

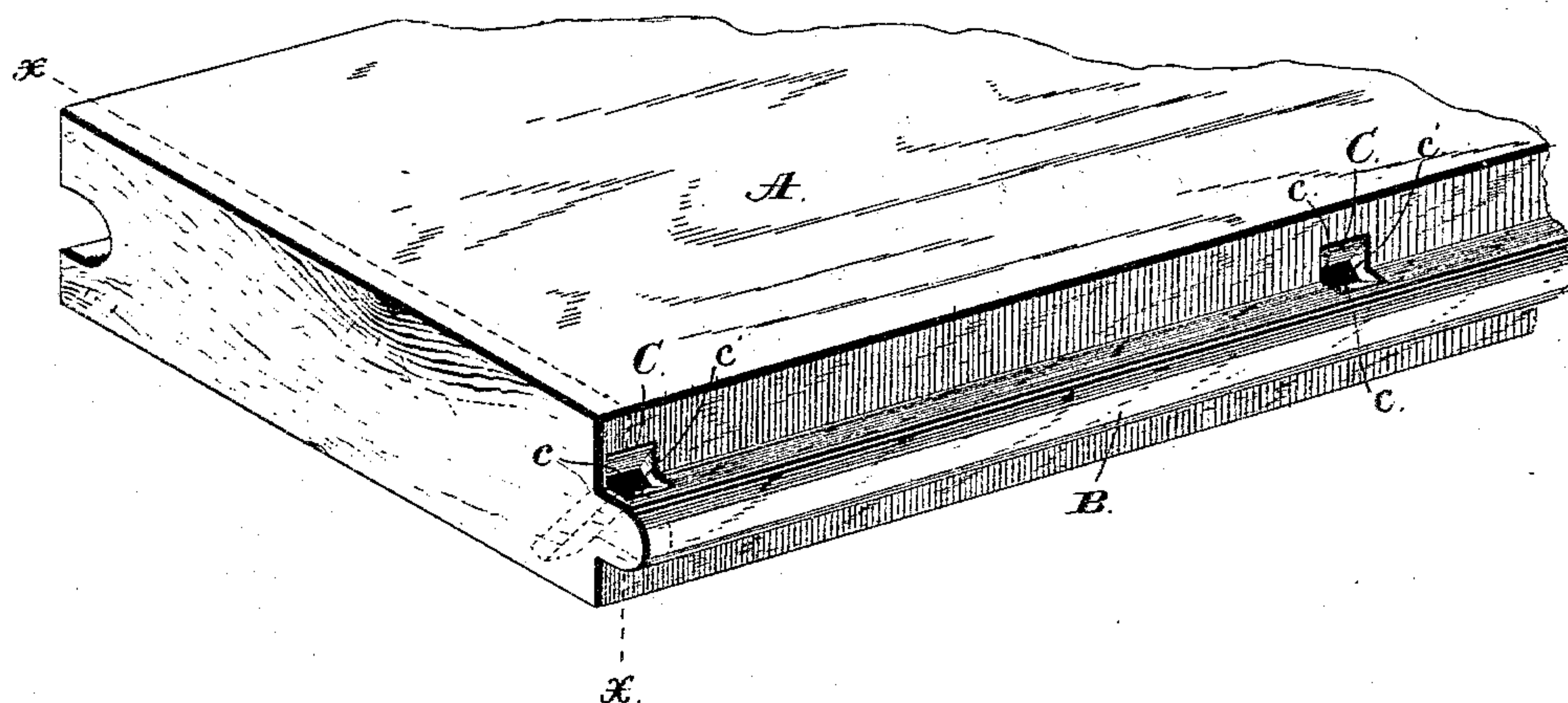
(No Model.)

A. M. SCHILLING.  
FLOORING STRIP.

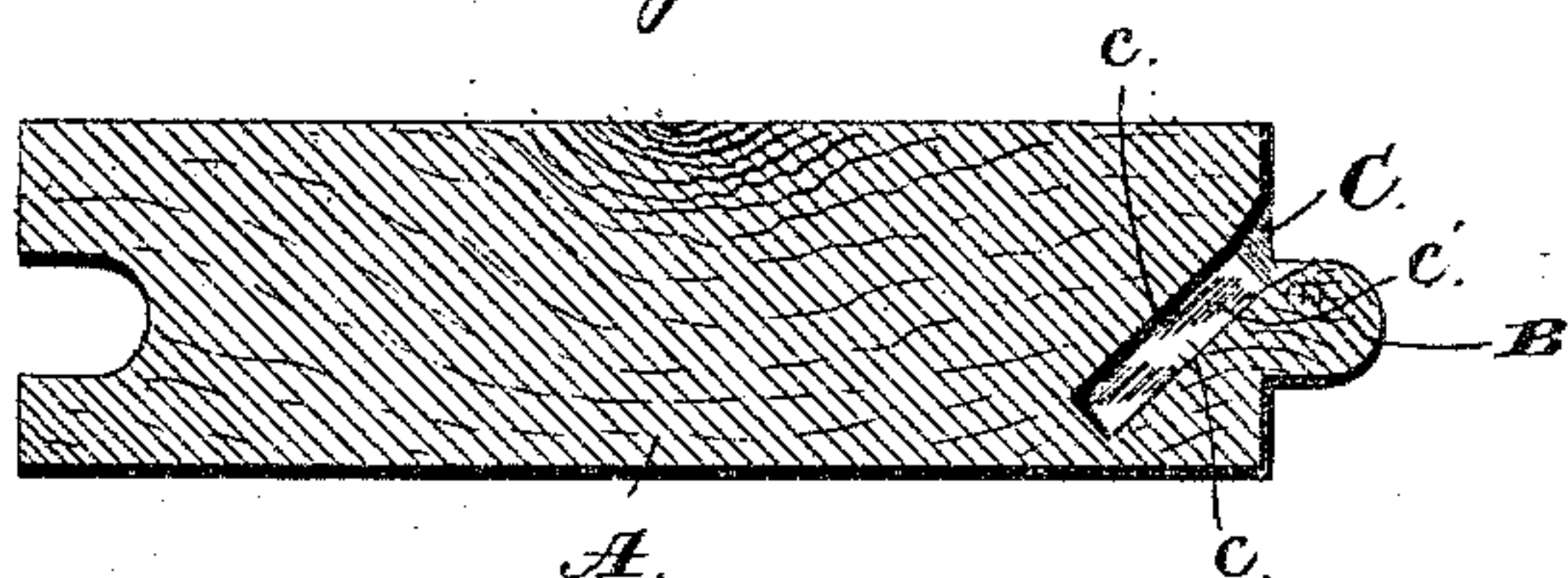
No. 411,684.

Patented Sept. 24, 1889.

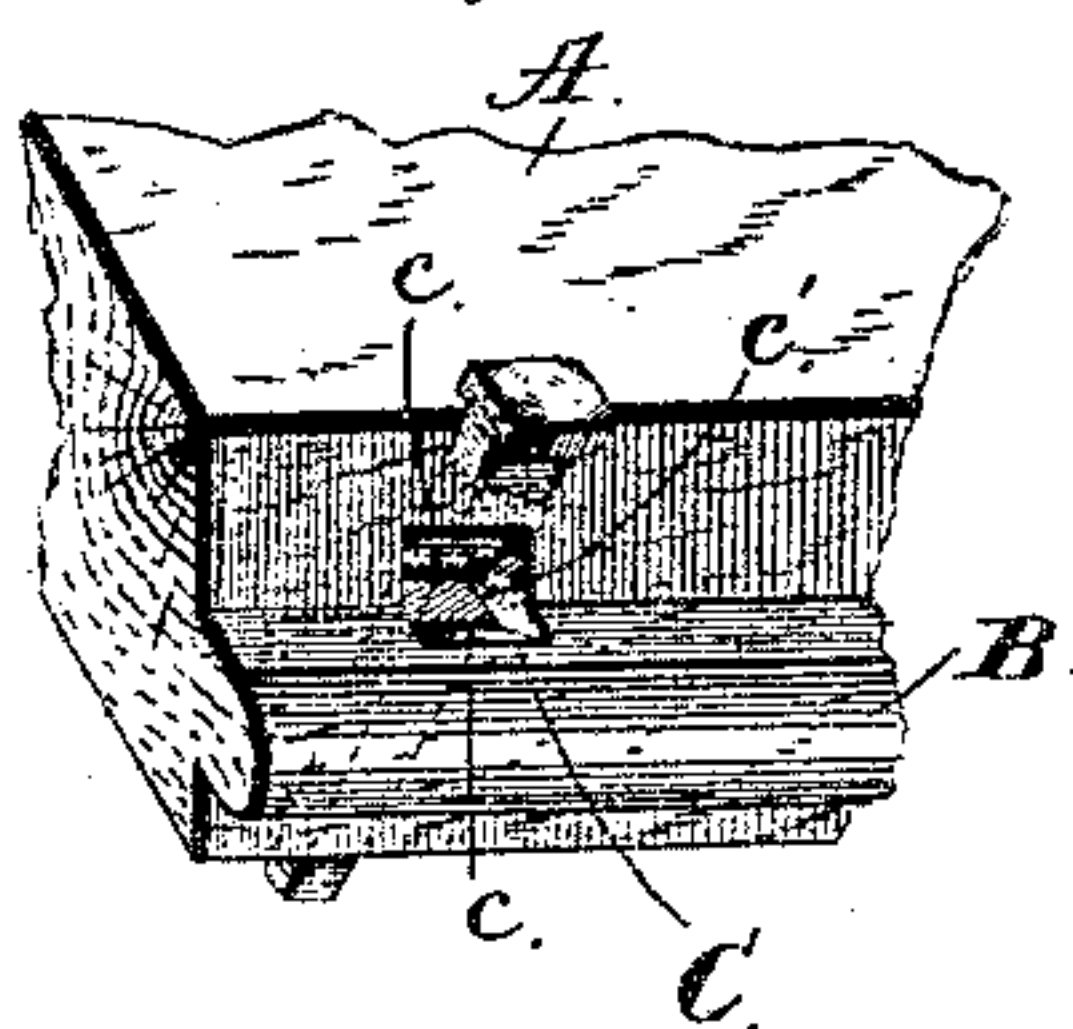
*Fig. 1.*



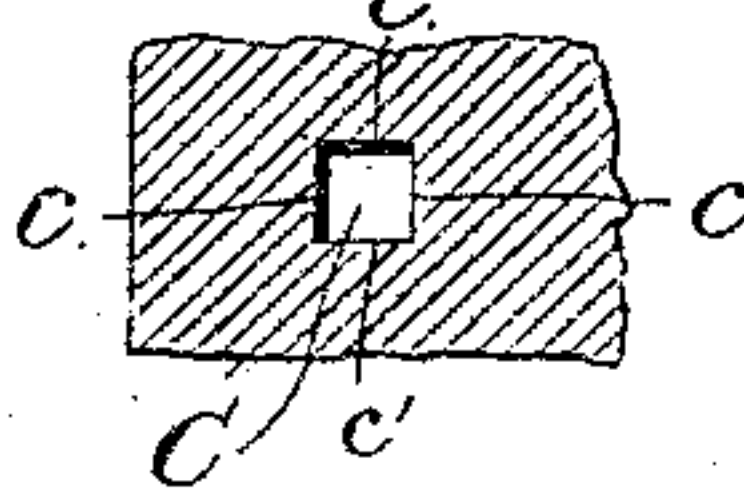
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:

Jas. E. Hutchinson  
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# UNITED STATES PATENT OFFICE.

AUGUST M. SCHILLING, OF CHICAGO, ILLINOIS.

## FLOORING-STRIP.

SPECIFICATION forming part of Letters Patent No. 411,684, dated September 24, 1889.

Application filed March 9, 1889. Serial No. 302,704. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST M. SCHILLING, of Chicago, in the county of Cook, and in the State of Illinois, have invented certain new and useful Improvements in Flooring-Strips; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows in perspective view a piece of flooring made in accordance with my invention; Fig. 2, a transverse section of the same on line *xx* of Fig. 1; Fig. 3, a detail perspective view showing a nail as partially driven home in one of the nail-holes in a piece of my flooring, and Fig. 4 a detail view showing a section on a plane cutting across one of the nail-holes at right angles to the same.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved flooring strip or plank which can be nailed and drawn to its place with ordinary flooring-nails without danger of splitting off the tongue as the nail is driven home, and which will be forced to its place with its groove embracing the tongue on the adjoining strip before the head of the nail used comes in contact with the strip.

It has been attempted heretofore to prevent the splitting off of the tongue on flooring-strips by the nails used to fasten the strips by boring or punching round holes for the reception of the nails. It has been found, however, that with a nail-hole of this shape the nail does not force the board up to place before the head of the nail comes in contact with the side of the strip and the tongue thereon. If the flooring-strip is even slightly bent or crooked, the nail-head will split off the tongue.

The drawing or forcing of the strip to place is accomplished or completed by the engagement of the nail-head with the strip or tongue as the nail is driven to the limit of its inward movement. All the stress and pressure necessary to seat the strip and straighten it if bent or crooked comes then upon the tongue and the side of the strip above the tongue where the nail-head engages. To avoid this defect in flooring as heretofore prepared for nailing and preventing the splitting off of

the tongue as the nail is driven home, I make the nail-openings of such shape and configuration that the nails force the strips home into place before the nail-heads reach the strip, and so that as the nails reach the end of their inward movement their heads can be seated, so as not to interfere with the tongue entering properly the groove of the next strip without bearing upon the tongue so as to split or bend it out of line.

With these ends in view I make my flooring-strips as shown in the drawings, in which—

A designates the body of the flooring-strip, of maple or any other desired material, and B its tongue, of the usual shape. In the strip I make the nail-receiving holes *cc*, of any desired number. Each of these holes starts, as shown, at the angle between the upper side of the tongue B and runs inward and downward at an angle, so that the nail driven into it passes diagonally downward through a portion of the strip. In cross-section the hole is rectangular, as are the usual flooring-nails. It is, however, not of the size and exact shape of the nail-shank; but its diameter in a plane at right angles to the grain of the strip is greater than the thickness of the nail, while its width in the plane of the grain is less than that of the nail. With this construction as a nail is driven down in the hole there is no injurious strip-splitting pressure on the upper and lower sides *cc* of the hole at right angles to the grain of the wood in a direction to produce splitting. When the nail is about half through its sides engage the sides *c' c'* of the hole, so that as the nail is driven farther in the board or strip will be forced home or into place without the engagement of the nail-head with it. The engagement of the nail sides with the sides *c' c'* exerts an outward pressure only in the direction of the grain of the wood, so that there is no liability of splitting. The outer end or mouth of the hole is countersunk or made flaring, so that the nail-head can be seated out of the way of the sides of the groove of the next strip without any prying or splitting action upon the tongue.

I have described the nail-holes in the strips as rectangular in cross-section. Ordinarily the rectangle for the shape of the nail-hole is a square. The ordinary flooring-strip nail is



made thicker or wider in one direction than the other, having two sides substantially parallel to each other, and the other two sides starting at a distance apart greater than that  
 5 between the parallel sides and approaching each other gradually toward the nail-point. In one direction, then, the nail is of substantially one thickness throughout, while in the other direction it has a greater thickness at  
 10 the head end, and from such end has its thickness gradually diminishing toward its point. With such a nail, if the nail-hole be made square in cross-section, with the side of the square equal to or but slightly greater than  
 15 the thickness of the nail from one of its parallel sides to the other, the nail will as it is driven home not engage the upper and lower sides of the hole, so as to give any pressure liable to split the strip or any part thereof, while its  
 20 other side will forcibly engage the hole sides, so as to get the desired drawing action, already described herein. With the nail-hole made rectangular, as described, as soon as one of the usual flooring-strip nails is started  
 25 into its hole it will be kept by the shape of the latter from turning, so as to bring any wedging action upon the upper and lower sides of the opening by the inclined sides of the nail.

30 The holes as made by me in my flooring-strips can be formed by any suitable punch or punching-machine. As the tool or machine for making them forms no part of the matter covered by the present application and can  
 35 be varied as desired without departure from my invention, I need not describe the same herein at length.

The machine as used by me in making the flooring has a punch corresponding in size  
 40 and shape with the hole to be made, a suitable bed and clamp for holding the strip while being punched, and a feeding mechanism to feed the strip a given distance after each punching operation. Such a machine, how-  
 45 ever, is not necessary to the successful production of my improved flooring-strips.

Having thus described my invention, what I claim is—

1. As an article of manufacture, an improved flooring-strip provided with one or  
 50 more nail-holes square in cross-section, each having its outer end countersunk to receive the nail-head, substantially as and for the purpose shown.

2. As an article of manufacture, an im- 55 proved flooring-strip provided with one or more nail-receiving holes inclined downward and inward, made in a plane at right angles to the grain of the strip, of a diameter equal to or greater than the thickness of a flooring- 60 strip nail, and in the direction of the grain made narrower than the broadest portion of the nail, substantially as and for the purpose described.

3. As an article of manufacture, an im- 65 proved flooring-strip having the nail-holes made rectangular in cross-section, with their diameters at right angles to the grain of the strip greater than the thickness of the ordinary form of flooring-strip nails to be used, 70 and their diameters in the direction of the grain less than the width of the broadest portion of such nails, substantially as and for the purpose specified.

4. As an improved article of manufacture, 75 a flooring-strip having one or more rectangular nail-holes for the reception of flooring-nails of the ordinary form, each starting at the angle between the upper side of the tongue and the strip side and running inward and 80 downward within the strip, and made of a diameter equal to or greater than the thickness of the nail in a direction at right angles to the grain of the strip and narrower than the widest part of the nail in the direction of 85 the grain, and having its mouth made flaring or countersunk to receive the nail-head, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I 90 have hereunto set my hand this 15th day of February, 1889.

AUGUST M. SCHILLING.

Witnesses:

ALBERT H. LARNED,  
 HENRY H. DREW.