April 16, 1946. G. J. SODERBERG 2,398,603

FASTENER

Filed April 18, 1945

Fig. 3

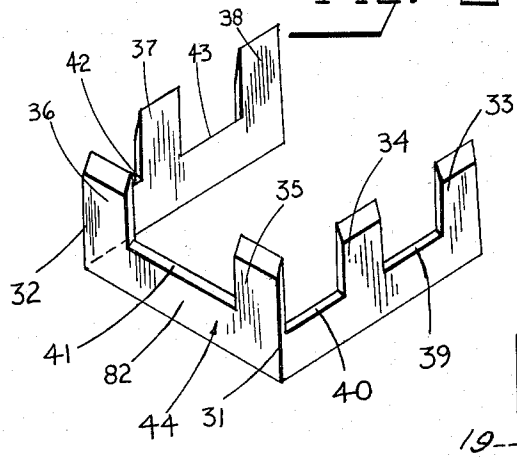


Fig. 2

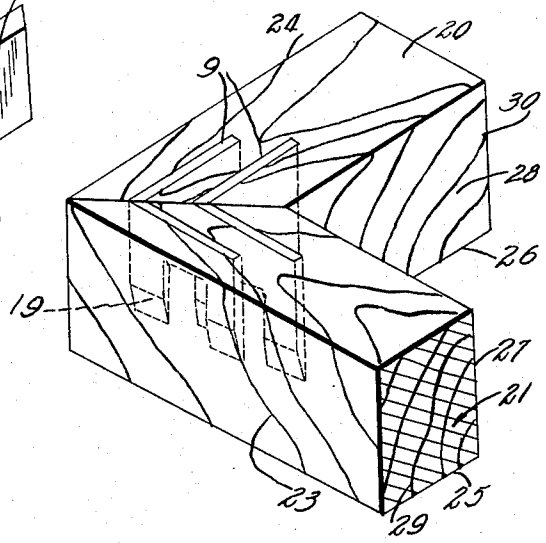


Fig. 1

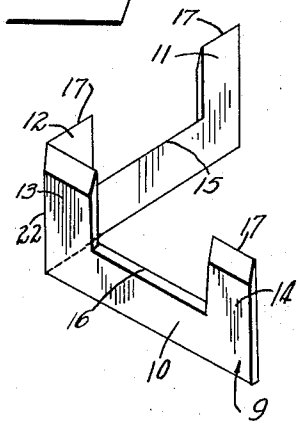
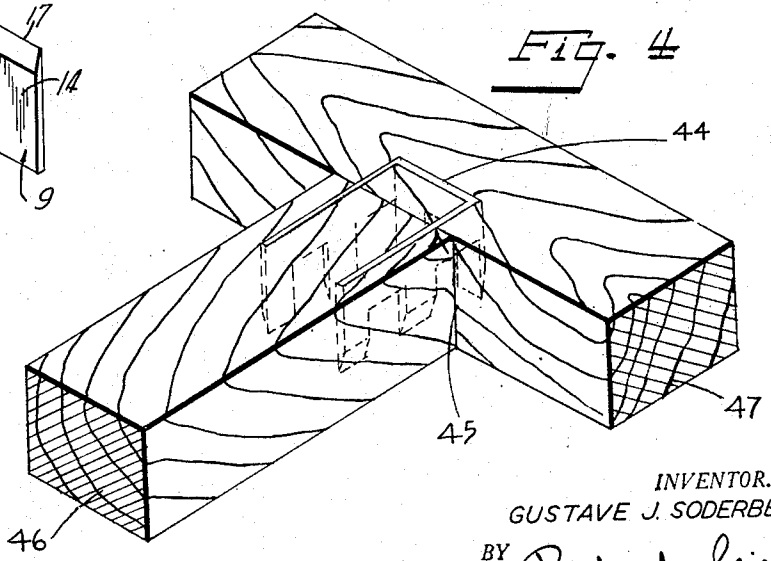


Fig. 4



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Patented Apr. 16, 1946 2,398,603

UNITED STATES PATENT OFFICE

2,398,603

FASTENER

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Application April 18, 1945, Serial No. 589,047

2 Claims. (Cl. 85—49)

This invention relates to nails and staples employed in carpentry and other similar types of assembled constructions, and refers more particularly to specially shaped metal staples for clamping securely joints of wood or other porous or fibrous materials.

When a wood joint is held by wooden pegs and glue, the assembled object acquires with time and wear a tendency to loosen and become dislocated. In other cases the use of nails or screws is either impractical or uneconomical due to cost of materials and the additional labor.

One type of wood joint fastener now available has a corrugated shape intended to prevent slipping or pulling apart of the adjoining wood pieces but it was found that these fasteners were not suited for permanently solid assemblies because the joint is weakened by the cutting of the wood fibers by the corrugations.

Therefore, an object of the present invention is to provide an improved joining staple designed to be hammered in across a joint without weakening the wood structure at this joint.

Another object is to provide a simple inexpensive staple intended for assembling wood joints more efficiently than by the use of nails and adhesives.

A further object is the provision of a staple which is so constructed that it will hold a joint securely and without interfering with the planing of the joint as a whole.

Yet another object is the provision of fasteners having knife edged sharp joints which make possible an easy driving into fibrous materials, thus reducing breakage and splitting.

Still another object is the provision of a staple which is so constructed that it will follow the grain of the wood throughout its length, after having been driven into a wooden joint.

Other objects of the present invention will become apparent in the course of the following specification.

In accomplishing the objects of the present invention it was found advisable to provide staples adapted to extend across the joints and having the form of L- or U-shaped strips with a plurality of sharp teeth dependent therefrom. Preferably, the teeth have a wide cutting edge similar to a spade.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawing showing, by way of example, preferred embodiments of the inventive idea.

In the drawing:

Figure 1 is a perspective view of a staple constructed in accordance with the present invention.

Figure 2 illustrates the manner in which staples of the type shown in Figure 1 may be embedded in a mitre or L-shaped joint.

Figure 3 shows a U-shaped staple provided with wide teeth.

Figure 4 illustrates a T-shaped joint held by a staple shown in Figure 3.

The angular staple 9 shown in Figures 1 and 2 includes a body 10 bent at a right angle and carrying dependent teeth 11, 12, 13 and 14. The teeth 11 to 14 have wide cutting edges 17 which act as sharp spade edges when the staple is driven into a body.

Sharp eddges 15 and 16 extend between the teeth 11 and 12, and 13 and 14, respectively.

A wooden mitre joint shown in Figure 2 may consist of pieces 20 and 21 which extend at right angles to each other and which contact each other along a surface 19. Any suitable number of staples 9 may be driven into the joint to hold together the pieces 20 and 21.

The staples may be hammered into the joint in a position in which the edge 22 between the two sides of a staple will be located within the contacting surface 19, so that the staples will extend symmetrically and uniformly on both sides of the surface 19. Then each of the staples 9 will extend along the grain of the wood throughout its length.

It is apparent that the staples 9 will firmly hold the joint without weakening its cross-section and that the staples will not interfere with any planing or polishing of the surfaces 23, 24, 25, 26, 27, 28, 29 or 30 of the joint.

Figure 3 shows a staple for joining T-shaped pieces. The staple 44 consists of a body 82 bent twice at 31 and 32 to form two right angles and carrying dependent teeth 33, 34, 35, 36, 37, 38 and a number of wide cutting edges 39, 40, 41, 42, 43 in a lower portion of this body intermediate the above mentioned teeth. The utilization of this staple is shown in Figure 4 wherein staple 44 is hammered in across joint 45 thus fastening piece 46 to transverse piece 47.

The present invention thus provides a simple and inexpensive means to join rapidly and firmly pieces of wood or similar materials without excessively weakening the structure of the material near the assembled joint. The described staples do not interfere with the planing or polishing of the joint and always extend in the direction of the grain of the wood.

In the making of these staples it was found that relatively soft sheet iron was a suitable ma-

terial for most joining purposes, and that an increased binding effect was obtained by employing several staples across one joint as shown in Figure 2.

Tempering the stamped out staples for increasing their hardness and rigidity was found desirable for fastening large heavy pieces of harder materials.

It is apparent that the above examples have been given solely by way of illustration and not by way of limitation and that the illustrations shown above are capable of wide variations and modifications within the scope of the present invention. All of such variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. A joining staple, comprising a metal body having at least two portions extending at right angles to each other and at least two teeth carried upon each of said portions, each of said teeth consisting of a flat substantially rectangular body having a cutting edge extending substantially parallel to its body portion, the cutting edges of all of said teeth being located in one plane, each of said portions having another cutting edge extending between the teeth of that portion, the second mentioned cutting edges being also located in one plane.

2. A joining staple, comprising a metal body having a middle portion and two end portions extending at right angles to said middle portion, and at least two teeth carried upon each of said portions, each of said teeth consisting of a flat substantially rectangular body having a cutting edge extending substantially parallel to its body portion, the cutting edges of all of said teeth being located in one plane, said body having cutting edges extending between said teeth and located in one plane.

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