(No Model.)

# C. W. GREEN.

## SQUARE.

No. 281,761. Patented July 24, 1883.

*Fig. 1.*

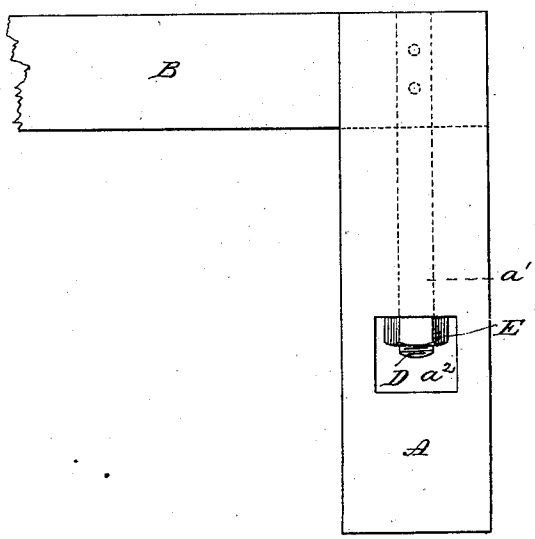
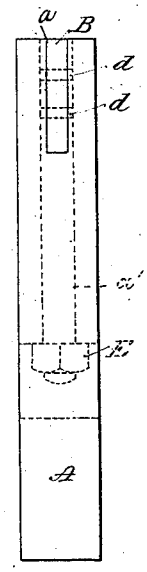



*Fig. 2.*



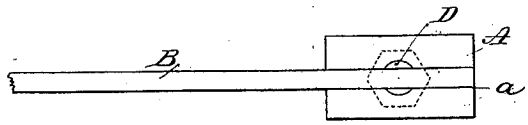




*Fig. 3.*

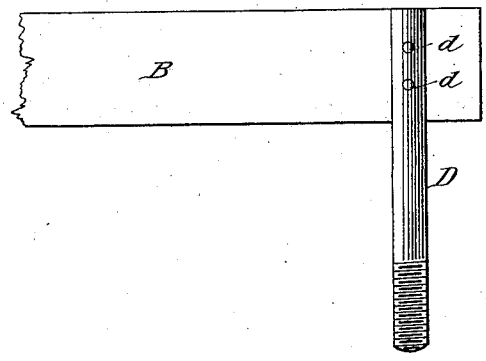



*Fig. 4.*

*Witnesses:*

A. H. Gourand

M. F. Boyle

*Inventor:*

Charles W. Green,

*By his Attorney:* Thomas D. Stetson.

N. PETERS. Photo-Lithographer, Washington, D. C.

# UNITED STATES PATENT OFFICE.

CHARLES W. GREEN, OF BROOKLYN, NEW YORK.

## SQUARE.

SPECIFICATION forming part of Letters Patent No. 281,761, dated July 24, 1883.

Application filed January 4, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. GREEN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Squares, of which the following is a specification.

In this class of squares one arm is thicker than the other and receives it in an open slot. It is very important to avoid any looseness at the joint. It has been common to depend upon making a sufficiently-rigid union by simply finishing the surfaces correctly and holding them firmly together while the hole is made and a rivet inserted. It is difficult by such means to avoid a slight degree of looseness. If, to avoid this, the hole in the thin part or blade is made out of line with the hole in the other part, so that the rivet having a tapered end being inserted will force the blade tightly against the end of the slot in the thick part, there is danger of warping the parts by the violence of the strain. My invention provides for putting the parts together without possible looseness, and with a degree of force which may be perfectly controlled. It allows of holding the parts together with absolute firmness, without risk of so much strain as to distort or warp any part.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a side elevation of my improved square. Fig. 2 is an end view; Fig. 3, a plan, and Fig. 4 shows certain parts detached.

Similar letters of reference indicate like parts in all the figures.

A is the thick portion of the square, made of cast-steel or other suitable material. For cheap squares, cast-iron, or even hard wood, may be sufficient. It is formed with an open slot, *a*, to receive the blade. The lower edge of this slot is finished very carefully. A hole is bored longitudinally in this part A, as indicated by *a'*. This communicates from the end to a transverse aperture, $a^2$.

B is the blade of rolled cast-steel of uniform thickness. It is carefully finished.

D is a screw-bolt adapted to lie in the longitudinal hole *a'*. A portion is divided by a milling-tool of proper thickness and receives the blade B, to which it is strongly united by rivets *d*.

E is a nut, which is introduced by a lateral movement into the cavity $a^2$, and matches on the threads of the bolt D.

In applying the parts together the split bolt D is riveted to the blade B. Then both are inserted in the part A, the nut E being inserted in the proper position and turned as the screw-bolt is introduced. When the blade is brought down to its bearing in the lower edge of the slot with sufficient firmness, the instrument is in perfect adjustment, and by turning the nut E a little in one direction or the other, the force with which the blade is drawn down into the bottom of the slot may be adjusted with nicety. If the parts are properly formed, the square is mathematically correct. If any changes are required it can be easily taken apart and the surfaces touched with a file or hone, or otherwise corrected, and the parts again applied together.

Modifications may be made in the forms and proportions of the details. A milled nut, E, operated by the fingers, may be employed instead of the hexagonal one shown. The number of the rivets D may be increased, or one may serve in most cases. The bolt D may be extended through the whole length of the thick portion and the nut E inserted in a recess in the end of the latter, or even may be allowed to protrude beyond the end of A. Screws may be substituted for the rivets *d*.

I attach importance to the firm joint made between the blade B and rod D by the said rod embracing the blade upon both sides and the rivets D, serving as shown, and to the body A, having transverse aperture $a^2$, in which the nut E works, thus protecting the nut from loosening jars or blows and locating it conveniently out of the way.

I am aware that a try-square blade has been held to a shoulder by a hook upon a threaded bolt, which passes through the body upon which said shoulder is located, the blade having a slot and adapted to be adjusted at will, and such construction is not sought to be covered in this application.

I claim as my invention—

The square herein described, consisting of the body A, having slot *a*, longitudinal recess *a'*, and transverse aperture $a^2$, the blade B, the rod D, embracing said blade upon both sides and firmly secured thereto, and the nut E, operating in the aperture $a^2$ and protected in the body A, all combined and operating as and for the purposes set forth.

In testimony whereof I have hereunto set my hand at New York city, New York county, this 29th day of December, 1882, in the presence of two subscribing witnesses.

CHARLES WESLEY GREEN.

Witnesses:

BARTON H. MARTIN,

C. HODGE HUDSON.