H. C. KNOWLTON.

CHAIR BACKS AND SEATS.

No. 190,872. Patented May 15, 1877.

Fig. 1.

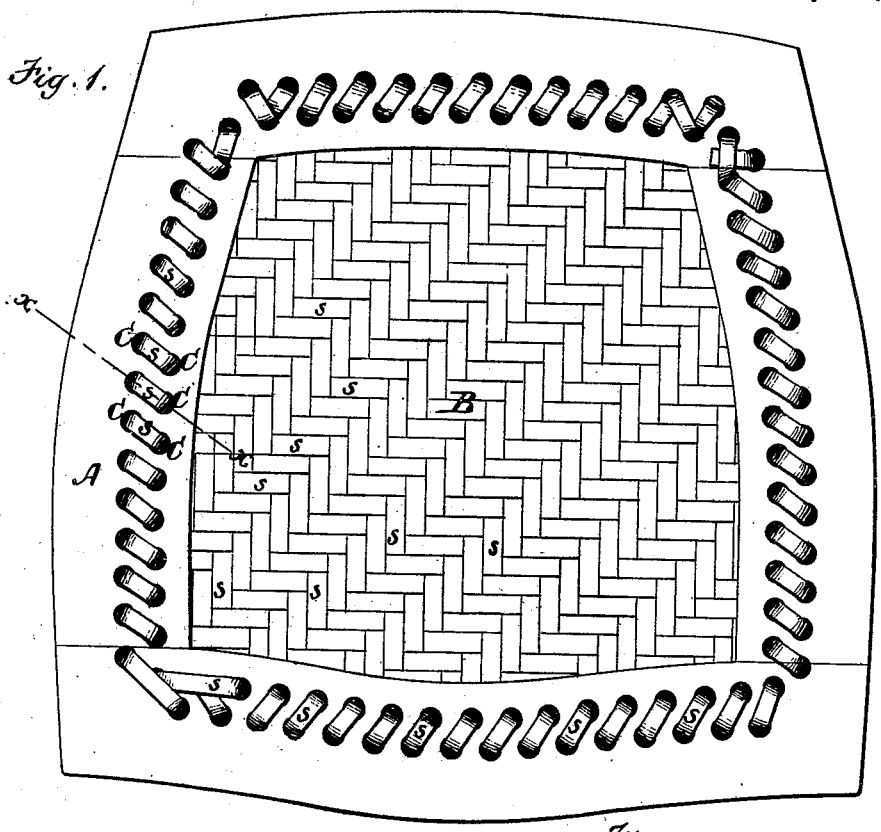


Fig. 3.

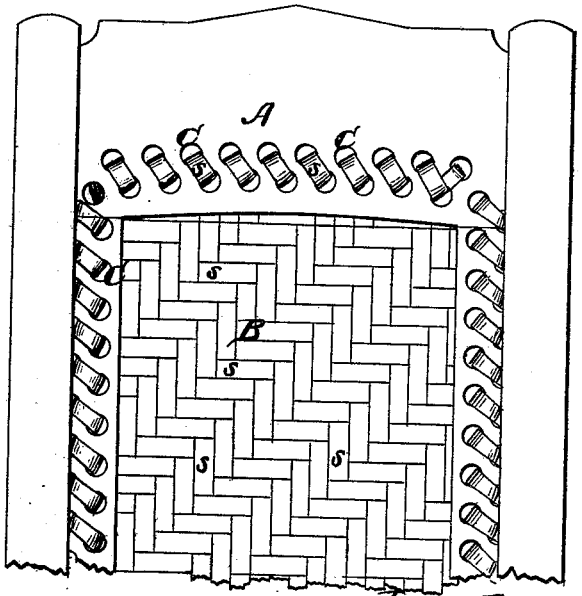


Fig. 2.

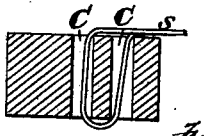


Fig. 4.

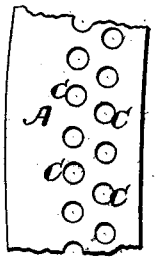
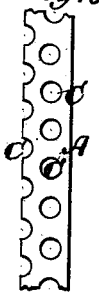


Fig. 5.



Witnesses.
Sam'l M. Barton
L. A. Toncre.

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UNITED STATES PATENT OFFICE.

HENRY C. KNOWLTON, OF GARDNER, MASSACHUSETTS.

IMPROVEMENT IN CHAIR BACKS AND SEATS.

Specification forming part of Letters Patent No. **190,872**, dated May 15, 1877; application filed October 9, 1876.

To all whom it may concern:

Be it known that I, HENRY C. KNOWLTON, of Gardner, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Chair Backs and Seats, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents a bottom plan view of a chair-seat embodying my invention. Fig. 2 represents a sectional view of the same on line *x x*, Fig. 1; Fig. 3, a view of a chair-back; and Figs. 4 and 5 are views of parts in detail.

This invention relates to that class of chair backs and seats which consist of a woven fabric composed of fibrous strands of cane or wood attached to a marginal wooden frame by passing the strands of the fabric through holes in the frame.

The object of my invention is to enable the strands to be so closely woven as to produce what is known as a "solid-woven" seat or back, without making the strand-receiving holes in the frames in such close proximity to each other as to unduly weaken the frames.

To this end the invention consists in the peculiar arrangement of holes in the marginal frames for the reception of the strands which compose the fabric, as I will now proceed to describe.

In the drawings, A represents the marginal wooden frame of a chair back or seat, and B represents the woven fabric, composed of cane, wooden, or other fibrous strands *s*, closely interwoven. C C represent the holes in the marginal frame through which the strands *s* are passed in being interwoven.

These holes are made on zigzag lines—or, in other words, in a double series—extending entirely around the frame, as shown. The holes of each series are bored vertically, or substantially parallel with each other and with the holes of the other series, and the holes of one series alternate in position with those of the other series, instead of an approximately straight or curved line, as heretofore. By this arrangement a strand, *s*, after being secured in one hole, can be carried across the frame, passed down through a second hole, up through a third, and back across the frame close beside, and parallel with, the part already carried across; then down through a fourth and up through a fifth hole and back across the frame, and so on until the fabric is completed, every strand in each series, viz., the warp and weft, being parallel with all the other strands in the same series, and close beside the adjoining strands.

It will be seen that, by making the holes C on a zigzag line, I am enabled to weave the strands into a close, and therefore strong and durable, fabric, and at the same time avoid injury to the frame by making the holes too near each other, as would be the case if the same number of holes were arranged on an approximately straight line, in which case it would be impossible to locate the holes so near each other as to enable the strands to be woven, as described, without seriously weakening the frame.

By my arrangement, however, sufficient material is left intact between the holes to give the necessary strength to the frame. I prefer to arrange the holes so that each shall be separated from those nearest to it by a space equal to its diameter.

In applying my invention to chair-backs the same arrangement of holes is employed as that already described, the only difference being in the construction of the marginal frame, which I prefer to reduce in width on the sides until the material in which the outer holes are formed is cut away to the center of the holes, as shown in Figs. 3 and 5, these cut-away sides being placed in contact with the side pieces of the chair-back.

My invention will apply also to settees and other articles of furniture besides chairs.

I claim as my invention—

A marginal frame for chair seats or backs provided with a double series of strand-receiving holes, each bored vertically, or substantially parallel each with the other, the holes of one series alternating in position with those of the other series, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. KNOWLTON.

Witnesses:

FRANCIS RICHARDSON,

LUCY A. TURNEY.