E. L. WALKER.

WELDING.

APPLICATION FILED JUNE 17, 1914.

1,132,989.

Patented Mar. 23, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

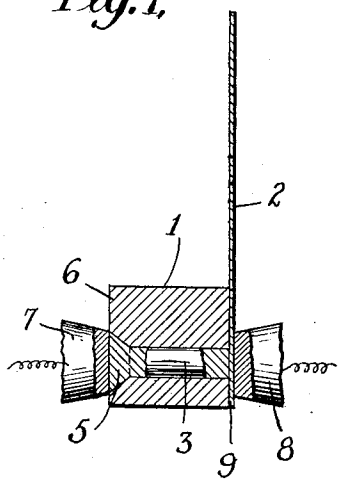
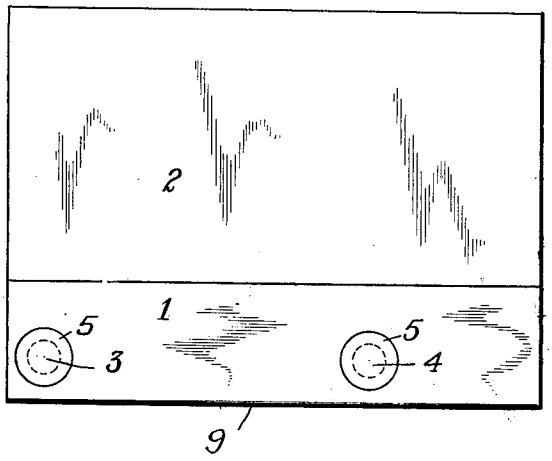


Fig. 2.



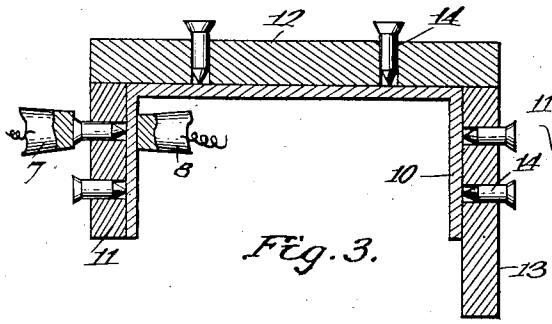


Fig. 3.

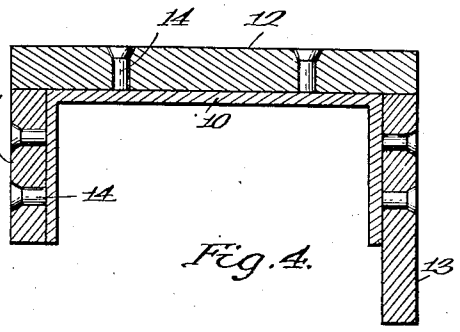


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 4,

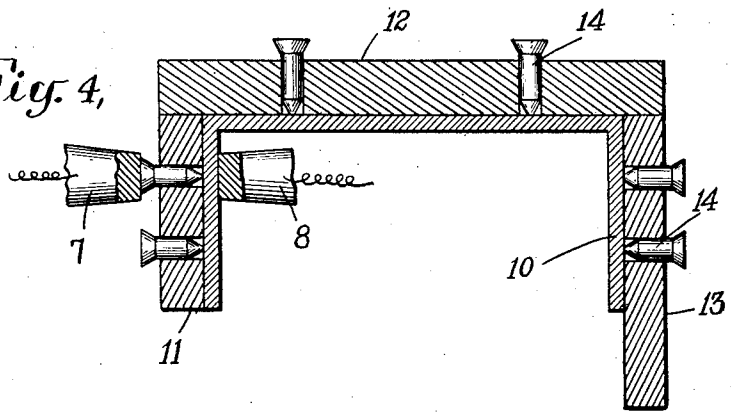
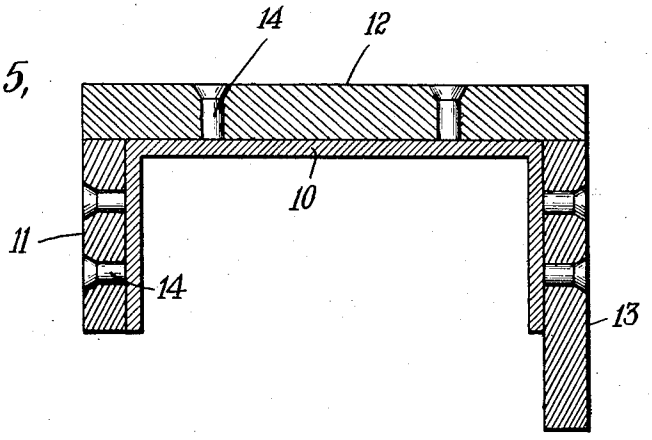


Fig. 5,



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EMERY L. WALKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HALE AND KILBURN COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF DELAWARE.

WELDING.

1,132,989. Specification of Letters Patent. Patented Mar. 23, 1915.

Application filed June 17, 1914. Serial No. 845,549.

To all whom it may concern:

Be it known that I, EMERY L. WALKER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Welding, of which the following is a specification.

My invention relates to improvements in the art of welding and is particularly directed to the production of an improved process whereby a metallic plate may have a wooden strip, or other strip of non-conducting material firmly secured thereto.

The objects of my invention are to devise improved processes for producing these results, my invention also comprising the articles made by such processes as new articles of manufacture.

I have found it advisable in some situations to secure to the edge or other portion of a metallic plate a strip of wood or other non-vibratory or vibration deadening material. For example, in the construction of automobile bodies, upholstery is provided on the inner side of the car and secured to the upper edge of the metallic plate on the outer side of the car in such a manner as to leave space for a pocket between the upholstery and the body of the car. By my invention, I may secure a wooden strip to the inner side of the metallic plates referred to adjacent the upper edge, this wooden strip serving as a tacking strip to which the upholstery is secured, space thus being left between the upholstery and the metallic plate for the pocket referred to. The wooden strip also serves to deaden or absorb the vibrations of the metallic plate, to lessen the unpleasant vibration received by an occupant of the car when resting the hand upon the side of the car during its operation.

Among the uses to which my invention may be put, may be mentioned the application of wood grounds to steel bucks in building construction, and similar uses.

By my invention, when a wooden strip is secured to a metallic plate by passing conducting metallic rods through the strip and welding the ends of the same to the plate, the strip and plate are closely and effectively secured together, while at the same time the outer surface of the plate is unmarred and there is no metal to be removed by a subsequent operation as there would be if the wooden strip were secured to the plate by rivets, the ends of which must subsequently be filed down flush with the outer surface of the plate. When a single metallic plate has one or more wooden members secured to a face thereof in accordance with my invention, the metallic rods passing through the wooden strip are provided with upset or enlarged ends seated in countersunk recesses within the surface of the wooden strip opposite to that which is in contact with the metallic plate.

In order that my invention may be more clearly understood, attention is hereby directed to the accompanying drawings forming part of this specification and illustrating the manner in which the same may be carried out.

In the drawings, Figure 1 represents a cross-section through a single plate and wooden strip being secured thereto, the terminals of the welding machine being shown in position, Fig. 2 is a plan view of the same, Fig. 3 represents a cross-section through a portion of a steel buck to which wood grounds are to be applied, before welding, and Fig. 4 is a similar cross-section of the construction after the welding is accomplished.

Referring to the drawings, the wooden strip 1 is shown in Figs. 1 and 2 as being secured to metallic plate 2 adjacent to one edge thereof. In this relation it may be useful, among other purposes, as stated, to serve as a hand rail and tacking strip to which upholstery may be secured in the construction of automobile bodies. Metallic rods 3 and 4 are driven through strip 1 or extended through previously drilled holes in the strip 1, these rods having heads 5, 5 seated in countersunk recesses formed in the face 6 of the strip 1. Rods 3, 4 are preferably of a length slightly greater than the thickness of the strip 1, although they may be of a length substantially equal to the thickness of the strip. The strip is positioned against the plate 2 with the ends of the metallic rods in contact with the surface of the plate, and the contacts 7 and 8 of a suitable welding machine are brought in contact under sufficient pressure with one end of one of the rods, and the plate 2 in line with, or adjacent to, the opposite end of the rod. Upon the passage of a suitable welding current through the rod and the

plate, the latter are welded firmly together, the operation being repeated as many times as there are rods extending through the strip. The heads 5 of the rods will tightly fit within their recesses and hold the strip closely positioned against the plate. Usually, as stated, the rods 3 and 4 are somewhat longer than the thickness of the strip 1, and have conically-pointed ends, or ends of reduced cross-section, which are placed in contact with plate 2. When the welding current and pressure are applied, the pointed ends of the rods melt sufficiently to flow under the pressure to fill the ends of the openings through which the rods extend in strip 1, the heads 5 of the rods then seating tightly within their recesses in face 6 of strip 1. If desired, a metallic trim rail for an automobile body may at the same operation, be welded to the outer face of plate 2, extending opposite the ends of rods 3 and 4, and about the edge of plate 2.

In Figs. 3 and 4, I have shown the application of wood grounds to steel bucks, as used in building construction. The buck 10 has wooden strips 11, 12 and 13 secured to its outer surfaces by metallic studs 14, having, preferably, conically pointed ends and enlarged heads as shown. When welding current is applied through terminals 7 and 8 the metallic rods are welded firmly to the buck, the heads of the rods then filling the countersunk recesses in the outer faces of the wooden strips, and the metal at the pointed ends of the rods filling the openings through which the rods extend, as shown in Fig. 4.

Having now particularly described my invention, what I claim and desire to protect by Letters Patent is as follows:—

1. The process of welding consisting in passing through a member of non-conducting, vibration-absorbing material, which it is desired to secure to a metallic plate, conducting metallic rods of a length at least equal to the thickness of said member, placing said member in contact with a metallic plate with the adjacent ends of said rods in contact with the plate, and passing a welding current through said plate and rods while pressing the same together with a suitable welding pressure, to weld the same together, reduce the length of said rods, and secure said member to said plate with a close contact, substantially as set forth.

2. The process of welding consisting in passing through a wooden strip conducting metallic rods of a length somewhat greater than the thickness of said strip, said rods having enlarged portions at one end adapted to be seated, when the welding is complete, in corresponding recesses in one face of said strip, placing said strip in contact with a metallic plate with the ends opposite to said enlarged ends of the said rods in contact with the plate and passing a welding current through said plate and rods while pressing the same together with a suitable welding pressure, to weld the same together and cause close contact of said plate and wooden strip, substantially as set forth.

3. As a new article of manufacture, a metallic plate having a wooden strip secured thereto by metallic rods extending through said strip, said rods being welded at one end to the plate, and having enlarged portions at their opposite ends seated in corresponding recesses in the strip on the face thereof opposite to said plate, said plate and strip being in close contact, substantially as set forth.

This specification signed and witnessed this 15th day of June, 1914.

EMERY L. WALKER.

Witnesses:
JOHN B. KILBURN,
WM. J. EARNSHAW.

Corrections in Letters Patent No. 1,132,989.

It is hereby certified that in Letters Patent No. 1,132,989, granted March 23, 1915, upon the application of Emery L. Walker, of Philadelphia, Pennsylvania, for an improvement in "Welding," errors appear in the drawings requiring correction as follows: Cancel Sheet 2; in the heading of the remaining sheet strike out the words and numerals "2 Sheets—Sheet 1" and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of April, A. D., 1915.

[SEAL.]

J. T. NEWTON,

Acting Commissioner of Patents.