

F. H. GRUER.

TOOL.

APPLICATION FILED JAN. 28, 1909.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.

939,496.

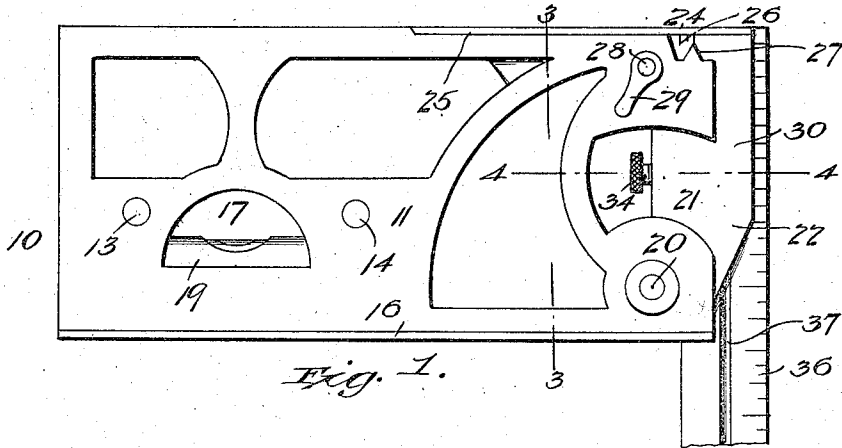


Fig. 1.

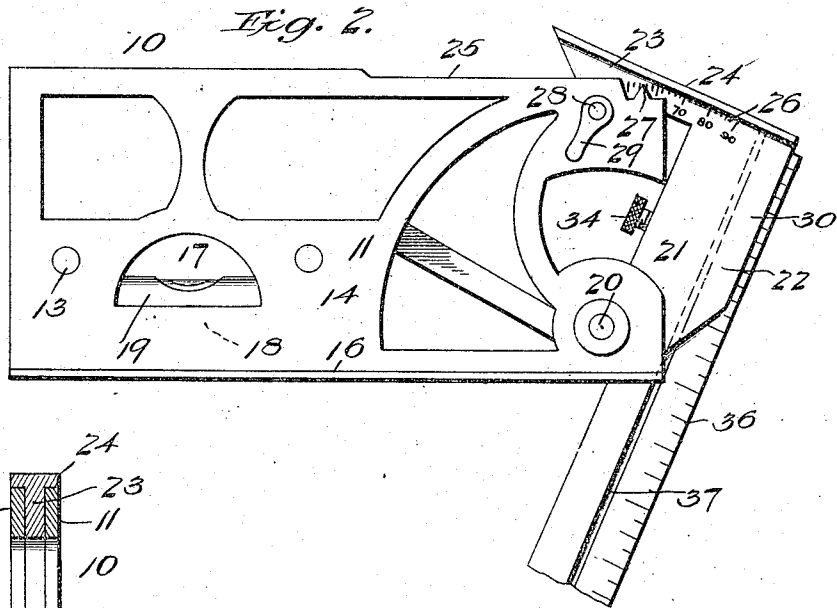


Fig. 2.

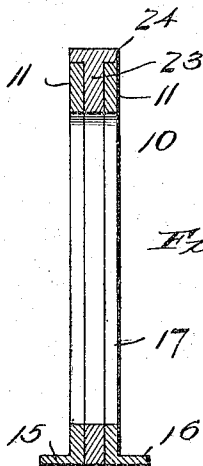


Fig. 3.

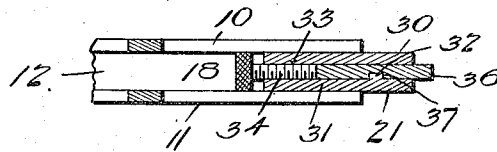


Fig. 4.

Inventor

FRANK H. GRUER

By

Geo. S. Vashon

Attorney

Witnesses
J. L. Mochman
E. C. Tucker

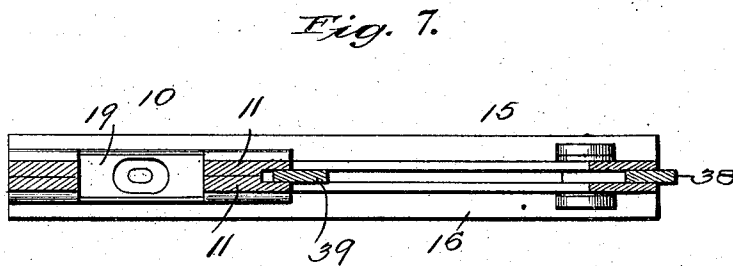
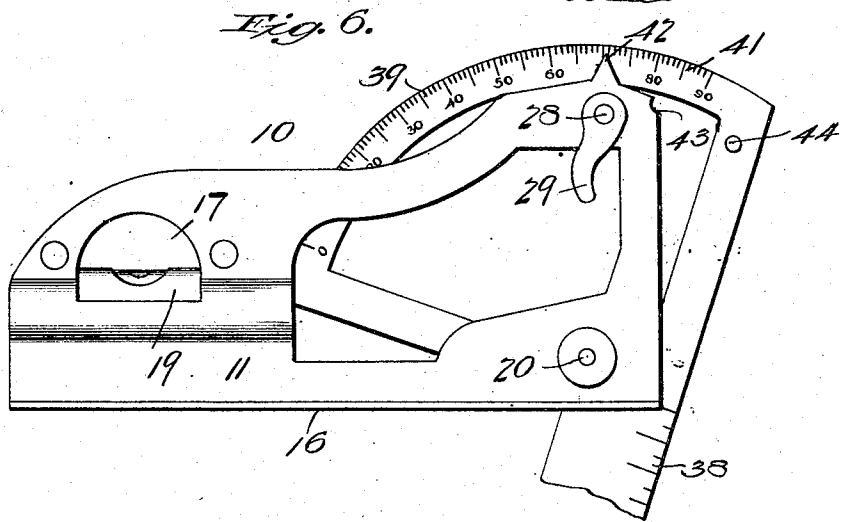
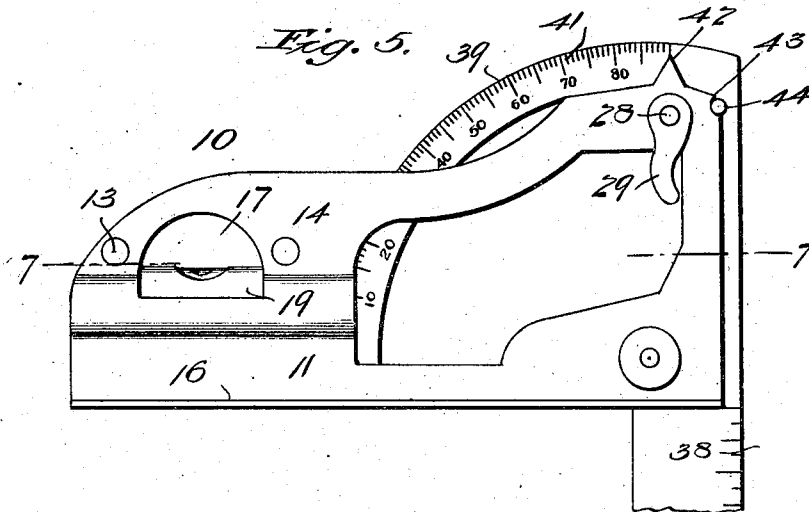
F. H. GRUER.
TOOL.

APPLICATION FILED JAN. 28, 1909.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 2.

939,496.



Inventor

FRANK H. GRUER

Witnesses

T. L. Moorehead
E. O. Cooper

354

Geo. S. Vashon

Attorney

UNITED STATES PATENT OFFICE.

FRANK H. GRUER, OF OAKLAND, CALIFORNIA.

TOOL.

939,496.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed January 28, 1909. Serial No. 474,645.

To all whom it may concern:

Be it known that I, FRANK H. GRUER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Tools, of which the following is a specification.

This invention relates to tools adapted for carpenters' use, and has specially in view a novel form of square in which mutually co-acting members are employed to ascertain various measurements, angles, levels, etc., of the work.

With the above and other objects in view the invention embodies in its construction a supporting frame which serves as the head of a square and which carries a spirit level which may also be used as a plumb, and in combining with said head a pivoted square blade the upper portion of which has marked thereon a circle arc which coöperates with a pointer to indicate the degree of the angle to which the blade is swung.

In practicing the invention stated generally above, various changes in details and structural arrangements may be resorted to, practical and preferred embodiments of which are shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the improved square showing the pivoted blade in its closed position. Fig. 2 is a similar view showing the blade swung to a position at an incline to the horizontal position of the head. Fig. 3 is a sectional view taken on the line 3—3 Fig. 1. Fig. 4 is a sectional view taken on the line 4—4 Fig. 1. Figs. 5 and 6 are views similar to Fig. 1, but showing a modification of the invention. Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5.

Like characters of reference designate corresponding parts.

In the preferred embodiment of the invention shown in Figs. 1 and 2 of the accompanying drawings, the head 10 of the square is composed of two side members 11—11 which are of duplicate construction and are held in spaced relation by upper and lower filler strips 12, and to assure of such parts being retained in position fastening bolts 13—14 are employed which pass through them. The lower portions of the side members are provided with outturned rest flanges 15—16, which provide a flat smooth surface for resting on the work. The said

head is preferably formed of sheet metal and in order to decrease the weight of the same, openings are formed therethrough which may be of the ornamental characters as shown in the said Figs. 1 and 2. Adjacent to one end of the head a semicircular opening 17 is formed through both side members, the base of which is made in the form of a pocket 18 to receive and hold therein a spirit level 19. The other end portion of the head carries a pivot bolt 20, preferably located in its lower corner, and which serves to hold a blade holder 21 in pivotal relation thereto. As shown more clearly in Fig. 2 of the drawings, said blade holder is composed of two members which are arranged at right angles to one another, the lower one 22 being the pivoted member, the upper one 23 being provided with outturned stop flanges 24, which engage with an upper recessed portion 25 formed in the head and thereby limit the inward swing of the holder. One surface of the upper member has an arc scale 26 which is concentric to the pivotal point of said blade holder, and which, in conjunction with a pointer 27 carried by the upper corner of one of the side members of the head, serves to ascertain accurately the angle at which the blade holder is set relatively to said head.

It will be understood that through the described spaced arrangement of the side members of the head, the blade holder swings out and in between the members thereof, and as said members are of thin, and to a certain extent resilient metal, it is contemplated employing a binding screw 28 which passes through each member at their upper corner and below the path of movement of the blade holder, with which coöperates a screw lever 29 which will serve to draw said members together to cause them to bind upon the blade holder and thereby retain it in any desired angular position relatively to said head.

The pivotal member 22 of the blade holder 21 is formed of two side plates 30—31 the inner face of one of which is provided with a longitudinal guiding flange 32, which is preferably located to one side of the center thereof. The inner edge of said side members have threaded sockets 33 for the reception of a binding screw 34 adapted to engage with one edge of a square blade 36 which is provided with a guiding groove

37 for engagement with the guiding flanges 32 of the blade holder when the blade is placed therein.

From the foregoing description it will be understood that through the described pivotal connection of the blade holder with the head of the square it is possible to swing the former to various angles, and through the described indicating feature of the invention, the degree of such angles may be readily ascertained. And through the described guiding and holding means for the square blade within the blade holder, it is possible to adjust the former longitudinally relatively to the holder, the advantages of which will be obvious.

Another prominent feature of the invention is in the described form of mounting the spirit level between the two members of the head, which provides for the same being readily used either as a level or a plumb.

In the modification of the invention suggested in Figs. 5, 6 and 7 of the accompanying drawings the invention preserves the same general features of the preferred embodiment set forth in Figs. 1 to 4 inclusive in so far as the mounting of the spirit level between the two spaced apart flanged side members of the head, the pivotal mounting of the blade, and the clamping feature of the upper corners of the side members which engage with and retain the blade in various adjusted positions is concerned. The dis-

tinctive features of this form of the invention are embodied in the blade 38 the upper end of which is in the form of a quarter of a circle 39 and which is concentric to the pivotal point of the blade and which has an arc scale 41 thereon, which coöperates with an upper pointer 42 carried by one of the side members of the head to indicate the angular degree of the blade relatively to the head. Preferably the outer edge of one of the members of the head has a recess 43 formed therein which receives a stop lug 44 carried by the blade to limit inward swing of the latter.

What I claim is:—

A tool of the character described comprising spaced apart side members provided with bottom flanges and an upper pointer, a blade holder pivotally mounted between said members and having a circle scale marked thereon which coöperates with said pointer to indicate the angular degree of said blade holder, a blade carried by said blade holder, means for limiting the inward swing of said blade holder, and means for clamping the blade holder between said members.

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

FRANK H. GRUER.

Witnesses:

HARDY C. HUTCHINSON,
VERNON P. IRVIN.