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J. H. DUNSTAN.
COMBINATION TOOL.
APPLICATION FILED NOV. 1, 1907.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.

Fig 3

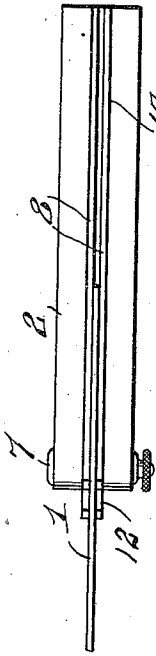


Fig 4

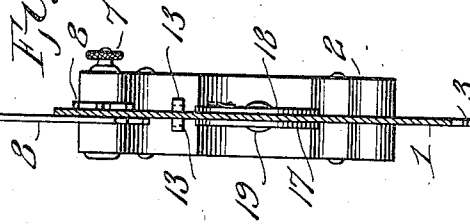


Fig 1

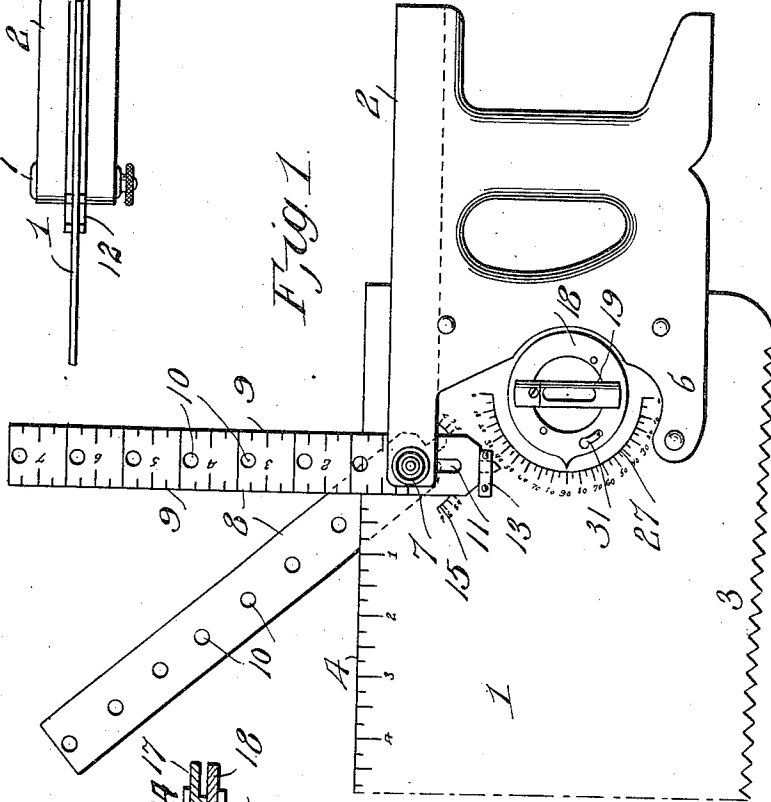
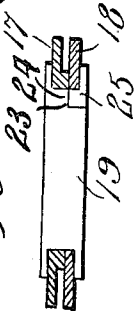


Fig 7



Witnesses
Frank Hough
K. Allen

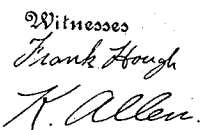
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES HENRY DUNSTAN, OF SUSANVILLE, OREGON.

COMBINATION-TOOL.

966,321.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed November 1, 1907. Serial No. 400,236.

To all whom it may concern:

Be it known that I, JAMES HENRY DUNSTAN, a citizen of the United States, residing at Susanville, in the county of Grant and State of Oregon, have invented new and useful Improvements in Combination-Tools, of which the following is a specification.

The invention relates to an improvement in combination tools, being particularly directed to the presentation for effective use in a single implement of a saw, a level, an adjustable square and a circling instrument.

The main object of the present invention is the provision of a saw blade of ordinary type in which is movably and adjustably fixed an arm serving either as a circling instrument or as an adjustable square with one edge of the blade, the construction also including a spirit level visible from either side of the blade and adapted for adjustment at any angular relation to the straight edge or of being fixed in either parallel relation to or at right angles to said straight edge.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a plan of a handle end of a saw blade, illustrating the various tools combined therewith. Fig. 2 is a bottom plan of the same, one of the arms forming the square being turned down into inoperative position. Fig. 3 is an edge view of Fig. 1 with the arms used to form the square housed within the handle. Fig. 4 is a section on line 4—4 of Fig. 2. Fig. 5 is a plan of the level. Fig. 6 is a plan of the level supporting ring. Fig. 7 is a section on line 7—7 of Fig. 5. Fig. 8 is a broken plan of a portion of the saw blade showing the spirit level receiving opening.

Referring particularly to the drawings, my improved implement is in the form of a hand saw including a blade 1, of any usual or preferred type, to which is secured a handle 2 permitting the use of the blade in the ordinary manner. One longitudinal edge of the blade is formed with saw teeth 3 in the usual manner and the opposite longitudinal edge 4 is particularly formed to provide a straight edge. The handle 2 is lon-

gitudinally slitted for the reception of one end of the blade 1, said handle portion being formed on each side of the blade to provide upper and lower projections 5 and 6 extending beyond the longitudinal center of the handle, as shown, the lower extension being riveted or otherwise permanently secured to the blade and the upper extension connected thereto through the medium of a set screw 7, which may be manually loosened or tightened.

Pivotally secured upon the set screw between the blade and each upper extension 5 is an arm 8, preferably an elongated strip of metal, the relatively outer face of which is graduated, as shown at 9, and formed with a series of longitudinally alined openings 10. Each arm is connected with the pivot 7 through the medium of an elongated slot 11 formed in the arm to receive the pivot, the relatively lower end of the arm being reduced to provide a pointed projection 12, as shown. To the saw blade beneath each pivot 7 is arranged a keeper strip 13 formed to receive the point 12 of the overlying arm when said arm has been moved inwardly on the pivot to the limit of the slot 11. The point 12 and keeper 13 are so relatively arranged that when the point is within the keeper the forward edge of the arm 8 is at an exact right angle to the straight edge 4 of the blade 1, thereby providing the ordinary try-square, it being understood that in this position the set screw pivot 7 may be manually tightened to prevent accidental movement of the arm in the use of the square. Beyond the pivot pin 7 the upper edge of the handle 2 is recessed at 14 to receive the blades 8 when the latter are not desired for use, permitting said blades to be turned down into alinement with the blade 1, as shown in Figs. 2 and 3.

Between the keeper 13 and the pivot pin 7 each side of the blade 1 is graduated, as at 15, on an arc coincident with the plane of movement of the point 12 on the pivot pin 7, the central point of the graduation being zero and increasing therefrom in each direction. Means are thus provided whereby the arm 8 may be adjusted in any desired angular relation to the straight edge 4, and se-

cured in such adjusted position through the set screw 7.

The blade 1 between the handle projections 5 and 6 is formed for the reception of a spirit level, being for this purpose formed with a cylindrical opening 16, preferably arranged entirely within the plane of the projections, the material of the handle intermediate the projection being cut away to permit the insertion of the level parts, as clearly shown in Figs. 1 and 2. The level proper comprises three parts, a supporting ring 17, a holding ring 18 and a level 19. The supporting ring comprises an annular section of greater diameter than the diameter of the opening 16 and formed on its inner edge with a laterally projecting flange 20 of a size to fit within the opening 16, the thickness of the flange approximately equaling the thickness of the blade 1. The holding ring 18 corresponds in size and shape to the ring 17, being an annular section adapted to overlie the blade on the side opposite that engaged by the ring 17 and to be secured to the edge of the flange 20 through the medium of screws 21. By this construction the supporting member of the level comprises in effect two rings secured together and overlying the opposing faces of the blade 1, the rings being connected by a solid portion revolvably mounted within the opening formed in the blade.

The level proper comprises a cylindrical member in which is secured in any appropriate manner a spirit bulb 22. The cylindrical member 19 is longitudinally recessed at one end to receive the inner edge of the flange 20 of the supporting member, the opposing walls of the recess resting directly upon the relatively outer surfaces of the rings 17 and 18. The opposite end of the member is cut away at 23 so as to provide a projection 24 to underlie the ring 17, a removable section 25 being adapted to engage the cut-away portion of the level and overlie the ring 18, said section being secured in place by a screw 26. The level member is thus securely fixed diametrically of the supporting member in a manner to permit its convenient removal or application. This arrangement of the level disposes the same equally on opposite sides of the blade 1, the bulb 22 being, of course, visible from either side. Beyond the periphery of each of the rings 17 and 18 the surface of the blade is graduated at 27 to afford a means for accurately adjusting the level to any desired inclination, each of the rings being integrally formed with a radially projecting pointer 28 for coöperation with the graduations. At determinate points beyond the edge of the opening 16 in the blade, said blade is formed with holes 29

and 30, and the ring 18 is provided with a spring pressed pin 31 which is normally operable when the level is in proper position to engage either the holes 29 or 30. The pin 31 and the holes 29 and 30 are so relatively disposed that when the pin is engaged in the hole 29 the spirit bulb is temporarily locked in a position at direct right angles to the edge 4, permitting said straight edge to be used as a plumb level, while when the pin is engaged in the hole 30 the spirit bulb is in parallel relation with the straight edge, permitting said straight edge to be used as an ordinary level.

The openings 10 in the arms adapt the latter for use as circling instruments, permitting introduction of a pencil or other marking device through the particular opening and the formation of a curved line by turning the arm with the marking device on the pivot pin 7 as a center.

It will thus be seen that the improved implement is in effect a hand saw capable of all the usual purposes to which this implement may be put, and that I have combined with this implement a square which may be adjusted to any angle relative to the straight edge of the blade, and also a spirit level which is also capable of adjustment as desired. The particular additional implements are so arranged that they do not interfere in the slightest degree with any ordinary use of the hand saw, the arms for the square being capable of being turned down into a protected and non-interfering position, while the spirit bulb or level is thoroughly protected against contact by the handle. The implements thus combined with the saw are always ready for instant use and entirely obviate the necessity of carrying independent implements for these purposes, while at the same time insuring that with the saw those implements most necessary for use, as the square and level, are always at hand.

The material of which the various parts are constructed is not important, though it is to be understood that I prefer metal for all parts as tending to produce a more substantial structure in which little, if any, weight is added to that of the hand saw.

Having thus described the invention what is claimed as new, is:—

The combination of a saw blade, and a handle secured thereto, said handle being formed on one edge throughout its length with a recess, said saw blade extending throughout the height and a portion of the length of said recess, of an arm formed in one end with a longitudinal slot, and a pivot pin uniting the blade and handle and passing through the slot of the arm, said pin passing through the recess in the handle

and mounting the arm to bear between one wall of the recess and the saw blade, whereby to permit the arm to cooperate with the recess in the folded position of the arm, a pointer projecting from one end of the arm, and a keeper carried by the blade to receive the pointer, said keeper being arranged to maintain the arm at right angles to and

projecting beyond one edge of the saw blade, said arm and blade being graduated.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES HENRY DUNSTAN.

Witnesses:

L. H. POWELL,
WM. A. DUNSTAN.