(No Model.)

H. M. STOCKING & E. L. VROOM.

SEPARABLE SQUARE.

No. 490,994. Patented Jan. 31, 1893.

Fig. 1

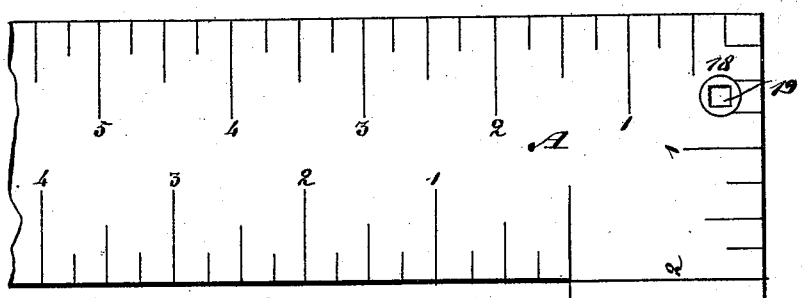


Fig. 5

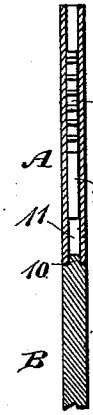


Fig. 2

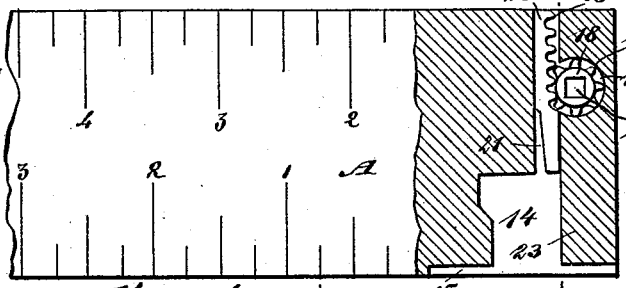
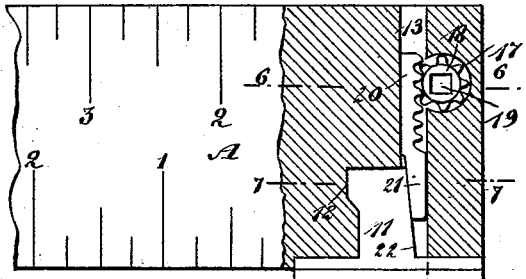
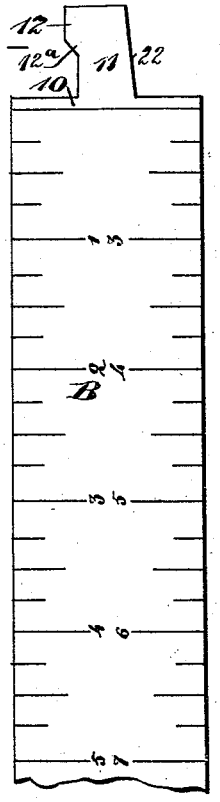


Fig. 4

Fig. 3





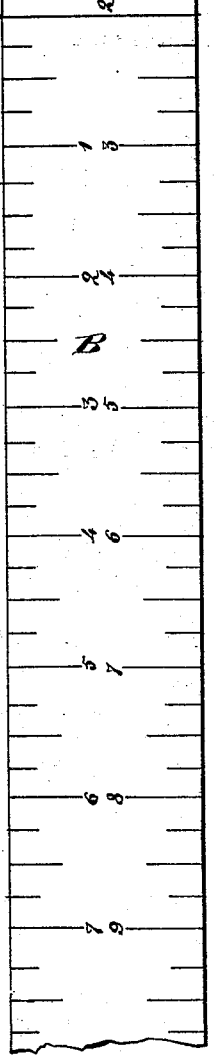


Fig. 6

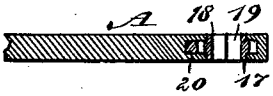


Fig. 7

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UNITED STATES PATENT OFFICE.

HARRY M. STOCKING AND EUGENE L. VROOM, OF CASTLETON CORNERS, NEW YORK.

SEPARABLE SQUARE.

SPECIFICATION forming part of Letters Patent No. 490,994, dated January 31, 1893.

Application filed July 20, 1892. Serial No. 440,579. (No model.)

To all whom it may concern:

Be it known that we, HARRY M. STOCKING and EUGENE L. VROOM, of Castleton Corners, in the county of Richmond and State of New York, have invented a new and useful Improvement in Carpenters' Squares, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in carpenters' squares, and has for its object to provide a means whereby the arms of the square may be separated and thus render it possible to pack the square in an exceedingly small compass.

A further object of the invention is to provide a mechanism whereby the two arms of the square may be brought into locking engagement and held one at a true right angle to the other, the square being at that time the exact shape of a one-piece square.

A further object of the invention is to so locate the locking mechanism that it will not be visible, and will not interfere in the least with the use of the square, enabling it to be employed in any capacity in which the ordinary square can be used.

Another object of the invention is to so construct the locking mechanism that it may be operated by means of a nail, the shank of an awl, or any object having corners, thus obviating the necessity of manipulating the square with a key.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a square having the improvement applied thereto, the arms being partially broken away; Fig. 2 is a plan view of one end of the wider or body member of the square, the said member being partially in horizontal section to disclose the locking mechanism; Fig. 3 is a plan view of the inner end portion of the arm of the square; Fig. 4 is a horizontal section through the body member of the square, disclosing the locking mechanism, and a plan view of a portion of the arm member thereof, the view showing the body and arm in locking engagement; Fig. 5 is a horizontal section taken practically on the line 5—5 of Fig. 2; Fig. 6 is a section taken essentially on the line 6—6 of Fig 4; and Fig. 7 is a section taken essentially on the line 7—7 of Fig. 4.

In carrying out the invention the square consists, as do all carpenters' squares, of a body section or member A and an arm B. In the construction of the square to be described the arm is separable from the body, and the arm is provided at its inner end with a central end flange 10, and a tongue 11, extending outward from the center of the flange. The flange tongue is wider at its inner than at its outer end, or where it joins the arm, being provided upon one side at its inner end with an integral lug or lip 12; and preferably the inner end surface of this lug or lip is beveled, as shown at 12^a in Fig. 3.

The body portion A of the square at that end which is to join the arm member B, is provided with a transverse channel 13, which channel communicates with a socket 14, adapted to receive the tongue 11, the socket being of corresponding shape with the tongue; and at the mouth of the socket a recess 15, is produced to receive the flange 10 of the arm member B. At one side of the channel 13 a circular cavity 16, is produced, in which a pinion 17, is mounted to turn. The hubs 18 of the pinion are adapted to extend outward flush with the side faces of the body member A, and the pinion is provided with a polygonal opening 19, extending through both of the hubs. This opening is adapted to receive a nail, file, or any object provided with corners, and when said object is inserted in the pinion it may be used to turn the same. The teeth of the pinion engage with a rack 20; this rack slides in the channel 13, and at the inner end of the rack a portion of one side face is cut away, as shown at 21 in the drawings. This cut-away portion serves as a head for the rack. There is this difference between the socket and the tongue 11 adapted to enter it; the side 22 of the tongue opposite that carrying the lip or lug 12, is beveled from the outer end of the tongue inward, and the corresponding wall of the socket is straight,

the said wall being indicated as 23 in Fig. 2; and when the rack is manipulated it slides against the straight wall of the socket 14, which wall is in alignment with a wall of the channel in which the rack has movement.

In the operation of connecting the members of the square, the rack is carried upward a sufficient distance to remove its head from the socket 14 in the body member; the tongue 11 of the arm member is then introduced into the socket until the flange 10 is firmly seated in the recess 15 of the body. The pinion is then turned, carrying the rack in direction of the arm member, and the pinion is turned until the head of the rack shall have slid upward between the straight wall 23 of the socket and the inclined wall 22 of the tongue to an engagement with both of these walls, as shown in Fig. 4. The effect of the head of the rack upon the tongue of the arm of the square is to force the lug or lip 12 of the tongue into the cavity in the inner wall of the socket made to receive it; and it is utterly impossible at this time to remove one member from the other, and both of the members will be held so firmly in place that the square may be used in every respect the same as a square made from one piece of metal, or in which the members are solidly and permanently connected. The members of the square are easily disconnected by turning the pinion in a manner to carry the rack outward, at which time the tongue 11 may be drawn from its socket.

We desire it to be distinctly understood that all the mechanisms, with the exception of the outer surfaces of the hubs of the pinions are concealed in the body member of the square.

Having thus described our invention, we claim as new and desire to secure by Letters Patent,—

1. In a carpenter's square, the combination, with the body member and the arm member, the said members being separable, and one of the members being provided with a socket, of a tongue secured to the other member and adapted to enter the socket, a rack held to slide in the member carrying the socket and provided with a locking head to engage with the tongue, and a pinion exteriorly operated and meshing with the teeth of the rack, as and for the purpose set forth.

2. In a separable carpenter's square, the combination, with a body member provided with a socket having one straight wall, a recess in the opposite wall and a channel leading into the recess, of a rack having movement in the channel and provided with a head having one inclined side, a rack having movement in the body member and engaging with the head, and a tongue secured to one end of the arm member, the said tongue being adapted to enter the socket in the body member, and said tongue being also provided with a lip or extension at one side to enter the recess in the wall of the socket, the opposite side of the tongue being inclined and adapted for locking engagement with the head of the rack, as and for the purpose set forth.

3. In a separable carpenter's square, the combination, with a body member provided with a socket, one wall of which is straight and the other provided with a recess and a second recess produced at the mouth of the socket, and a rack having sliding movement in the body member and in the socket, one end of the rack having one of its sides inclined, of a pinion engaging with the rack, a flange formed upon the arm member of the square and adapted to enter the recess at the mouth of the socket, a tongue projected from the flange and having one beveled side adapted for engagement with the inclined surface of the rack, the tongue being also provided with a lip or extension at its opposite side to enter the recess in the wall of the socket, substantially as shown and described.

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Witnesses:
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