

(No Model.)

S. DARLING.
METALLIC TRY SQUARE.

No. 252,436.

Patented Jan. 17, 1882.

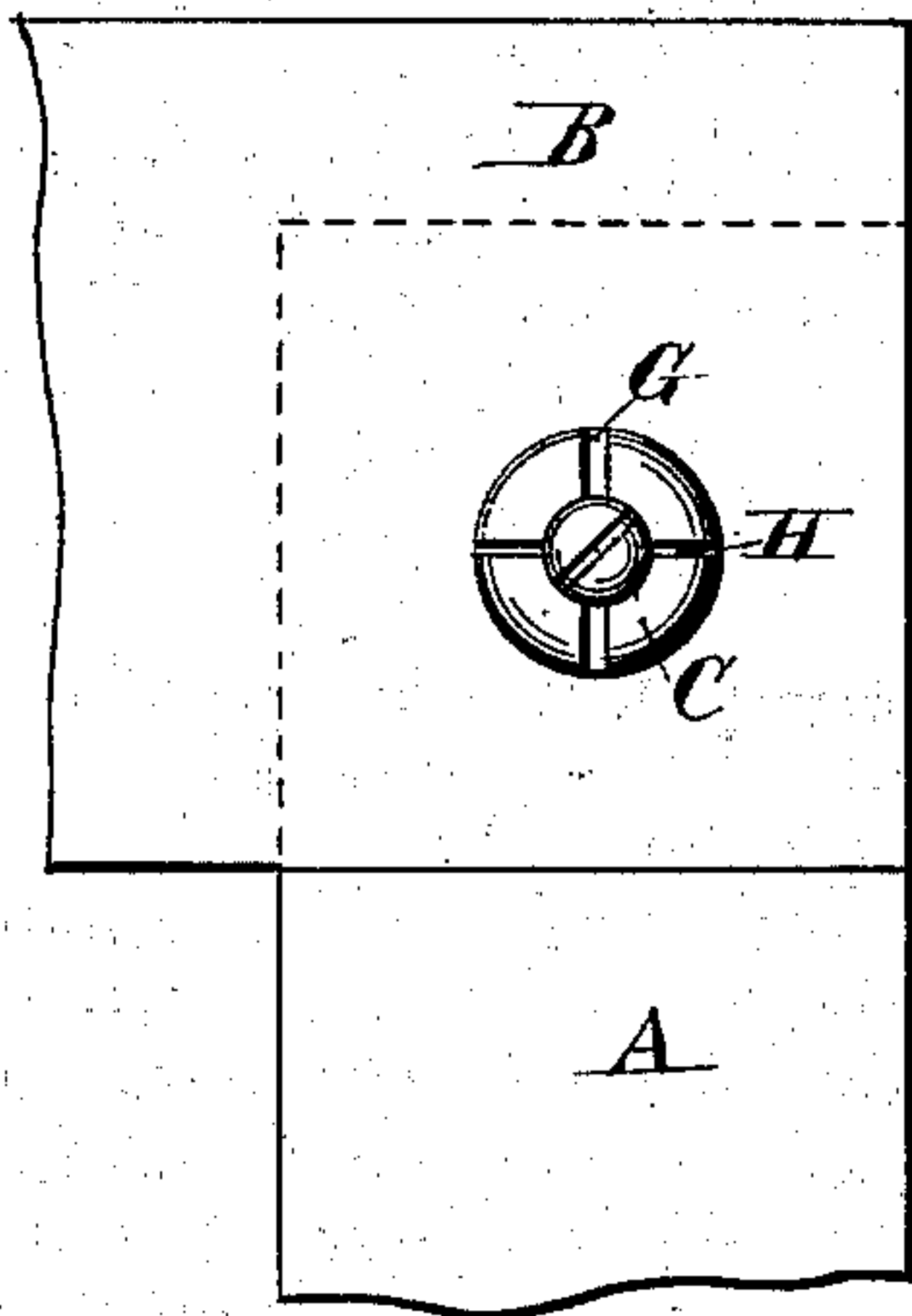


FIG. 1.

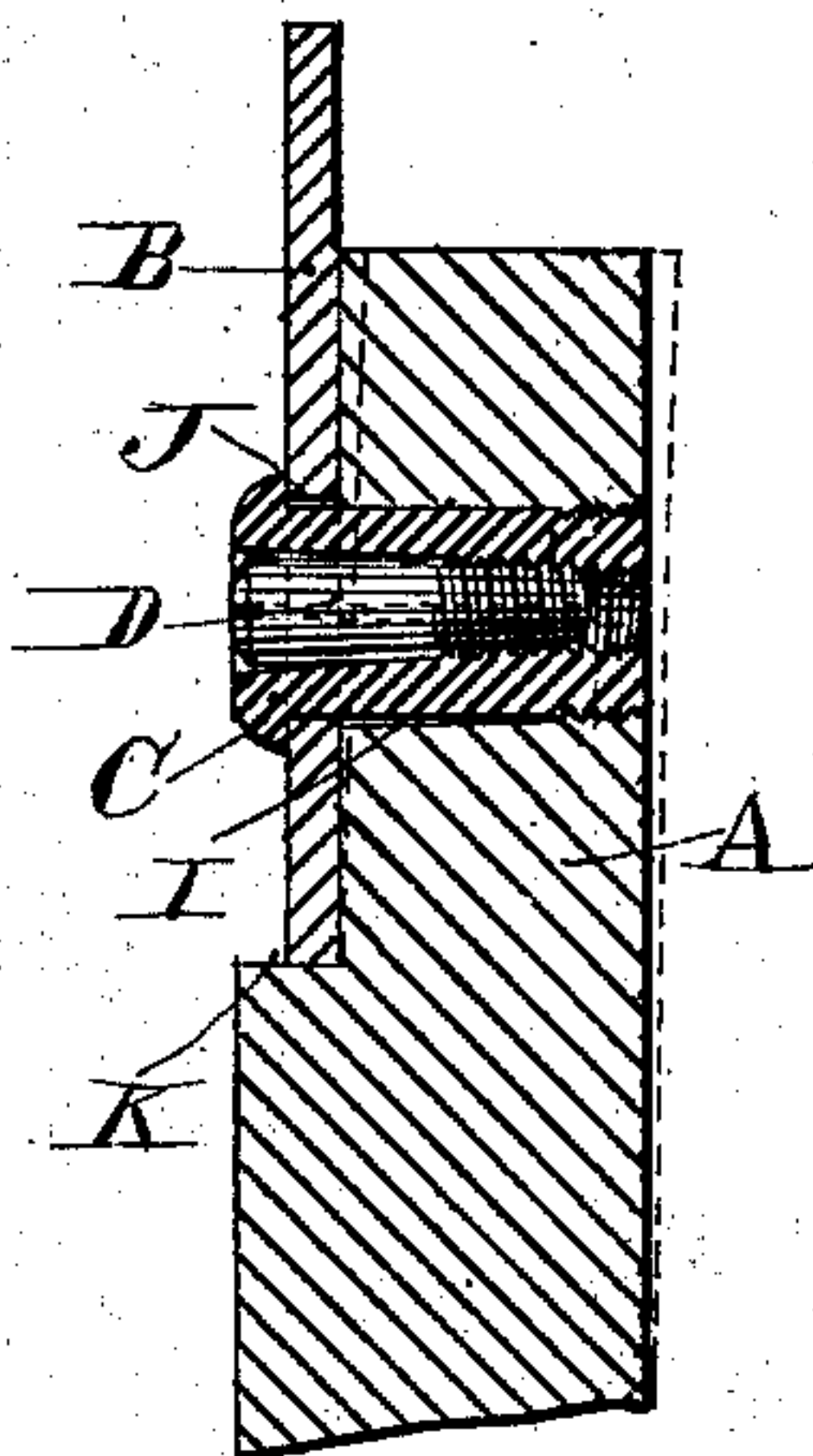


FIG. 2.

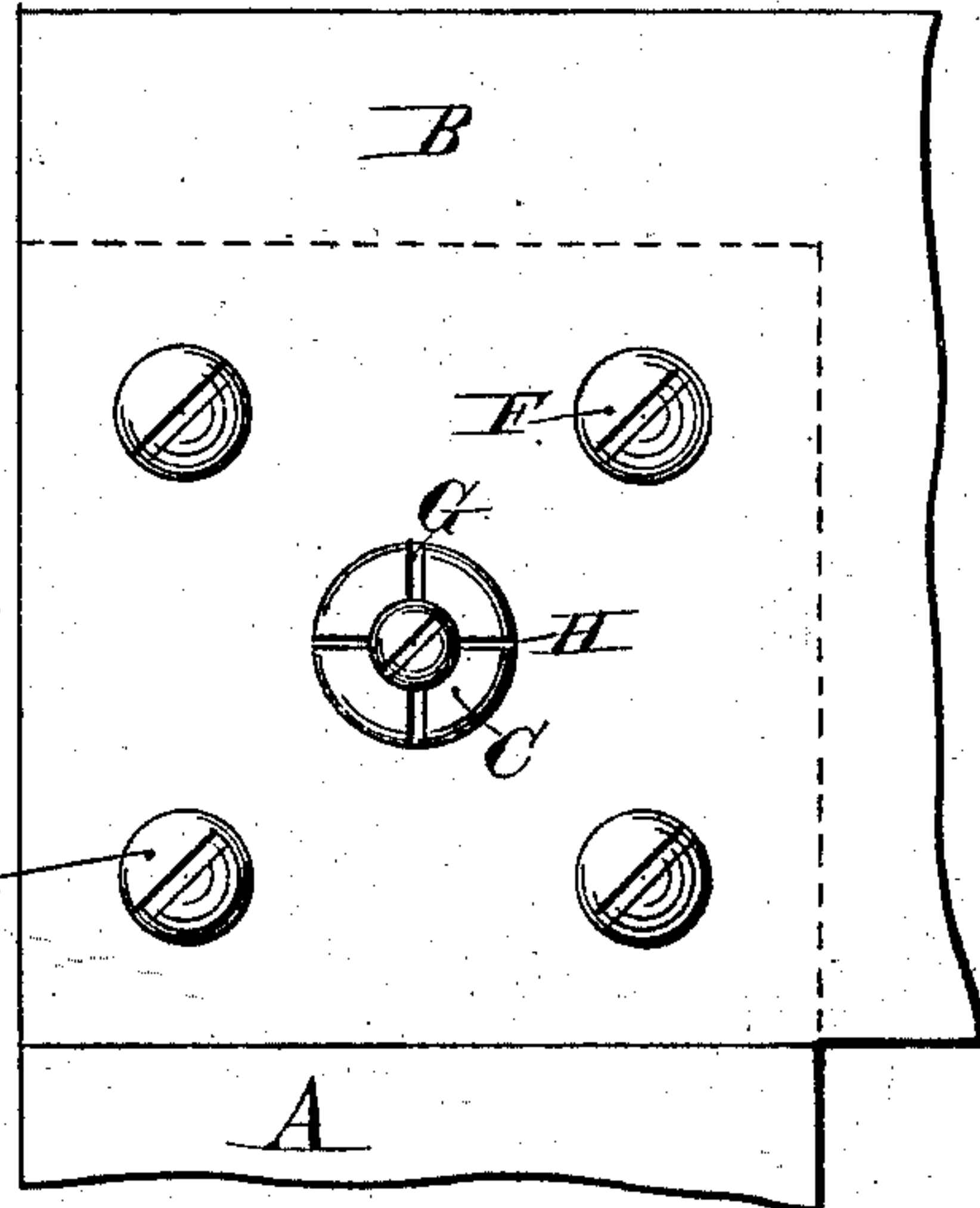


FIG. 3.

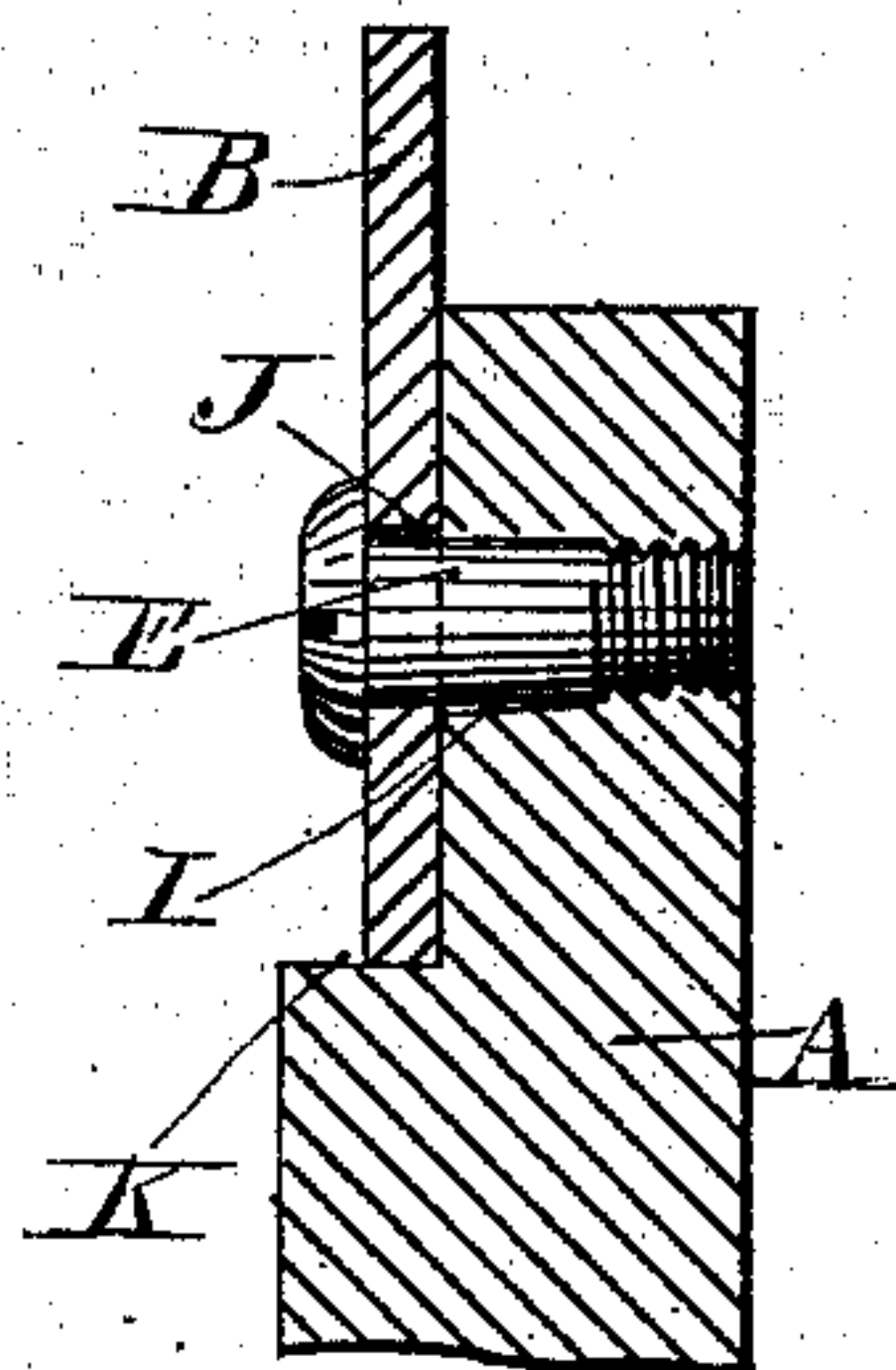


FIG. 7.

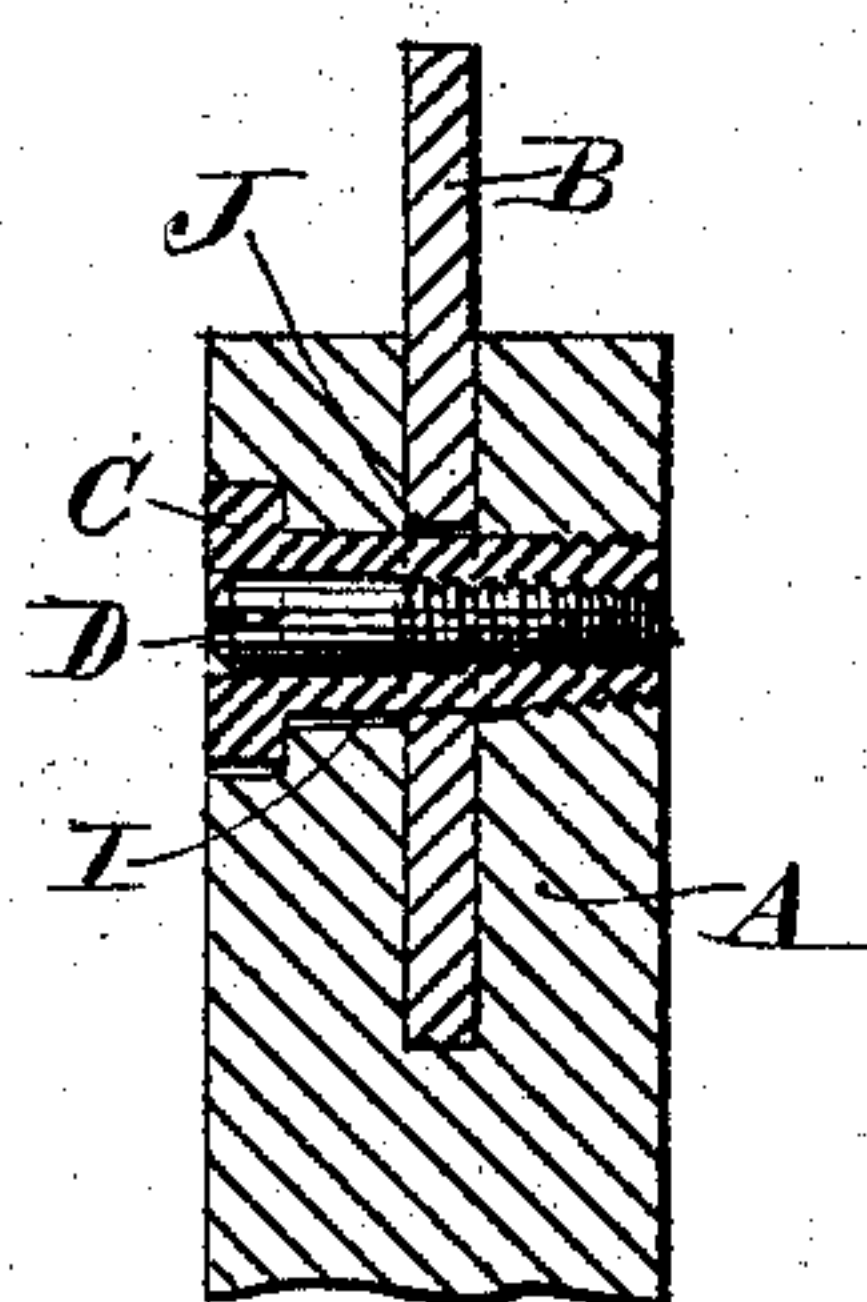


FIG. 6.

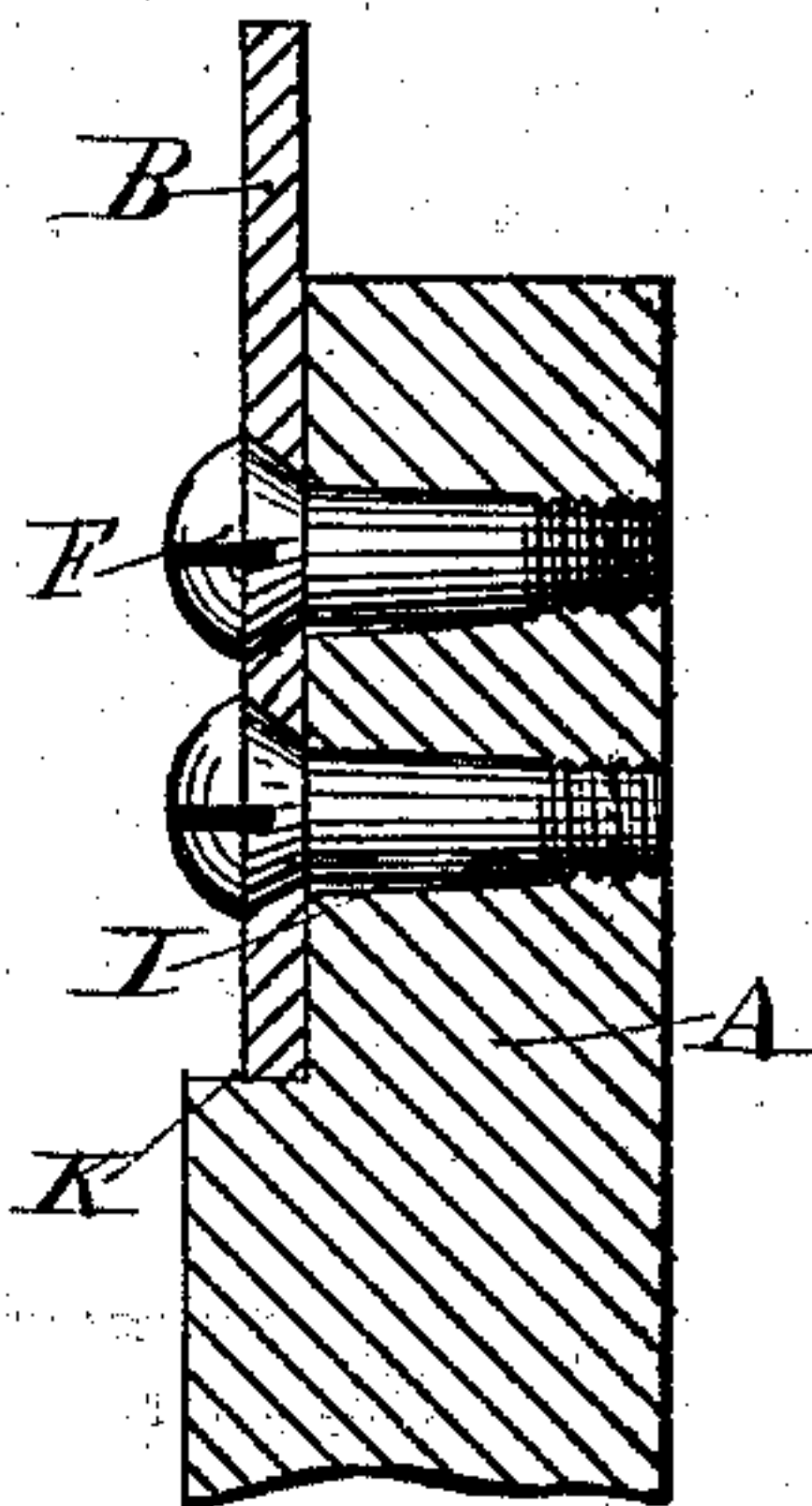


FIG. 5.

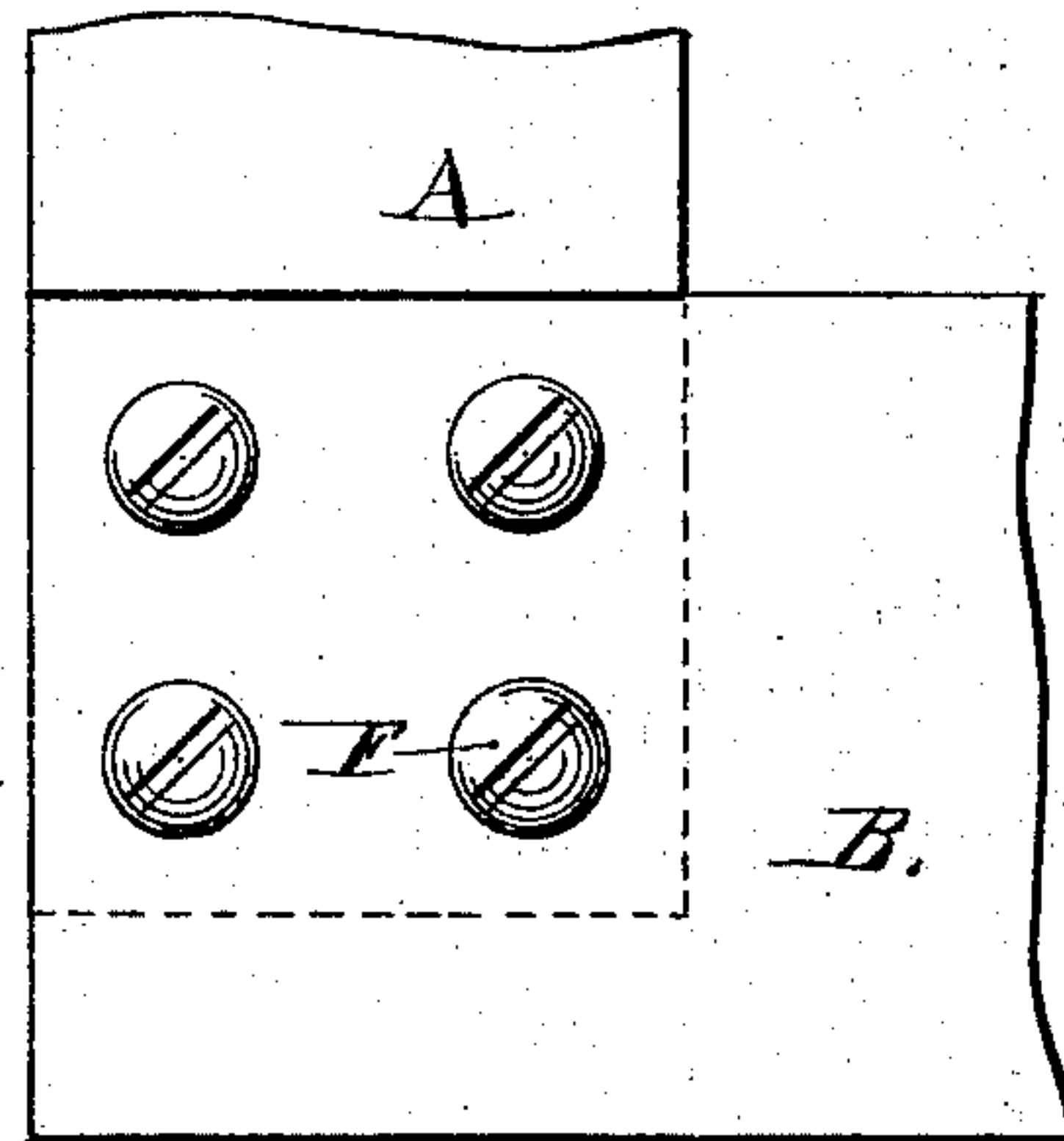


FIG. 4.

WITNESSES.

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METALLIC TRY-SQUARE.

SPECIFICATION forming part of Letters Patent No. 252,436, dated January 17, 1882.

Application filed September 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DARLING, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Metallic Try-Squares; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

My improvement relates to the position of the blade in the stock and the mode of fastening it; and the object of the invention is to produce a try-square of greater accuracy and durability, and one in which the blade can be readily adjusted, removed, repaired, and readjusted, or a new one substituted; a try-square in which the position of the blade and mode of fastening it to the stock will produce an elastic reserve force to compensate for any compression of parts that may be caused by the falling of the square or other accidents; and, also, a try-square of a form adapted to squares of large size, having blades from two to five feet long, more or less; and the invention consists in attaching the blade to a gain, made more or less deep, in the side of the stock at one end, instead of a slot in the center, where square-blades have heretofore been located; in fastening the blade to the stock with a double bolt, one part of which binds the blade to the side of the stock, while the other part forces the edge of the blade against the shoulder in the stock made by the gain, as shown in the drawings, and hereinafter more fully explained; and, also, in pressing the edge of the blade against the shoulder in the stock sufficiently to spring the stock slightly, thus producing an elastic or reserve force to keep the edge of the blade firmly against the shoulder in the stock to prevent any slight yielding of the surfaces in contact from loosening the blade. The springing of the stock .001 inch will be sufficient to produce the reserve force needed.

In the drawings, Figure 1 is a side elevation of a part of a try-square embracing my improvement; Fig. 2, a horizontal section of the same through line *xx*; Fig. 3, a side elevation of a larger square, having four common screws in addition to the double bolt; Fig. 4, a side elevation of my improved square put together with

common screws; Fig. 5, a horizontal section of Fig. 4 through line *oo*; Fig. 6, a horizontal section of a square made in the common form, the blade being fastened by my improved double bolt; Fig. 7, a horizontal section of my improved square, the blade being held in the stock by a tapering screw; dotted lines in Fig. 2, an exaggerated view of the crook or spring in the stock.

The letter A represents the joint end of the stock of the try-square; B, the joint end of the blade; C, a hollow split bolt; D, screw for expanding bolt C; E, tapering screw; F, common conical-headed screws; G, notch for screw-driver; H, split in bolt C; I, enlargement of the hole in the stock; J, enlargement of the hole in the blade; K, shoulder in the handle.

My improvement is especially adapted to large squares made of hardened cast-steel, as they can be made in that form without drawing the temper, which cannot be done when the blade is soldered to the stock, according to my patent of 1857. To solder in the blades squares have to be heated, in most cases many times, to about 400° Fahrenheit, which is liable to change their form and crook them, so that the accuracy sought after cannot be obtained in that way of fastening the blade and stock together.

It will be readily seen that the longer the blade of a try-square the more difficult it must be to get it square.

In making a try-square of hardened steel in one form according to my improvement—say a thirty-six-inch square—the stock should be about twenty-two inches long, three wide, and one and a quarter thick; the blade thirty-nine inches long, four wide, and an eighth thick. The blade should be hardened at the edges, about three-sixteenths of an inch wide, in any of the ways known for doing such work. The middle of the blade being soft, it can be trued by hammering and then ground flat on the sides and straight on the edges. The stock should be planed or ground true on the sides, edges, and ends, and a gain made in the side of one end about twice the thickness of the blade in depth, and about three inches long. Then a hole about five-eighths diameter should be made in the side of the stock in the middle of the gain, the lower part of the hole to be made

smaller than the other part and tapped for a screw. The stock should then be hardened in a hardening-machine to make it as hard as possible, and after being hardened it should be
 5 ground flat and straight on the sides and edges, and especially straight on the edges. Then the bottom of the gain should be ground flat with an emery-wheel, and the face of the shoulder K should be ground at a right angle with
 10 the edge of the stock and bottom of the gain. A hole is to be made in the blade corresponding with the hole in the stock, a hollow bolt is made to fill the hole in the stock and blade, the bolt is split within a quarter of an inch of
 15 its whole length, and the slot in the bolt stands transversely to the stock. A tapering screw is fitted to the interior of the bolt, by which it is expanded. The hole in the stock is enlarged a little, as shown at I in the drawings. The
 20 hole in the blade is enlarged, as shown at J. The parts being thus completed, to put the square together the blade is placed in the gain and bolted firmly to the stock with the hollow bolt. Then the tapering central screw is
 25 screwed into the hollow bolt as far as necessary to bring the edge of the blade firmly against the shoulder K in the stock and spring the stock slightly to produce an elastic pressure. After being thus put together, if the
 30 blade should not stand square with the stock it may be taken off and the shoulder K reground or oilstoned to make it true. The shoulder K and the blade being so very hard, when once fitted will remain so a long time. In a square
 35 of this size, if greater permanency is wanted than the double bolt affords, common screws may be used in addition, as shown in Fig. 3.

Figs. 4 and 5 show another method of putting together my improved square where the
 40 common screws are used, the holes in the stock between the screws and the shoulder K being enlarged a little—say .001 inch—as shown at I, and also the opposite side of the holes in the blade, as shown at J. The screws
 45 have conical heads, as shown in Figs. 4 and 5,

or they may have flat heads, as shown in Fig. 7, taking care to have the screws bear against the blade to press it against the shoulder in the handle sufficiently to produce a slight
 50 spring of the stock. The holes in the blade are in the soft part, and the screws being soft, the bearings are liable to yield a little. Hence the necessity of having a spring reserve force to provide against accidents and hard usage.

Fig. 6 shows the square blade put in the center of the stock and fastened with my double
 55 bolt. In this form the stock cannot be sprung, as it can be when the blade is put on the side, and it is more difficult to make a hard bearing for the edge of the blade to bear against, and
 60 more difficult to adjust.

Having described my invention, what I claim is—

1. A try-square consisting of the metal stock gained at one end to receive the metal blade, 65 and having the blade secured thereto, substantially as described.

2. A try-square having its metal stock gained at one end, a steel blade, and the double bolt by which the two are secured together, sub- 70 stantially as described.

3. In combination with the steel stock of a try-square gained at one end and having a portion of its screw hole enlarged on the side toward the shoulder, the blade adapted to fit the 75 gain, and having the hole for the fastening-screw enlarged on the side away from the shoulder, and an expansive bolt, all substantially as described, and for the purpose set forth.

4. The double bolt consisting of a hollow 80 bolt split at the head end and having an exterior and interior screw at the other end, and a center piece provided with a screw at one end, fitting the internal screw of the hollow bolt for the purpose of expanding it, substantially as 85 described.

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Witnesses:

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JOHN E. HALL.