No. 793,123. PATENTED JUNE 27, 1905.

C. J. CARROLL.

WIRE NAIL.

APPLICATION FILED OCT. 4, 1904.

Fig. 1.

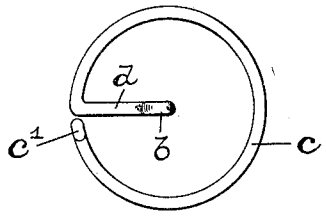



Fig. 2.

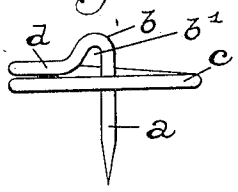



Fig. 3.

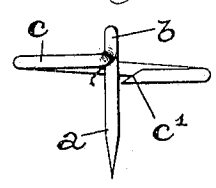



Fig. 4.

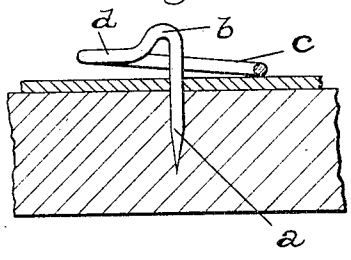



Fig. 5.

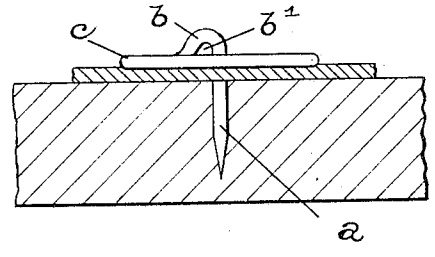
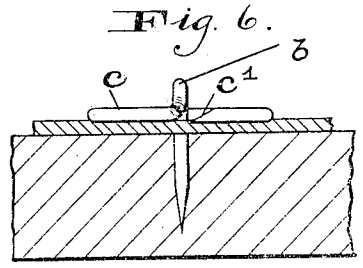



Fig. 6.




Witnesses.
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No. 793,123. Patented June 27, 1905.

# UNITED STATES PATENT OFFICE.

CHARLES J. CARROLL, OF BALTIMORE, MARYLAND.

## WIRE NAIL.

SPECIFICATION forming part of Letters Patent No. 793,123, dated June 27, 1905.

Application filed October 4, 1904. Serial No. 227,120.

*To all whom it may concern:*

Be it known that I, CHARLES J. CARROLL, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Wire Nails, of which the following is a specification.

This invention relates to an improved wire nail for securing roofing-paper or tarred paper to wood structures. Heretofore it has been the practice to secure such paper by employing tin-plate disks and tacks. The tin-plate has usually been stamped up to form a convex surface with a small hole in the center. This disk is placed on the paper with its concave side toward the paper. By thus utilizing the circular base of the disk it has a bearing over the largest possible area of the paper. The point end of the tack or nail is inserted in the said small central hole, and the tack is then driven in until its head bears on the convex part of the disk. This device holds the paper securely; but there are various practical objections to its use. There being two pieces, it cannot be handled rapidly enough, it cannot be removed and used again, and its cost is too great.

The object of my invention is to dispense with the tin-plate disk and to provide a wire nail of such shape as will serve the same functions of both the convex tin-plate disk and tack and at less cost and which can be handled and applied with greater rapidity and be withdrawn whenever desired and used again.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the wire nail. Figs. 2 and 3 are side views of the wire nail in normal positions, taken in relatively transverse directions. Fig. 4 is a section of the nail, a sheet of roofing-paper, and a piece of wood, the nail being driven only partly in. Fig. 5 shows a side view of the nail and other parts in the same relation, but here the nail has been driven entirely in. Fig. 6 is a similar view to that in Fig. 5, but differs therefrom in showing the nail at the same side seen in Fig. 3.

The wire that composes the nail is bent to form a straight tack end *a*, an arched head *b*, a circle or ring *c* around the tack end, and a radial bar *d*, connecting the said head and circle or ring. To more specifically describe it, the tack end *a* is pointed and is in the center of the circle or ring *c*, and the head *b* of the tack end, which connects with the radial bar, has a short vertical doubled back bend in the form of an arch. This short or abrupt arch projects above the radial bar and above the plane of the circle or ring. The single circle or ring *c* is concentric with respect to the tack end *a*, and normally—that is, when the nail is unattached—this ring has a spiral formation which is observable when viewing the tack end sidewise, as in Figs. 2 and 3. The radial bar *d* connects one side of the arched head with the highest part of the spiral-shaped ring, and the free extremity of the ring is the lowest part of the spiral and is beveled on top, as at *c'*, to form a sharp slightly down-pointed end. A wire nail having these features is sufficient by itself without a tin-plate disk and answers all the requirements for holding roofing or weather-excluding paper without any of the additional devices heretofore used.

The head *b* affords several advantageous results. The short or abrupt arch makes the wire firm enough to receive the blows of a hammer without being flattened or injured, and the loop *b'*, which the arch forms, remains open and stands up above the plane of the ring *c* after the tack end has been driven entirely in. This up-projecting loop serves for the reception of a suitable pronged instrument to withdraw the tack. As the free extremity of the ring is the lowest part thereof and as it has a beveled down-pointed end *c'*, it is the first part of the ring to bear on the paper when the nail is being driven, and it engages with or pricks into the paper and prevents the ring and tack end from turning or rotating. When the tack end *a* has been driven in far enough to cause the radial bar *d* to press on the paper, all parts of the ring *c* will be found bearing firmly on the paper and covers the largest possible area thereof.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

The improved wire nail having a straight tack end, *a;* a single circle or ring concentric with said tack end; and a radial bar connected with said circle or ring and having a doubled back bend forming for the tack end an arched head with an open loop which stands above the plane of said circle or ring, as set forth.

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

CHARLES J. CARROLL.

Witnesses:

HARRY L. PRICE,

EUGENE FREDERICK.