Jan. 18, 1927. 1,615,013

F. I. KIMBALL

TAKEDOWN SQUARE

Filed July 21, 1921

Fig. 1.

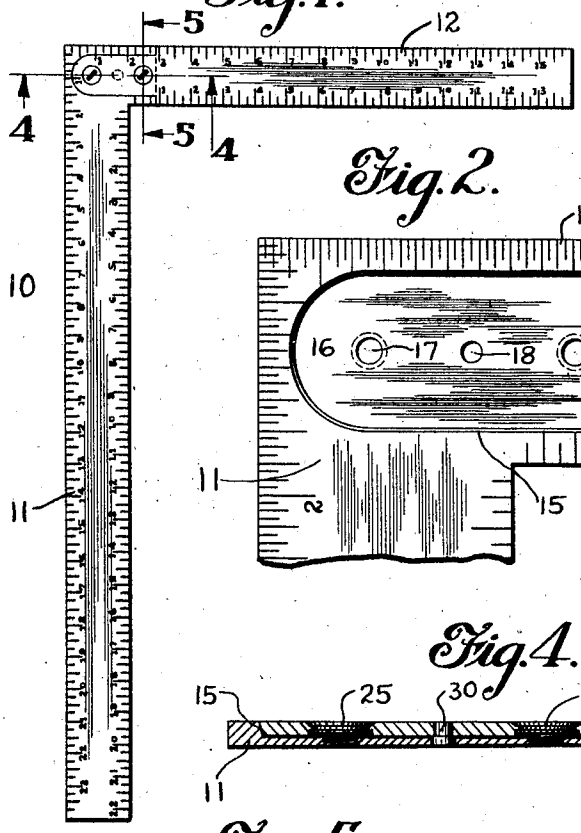


Fig. 2.

Fig. 3.

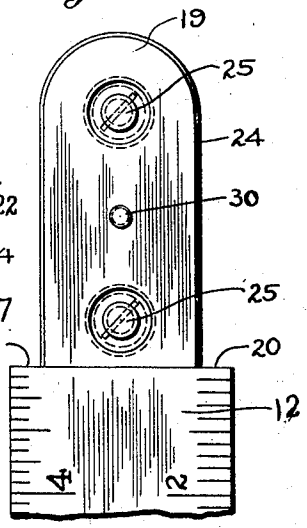


Fig. 4.

Fig. 5.

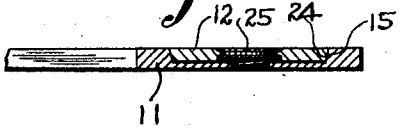
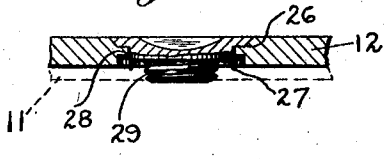


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TAKEDOWN SQUARE.

Application filed July 21, 1921. Serial No. 486,436.

My invention relates to carpenters' squares and, more particularly, to the types of the same which are adapted to be disassembled or taken down so as to be more conveniently stored or put away in a tool box. It is of course obvious that a square which must have two dimensions of considerable length is a very inconvenient tool to store away or carry. These tools have therefore been made in such a manner that the two arms thereof may be taken apart or disassembled when not in use and when it is desired to use them again, they may be readily assembled and secured together in operative relation.

It is of course essential that when the two parts are secured together they must be so arranged that they will accurately lie at right angles to each other and they must be capable of being secured together so rigidly that there will be no looseness or play between the parts. It is, moreover, desirable that the assembling and disassembling of the parts may be accomplished with the greatest ease and facility so that they may be taken down for storage or put together for use with the least possible trouble and effort.

Heretofore such squares have been so arranged that the two parts would dovetail together, one being provided with a slot so bevelled that the bottom portion thereof was wider than the upper portion and the other part of the square being arranged with a tongue correspondingly bevelled to fit into the slot. With such an arrangement it was necessary to assemble the two parts by sliding the tongue laterally into the slot as far as it would go, or until openings formed in the two members for the reception of securing screws or the like would register for the reception of these screws. The parts would necessarily have to fit very closely so that the sliding of the tongue into the slot was attended with some difficulty and when the square became slightly dirty or corroded, considerable pressure would have to be exerted in order to accomplish the assembling of the parts. Likewise, when assembled, the parts were likely to rust or corrode until it was extremely difficult to pull the tongue laterally out of the slot to take down the parts. Moreover, the continual sliding in and out of the tongue would have a tendency to wear the adjacent edges of the tongue and slot until the parts would no longer fit closely and the arms of the square would no longer form an exact right angle.

One object of my invention is to provide a takedown square which may be assembled and disassembled with greater ease and facility than those known heretofore.

Another object of my invention is to provide the arms of a take-down square with a tongue and a slot, respectively, so arranged that the tongue is adapted to be received at the top of the slot so that it will be very easy to place the parts in assembled relation.

Another object of my invention is to provide the arms of a take-down square with a tongue and slot, respectively, so shaped that when the securing members which serve to secure the parts together are tightened into place, the parts of the square will be drawn into close fitting relation thereby and will also be firmly secured together.

A still further object of my invention is to provide a take-down square with a slot and tongue connection so arranged that one of the parts may be provided with self-contained screws or screws permanently secured thereto, which serve to secure the parts in operative assembled position. In the squares heretofore known where the tongue was arranged to slide laterally into the slot, the provision of such screws was impossible.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a side elevational view of a take-down square embodying the principles of my invention;

Fig. 2 is an enlarged elevational view of a portion of one arm of the square showing the recess formed therein to receive a part of the other arm;

Fig. 3 is an elevational view of the remaining arm of the square taken from the side opposite that shown in Fig. 1, and showing the connecting tongue;

Fig. 4 is a sectional view on line 4—4 of Fig. 1;

Fig. 5 is a sectional view on line 5—5 of Fig. 1; and

Fig. 6 is an enlarged sectional view similar to Fig. 5, but showing the manner in which the screws are secured in place.

To illustrate the principles of my inven-

tion, I have shown at 10 a take-down square which may be graduated in any desired or approved way. The square consists of the two arms 11 and 12 which are arranged at right angles to each other as usual. As may be inferred from the foregoing description, these two arms are arranged to be taken apart and are detachably secured together at a point near the angle formed thereby.

The arm 11 as shown in Fig. 2 is, in this instance, provided with a short right angle projection 13 extending in the direction of the second arm of the square. This makes possible the provision of a relatively long recess or slot 14. The slot 14 has its rear end somewhat oval in shape, although this may be varied, if desired, and around the edge thereof is bevelled at 15 as shown in Fig. 2. It is noted that the bevel extends upwardly and outwardly so that the slot or recess is wider at the top than at the bottom thereof for a purpose to be hereinafter described. The bottom 16 of this recess is provided with a pair of threaded openings 17 and a plain opening 18.

As shown in Fig. 3, the arm 12 of the square is provided with a tongue 19 somewhat narrower than the arm of the square, thus providing the shoulders 20 and 21 which abut, respectively, the shoulders 23 and 22 upon the arm 11 at each side of the recess 14. The tongue 19 is shaped to correspond with the shape of the recess 14. The edge of the tongue is bevelled at 24 in a complementary fashion to the edge of the recess 14 so that the tongue is narrower at the bottom portion thereof than at the top.

The tongue is provided with two self-contained screws 25, the heads of which are broadened, as shown more particularly at 26 on Fig. 6, the body passing through openings in this arm of the square and being provided with a flange 27 which is spun over upon a shoulder 28 on the square to hold the screws loosely in place. It will be obvious that while a turning motion of the screws is permitted as the shoulder 28 is loosely engaged between the broadened head 26 and the flange 27, the screw will be prevented from dropping out of the opening so that it will always be ready for use. The lower threaded portions 29 of the screws are adapted to be received in the threaded openings 17 in the bottom of the recess 14. The tongue 19 is also provided with a dowel pin 30 which serves as an aligning and positioning pin, and is adapted to be received in the opening 18.

When it is desired to assemble the two parts of the square, the tongue 19 is placed within the recess 14 by direct superposition thereupon. The dowel 30 will enter the opening 18 and the screws the openings 17. The screws are then turned to secure the parts rigidly together. It will be obvious that the turning of the screws will draw the tongue 19 down into the recess 14 and, owing to the shape of the walls of the recess and the correspondingly shaped edge of the tongue, the parts will be drawn more closely together as the screws are tightened. As there is no sliding of one edge upon the other, there will be no appreciable wear upon these edges so that the parts will always fit properly. It will be obvious that the tighter the screws are turned, the tighter the tongue will be drawn into the bevelled recess and the more rigidly the parts will be secured together. This connection, together with the rigidity provided by the shoulders 20 and 21 will form an efficient and secure means for connecting the two parts of the square, and many of the disadvantages present in squares heretofore known will be obviated.

While I have shown and described a preferred embodiment of my invention, it will be understood that the same is not to be limited thereto in all of its details, but is capable of many modifications and variations which fall within the spirit of the invention and within the scope of the appended claims.

What I claim is:

1. In a take-down square, a pair of members adapted to be joined to extend at right angles to each other and provided respectively with a cooperating tongue and slot, one of said members being adapted to be applied to the other by direct superposition to cause the tongue to overlie the bottom of the slot, the edges of said slot being beveled to flare outwardly and the corresponding edges of the tongue being complementally beveled, and fastening members engaging the tongue and the bottom of the slot to secure the parts together and to draw the beveled edges into close engagement.

2. In a take-down square, a pair of members adapted to be joined to extend at right angles to each other, one of said members being provided with a tongue, the other member being provided with a recess having sides flaring outwardly from the bottom thereof to receive said tongue from the top of the recess, means engaging the tongue and the bottom of the recess to force the sides of the tongue into tight engagement with the diverging sides of the recess and a positioning dowel pin secured on the underside of said tongue and adapted to enter an opening in the bottom of the recess.

3. In a take-down square, a pair of members adapted to be joined to extend at right angles to each other, one of said members having a projecting tongue, the other member being provided with an open ended recess arranged to receive said tongue through the top of the recess, and means passing

through the tongue and adapted to take into the bottom of the recess to draw said members together, said means being permanently secured to said tongue.

4. In a take-down square, a pair of members adapted to be detachably secured together, one of said members having a recess with upwardly and outwardly flaring sides, the other having a tongue with complementally beveled edges adapted to fit in said recess by direct superposition of the tongue over the recessed member, and fastening screws permanently secured to one of said members and adapted to be threaded into the other to secure the parts together and draw the adjacent edges of the recess and tongue into close engagement.

5. In a take-down square, a pair of members adapted to be detachably secured together, one of said members having a recess and the other having a part adapted to be received therein by direct superposition of parts of said members, the edges of said part and recess being complementally beveled, and means passing through both of said members to secure them together, said means being arranged when tightened to draw said beveled edges into close contacting relation.

6. In a take-down square, a pair of members adapted to be detachably secured together, one of said members being provided with a U-shaped recess, the other member having a correspondingly shaped tongue adapted to be received therein, the edges of said recess and tongue being complementally beveled so that one part may be applied to the other by direct superposition, and securing means adapted to draw said edges into close engagement to prevent relative angular movement of the members.

7. In a take-down square, a pair of members adapted to be detachably secured together, one of said members being provided with a U-shaped recess, the other member having a correspondingly shaped tongue adapted to be received therein, the edges of said recess and tongue being complementally beveled so that one part may be applied to the other by direct superposition, and means engaging in said tongue and the bottom of said recess for drawing said edges into close engagement.

8. In a take-down square, a pair of members adapted to be detachably secured together, one of said members being provided with a recess having outwardly and upwardly flaring sides, the other of said members having a part with downwardly and inwardly beveled edges to fit closely against said sides, and adapted to be received into said recess from the top thereof, and fastening members engaging said part and the bottom of the recess to draw said beveled edges into close engagement.

In witness whereof, I have hereunto set my hand this 15th day of July, 1921.

FRANK I. KIMBALL.