(No Model.)

# C. KLEIFGEN.

## HINGE.

No. 453,700. Patented June 9, 1891.

FIG. 1.

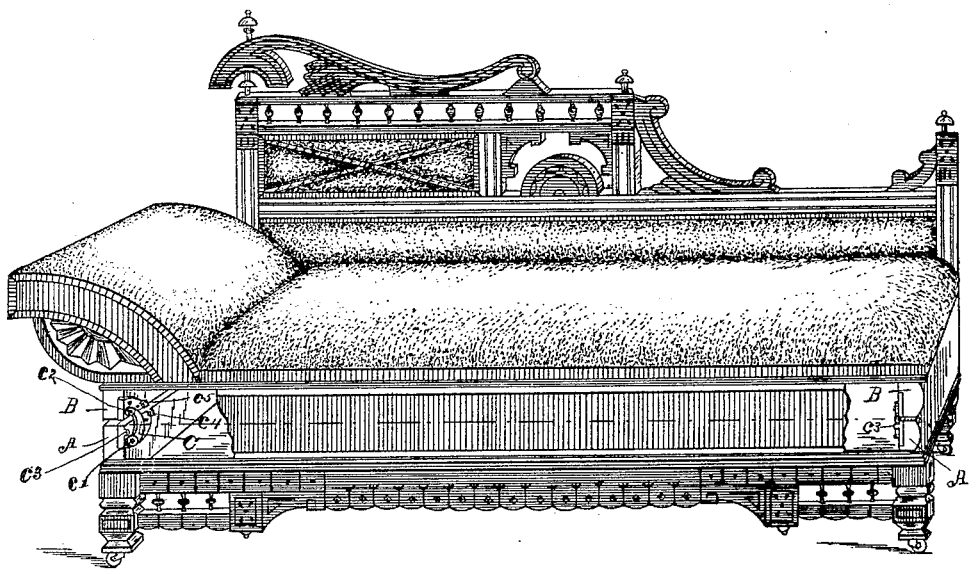



FIG. 2.

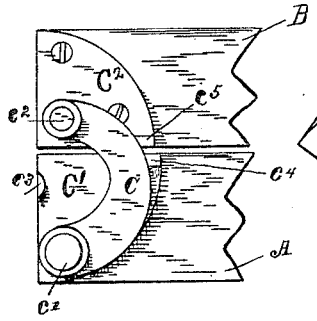



FIG. 3.

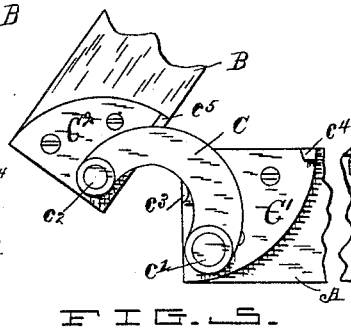



FIG. 4.

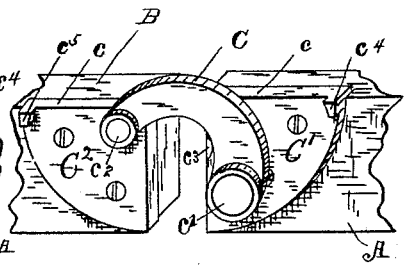
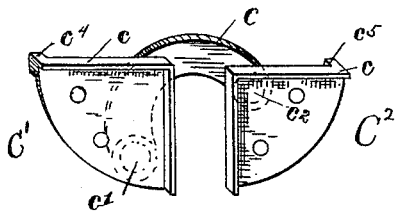



FIG. 5.




WITNESSES.

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# UNITED STATES PATENT OFFICE.

CASPER KLEIFGEN, OF SHELBYVILLE, ASSIGNOR TO GEORGE E. KRAUSE AND ANDREW KRAMER, OF INDIANAPOLIS, INDIANA.

## HINGE.

SPECIFICATION forming part of Letters Patent No. 453,700, dated June 9, 1891.

Application filed March 24, 1891. Serial No. 386,190. (No model.)

*To all whom it may concern:*

Be it known that I, CASPER KLEIFGEN, a citizen of the United States, residing at Shelbyville, in the county of Shelby and State of Indiana, have invented certain new and useful Improvements in Hinges, of which the following is a specification.

My said invention consists in an improved construction of hinge particularly adapted for use with bed-lounges or sofa-beds, which will permit the front of the structure to remain smooth when folded up, all portions of the hinge being behind the front surface of the parts of the frame when in this position, it being an improvement on that construction of hinge shown in the Letters Patent No. 444,445, granted to George E. Krause and Andrew Kramer, dated January 13, 1891.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a bed-lounge, the two parts of which are connected with my improved hinge, a portion of the upholstering being broken away at each end to show the manner in which said hinge is connected to said parts; Fig. 2, a detail elevation of the hinge connected with portions of the frame in the same position as shown in Fig. 1, but on an enlarged scale; Fig. 3, a view similar to Fig. 2, showing the relative position the hinge parts occupy when the structure is partly folded; Fig. 4, a detail perspective view showing the relative position of the parts of the hinge when the lounge is opened ready for use as a bed; and Fig. 5, a similar view from the rear side, showing the flanges on the hinge parts, which are set into the wood of the frame-work.

In said drawings, the portions marked A represent the frame-work of the lower or permanent portion of a sofa-bed or lounge; B, the frame-work of the upper or folding portion, and C, C′, and $C^2$ the three parts composing the hinge. The lounge is of any form desired, composed of two frames hinged together, the adjacent edges of which when one is folded upon the other form a continuous front surface for the structure.

The general arrangement of the hinge is the same as that shown in the Krause and Kramer patent before referred to, the parts C′ and $C^2$ being connected by the link C, each end of which is pivoted to said parts C′ and $C^2$ on the pivots $c'$ and $c^2$, respectively. The parts C′ and $C^2$ are also formed with flanges $c$ on their edges, which let into the corners of the frame to which they are attached by means of screws, which is also a similar arrangement to that shown in the patent before mentioned. The part C, however, instead of being a straight bar, as shown in said patent, is in the form of a curved link or bar, and the pivot $c'$, connecting it with the plate C′, is arranged at the lower corner of said plate, while the pivot $c^2$, connecting it with the plate $C^2$, is arranged near the upper corner of its plate. Said plate C′ is formed with a projection $c^3$ on its front edge near its upper corner, the rear face of which is preferably of a curved form, said projection being adapted to serve as a stop to limit the forward or downward motion of said link C as it turns on the pivot $c'$. Another projection $c^4$ is also formed on said plate C′ at its upper rear corner, preferably formed with a concave front face, the same being adapted to serve as a stop to limit the backward or upward motion of said link as it turns on the pivot $c'$. On the inside upper corner of the plate $C^2$ is also formed a projection $c^5$, which is adapted to strike the upper surface of said link as the folding part is turned out or folded in, and serves to turn said link on the pivot $c'$ between the stops $c^3$ and $c^4$.

In the use of the hinge of the patent above referred to it has been found impracticable to secure the goods with which the front of the frames is covered to said frames at points nearer the adjacent corners than are in line with the pivots of the hinge. Otherwise when opening up the lounge the straight part of the hinge operates to tear said goods or loosen it from the frames. By the use of the curved link this disadvantage is overcome, and it is rendered practicable to fasten the goods to the edges of the frames up to within a very short distance of the adjacent corners, which provides a much smoother front when the structure is folded.

In the use of the hinge of the above-mentioned patent it has also been found that in opening the lounge the rearwardly-extending end of the part C comes against the lug or stop with considerable force, which in some cases is liable to break the parts. By the use of the construction herein described the link is brought against the stop $c^3$ and also the stop $c^4$ in a substantially vertical position and with but little force, thus overcoming the disadvantage mentioned.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a hinge, of the three parts connected together by pivots, the intermediate parts being formed curved, appropriate stops formed on the end parts for limiting the movement of said several parts to the proper relative positions, the pivots by which said parts are connected being located in different planes, substantially as set forth.

2. In a hinge, the combination of the parts C, C′, and $C^2$, said part C being formed curved and connected to said part C′ by a pivot $c'$, located near the lower corner of said part, a stop $c^3$, located near the upper corner of said part on its front edge, and a rear stop $c^4$ on the upper edge of said part, said part C being connected to the part $C^2$ by means of the pivot $c^2$, located near the upper edge of said part, whereon is formed the stop $c^5$, substantially as set forth.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 18th day of March, A. D. 1891.

CASPER KLEIFGEN. [L. S.]

Witnesses:
E. W. BRADFORD,
FRANK W. WOOD.