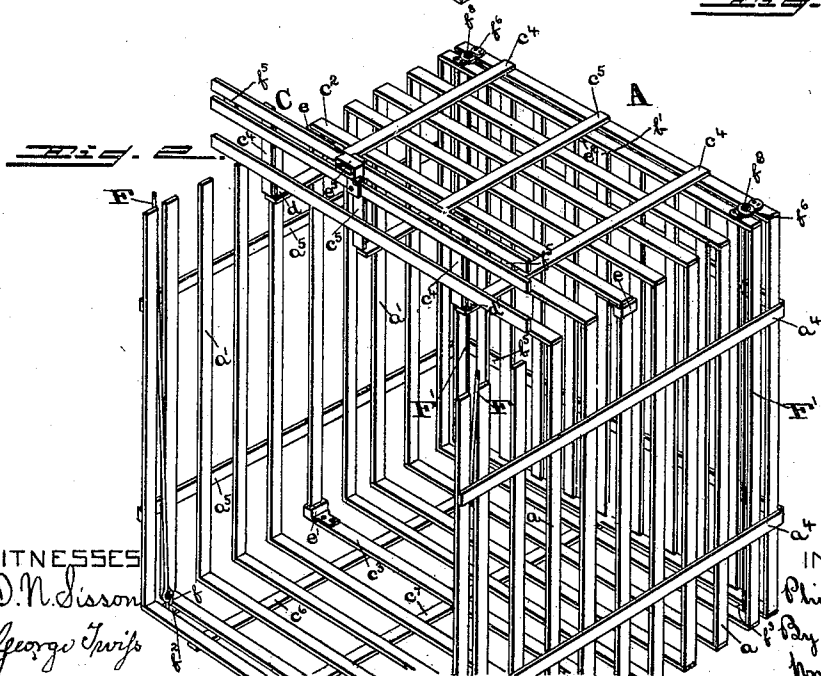
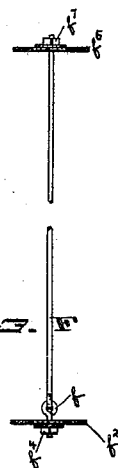
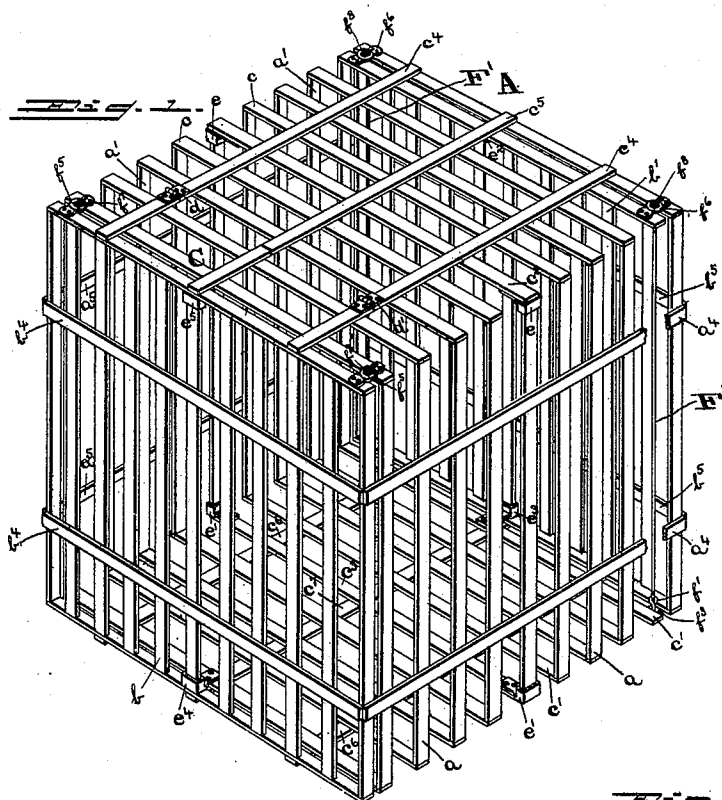


(No Model.)

P. HAUCK.
KNOCKDOWN CRATE.

No. 466,234.

Patented Dec. 29, 1891.



WITNESSES
O. N. Lissner
George Turpin

INVENTOR
Philip Hauck,
By his Attorney
Amos Powell.

UNITED STATES PATENT OFFICE.

PHILIP HAUCK, OF PHILADELPHIA, PENNSYLVANIA.

KNOCKDOWN CRATE.

SPECIFICATION forming part of Letters Patent No. 466,234, dated December 29, 1891.

Application filed March 11, 1891. Serial No. 384,565. (No model.)

To all whom it may concern:

Be it known that I, PHILIP HAUCK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Knockdown Crates, of which the following is a specification.

My invention has relation to knockdown crates for shipping purposes, is designed especially for the shipment of paper boxes, and has for its object to improve the construction and increase the efficiency thereof.

My invention consists in the details of construction and the combinations of parts, as hereinafter fully described and claimed, and as illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of my invention complete. Fig. 2 is a similar view of the improved crate with its front removed, and Fig. 3 is a side elevation of a detail.

In said drawings, A represents the improved crate, having its sides composed of the slats a a' , secured to the cross-bars a^4 a^5 , its front and back composed of the slats b b' , secured to the cross-bars b^4 b^5 , and its top and bottom composed of the slats c c' , secured to the cross-bars c^4 c^5 c^6 c^7 , the bars c^4 being severed transversely, as is the bar c^5 , near their front ends and having secured thereto the hinges d d' , the portion of the top outside such separation thus constituting the lid C. The central slats c^2 c^3 of the top and bottom have secured thereto at each of their ends the oppositely-disposed shoes e e' , provided with vertical sockets for reception of the ends of the central slats a^2 a^3 of the sides of the crate, and the end slats of said top and bottom, which are brought into closer relation than the rest of the slats, have secured to their inner sides in alignment with the cross-bars c^5 c^7 the similar shoes e^2 e^3 e^4 , having vertical sockets therein for reception of the ends of the central slats b^2 b^3 of the front and back of the crate.

F F' represent metallic rods, having their lower ends formed into rings and engaging with the eyebolts f f' , said eyebolts being secured in the plates f^2 f^3 by the nuts f^4 and having their upper ends threaded, passing through the plates f^5 f^6 , and receiving the nuts f^7 f^8 , said plates being secured to the outer

sides of the end slats of the top and bottom near their ends. Supposing now the crate to be in a knockdown condition, the bottom is first laid on the floor and the sides and back placed in the proper relative positions therewith by the insertion of the lower ends of their central slats in the sockets of the shoes e' e^3 , such sockets being of the same shape as the cross-section of said slats, preventing the twisting or lateral movement of said sides and back and being of such depth as to permit of the sides and back standing unassisted in their vertical positions at right angles with the bottom. Then the top is placed in such position as to allow the shoes e e^2 by their sockets to embrace the upper ends of the central slats of the sides and back and the rods F' at their threaded ends to pass through the openings therefor in the plates f^6 , and the nuts f^8 screwed as tightly as possible on said threaded ends. Thus far, through the medium of said rods and the nuts thereon, the central slats of the sides and back of the crate are prevented from disengagement with the sockets in the shoes, the top, bottom, sides, and back maintained in rigid relation, and the front left open for the passage of merchandise thereinto. Finally, when the crate is full, the lid C is raised, if not already so, and the front placed so as to bring the lower end of its central slat into engagement with the socket in the shoe e^4 , such front being also maintained in its vertical position thereby. Then said lid is swung back into its horizontal position, causing the shoe e^5 thereon to embrace the upper end of said central slat of the front of the crate and the threaded ends of the bolts F to pass through the openings in the plates f^5 , when the nuts f^7 are placed thereon, thus securing the front rigidly in position and the lid and top in rigid relation, completing the operation.

To remove the goods from the crate, the front is first removed in a manner the reverse of that just described and the bolts F swung into position between the slats at the front ends of the sides, as shown in Fig. 2 of the drawings, where they are out of the way and allow of an unobstructed removal of such goods. Upon the conclusion of such removal the sides, back, and top are removed by reversing the operation hereinbefore described,

and the bolts $F F'$ swung on their joints with the eyebolts $f f'$ until they lie flat on the bottom of the crate. Then the sides, back, front, and top are laid flat one upon the other on said bottom and the whole bound together in any convenient manner for reshipment or storage, in which condition the crate occupies but very little space, effecting an economy of storage-room and freightage.

10 What I claim as my invention is as follows:

1. In a crate, the combination of the top and bottom sections having shoes secured thereto provided with sockets, and the side, front, and back sections having slats with their ends secured in said sockets, substantially as specified.

2. In a crate, the combination of the top and bottom sections having shoes secured thereto provided with sockets, the side, front, and back sections having slats with their ends in said sockets, and rods secured to said top and bottom and connecting substantially as specified.

3. In a crate, the combination of the top section having a hinged portion, the bottom section, and a removable front section, said bottom section and hinged portion being provided with sockets for reception of the ends of and keeping the front section in its normal position relatively to said top and bottom sections, substantially as specified.

4. In a crate, the combination of the top section having a hinged portion, the bottom section, and a removable front section, said bottom section and hinged portion being provided with retainers for reception of the ends of the front section, and rods secured to and connecting said top and bottom sections and maintaining them in operative relation with the remaining sections, substantially as specified.

5. In a crate, the combination of the top section having a hinged portion, the latter and said section being provided with sockets, the bottom section provided with sockets, and the side, front, and back sections having slats with their ends secured in said sockets, substantially as specified.

6. In a crate, the combination of the top section having a hinged portion, the latter and said section being provided with sockets, the bottom section provided with sockets, the side, front, and back sections having slats with their ends in said sockets, and rods secured

to and connecting said top and bottom, substantially as specified.

7. In a crate, the combination of the top section having a hinged portion, the latter and said section having shoes secured thereto provided with sockets, the bottom section having similar shoes secured thereto, and the side, front, and back sections having slats with their ends secured in said sockets, substantially as specified.

8. In a crate, the combination of the top section having a hinged portion, the latter and said section having shoes secured thereto provided with sockets, the bottom section having similar shoes secured thereto, the side, front, and back sections having slats with their ends in said sockets, and rods secured to and connecting said top and bottom, substantially as specified.

9. In a crate, the combination of the top and bottom sections having shoes secured thereto provided with sockets, the side, front, and back sections having slats with their ends in said sockets, and jointed rods secured to and connecting said top and bottom, substantially as specified.

10. In a crate, the combination of the top section having a hinged portion, the latter and said section having shoes secured thereto provided with sockets, the bottom section having similar shoes secured thereto, the side, front, and back sections having slats with their ends in said sockets, and jointed rods secured to and connecting said top and bottom, substantially as specified.

11. In a crate, the combination of the top section having a hinged portion, the latter and said section having shoes provided with sockets and metallic plates secured thereto, the bottom section having similar shoes and plates secured thereto, the side, front, and back sections having slats with their ends in said sockets, eyebolts secured to the bottom plates, and rods jointed at their lower ends in said eyebolts and at their upper ends secured by nuts in the top plates, substantially as specified.

In testimony whereof I have hereunto set my hand this 9th day of March, A. D. 1891.

PHILIP HAUCK.

Witnesses:

WM. L. SOWELL,

R. DALE SPARHAWK.

It is hereby certified that in Letters Patent No. 466,234, granted December 29, 1891, upon the application of Philip Hauck, of Philadelphia, Pennsylvania, for an improvement in "Knockdown Crates," an error appears in the printed specification requiring correction, as follows: In line 22, page 2, the words "and connecting" should be stricken out and inserted after the words "secured to" in line 21, same page; and that the Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 5th day of January, A. D. 1892.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

W. E. SIMONDS,
Commissioner of Patents.