

No. 816,522.

PATENTED MAR. 27, 1906.

G. R. WYMAN.
NAIL CAP PLATE.

APPLICATION FILED JULY 6, 1905.

Fig. 1.

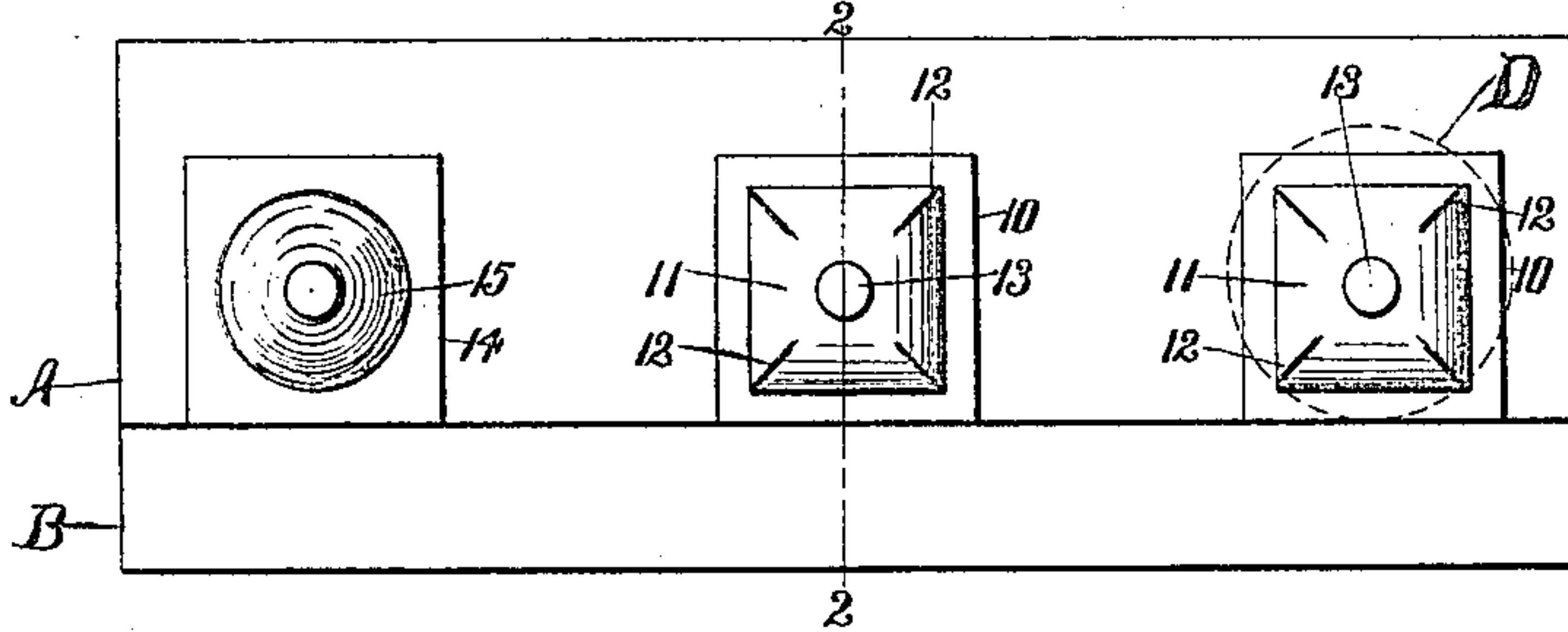


Fig. 2.

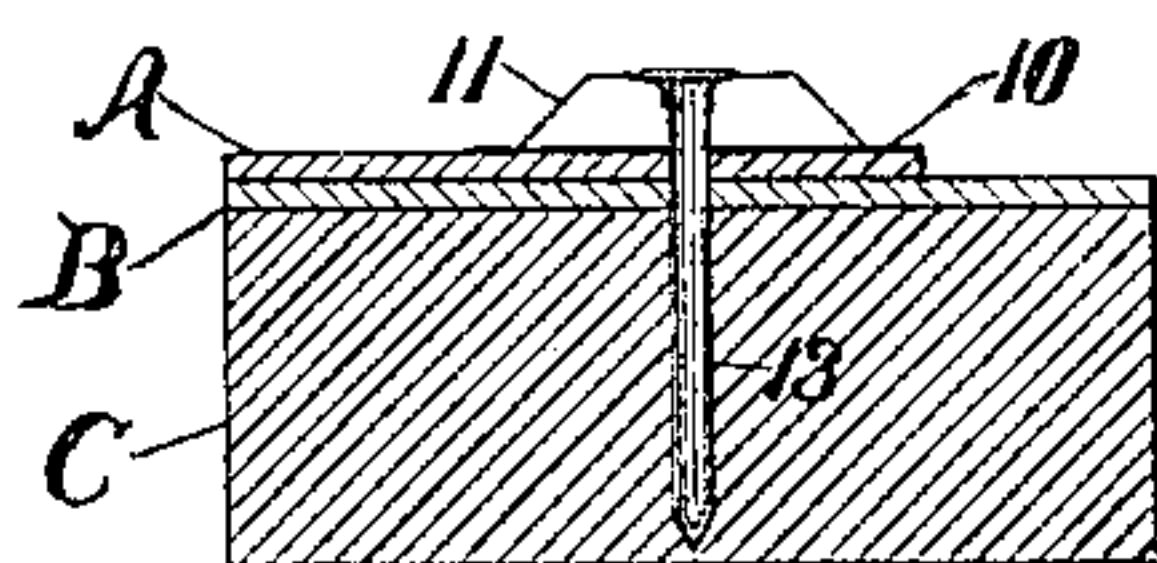


Fig. 3.

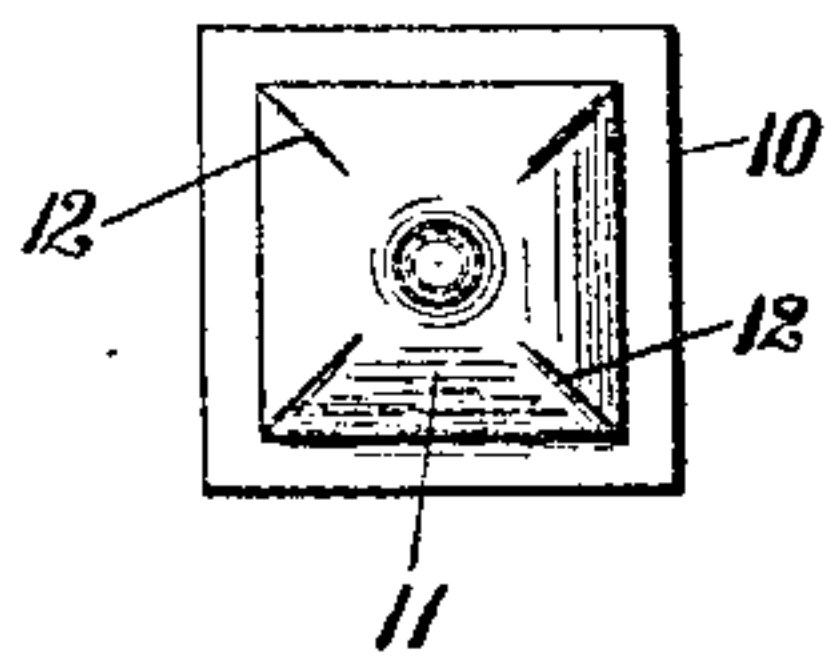


Fig. 4.

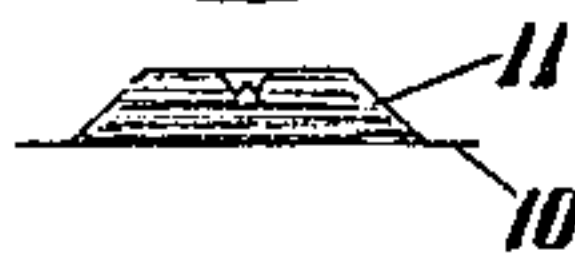


Fig. 5.

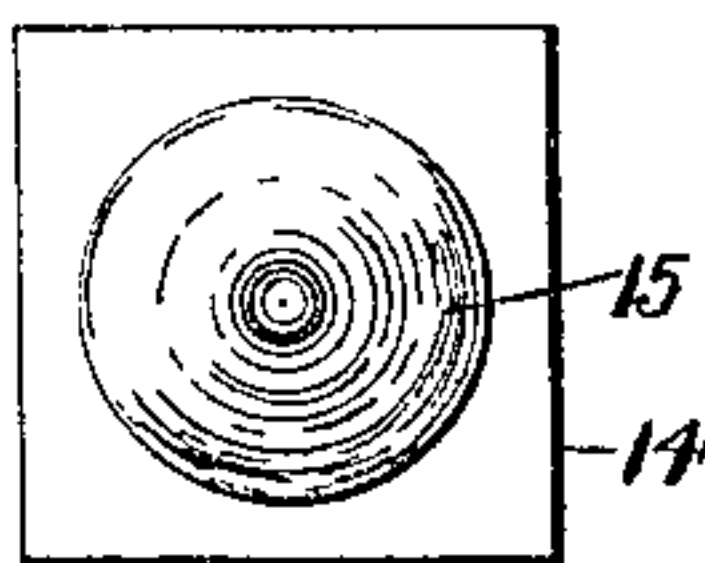
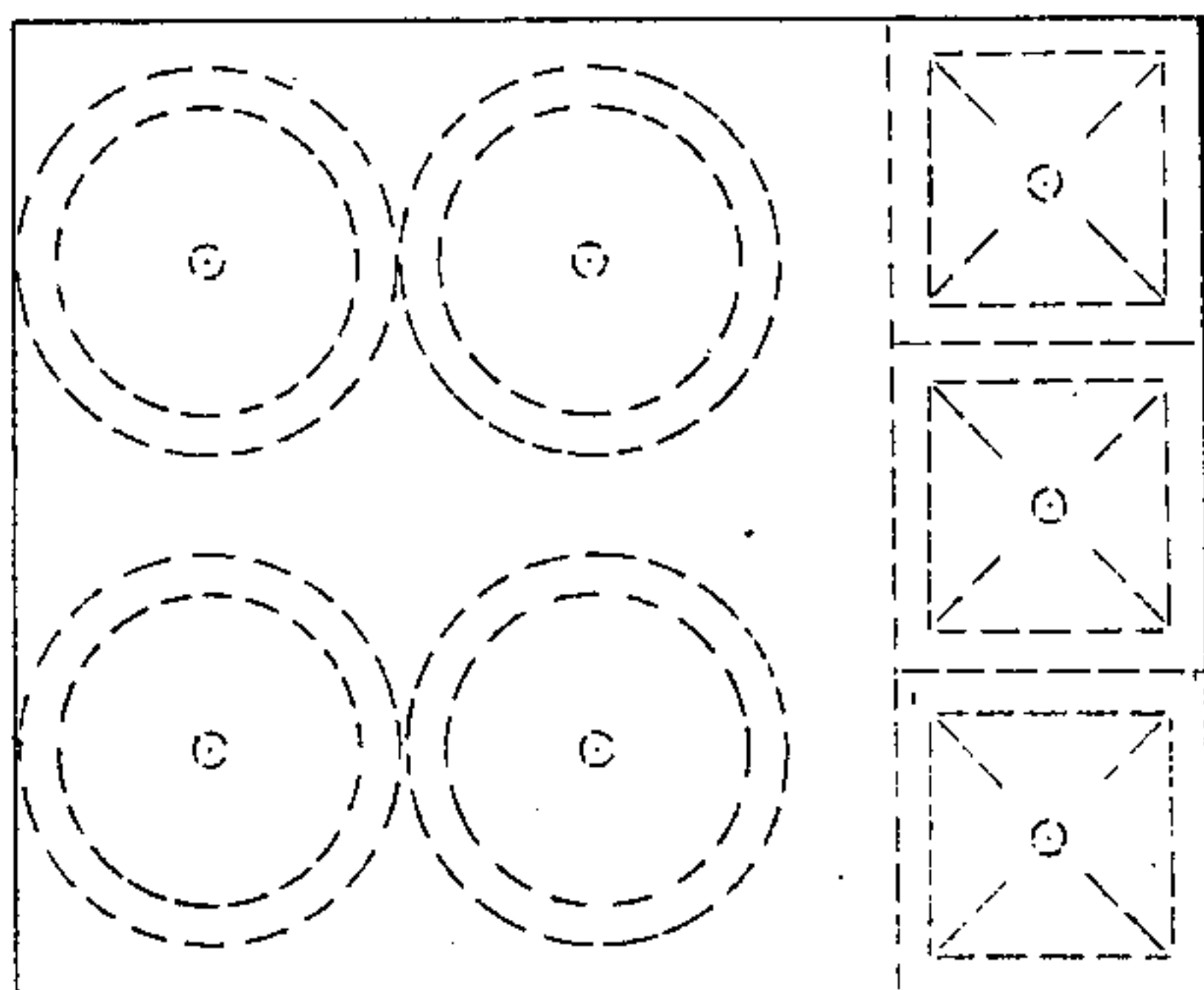


Fig. 6.



Fig. 7.



Witnesses

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NAIL CAP-PLATE.

No. 816,522.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed July 6, 1905. Serial No. 268,478.

To all whom it may concern:

Be it known that I, GEORGE R. WYMAN, of East Walpole, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Nail Cap-Plates; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in nail cap-plates or washers designed to secure an increased area of bearing on the material secured by nails.

One object of the invention is to provide a nail cap-plate which may be economically manufactured.

Another object of the invention is to so construct a nail cap-plate that increased bearing may be furnished thereby along the edge of the material which is to be secured.

Another object of the invention is to increase the strength of sheet-metal caps of this nature.

The invention consists in such novel features of construction as will hereinafter be more fully described, and pointed out in the claim.

Figure 1 represents a plan view of pieces of material secured in place by nails furnished with the improved cap-plates. Fig. 2 represents a cross-sectional view taken on line 2 2, Fig. 1. Fig. 3 represents a plan view of one of the cap-plates. Fig. 4 represents a cross-sectional view of the same. Fig. 5 represents a plan view of one of the cap-plates having a circular raised center. Fig. 6 represents a cross-sectional view of the same. Fig. 7 represents a plan view of a piece of sheet metal with two series of cap-plates, plotted thereon to indicate the economy in the use of material by the manufacture of the improved cap-plate.

Similar numerals of reference designate corresponding parts throughout.

Nail cap-plates or washers of the nature herein referred to are designed for use, as shown in Figs. 1 and 2 of the drawings, with nails having comparatively small heads to afford increased bearing on the surface of the material secured in place thereby in order to prevent the tearing of the material away from the securing-nail. These cap-plates are generally stamped from sheet metal, such

as tinned sheet-iron, the circular shape heretofore used originating from the utilization of waste material stamped out in forming larger articles having circular openings.

The use of cap-plates or washers has so increased that the supply of waste material is no longer equal to the demand, and in view of the nature of such use the question of their economical manufacture has become of great importance. In the manufacture of the circular cap-plates heretofore used a series of punches were arranged to act simultaneously on the sheet metal to cut the cap-plates from a sheet of metal and to concave them at the same time. Owing to the unequal wear of these punches, it has been necessary to removably mount the same, and as a result of this style of mounting it has been necessary to separate the punches, the distance of this separation being represented in the sheet metal by the spaces between the openings formed in said plate by the punches, this necessary separation of the punches resulting in considerable waste of the sheet metal, as is shown in the plotting of the circular disks or plates in Fig. 7 of the drawings.

In carrying this invention into practice a sheet of metal is preferably cut into strips of a width equal to that of the finished article. These strips are fed beneath a die or punch which forms a depression in the strip and cuts the strip at a suitable distance from the end to form a rectangular plate having a raised center when in its preferred position of use. By this method the entire sheet of metal may be utilized without waste, while the spread or bearing dimensions of the plates is larger than that of the circular plates. Comparison of the economy in the use of material in making the rectangular plate is offered in Fig. 7 of the drawings. As shown in the drawings, 10 represents a rectangular plate of this nature having the raised central boss 11, furnished with the ribs 12 12, extending in radial lines from the center toward the corners of the plate to strengthen the same. A central perforation is generally formed in the raised center of said plate to receive the nail 13, by which the plate is secured in place.

In Figs. 5 and 6 of the drawings I have illustrated a modified form of the improved cap-plate, in which 14 indicates the rectangular plate, and 15 the concavo-convex center thereof.

These nail cap-plates are largely used in combination with nails, as represented in Figs. 1 and 2, to secure weatherproof paper to roofs and outer walls of buildings. As this weatherproof paper has but little tensile strength, it is desirable that the cap-plate should afford as large a bearing on the paper as possible, and this is particularly important in securing the edge portions of the paper. In illustrating this use I have shown in Figs. 1 and 2 of the drawings two sheets of paper A and B secured by nails 13, furnished with these cap-plates, to the member C, and it will be seen by reference thereto that the rectangular plates afford a long bearing edge along the edge of the sheet A, by means of which such edge is pressed against the sheet B. It will also be noticed that the ribs 12 12 in their divergence from the median line of the plate (indicated by line 2 2, Fig. 1) are so spread as to exert resistance to the undue upbending of the corners of said plate, thereby securing pressure on the sheet at points comparatively widely separated. In order to draw a comparison between the

circular plates and the rectangular plates of my invention as to bearing on the sheet A, a circular plate of approximately corresponding area is indicated by dotted lines D in Fig. 1, which shows that the edge of such plate curves away from the edge of the sheet A and has but little bearing thereon, while said curved edge forms a wedge against which the paper may tear.

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

A nail cap-plate formed of sheet metal having a rectangular plain marginal bearing-surface and a rectangular raised center of less diameter than the marginal portion, the corners of said center forming strengthening-ribs.

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

GEORGE R. WYMAN.

Witnesses:

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