May 20, 1924. 1,494,955

A. C. HAUCK

HEEL CONSTRUCTION

Filed April 19, 1920

Fig. 1.

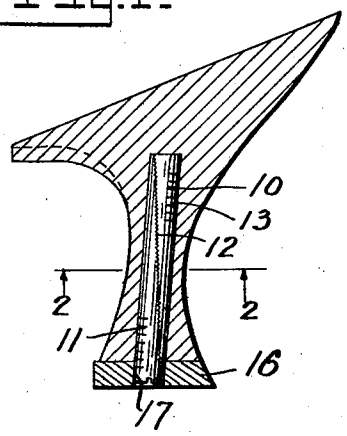


Fig. 2.

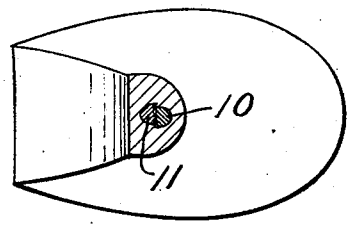


Fig. 3.

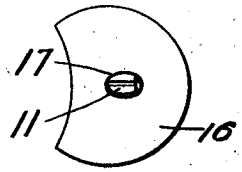


Fig. 4.

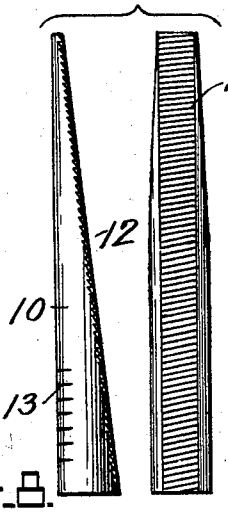


Fig. 5.

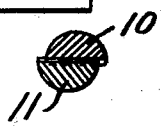


Fig. 6.

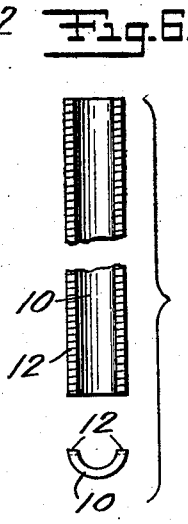


Fig. 7.

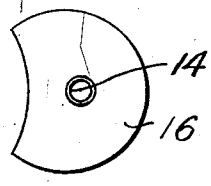
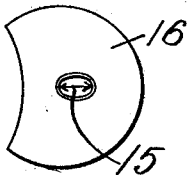


Fig. 8.



Inventor
ANDREW C. HAUCK.

By his Attorney
Philip S. McLean.

Patented May 20, 1924.

1,494,955

UNITED STATES PATENT OFFICE.

ANDREW C. HAUCK, OF BROOKLYN, NEW YORK, ASSIGNOR TO WILLIAMSBURGH WOOD HEEL COMPANY, INC., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

HEEL CONSTRUCTION.

Application filed April 19, 1920. Serial No. 374,906.

To all whom it may concern:

Be it known that I, ANDREW C. HAUCK, a citizen of the United States of America, and a resident of Brooklyn, Kings County, and State of New York, have invented certain new and useful Improvements in Heel Constructions, of which the following is a specification.

My present invention relates to the strengthening and reinforcement of wooden or leather heels.

The objects of the invention are to provide a practical and relatively simple and inexpensive reinforcement, which can be readily applied, which will compensate automatically to meet variations in the heels and which will exert a binding force on the heel material.

The invention involves a "dowel" construction which is automatically expanded as it is driven in the heel and comprises certain other novel features of construction, combinations and arrangement of parts as will be clear from the following specification.

In the drawing accompanying and forming a part of this specification, I have illustrated the invention embodied in different practical forms, but wish it understood that it is capable of further modification without departure from the true spirit and scope of the invention.

In the drawing referred to:

Figure 1 is a vertical sectional view of a wood heel, showing the dowel applied thereto.

Figure 2 is a transverse sectional view of the same on substantially the plane of line 2—2 of Figure 1.

Figure 3 is a bottom plan view of the heel.

Figure 4 is an enlargement of one of the dowel pins, showing the same in side and front elevation.

Figure 5 is an enlarged cross sectional view illustrating the "offsetting" feature.

Figure 6 is a detail of a hollow form of dowel piece, showing the same in front and end views.

Figures 7 and 8 are detail views of a tubular form of expansible dowel.

In the first form of the invention illustrated, the expanding action is obtained by making the dowel in two reversely arranged wedge parts 10 and 11, having inclined engaging faces, as shown, which preferably, are toothed, as indicated at 12, to cause the two parts to interlock and "hold", as they are driven.

These dowels may be made of metal or of hickory or other sufficiently "hard" wood, or of hard fibre or the like and they may be made of solid material, as shown in Figures 1 to 5, or of tubular or hollow form, as shown in Figure 6.

In use, the dowels are usually applied by first entering one of the wedge parts, (10 in the illustration), blunt end first, in the hole provided therefor in the heel and then driving in the other member of the pair, over the inclined face of the first member. This gradually expands the dowel and as fast as it expands, it is held against contraction or retractive movement, by the progressive interlocking of the teeth on the two parts and the frictional engagement with the walls of the bore in which it is seated, the latter being aided, if found desirous, by roughening or serrating the outer sides of the dowel parts, as indicated at 13.

To further affix the dowel in the heel, I may incline the interlocking teeth of the two parts, as shown in Figure 4 so as to cause the two parts to "offset" laterally, as they are driven, as appears in Figures 2 and 5. This offsetting causes each piece of the dowel to "bite" sidewise into the heel, more firmly anchoring it and in the case of the heel breaking, preventing the broken piece of the heel from twisting on the dowel. The edges of the pieces, where they offset, may be left relatively sharp, as shown, so that they will readily bite into the material.

If desired, when setting the dowels, glue or other adhesive may be used, but this is usually unnecessary as the expansion is ordinarily sufficient to permanently interlock the dowel in the heel.

The dowels are usually so placed that the expansion will be in line with the grain of the wood or other heel material, so as to avoid "splitting" the heel. Thus, in Figure 2, it will be noted that the plane of expansion is longitudinally of the heel so that the expansion will result in a stretching of the fibres, without materially separating or spreading them. The more or less oval cross section produced by the expanding of the dowel also is a material aid in preventing a broken portion of a heel from twisting loose.

Another method of expanding and inter-

locking the dowel in a heel is illustrated in Figures 7 and 8, in which case the dowel consists of a piece of tubing 14, driven into a bore in the heel and then expanded, as shown at 15, as by means of a suitable expanding tool forced into the same.

The top lift of the heel, which I have indicated at 16, may be secured over the end of the dowel, as by brads or screws, or it may be partly secured by leaving the dowel with a projecting outer end portion, over which the top lift is engaged, as shown at 17, and which projecting lift-securing portion may be made to resemble the usual screw head.

As a further possible modification, the dowel may be made of square or other angular cross section. This offers greater resistance to twisting strains than the somewhat angular or more or less sharp cornered elliptical form produced by the expansion in Figures 1 and 2. In such a case, a special drill for producing a square or angular hole would be employed for forming the seat for the dowel.

What I claim is:

1. The combination, of a dowel consisting of two members having a wedging engagement one with the other and cooperating teeth on the meeting faces of said wedge members for holding the same in expanded relation, said teeth being inclined to the transverse plane of the dowel to effect the offsetting of one member with respect to the other.

2. The combination, of a dowel consisting of engaging members provided with teeth on the meeting faces thereof inclined to the transverse plane of the dowel to cause the members to offset laterally with respect to each other.

3. The combination, of a dowel consisting of engaging members provided with teeth on the meeting faces thereof inclined to the transverse plane of the dowel to cause the members to offset laterally with respect to each other, said offsetting members having relatively sharp edges to bite into the material in which the dowel is embedded.

4. The combination, of a compound dowel seated in a bore and comprising overlapping members fitting the walls of the bore and having engaging teeth on the meeting faces thereof automatically interlocking to hold said members seated in the bore, said teeth being inclined to the longitudinal axis of the members to automatically offset one member with respect to the other.

5. An expansible dowel for wood heels or the like comprising cooperating headless wedge members having ratchet teeth on the meeting faces thereof inclined to transverse planes of the dowel to produce a lateral offsetting of the wedge parts as they are driven one over the other.

In witness whereof, I have hereunto set my hand this 16 day of April, 1920.

ANDREW C. HAUCK.

Witness:

PETER TOTANS.