

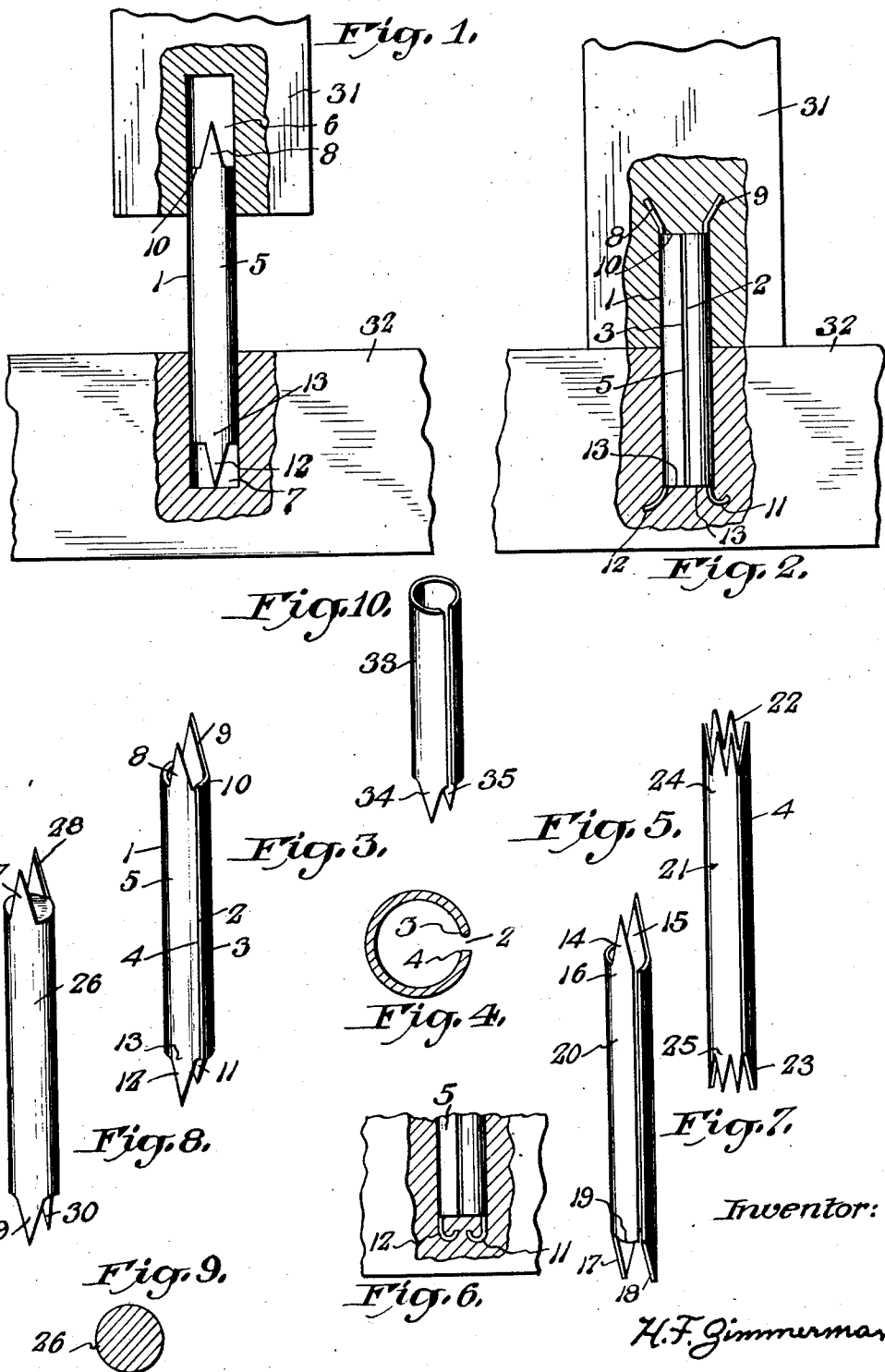
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DOWEL

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UNITED STATES PATENT OFFICE.

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DOWEL.

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This invention relates to improvements in dowel pins. The general object of this invention is to provide a novel form of dowel pin which will clinch or secure itself in wood or similar material when driven "home".

Another object of the invention is to provide a dowel having means integral therewith whereby it will take permanent hold of the material in which it is embedded.

Another object of the invention is to provide a metallic dowel having pendable points projecting from the ends thereof.

A still further object of the invention is to provide a contractible dowel.

Another object of the invention is to provide a dowel formed from sheet metal.

With the above and such other objects in view as may hereinafter more fully appear, I have invented the device shown in the accompanying illustration, in which:

Figure 1 is a sectional, elevational view showing the application of my improved dowel before being driven home;

Figure 2 is a similar view after the dowel has been driven home;

Figure 3 is a perspective view of the dowel;

Figure 4 is a transverse, sectional view thereof;

Figure 5 is a perspective view of a modified form of the dowel;

Figure 6 is an elevational sectional view, similar to Figure 2, showing one form of a clinch hold;

Figure 7 is a perspective view of another modification;

Figure 8 is a perspective view of still another modification;

Figure 9 is a transverse, sectional view thereof; and

Figure 10 is a perspective view of another modification.

Like reference characters indicate like parts throughout the following specification, and in the several views in the drawings in which 1 indicates a dowel preferably formed of a single piece of tubular sheet metal and includes a body portion 5 longitudinally split as at 2. The edges 3 and 4 of the slit 2 are slightly spaced apart in order that the body portion 5 may contract when forced into bores 6 and 7 of a somewhat smaller diameter than the original diame-

ter of the dowel. This arrangement provides for an extremely tight fitting dowel as the bores 6 and 7 may be purposely made of a diameter slightly smaller than the original diameter of the dowel. The body portion 5 of the dowel is provided with projecting prongs 8 and 9 at its end 10, and similar prongs 11 and 12 at its end 13. As shown in Fig. 7 prongs 14 and 15 at one end 16 of a modified form of dowel 20, may be arranged transversely to the points 17 and 18 at the opposing end 19 of the dowel. This is advantageous in certain cases, for instance, where the grain of one piece of wood runs opposite to that of the other piece to be connected thereto by the dowel. This would obviate the possibility of the points running with the grain of either piece of wood, and the probability of splitting the same.

In Figure 5 another modification is shown in which the dowel 21, is formed with a series of clincher prongs 22 and 23 at its opposing ends 24 and 25.

In Figures 8 and 9 I show a modification of an invention in which a dowel 26 is cast solid with projecting prongs 27 and 28 at one end, and similar prongs 29 and 30 at the other end.

In Figure 1, I illustrate the manner of applying the dowel, the same being shown before the members 31 and 32 are driven together.

In Figure 2 the same dowel is shown, the members 31 and 32 having been forced together and the prongs 8, 9, 11 and 12 driven home into the body of the wood and split apart and clinched therein, whereby the members 31 and 32 are securely tied together in a manner to prevent possibility of their becoming accidentally pulled apart.

Figure 6 illustrates at 11' and 12' how the prongs sometimes turn and clinch into the wood.

In actual use I have found that a dowel constructed according to this invention, will so securely lock the members together that they cannot be pulled apart without actually tearing or breaking the wood and that there is no possibility of the dowels becoming loose through shrinking of the wood when dried out or no possibility of splitting the wood through the same swelling on becoming damp as the contractability of the dowel

will compensate for any swelling of the wood.

In Figure 10, I show a modification in which the dowel 33 is provided with clincher prongs 34 and 35 at one end only of the dowel so that in certain cases the dowel may be used, causing it to clinch to one member of the pieces of wood being joined while it does not clinch to the other member. This form is especially adapted for use in cases where it may be desired to separate the wood members. In this case the contractability of the dowel will bind it securely to the member to which it is not actually clinched, to prevent accidental separation of the parts.

Having described my invention that which I claim to be new and desire to procure by Letters Patent is—

1. As a new article of manufacture, a dowel made from a single piece of sheet metal and including a body portion bent to cylindrical form and having the longitudinal edges of the body spaced apart whereby said body portion is rendered transversely resilient, a plurality of spaced apart pointed prongs integral with said body portion and

projecting therefrom at both ends thereof, said prongs having their greatest width at the juncture with the body portion.

2. As a new article of manufacture, a dowel made from a single piece of sheet metal, said dowel including a body portion bent to cylindrical form and having a longitudinal split therein whereby said body portion is rendered transversely resilient, a plurality of spaced apart pointed prongs integral with said body portion and projecting therefrom at each end thereof, said prongs having their greatest width or root at their juncture with said body portion and their apex furthest removed therefrom, whereupon when said dowel is inserted into a previously bored hole of the same length as the body portion of the dowel and driven "home" the roots of said prongs will be adjacent the bases of said hole and the remaining portion of said prongs will be imbedded in the material in which the hole is bored.

In testimony whereof I have signed my name to this specification.

HERMAN F. ZIMMERMAN.