

(No Model.)

N. R. SMITH.

SLATTED STRUCTURE FOR FLOORS, STAIRS, &c.

No. 488,371.

Patented Dec. 20, 1892.

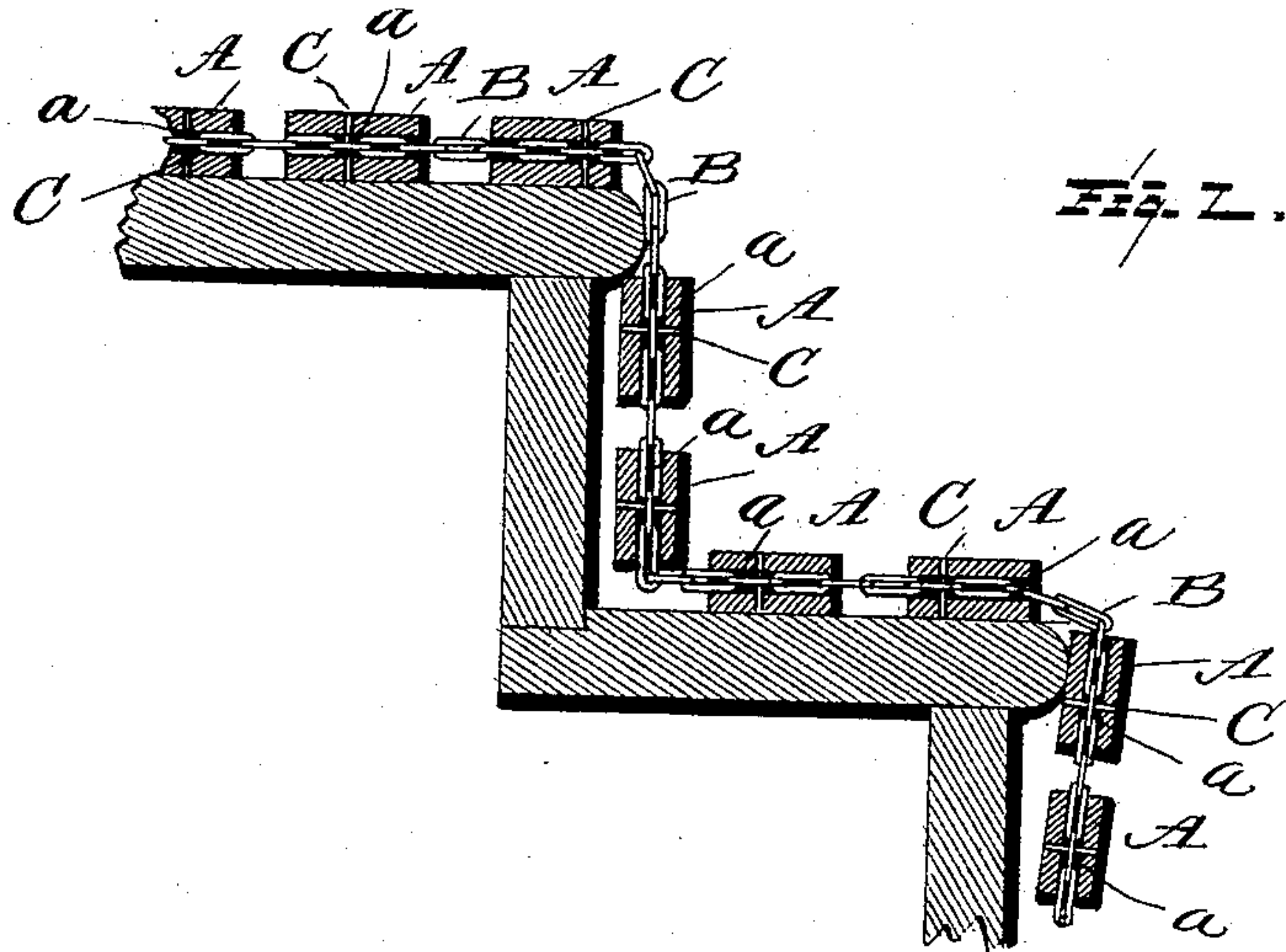


Fig. 1.

Fig. 2.

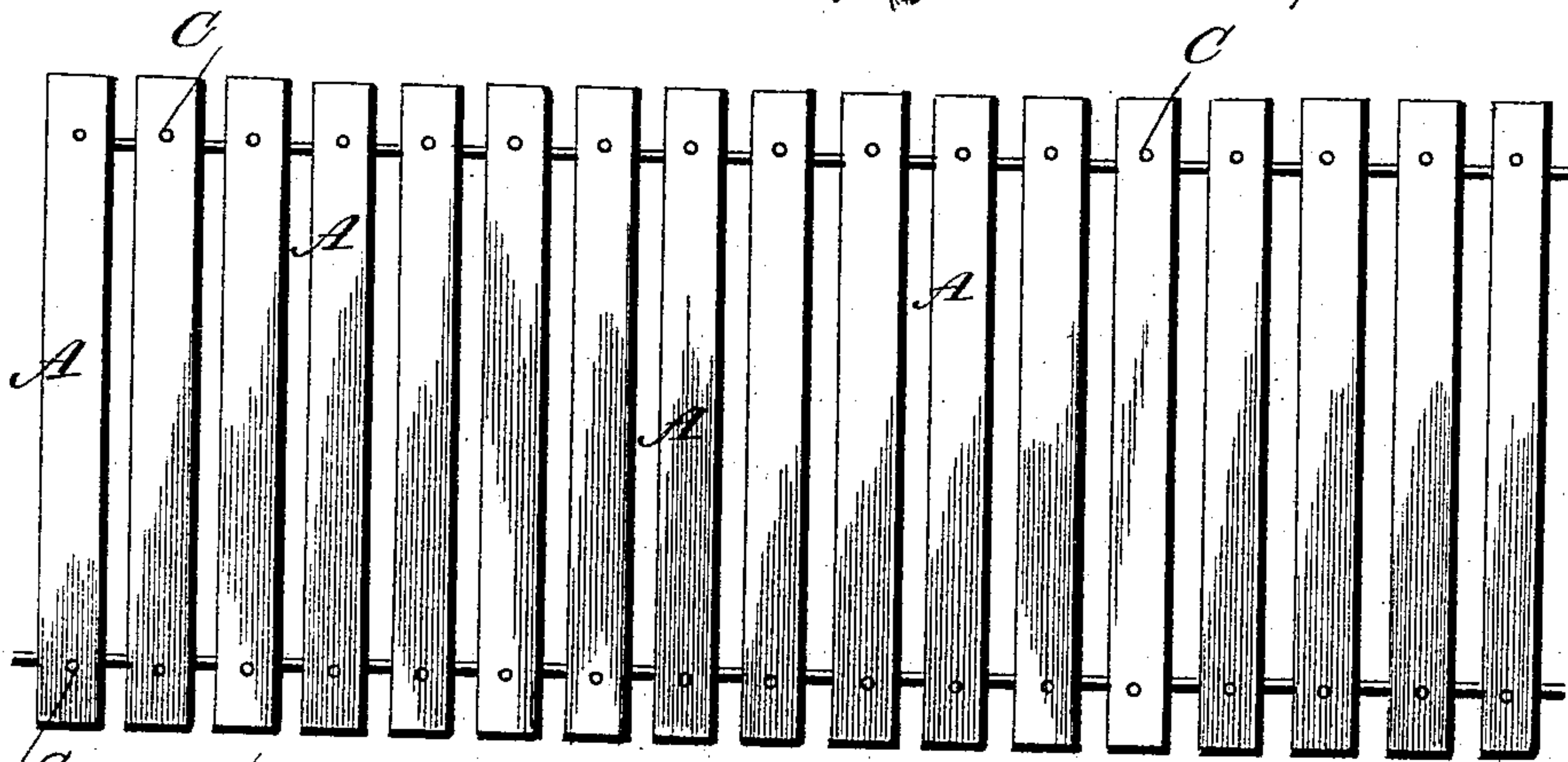


Fig. 3.

Fig. 4.

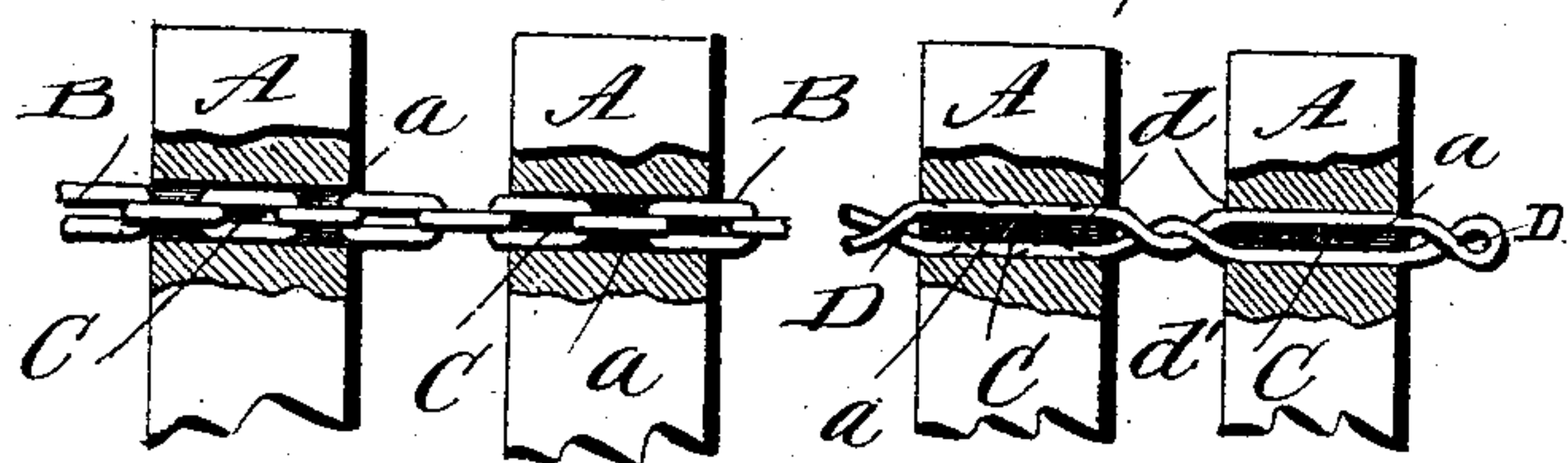


Fig. 5.

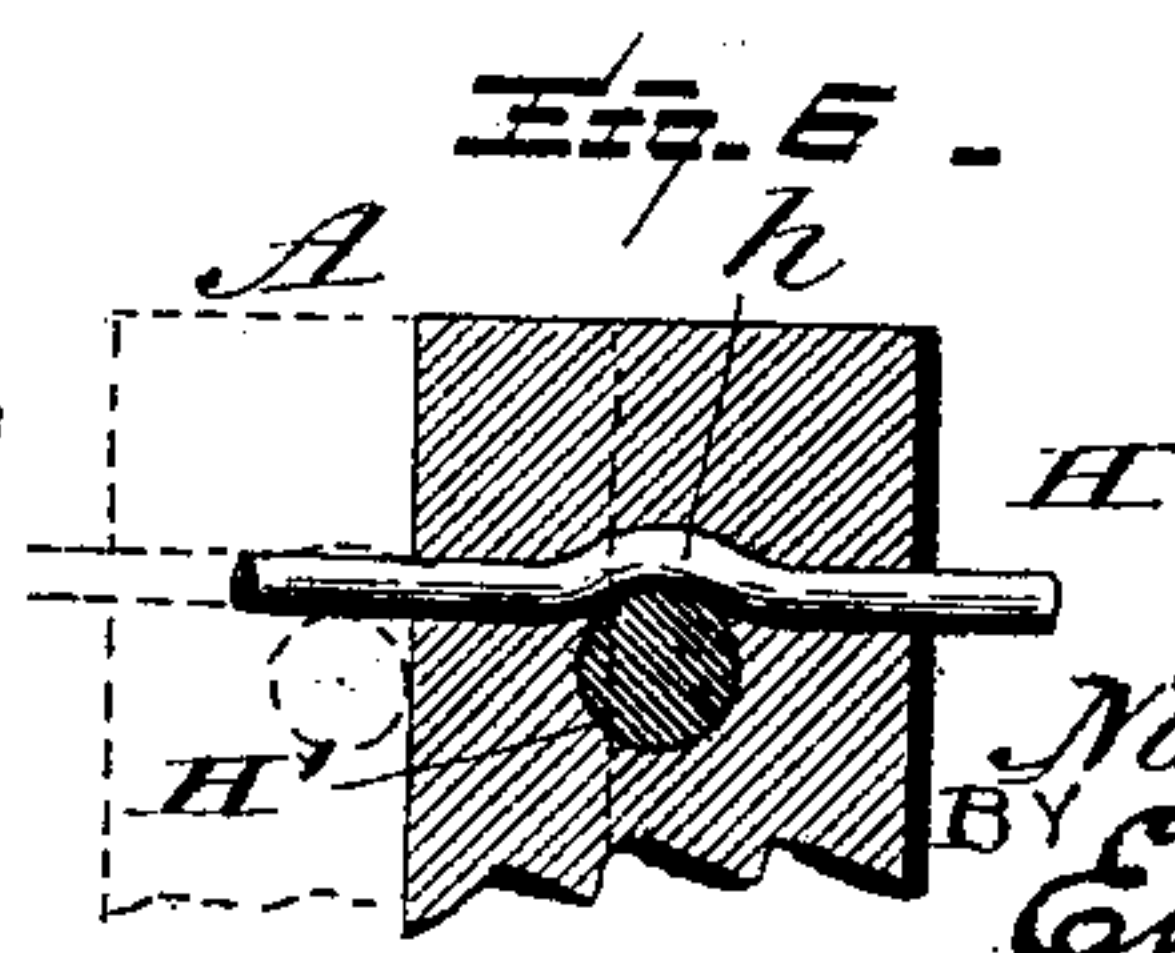
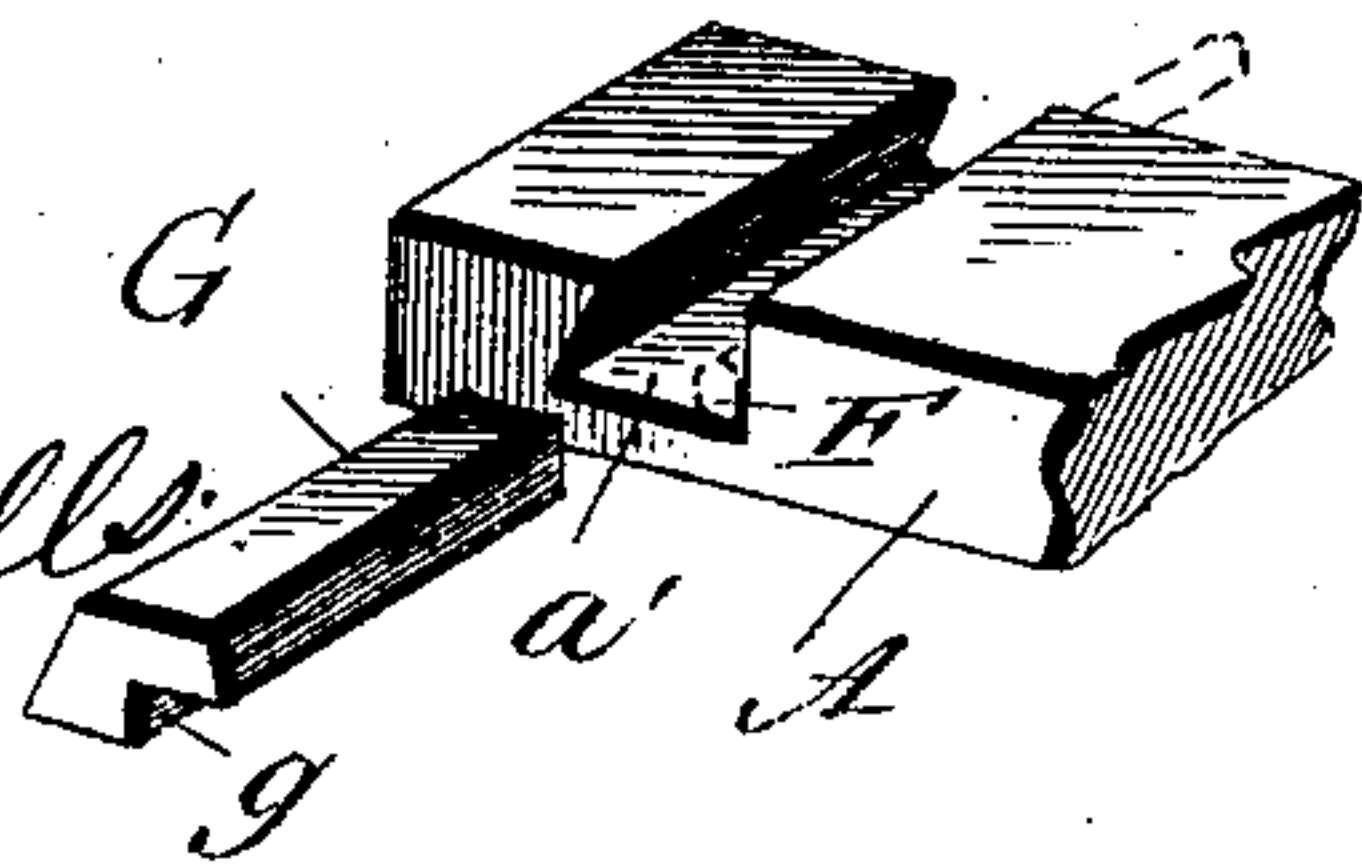


Fig. 6.

Witnesses  
L. C. Hills  
E. H. Bond



Inventor:  
Nathan R. Smith,  
BY E. B. Stocking

Attorney



# UNITED STATES PATENT OFFICE.

NATHAN R. SMITH, OF BALTIMORE, MARYLAND.

## SLATTED STRUCTURE FOR FLOORS, STAIRS, &c.

SPECIFICATION forming part of Letters Patent No. 488,371, dated December 20, 1892.

Application filed April 19, 1892. Serial No. 429,721. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN R. SMITH, a citizen of the United States, residing at the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Slatted Structures for Floors, Stairs, and the Like, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to stair coverings and other slat constructions which may be employed not only for stairs but for floor coverings, flexible doors, gates, hatches and for all purposes where it is desired to provide  
15 a covering or closure formed of slats connected with each other. Heretofore such constructions have consisted of slats of any suitable material usually of wood or metal arranged parallel with each other, spaced or  
20 in contact at their longer sides and a connecting rod, rope or wire or a series of such connecting devices.

The principal object of my invention is to provide such a slat-connecting device as will  
25 permit of an adjustment of the slats thereon with relation to their distance from each other whereby the series may be the better adapted for the numerous varied uses to which they may be applied. As an example of the beneficial results of my invention its use as a  
30 stair covering may be cited. Stairs vary in the width of the tread and the height of the riser, so that in applying a slatted covering thereto in which the slats are permanently spaced a slat of the series is liable to come in  
35 undesirable positions for instance at the front edge of a tread; this objection is entirely obviated by providing a means for varying the distance between any two slats of the series.

40 My invention therefore may be said to consist of a slatted structure each slat of which is adjustably connected with the slat-connecting device or devices. These latter may be either flexible or only bendable because in  
45 some instances the covering is applied in position for use and can remain without change of or bending the connecting device so that it may be made of material which will not permit of frequent bending. I have illustrated one simple form of adjustable connection of the slats and the connecting-device,

and one less simple form for the same purpose which has the advantage of facilitating the manufacture of the structure by machinery as it permits the laying of the connecting device within the slats instead of passing the same endwise therethrough.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined  
60 by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which  
65

Figure 1 is a sectional view showing my improved slatted construction as applied to steps or stairs. Fig. 2 is a plan view of the covering. Fig. 3 is a detail with portions broken away showing one form of slat-connecting device and adjustable connection.  
70 Fig. 4 is a like view of another form. Fig. 5 is a perspective detail showing the wedge connection. Fig. 6 is a sectional view showing still another form.  
75

Like letters of reference indicate like parts throughout the several views in which they appear.

In carrying out my invention I take a plurality of slats A of any suitable material, preferably wood, of the required dimensions and these I connect in such a manner that while they are held at the required distance apart still the distance between the slats may be varied as occasion may require.  
85

As shown in Fig. 3 the slats near their ends are provided with channels or grooves *a* in which are located or seated the slat-connecting devices, which, as shown in Figs. 1 and 3, are chains the links of which are shown as fitting quite snugly to the channels in the slats, but this is not absolutely necessary. The slats are held to these chains by means of pins C which pass through the slats and through the link of the chain at that point, being  
95 engaged with the sides of the link so as to hold the same by frictional contact to prevent movement of the slats and chains relatively to each other under ordinary circumstances, but permitting of adjustment by  
100 slipping the slats along the chains when it is desired to change their relative positions, as



for instance when using the covering upon stairs as shown in Fig. 1, where it will be necessary to vary the distance between some of the slats to bring a slat otherwise than against the edge of a tread; this will be clearly understood upon reference to Fig. 1, wherein the slats at the edge of the tread of the upper stair are separated so that the one shall lie flat upon the top of the tread and the next lower one below the bottom edge of the said tread.

In the form shown in Fig. 4 the slats are provided with the channels similar to the form shown in Fig. 3 and the slat-connecting devices instead of being ordinary link chains B as in the other form are wires D having elongated loops  $d$  through which the pins C pass and which are frictionally held as in the other instance, the wires being preferably twisted between each two slats as seen at  $d'$  in Fig. 4; instead of elongated loops the wires may be twisted to form smaller loops as shown in dotted lines in Fig. 4.

In the form shown in Fig. 5 the slats are provided with channels  $a'$  which are dovetailed and are open upon one side or face so that the slat-connecting devices may be laid therein instead of being passed therethrough as in the forms above described; in constructing the slatted structure of this form of slats the wire F is laid in the channels and the wedges G are then placed therein, the wedges being provided with a longitudinal recess or channel  $g$  for the wire and when the wedges are driven in place they bind the wire in the said groove or channel as will be readily understood from Fig. 5.

In the construction shown in Fig. 6 the slats are connected by the wire H which is passed through the slats and then pins H' are driven at right angles thereto and against the wire so as to slightly bend or distort it as seen at  $h$ ; this forms a cheap way of securing the slats to their connecting devices. In this form, in order to provide for the necessary adjustment without removal of the pin, the wire should possess a considerable degree of flexibility and the pin should be so arranged relatively thereto as to distort it just sufficiently to hold the slat frictionally in its adjusted position and yet permit of movement therealong when desired. The advantages of such a slatted structure as above described will be readily apparent; its use is almost unlimited; by making the links between the slats split any one of the slats

can be removed when desired without disturbing the others or without removing the covering from the stairs.

Means other than those described may be employed for adjustably connecting the slats. The connecting devices may be so proportioned with relation to the channels as to bind against the walls thereof with sufficient friction to hold the slats under normal conditions the predetermined distance apart, in which case the pins C may be dispensed with, or both of these features may be present in the one structure.

What I claim as new is;—

1. The combination with a slat and a slat-connecting device, of means for connecting the two and holding the same in their relative positions while permitting adjustment of the slats toward or from each other without the removal of said means, as set forth.

2. The combination with slats, of slat-connecting devices, and means held transversely in the slats and engaging said slat-connecting devices to frictionally hold the slats and devices in their relative positions while permitting adjustment thereof without removal of said means, as set forth.

3. A slatted structure, consisting of slats, slat-connecting devices seated in channels in the slats and flexibly connected between the slats, and means held in the slats and frictionally engaging the said devices to hold the slats and connecting devices at a regulated distance apart while permitting of their adjustment without removal of such means, as set forth.

4. A slatted structure consisting of slats with channels, linked slat-connecting devices seated in said channels and flexibly connecting the slats, and means passed transversely through the slats and frictionally engaged with the walls of a link within the channels to frictionally hold the slats in their adjusted positions and yet permit of their adjustment without removal of said means, as set forth.

5. The combination with a series of slats, of flexible connecting devices therefor, and wedges for adjustably securing the slats to the connecting devices, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

NATHAN R. SMITH.

Witnesses:

LEE PURCELL,

THOS. KELL BRADFORD.