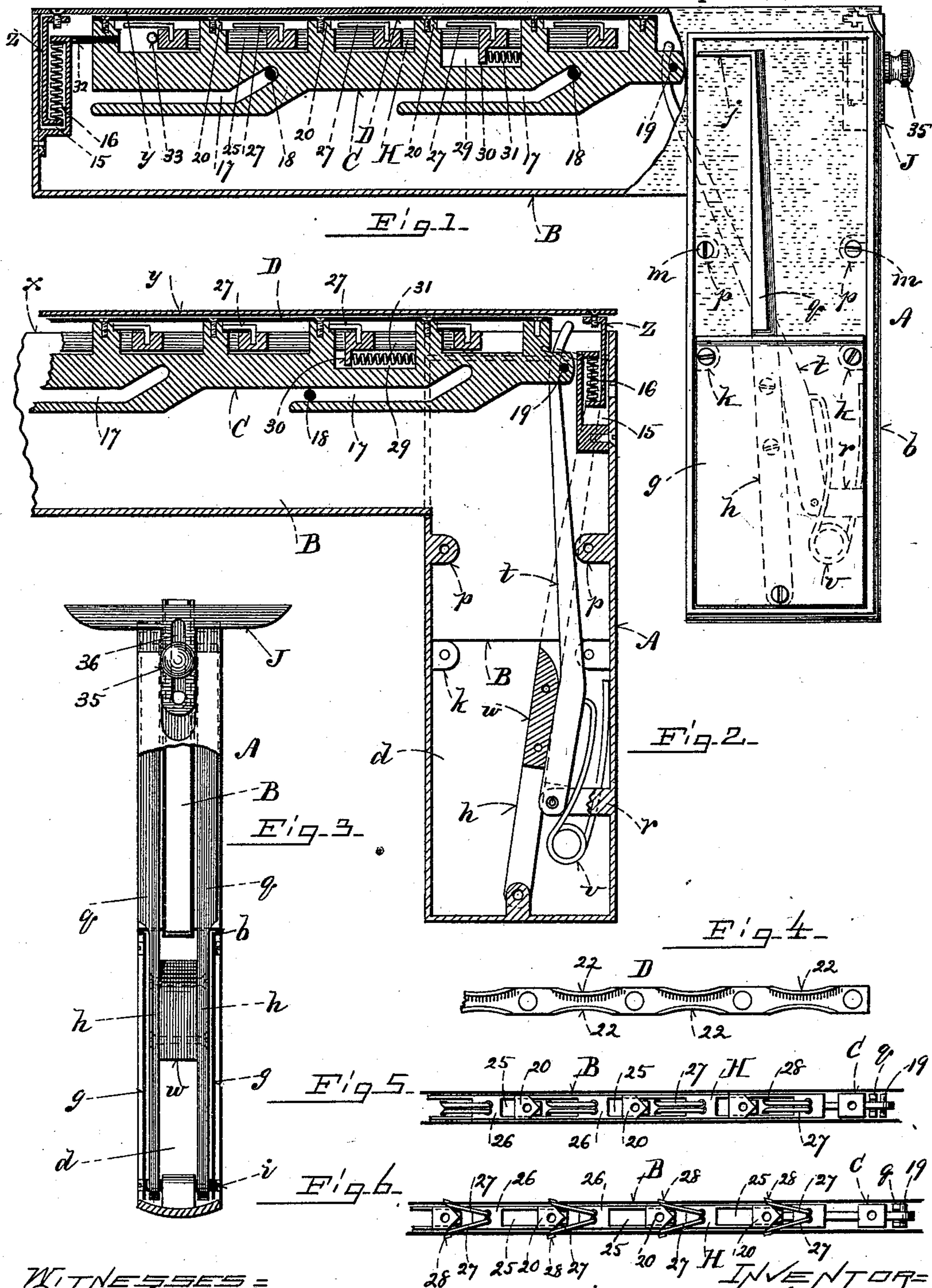


(No Model.)

W. JOHNSON.
TRY SQUARE.

No. 496,227.

Patented Apr. 25, 1893.



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UNITED STATES PATENT OFFICE.

WILLIAM JOHNSON, OF HULL, MASSACHUSETTS.

TRY-SQUARE.

SPECIFICATION forming part of Letters Patent No. 496,227, dated April 25, 1893.

Application filed June 20, 1892. Serial No. 437,309. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHNSON, of Hull, in the county of Plymouth, State of Massachusetts, have invented certain new and useful Improvements in Try-Squares, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation partly in vertical longitudinal section of my improved try-square. Fig. 2 is a vertical longitudinal section of the same, the marking fingers or teeth being represented as projected. Fig. 3 is an end elevation of the same partly in section; Fig. 4 a plan view of the cap-plate; Fig. 5 a top plan view showing the marking teeth housed; and Fig. 6 a like view showing the teeth projected.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a carpenter's try-square and mechanism for marking the stock without the use of pencil or awl ordinarily employed, it being designed particularly as an improvement on the device shown in my Letters Patent dated December 1, 1891, No. 464,407.

In the drawings, A B represent the arms of my improved self-marking try-square, said arms being arranged at right-angles to each other in the ordinary manner and the marking arm, B, being thinner than the companion arm, A, for the purpose of forming a shoulder for engaging the edge of the stock. The marking mechanism is disposed inside these arms which are hollow.

The arm, A, comprises a rectangular metallic frame, *b*, in the lower end of which a chamber, *d*, is formed, the sides of said chamber being closed by face-plates, *g*, secured to lugs, *k*, within the frame. Two vertical levers, *h*, are pivoted at, *i*, by their lower ends in the bottom of the chamber, *d*, in parallelism. The ends of said levers project into the upper portion of the frame, *b*, and are bent

forming a head, *j*. Said levers flare laterally at, *q*, to form a hole for the fingers in operating the square.

The arm, B, is hollow and is formed from metallic plates said arm being let into the frame, *b*, centrally and at right-angles thereto and secured therein by screws, *m*, passing through lugs, *p*, in said frame. The levers, *h*, are thus disposed on opposite sides of the arm, B, and their off-set portions, *q*, are exposed on the open portion of the frame, *b*. Pivoted to a lug, *r*, in the bottom of the frame there is a vertical lever, *t*, pushed outward by a spring, *v*. The levers, *h*, are connected within the chamber, *d*, by a cam-shaped block, *w*, against which the lever, *t*, is held by the spring, *v*. The outer edge of the arm, B, is open at, *x*, and is adapted to be closed by a face-plate, *y*; said face-plate is mounted on two angular vertically arranged plates, *z*, at each end. Said plates, *z*, project into a chamber, 15, formed within the arm, B, and push-springs, 16, tend to force said angle-plates inward whereby the face plate, *y*, is normally held flush with the edge of the arm, B. The sliding block, C, is arranged to move longitudinally within the arm, B. Said block is provided with two cam grooves, 17, in which studs or pins, 18, connecting the walls of the arm, B, work. The cam-grooves are so shaped that when the block, C, is moved longitudinally of the arm a vertical motion is imparted thereto. The free end of the lever, *t*, is confined by a pin, 19, in the inner end of the block, C. The spring, *v*, bearing against said spring tends to hold said block housed. When the levers, *h*, are moved from left to right as viewed in the drawings, the lever, *t*, is actuated thereby drawing the block, C, in corresponding direction.

The block, C, is provided on its upper edge with a series of studs, 20, to the top of which a cap-plate, D, shown in underside plan view in Fig. 4, is secured by screws. This plate between each of the studs is provided with pendent inwardly curved lips or flanges, 22. A bar, H, is fitted with openings, 25, (see Figs. 5 and 6) in which the studs, 20, slide. In the partitions, 26, between said openings two horizontally swinging arms, 27, are mounted.

These arms are normally in parallelism, as shown in Fig. 5, and on their outer ends are provided with marking teeth, 28, best shown in Fig. 6. The free ends of said arms flare or are rounded slightly, as shown in Fig. 5, and the studs, 20, are V-shaped to spread said arms when the block, C, is moved. Said block is recessed vertically at, 29, and lugs, 30, on the bar, H, projects into said recess, a push spring, 31, being interposed between said lug and the vertical wall of said recess.

On the forward or outer end of the block, C, there is an adjustable stop, 32, which engages a wall of the chamber, 15, and limits the forward movement of said block. A stop-pin, 33, (see Fig. 1) limits the forward movement of the bar, H.

On the inner rear face of the frame, A, an adjustable T-shaped gage, J, is mounted by means of a set screw, 35, said gage being slotted longitudinally of its shank at, 36, to receive said screw.

In the use of my improvement the try-square is manipulated in the ordinary manner in obtaining the line at which to cut the stock. Instead of using an awl or pencil to mark the line a lever, *h*, the handle portion, *q*, of which is exposed in the frame, is thrown backward into the position shown by dotted lines in Fig. 2, carrying with it the lever, *t*. This moves the block, C, in corresponding direction longitudinally of the arm, B. Conjointly therewith the shape of the cam-grooves, 17, causes said block, C, to move outward from the arm. The spring-pushed face plate, *y*, is forced upward thereby compressing the springs, as shown in Fig. 2. The marking arms, 27, are thus disposed slightly above the edge of the arm, B. The first upward movement of the block, C, causes its lugs, 30, to slide freely in the slots, 25, of the bar, H, said lugs being V-shaped as described enter between the marking arms, 27, tending to spread said arms and the bar is carried backward with said block. The marking pins, 28, on said arms are thus projected over the edges of the square-arm, B, as shown in Fig. 6, and enter the stock against which said arm is laid indenting a straight line therein. As soon as the lever handle, *q*, is released by the hand of the operator the spring, *v*, throws the lever, *t*, backward and with it the block, C. Said block carrying the plate, D, the curved flanges, 22, on said plate engage the marking arms, 27, at their pivot end closing them as they leave the cam studs, 20. The bar, H, is arrested by the stop, 33, and the tension spring, 31, is compressed as the block, C, reaches its forward limit of motion. The force of said spring is sufficient only to hold the bar, H, so that the cam studs, 20, may spread its marking arms in the first movement of said block. The spring actuated lugs, *z*, as soon as the block, C, is housed return the face-plate, *y*, leaving a smooth edge to the try-square. The T-shaped gage, J, is

employed in positions where a long piece of stock has to be fitted into an opening and it is impracticable to adjust the frame, A, against a wall of said opening.

Having thus explained my invention, what I claim is—

1. In a self-marking try-square the combination of a hollow cross-arm; a sliding block therein; a spring-pushed lever exposed in the companion square-arm for actuating said block; mechanism for projecting said block from the cross-arm when actuated by said lever; and marking arms adapted to be spread by said block into contact with the stock, substantially as described.

2. In a self-marking try-square the combination of a hollow cross-arm; a sliding block therein; a spring-pushed lever exposed in the companion square-arm for actuating said block; cams for projecting said block from the cross-arm when actuated by said lever; and marking arms adapted to be spread by said block into contact with the stock, substantially as described.

3. In a self-marking try-square the combination of a hollow cross-arm; a sliding block therein; a spring-pushed lever exposed in the companion square-arm for actuating said block; cams for projecting said block from the cross-arm when actuated by said lever; and marking-arms adapted to be spread by said block into contact with the stock, and mechanism for housing said block when released, substantially as described.

4. In a self-marking try-square, the hollow cross-arm and lever-actuated block in combination with the spring-tensioned sliding-bar; pivoted marking-arms thereon; and mechanism for spreading said arms, substantially as described.

5. In a self-marking try-square, the lever-actuated block in combination with cams for imparting vertical movement to said block; a spring-tensioned bar carried by said block, marking arms on said bar; a spreader for said arms and mechanism for closing said arms when the block is released, substantially as described.

6. In a self-marking try-square, the hollow cross-arm and spring-tensioned plate, *y*, in combination with the lever actuated cam-guided block; a spring-tensioned bar carried by said block; pivoted marking arms on said bar; a spreader for said arms and the flanged plate on said block for closing said arms, substantially as described.

7. In a self-marking try-square, the forked lever, *h*, and spring-pushed lever, *t*, in combination with the cam-guided block, C, actuated by said lever; the cap-plate, D, on said block; the spring-pushed bar, H, carried by the block; laterally swinging marking points on said bar; spreaders for said points on the block; and flanges on said cap-plate for closing said arms, substantially as described.

8. In a self-marking try-square, the hollow

cross-arm; the spring-held plate, *y*, closing
said arm; the cam-guided block in said arm;
the spring-pushed bar carried by said block
and bearing pivoted marking arms; spread-
5 ers for said arms; closing devices for said
arms; the forked lever having handle por-
tions exposed in the upright square arm and

the spring-pushed lever in operative con-
nection with said block, substantially as set
forth.

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Witnesses:

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