COMBINATION NAIL SET AND PATCH HOLE MAKING TOOL

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Inventor

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This invention relates to tools for setting nails and the preparation of the holes about the end of the driven nails, whereby the wood may be rendered free from blemish by the application of patches in said holes, to which glue has been applied previously.

The combination tool herein described is intended to be used as a hand tool in much the same manner as a nail set, keeping the patch hole maker parallel to the grain of the wood at the time of the setting and patch hole making operation.

It has been the practice to first set the nail, then putty the hole or to take a chisel and raise a portion of the wood, drive a nail, set it, insert glue under the raised up portion, then either pound or clamp back in place. This practice is more costly, inconvenient, and requires greater care to produce good results. The putty requires coloring to match the wood, which to an inexperienced person is not an easy matter. Another practice is to take a knife and extend the hole parallel to the grain of the wood, thus making the hole oblong in shape so that a three cornered shim may be inserted, then cut off along the surface of the finished product.

It has been necessary to construct my invention, in several different forms, at the patch hole making ends, in order to meet the several different conditions, such as the setting a nail and the repair of the hole in a sharp corner, on flat surfaces, in wood or soft woods.

It is the general object of my invention to put at the disposal of wood workers, such as carpenters, cabinet makers, sash men, door men, and others, a tool by which the holes, left by nails, may be quickly, conveniently and neatly repaired, in such a manner as to leave no blemish on the finished product and to match the grain of the adjoining wood.

I attain these and other objects by the devices and arrangements illustrated in the accompanying drawing, of which Fig. 1 is a perspective view, illustrating one form of my combination nail set and patch hole making tool: Fig. 2 is a cross section thereof taken on the line 2—2 of Fig. 1, in the direction of the arrow; Fig. 3 is a perspective view of a piece of lumber, to which a patch has been applied, three holes prepared of different outline or shape, a shim in position to insert the corner of one end into one of the prepared holes and a view of my invention similar to Fig. 1, positioned over the set nail, after the setting blow has been applied; Fig. 4 is a plan view of my invention in another form; Fig. 5 is a front elevation thereof, with the lower end cut away longitudinally on the line 5—5 of Fig. 4 and shown in the direction of the arrow; Fig. 6 is a plan view of still another form of my invention; Fig. 7 is a front elevation thereof; Fig. 8 is a front elevation with the lower end cut away and shown in cross section in the direction of the arrow on the line 8—8 of Fig. 6; Fig. 9 is a plan view of a patch hole maker and gauge; Fig. 10 is a front view in cross section thereof taken on the line 10—10 of Fig. 9 with a portion of a nail set inserted; Fig. 11 is a side view in cross section taken on the line 11—11 of Fig. 9; Fig. 12 is a plan view of gauge; Fig. 13 is a front elevation thereof; Fig. 14 is a side elevation thereof.

Similar numerals of reference refer to similar parts throughout the several views.

The combination nail set and patch hole making tool is formed of a metal rod 1, adapted to receive a force at its end, a knife 3 and a setting point 8 at the other end thereof, adapted to simultaneously set a nail and puncture or cut an oblong hole at the nail end, for the purpose of applying a patch therein, by the application of a force at the end 3 parallel to a center longitudinal line of the rod 1. The holes illustrated as 9, 12, and 13, in Fig. 3, are made by my combination tools, of different forms, at the time of the setting operation. A shim 14 may be used as a patch by gluing the end thereof, then driving the end into hole 12 and cutting it off along the upper surface of the piece of lumber, thus forming a similar patch to the one shown as patch 7 in place.

In the form shown in Figs. 4 and 5 the tool is formed in two pieces, namely, the nail set 15 and the patch hole maker 19, with an adaptable gauge 20, having an eye 21 therein, shown between the upper portion of the nail set 15 and the patch hole maker 19, with the nail setting means 17 passed through the eye 21, of the gauge 20 and into the patch hole maker 19, in such a manner as to hold the gauge 20 in place, while the screw 22 forms a means of fastening the patch hole maker 19 to the nail set 15. However, the nail setting means 17 may be made so as to fit tightly within the patch hole maker 19 thereby forming a force fit and acting as a means of fastening the nail set 15 to the patch hole maker 19; therefore the screw 22 could be dispensed with if desired. The patch hole maker 19 may be adapted to fit any nail set and the patch hole maker 19 and the nail set 15 may be made with or without the gauge 20 or the patch.
hole maker 19 and the nail set 15, may be made in one piece, or the three units, namely, the nail set 15, the patch hole maker 19 and the gauge 20, may be made in one solid piece. This tool whether of the one unit type or the plural unit type has a nail set 15, with a nail setting means 17 at one end, two points, and patch hole making means 19 about the nail setting means 17, a cavity 16 located within the perimeter, at the setting end; in the patch hole maker 19, and knife or knives 18 form the perimeter. It is to be understood that the knife or knives 18 may be omitted if desired, thereby leaving the end flat with the setting means 17 within or on said flat surface end. It is to be generally understood that a pointed or concave setting means 17 may be used in the described tool, so as to make it adaptable for use with the ordinary type of nails, or the nails with a cavity in the head. It is to be further understood that the patch hole maker 19 may be any desired oblong shape about its perimeter especially at the patch hole making end, so as to be adaptable for making holes of any desired oblong shape about the nail head during the setting operation, and that the sides of the patch hole maker 19 may be made so as to be perpendicular or incline obliquely from the patch hole making end.

In the form shown in Figs. 6, 7 and 8, the tool is formed in a metal rod 25 having any desired shape but shown as diamond shape, with a deep cavity 24 in the end thereof, with a nail setting means 23 extending downward through the said cavity 24 and in some cases when the tool is narrow the nail setting means 23 divides said cavity 24 into cavities 27 and 27' and 24c having outlets 24d and 24e, respectively, through the tool, knife or knives 27 form the perimeter at the patch hole making end; and the tool may be constructed in two pieces, the upper piece provided with a screw 34 so that it may be screwed into a provided threaded hole in the lower piece constituting the patch hole maker in such a manner as to hold the patch hole maker and nail set 26 to the rod 25.

Figs. 9, 10 and 11 show variations which may be made in the tool, showing the patch hole maker 25, a gauge 28, a rivet 28 fastening the gauge 30 to the patch hole maker 25, with a portion of a threaded nail set 33 inserted in the hole 31 in the patch hole maker, said hole 31 being provided with a thread means for fastening, if desired.

In Figs. 12, 13 and 14, a gauge 25a with an eye 21 therein to be used in connection with the tool shown in Fig. 5 has the advantage of being readily interchangeable so one is able to use a gauge regulating any different depth of the patch hole cut.

It is to be understood that I may alter the shape of the tool to meet different requirements, or change the shape and formation of the patch hole maker, that I may use one or more knives at the cutting end to form the perimeter, if desired, or I may dispense with the knives and use a flat end with a setting means or cavity within the perimeter in the end thereof, and that the making of the patches to fit the holes has been provided for in my copending application, Serial No. 82,716, filed June 1, 1936.

It is to be further understood that a patch hole making means, adapted to fasten to a nail set wherein a means is provided for the purpose of fastening to a nail set and manufactured as a separate unit for the purpose of being used with a nail set, comes within the scope of the appended claims.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and the usefulness of the tool will be readily understood by those skilled in the arts in which such tools are used.

I have described the principle of operation together with certain forms which I now consider to be the best embodiment thereof. I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired, as fall within the scope of the appended claims, and that I hold no claim on the ordinary nail set in common use.

Having, therefore, described and illustrated my invention, what I claim and desire to secure by Letters Patent is:

1. A combination tool comprising the combination of a short metal bar constituting a handle, with a patch hole making means of an oblong pointed cross-sectional form and a nail setting means centrally located within said patch hole making means; wherein said cavity is provided with chip clearing passage through the side of the tool forming clear passages through which cut away material may pass.

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