Nov. 16, 1943. A. J. GRAY 2,334,406

ROOFING AND PACKING NAIL

Filed Feb. 27, 1942

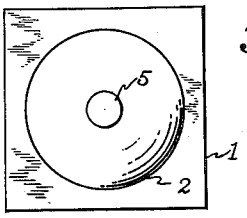


Fig. 1

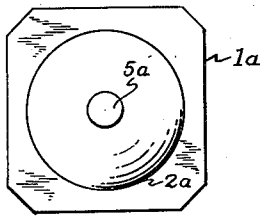


Fig. 3

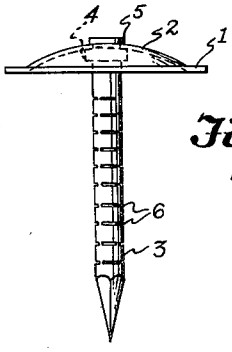


Fig. 2

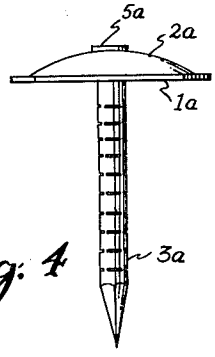


Fig. 4

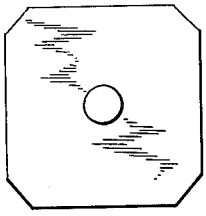


Fig. 7

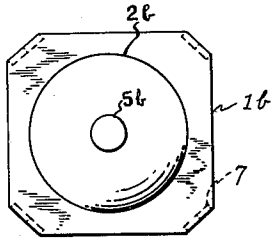


Fig. 5

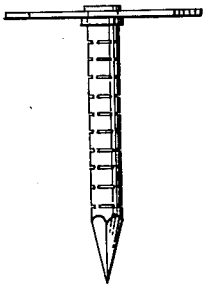


Fig. 8

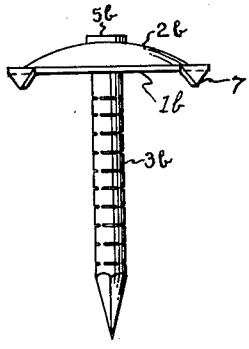


Fig. 6

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ROOFING AND PACKING NAIL

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Application February 27, 1942, Serial No. 432,661

3 Claims. (Cl. 108—33)

This invention relates to nails and particularly nails having large sheet metal heads and thus especially suited for attaching sheet material such as roofing or siding sheets to a building or other structure. The present disclosure may be considered as an improvement upon the subject matter of Patent Number 2,048,093, issued July 21, 1936, to J. C. Alpeters.

An object of the invention is to adapt sheet metal heads of nails to be stamped from strip material without appreciable waste.

Another object is to adapt marginal portions of a sheet metal nail head to form prongs which will assist materially in assuring a sealing contact of the periphery of such a head with material against which the head seats.

A further object is to adapt the sheet metal head of a nail to seat under a strong spring stress derived from a central portion of said head, while providing a considerable seating area peripherally of said head.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawing, wherein:

Fig. 1 is a top plan view of a nail, showing one of the various forms in which the improvement may be practiced.

Fig. 2 is a side elevational view of the same.

Fig. 3 is a top plan view of the nail in a slightly modified form.

Fig. 4 is a view in side elevation of the nail shown in Fig. 3.

Fig. 5 is a top plan view of the improved nail in a further modified form.

Fig. 6 is a side view of the last-mentioned nail.

Fig. 7 is a top plan view of a further modification.

Fig. 8 is a side elevational view of the nail shown in Fig. 7.

In these views, the reference character 1 designates a nail head consisting of a square sheet metal plate having a central circular portion 2 dished slightly upward. Said head is centrally perforated and inserted in the perforation is the upper end of a shank 3 formed of wire or the like. To rigidly secure the head to the shank the latter is upset below the head to form a slight annular enlargement 4, and the shank end is riveted down upon the top face of the head as indicated at 5. It is preferred to form the shank with numerous nicks 6 spaced lengthwise and also circumferentially of the shank, these serving to materially increase the resistance to escape of the shank from any member into which it is driven.

The modification disclosed by Figs. 3 and 4 differs from the construction already described only in having the corners of the head 1*a* cut away to reduce the possibility of their becoming upwardly bent and thus detracting from the sealing effect of the head.

In the further modified form of the invention shown in Figs. 5 and 6, the corners are downwardly bent to form triangular prongs 7 which will embed themselves in the material against which the head is to seat. This provision affords very positive assurance that the head will seat tightly throughout its intended seating area.

In either of its first and last described forms, the nail head may be struck from strip material with complete avoidance of waste, and such waste as is involved by the construction shown in Figs. 3 and 4 is trivial.

Several important advantages accrue from upwardly dishing the central portion of the square or substantially square head, in each of the described variations of the invention. Any likelihood of the head being bent by a hammer blow is practically eliminated due to the powerful reinforcing effect of the dished center portion. Possibility of the head being bent or the shank being tilted by careless use of a hammer is decreased by the raised portion since such portion naturally tends to receive and center the blow. Further the dished portion forms a pocket wherein enlargement 4 is located so that latter has no tendency to prevent the head seating firmly throughout its intended area. Finally, the upwardly dished portion is sufficiently flattened by the final blow or blows applied to the head to set up a considerable resilient stress urging the margin of the head tightly against the material seating such margin. It is to be noted that it would not be feasible to form prongs by turning down the corners as in Figs. 5 and 6 were it not for the vital reinforcement of the head effected by the dished portion 2*b*. In other words provision of the prongs without the reinforcement would, at least in many instances, result merely in an upward flexing or bending of the corner portions of the head upon impact of the prongs with the surface into which the nail is driven.

The construction shown in Figs. 7 and 8 is similar to that of Figs. 3 and 4 in that the corner portions of the head are clipped off, but differs from Figs. 3 and 4 in omission of the dished portion 2*a*. For certain purposes, such omission would be feasible, particularly if the

head be formed of quite stiff metal capable of resisting considerable bending stresses.

As distinguished from the nail shown by Alpeters patent hereinbefore identified, the improved nail not only eliminates waste incident to use of a circular head (the resultant saving amounting to 17% of sheet material required for the Alpeters nail), but further provides a materially increased seating area for the head, eliminating the sharp marginal edge of Alpeters together with the cutting action which such edge may exercise on relatively soft material. Any shearing effect due to driving the head of the improved nail firmly against a surface is prohibited by the considerable marginal seating area.

It will be readily appreciated that it is highly desirable to safeguard a nail serving the intended purpose from any seepage of liquid under the head.

The invention is presented as including all such modifications and changes as come within the scope of the following claims.

What I claim is:

1. A nail comprising a shank pointed at one end and a sheet metal head mounted rigidly and substantially at its center on the other end of said shank, said head having a substantially circular upwardly dished portion coaxial with said shank and being formed at its margin with a plurality of prongs bent in the direction in which the shank extends to form prongs for entering material into which the nail is driven.

2. A nail comprising a shank pointed at one end, and a substantially square sheet metal head mounted rigidly and substantially at its center on the other end of said shank, said head having a reinforced circular center portion and having its corners bent in the direction in which the shank extends to form prongs for entering material into which the nail is driven.

3. A nail comprising a shank pointed at one end and a substantially square sheet metal head mounted rigidly and substantially at its center on the other end of said shank, said head having an upwardly dished, substantially circular center portion, spaced materially inwardly from the margin of said head, and having a plane seating area between such margin and center portion, and having its corners bent in the direction in which the shank extends to form prongs for entering material into which the nail is driven.

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