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M. A. MEEKER, ADMINISTRATRIX.
UNIVERSAL SQUARE.

APPLICATION FILED SEPT. 26, 1908.

Patented July 26, 1910.

3 SHEETS-SHEET 1.

965,312.

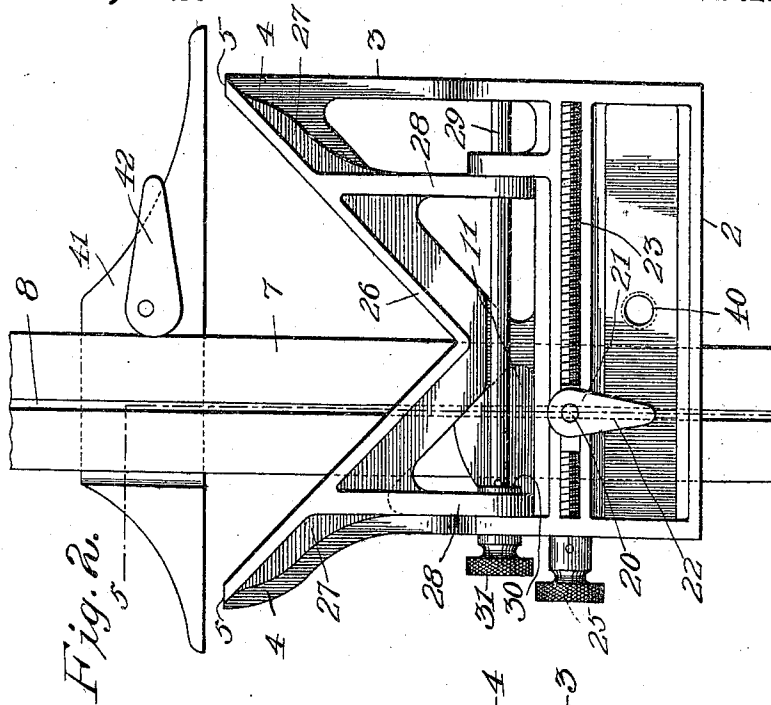


Fig. 2.

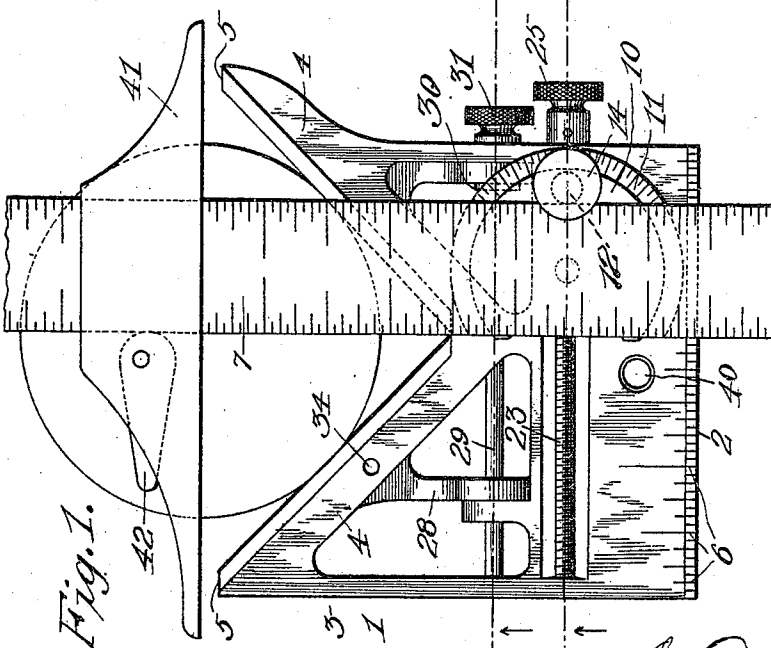


Fig. 1.

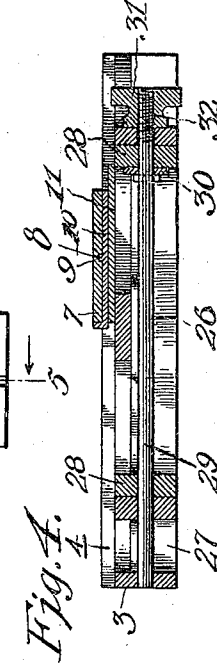


Fig. 4.

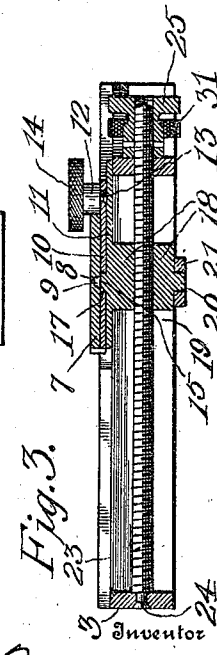


Fig. 3.

Witnesses

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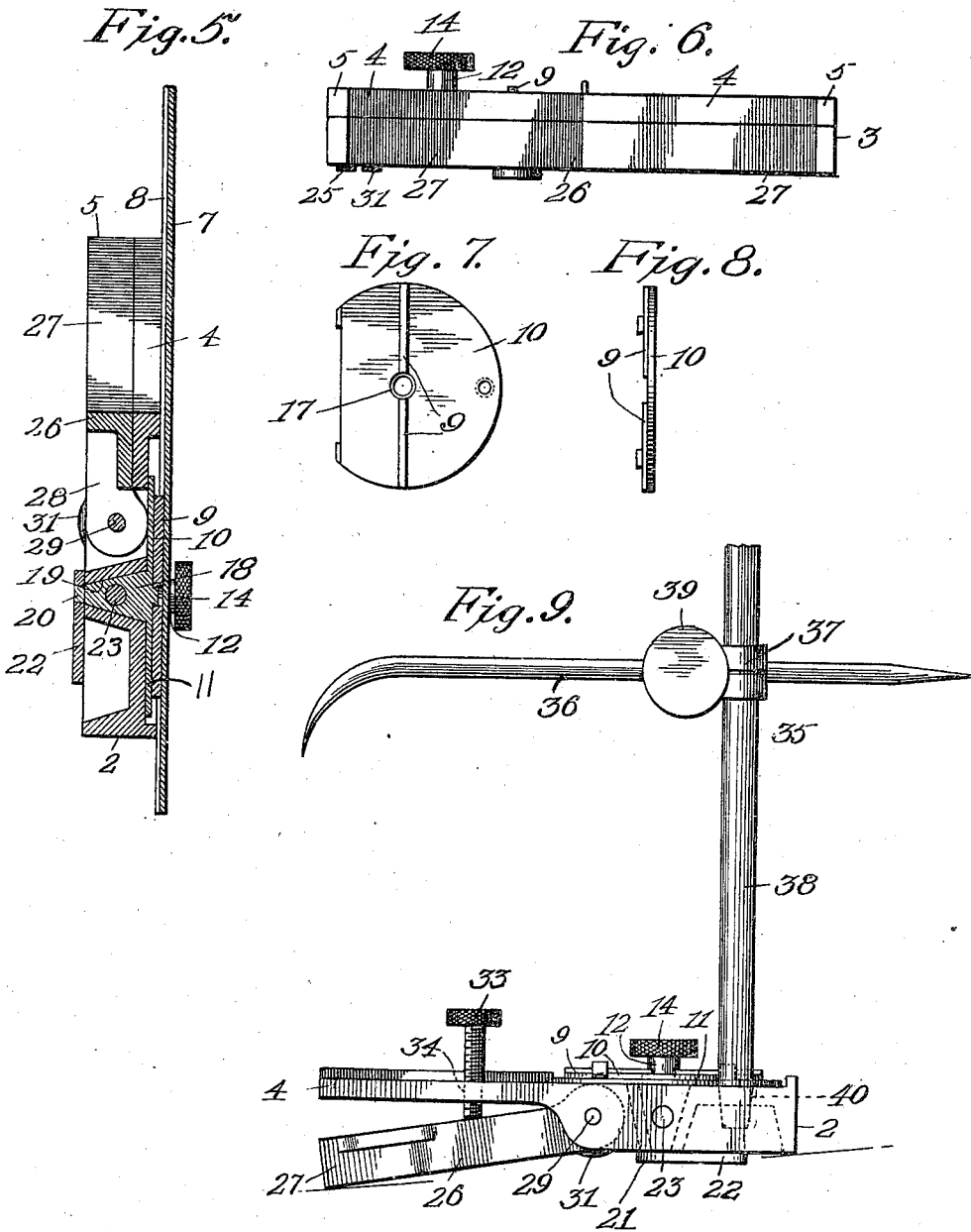
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3 SHEETS—SHEET 2.

965,312.



Witnesses

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3 SHEETS-SHEET 3.

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Fig. 10.

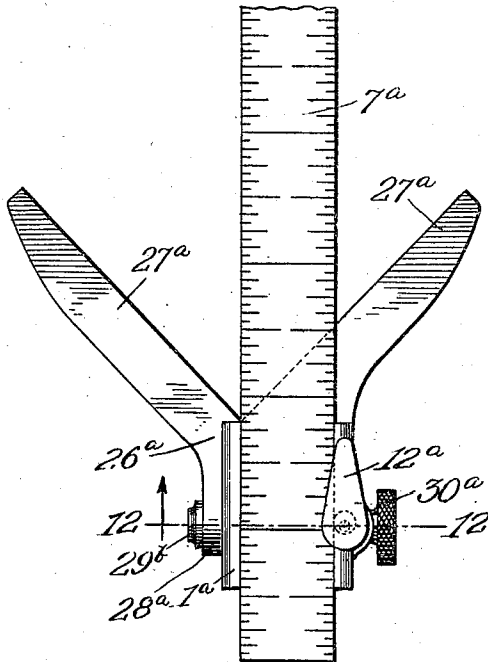


Fig. 11.

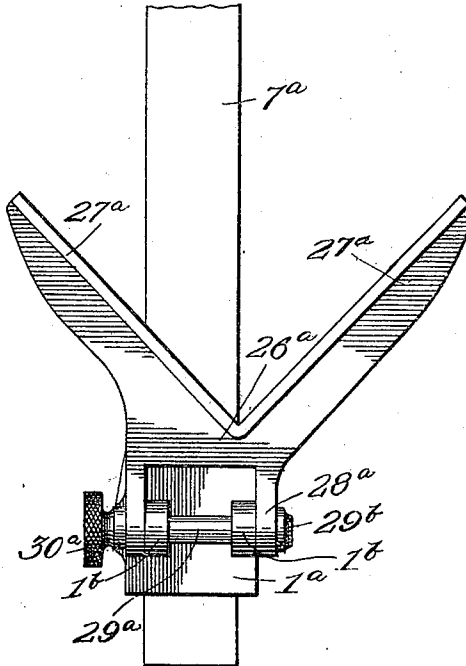
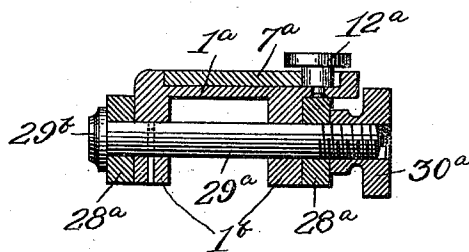


Fig. 12.



Witnesses

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UNITED STATES PATENT OFFICE.

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UNIVERSAL SQUARE.

965,312.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DEWITT C. MEEKER, a citizen of the United States, residing at Carthage, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Universal Squares, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in universal or combination squares, and its object is to improve and simplify the construction and operation of devices of this character whereby they will be rendered more useful and convenient.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved universal square; Fig. 2 is a rear elevation of the same; Figs. 3 and 4 are horizontal sections taken, respectively, on the planes indicated by the lines 3—3 and 4—4 in Fig. 1; Fig. 5 is a vertical section taken on the plane indicated by the line 5—5 in Fig. 2; Fig. 6 is a view looking down upon the upper edge or top of the device; Figs. 7 and 8 are side and edge views of the blade carrying plate; Fig. 9 is a detail view showing the use of a surface gage attachment in connection with the device; Figs. 10 and 11 are views of the opposite sides of a modified form of the invention; and Fig. 12 is a section taken on the plane indicated by the line 12—12 in Fig. 10.

Referring more particularly to Figs. 1 to 8, inclusive, of the drawings, 1 denotes the body of my improved universal square. This body has its bottom edge 2 and left hand side edge 3 disposed in planes at right angles to each other and at its top are two arms 4 the upper or outer edges of which are disposed, preferably, in planes at right angles to each other and so that the bisector of the angle formed by them is perpendicular to the bottom edge or base 2 of the square. The upper ends of the arms 4 are flattened as at 5 and disposed in a plane parallel to the bottom 2. While the body portion 1 may be of any suitable form and construction I preferably make it, as illustrated, with one or more openings and re-

cesses to lessen its weight. I also preferably graduate the front face of the bottom edge 2 of the body, as indicated at 6. 7 denotes a suitably graduated drafting blade which is mounted so that it may be adjusted angularly as well as horizontally and vertically. Said blade is formed in its rear face with a centrally disposed, longitudinally extending groove 8 to receive a radially disposed rib 9 formed upon a supporting plate 10 which is pivoted upon a slidable plate or member 11. The blade 7 is adapted to slide longitudinally upon its pivoted supporting plate 10 and it is retained thereon in an adjusted position by means of a cam or eccentric 12 the inner end of which is rotatably mounted at 13 in the plate 10 and the outer end of which is provided with a milled head 14. Both of the plates 10, 11 are circular in form and have one side cut away; the plate 11, however, is slightly larger in diameter than the plate 10 so that it projects from beneath the latter and has its projecting edge graduated, as shown. The blade supporting plate 10 is pivoted upon the center of the slidable plate or member 11 by forming at the center of the latter a pivot stud 15 Fig. 3 to project into a central opening 17 formed in the plate 10. The outer edge of the opening 17 is reamed and the end of the pivot 15 is upset or flattened to retain the plate 10 upon the plate 11. While any suitable means may be provided for retaining the plate against rotation, I preferably effect this by the frictional engagement of said plates. Projecting from the rear face of the plate 11 are one or more blocks 18 having oppositely beveled faces to engage the similarly inclined walls of a transverse or horizontal slot 19 formed in the body 1. If desired the walls of lugs 18 may be parallel and at right angles to the plate 11. These blocks or lugs 18 prevent the plate 11 from turning and one of them is provided with a projecting screw threaded stem which bears against the rear face of the body 1 and may be provided with a handle or operating wing 22 Fig. 2, or any other means which will enable it to be readily turned. At least one of the lugs 18 is formed with a screw threaded opening to receive an operating screw 23 arranged in the slot 19 and having one end swiveled at 24 in one side of the body and its other end

projecting through the other side of the same and provided with a milled head or finger piece 25. It will be seen that when the latter is rotated the screw will cause the lugs 18, and hence the plates 11, 10 and the blade 7, to be moved laterally or horizontally across the body 1. It will be understood that the nut 21 will be tightened just sufficiently to hold the parts firmly together, but not so tightly as to prevent the screw from shifting them. 26 denotes a swinging member mounted upon the body and having two arms 27 which are similar in shape to the arms 4 and against which they are adapted to fold so as to aline or register therewith. This swinging V-shaped member or plate which is adapted to co-act with the surface gage hereinafter described is pivoted by providing it with apertured ears 28 to receive a combined pivoting and clamping shaft or rod 29 which passes through bearing openings in the body. On said rod or shaft 29 is a stop collar 30 adapted to engage one of the ears or lugs 28 and to press the same against one side of the body 1 when said rod or shaft is moved longitudinally in an outward direction by a milled nut 31 arranged upon the projecting screw threaded end 32 of said shaft, as clearly shown in Fig. 4. It will be seen that by means of this construction, the V-shaped swinging member or plate 26 is not only pivotally mounted upon the body but it may be also clamped in any adjusted position. A set screw 33 having a milled head is arranged in a screw threaded opening 34 in the body 1 adjacent to its top and is adapted to impinge against the member or plate 26 to limit its inward swinging movement.

35 in Fig. 9 of the drawings denotes a surface gage attachment for use in connection with the invention. This attachment comprises a rod 36 having curved and straight pointed ends slidably mounted in a clamp block 37 which in turn is slidable upon a standard 38 and adapted to be clamped thereon by means of a set screw 39. The standard or upright 38 has a tapered lower end adapted to be inserted and frictionally retained in an opening 40 formed in the body 1 adjacent to its bottom. The use of this attachment will be readily understood by those familiar with devices of this character upon reference to said Fig. 9 of the drawings.

41 denotes a blade which is slidable upon the blade 7 and adapted to be secured in an adjusted position thereon by a cam lever 42. This blade is disposed at right angles to the blade 7 and is for the purpose of permitting marks to be made at right angles to the marks made by using the said blade 7.

In Figs. 10, 11, 12 of the drawings I have illustrated a modified form of the inven-

tion which comprises a body member of plate 1^a grooved to slidably receive the blade 7^a which is secured in an adjusted position by a cam lever 12^a. Upon the rear face of the body plate 1^a are apertured lugs 1^b to receive a pivoting and clamping bolt 29^a also engaged by pivot lugs or ears 28^a upon a V-shaped swinging member or plate 26^a having diverging arms 27^a disposed at right angles to each other. The clamping bolt 29^a has at one end a fixed head 29^b and upon its other screw threaded end is milled clamping nut 30^a.

The use of my invention will be readily understood by those skilled in the art from the foregoing description taken in connection with the accompanying drawings. It will be seen that by providing it with the pivotally connected and angularly adjustable plates or members and with the sliding and pivotal adjustment for the blade that it is adapted for any kind of bevel or angular work and that its use is practically universal.

While I have shown and described in detail the preferred embodiments of my invention it will be understood that I do not limit myself to the precise construction set forth and that various changes in the form, proportion, and minor details may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention what I claim is:

1. A device of the character described comprising a body having right angularly disposed arms and a slot, the latter having its side walls arranged in converging relation and its length disposed in a plane at right angles to the bisector of the right angle formed by said arms, a slidable member on the body and provided with a tapered lug arranged in said slot and formed with a threaded opening and with a projecting threaded stem, a clamping nut on the latter, a screw swiveled in the body and extending through the threaded opening in said lug, whereby said member may be shifted lengthwise of the slot, a blade-supporting guide rotatably mounted on said member, a blade slidably arranged in said guide, and a cam carried by said guide to engage the blade and retain it in adjusted position.

2. A device of the character described comprising a body having angularly disposed arms and a slot, the longitudinal walls of said slot being arranged in converging relation, a blade-carrying member having a tapered lug slidably arranged in said slot and formed with a threaded opening and with a threaded stem, the latter being at the small end of said lug, a nut upon said threaded stem to retain the member in adjusted position, and a screw swiveled in

the body and arranged in the threaded opening in said lug, whereby said member may be adjusted.

3. A device of the character described comprising a body having angularly disposed arms and a slot or opening, a slidable member upon the body having a lug projecting through the slot or opening in the latter and formed with a threaded opening and with a projecting threaded stem, a clamping nut upon the latter, a screw swiveled in the body and extending through the threaded opening in said lug and a blade carried by said member.

15 4. A device of the character described comprising a body having angularly disposed arms and a slot or opening, a slidable member upon the body having a lug projecting through the slot or opening in
20 the latter and formed with a threaded open-

ing and with a projecting threaded stem, a clamping nut upon the latter, a screw swiveled in the body and extending through the threaded opening in said lug, a blade support pivoted on said member and a blade 25 adjustably mounted on said support.

5. A device of the character described comprising a body having graduations extending across the same and angularly disposed arms, a substantially circular plate 30 slidable upon the body and having graduations, a blade support pivoted to said plate, a graduated blade adjustable in said support and means for adjusting said plate.

In testimony whereof I hereunto affix my 35 signature in the presence of two witnesses.

DE WITT C. MEEKER.

Witnesses:

D. E. Fox,

GEO. MIPWELL.