No. 666,345. Patented Jan. 22, 1901.

E. GOEHST.

FLOOR.

(Application filed Oct. 3, 1900.)

(No Model.)

Fig 1.

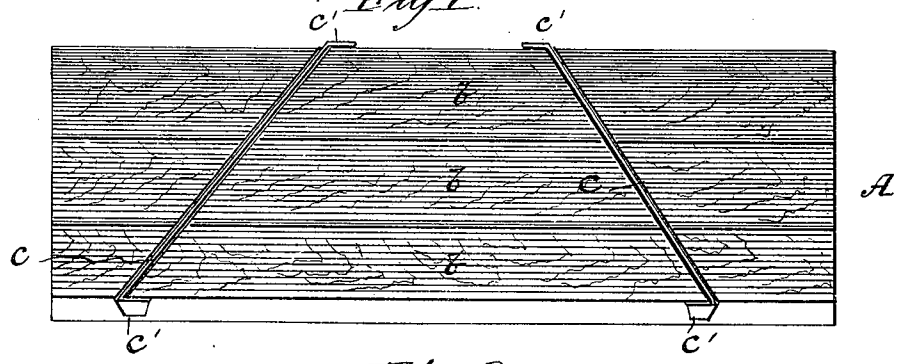

Fig 2.

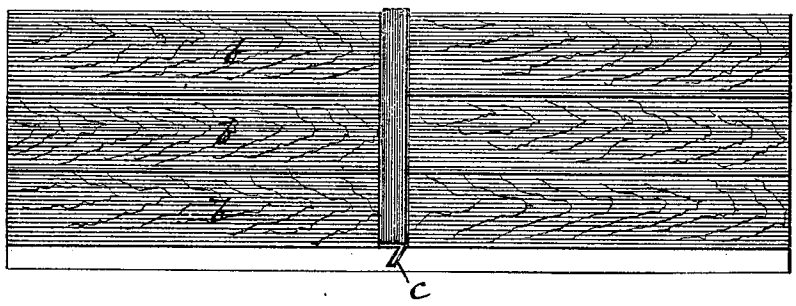

Fig 3. Fig 4 Fig 5. Fig 6.

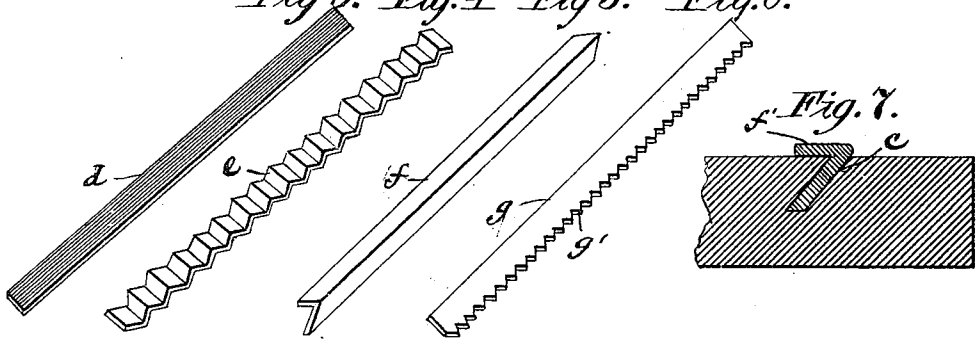

Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD GOEHST, OF CHICAGO, ILLINOIS.

FLOOR.

SPECIFICATION forming part of Letters Patent No. 666,345, dated January 22, 1901.

Application filed October 3, 1900. Serial No. 31,881. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GOEHST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Floors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the construction of wood floors, and more particularly has reference to the manufacture of borders of hard or fancy-colored woods for such floors, and embodies improvements on the invention described in my application for Letters Patent filed December 12, 1899, Serial No. 744,093.

One object of my improvements is to provide means whereby such borders can be built at a factory in the size and style desired, planed to a smooth finish, and shipped as formed or knocked down to be reassembled when placed in a floor.

A further object is to provide a construction that will be economical to manufacture, so easy and simple to put together that unskilled labor may be employed, and when finished will prevent the warping of the boards and their separation.

In the accompanying drawings, which form a part of this application, Figure 1 is a perspective view of a section of a border, showing the bottom or lower side of the boards and with one form of my invention applied thereto. Fig. 2 is a similar view showing one manner of applying my invention. Figs. 3, 4, 5, and 6 are perspective views of different shapes of my improved tie-band, which forms a part of my invention. Fig. 7 is a detail in cross-section, on an enlarged scale, of the form shown in Fig. 2.

Referring to the drawings, A represents a section of the floor-border composed of three boards *b*, set edge to edge. Extending transversely across the under or lower sides of the boards are grooves *c c*, which may be formed therein by an ordinary saw after the boards are assembled, the grooves being continuous and having their sides parallel. These grooves are formed at an inclination to the plane of the boards, as shown in Fig. 2, and are preferably arranged at opposing angles to each other, though they may be parallel and extend through the boards at right angles to the side edges thereof, as shown by the same figure.

When the grooves above described are formed, I insert therein what I term the "tie-bands," as their function is to tie or bind the boards together. These bands are shown as *d*, *e*, *f*, and *g* in Figs. 3, 4, 5, and 6, respectively. They are preferably made of thin flat strips of metal, though wood may be used. The form *d* is the basis of other forms shown, being simply a flat metal strip. This may be crimped or corrugated to give the form *e*, bent over to give the form *f*, or by having teeth formed in one edge give the construction shown at *g*. In whichever form used the strip or tie-band is inserted in the grooves *c c*, the latter being of a proper width to make a tight fit, and driven in. When in place, the projecting ends *c'* of the band are bent over, as shown in Fig. 1, thus clenching the band and effectively clamping the boards together.

For some purposes it is desirable to bend the band longitudinally to form the flange *f*, which will lie close to the under side of the boards. By crimping or corrugating the tie-band I not only stiffen it, but the projecting edges or corners so formed enter the fiber of the wood on either side of the groove and very effectively bind the boards together and prevent the band from slipping longitudinally or from falling out if unsupported on the under side.

Where the groove is of less depth than the width of the band, by using the form *g* the teeth may be forced into the board at the bottom of the groove and the band thus securely held in place.

By arranging the bands at opposing angles, as shown in Fig. 1, it will be apparent that it will be impossible to separate the boards, and I therefore prefer such arrangement. In practice these bands will be placed in opposing pairs every fourteen or sixteen inches throughout the length of the board and the ends bent up to lie parallel with the side edges of the outer boards, as shown in said Fig. 1. It will also be apparent that any tendency of the boards to warp longitudinally will be effectively resisted by the bands, as the strain would be presented to their edges instead of

flatwise, so that comparatively thin strips of metal could be utilized when placed in the grooves in the manner shown. Should I substitute a wood band for the metal, its flat faces could be corrugated similarly to the form shown in Fig. 4.

Though I have shown my invention as applied to the borders of floors, it is apparent that the same construction can be used in building an entire floor.

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

1. Floors composed of boards having grooves extending thereacross at opposing angles, and bands or strips fitting said grooves whereby the boards are bound together, as set forth.

2. Floors composed of boards having grooves extending thereacross at opposing angles, said grooves being cut at an incline to the plane of the boards, and strips or bands fitting said grooves in the manner and for the purpose set forth.

3. Floors composed of boards having grooves extending thereacross, said grooves being cut at an incline to the plane of the board, and strips or bands fitting said grooves for the purpose described.

4. Floors composed of boards having grooves extending thereacross and strips or bands having a portion fitting said grooves, and having another portion bent over to form a flange, in the manner and for the purpose set forth.

5. Floors composed of boards having grooves extending thereacross, strips or bands fitting said grooves and having their ends bent over against the edges of the outer boards, as set forth.

6. The herein-described method of building board floors or borders therefor, consisting in forming grooves transversely across the lower side of the boards, cutting said grooves at an inclination to the plane of the boards, and fitting the grooves with metallic strips, substantially in the manner and for the purpose set forth.

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

EDWARD GOEHST.

Witnesses:
F. BENJAMIN,
L. G. SNOW.