends of the flexible connections, and where a turn-buckle is used, the cleats 36 may be recessed, as at 46, to permit the turn-buckle to be seated therein, so that the turn-buckle, as well as the cable, will not come in contact with any object to injure the same; and to further strengthen the parts and to prevent the cable from injuring the crate members, a metallic corner-piece or protector, as 46^a may be arranged on the members at each turn or corner that the cable or connection is to make.

The side members or devices 14 and 15 may be provided with a handle 47 of any suitable or preferred construction which adapts the crate to be readily lifted. The handle 47 may be of such length as to permit both ends to grasp the same and is so constructed that it will lie flat against the sides when not in use, but which will be held in a horizontal position when it is desired to carry the crate with the contents thereof. The end of the handle may be pivotally held to plates 48 which are held to the end-pieces by means of nuts 49 arranged upon the inner surface of said end-pieces.

Where the crate is to be employed for transporting other objects than pianos or similar instruments, and where it is desired to ship a number of articles or a less number than would entirely fill the crate, it is desirable to hold the objects properly within the crate to prevent them from moving around and likely to become injured thereby. To effect this, I may arrange one or more straps 50 which may be secured to the bottom or base 11 within the same, and these straps or other fastening means may be passed through clips or guides 51 arranged on the end-pieces 14 and 15 or on the inner surface of the front or rear members so that said strap or fastening means may extend transversely or lengthwise of the crate as found most suitable. The ends of the straps may be held in any desired way either by a buckle or other fastening means, and is adapted to be passed over and around the articles when the contents to be transported do not entirely fill the crate. The straps or other fastening means 50 may be utilized to fasten the several parts of the crate together when it is desired to return the same to the shipper, thus serving as a ready means to hold the parts together in a compact space.

From the foregoing it will be seen that a strong, durable and effective crate is pro-

vided for transporting various forms of articles which may be readily assembled and rigidly held in its assembled position, and which permits the members to be readily detached so that the crate may be knocked down for the purpose of storage or transportation purposes, thus permitting the crate to be used many times and thereby materially saving in the cost of transporting pianos and other instruments or objects; that said crate has simple means for holding the parts together and permitting the same to be carried; and that said crate is adapted to hold objects or a number of objects therein in such a way as to prevent injury thereto.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

20 A knock-down crate, comprising a bottom member having a single U-shaped metallic bar at each edge thereof forming a groove, a front formed of two members angularly

arranged with respect to each other and both provided with a single U-shaped metallic bar on their inner surfaces and at the ends thereof, a rear member adapted to fit one of the U-shaped bars of the bottom member at one edge and provided with a single U-shaped bar at each of two edges thereof, end-pieces fitting the U-shaped bars at the ends of the front, bottom, and rear members, a top member provided with U-shaped bars fitting the end members and the rear members, cleats extending around the members and carried thereby and provided with a groove, a flexible connection arranged in each groove, and a fastening device adapted to rigidly hold the ends of the flexible connection together.

This specification signed and witnessed this sixth day of June A. D. 1908.

FRANK V. NEUVILLE.

Witnesses:

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ROBT. A. SHERLOCK.