No. 649,009. Patented May 8, 1900.

I. W. STEPHENS.

SELF MARKING TRY SQUARE.

(Application filed Nov. 13, 1899.)

(No Model.)

Fig. 1.

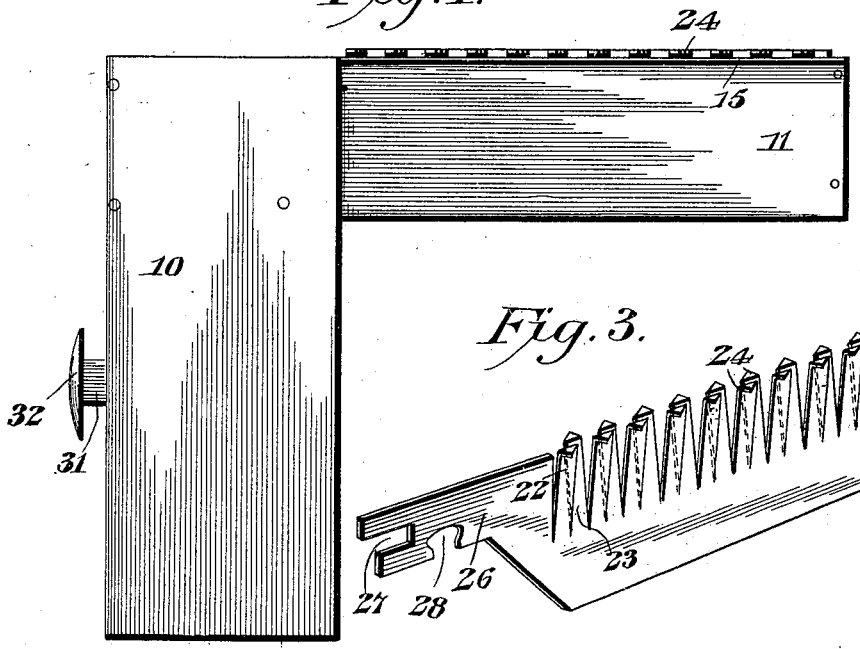

Fig. 3.

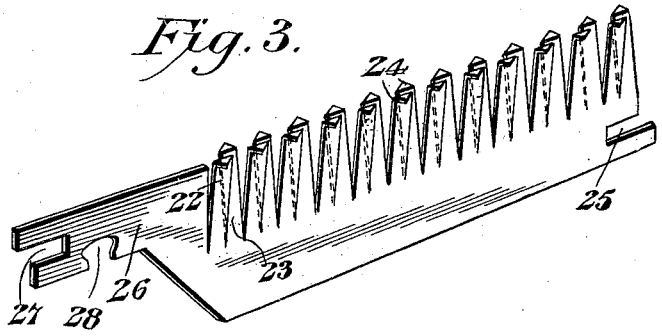

Fig. 2.

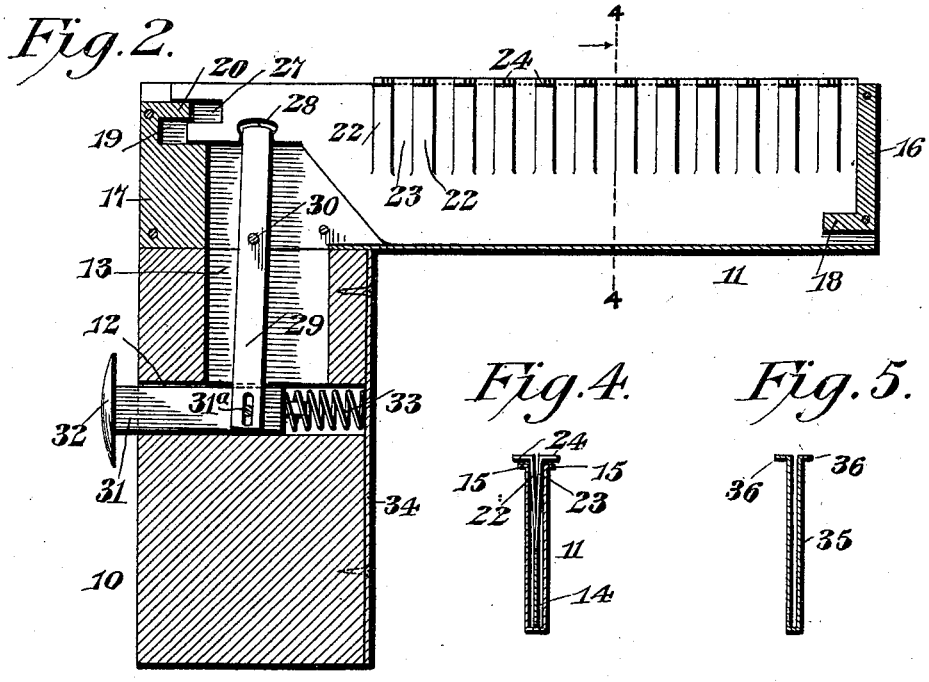

Fig. 4.

Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC W. STEPHENS, OF SARDIS, TENNESSEE.

SELF-MARKING TRY-SQUARE.

SPECIFICATION forming part of Letters Patent No. 649,009, dated May 8, 1900.

Application filed November 13, 1899. Serial No. 736,801. (No model.)

To all whom it may concern:

Be it known that I, ISAAC W. STEPHENS, a citizen of the United States, residing at Sardis, in the county of Henderson and State of Tennessee, have invented a new and useful Self-Marking Try-Square, of which the following is a specification.

My invention relates to improvements in self-marking try-squares for use by carpenters and artisans generally in the arts; and the primary object in view is to provide a single implement by which the work may be gaged and a score-line produced on the stock or work without using a pencil or tool.

A further object of the invention is to provide a marking or scoring appliance which will automatically accommodate itself to irregularities in the surface of the work or stock, and thus increase the efficiency in the operation of scoring a plainly-visible and continuous line.

A further object of the invention is to materially simplify the construction by reducing the number of parts comprising the implement, thereby promoting the durability and serviceability of said implement and cheapening the cost of manufacture.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated a preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of a self-marking try-square constructed in accordance with my invention. Fig. 2 is a longitudinal sectional elevation of the implement, showing the scoring-plate and its actuating devices in elevation. Fig. 3 is a detail perspective view of the preferred form of the scoring-plate removed from the channeled blade of the square. Fig. 4 is a transverse section through the implement in the plane of the line 4 4 of Fig. 2. Fig. 5 is a detail cross-section of another embodiment of the scoring-plate.

The same numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

The try-square of my invention is similar in its general appearance to devices well known in the art, and this square consists of the handle 10 and the blade 11, which are suitably joined together in any secure firm manner. To enable the scoring devices to be combined with the try-square, I have constructed the handle and blade thereof in a peculiar manner, the square-blade being channeled for the reception of the reciprocatory scoring-plate, while the handle is chambered or hollow to accommodate the actuating devices by which the operator may with one hand easily give the necessary reciprocating motion to the scoring-plate.

A transverse slot 12 is produced in the handle at one side of the blade and parallel therewith, and a recess 13 is also produced in the handle, said recess opening into the transverse slot, as clearly shown by Fig. 2.

The blade 11 is provided with a longitudinal channel 14. This blade may be constructed of a single piece of metal, which is doubled or folded upon itself to produce the channel 14, said blade thus consisting of two side plates parallel one to the other and joined together at one edge, as clearly shown by Fig. 4; but it is evident that the channeled blade may be otherwise constructed—as, for instance, by employing two separate plates, which are placed side by side at a suitable distance apart and securing said plates together by any suitable means. The channeled or hollow blade is provided with lateral flanges 15 at the edge through which the channel 14 opens, (see Fig. 4,) and the ends of the channeled blade are provided with filling pieces or blocks 16 17. (See Fig. 2.) The filling-pieces close the channel 14 at the ends of the blade, they serve as stays for the reinforcement of the hollow blade, and they are peculiarly constructed to operate as guides for the scoring-plate in order to direct the latter in a rectilinear path. The filling-block 16 at the distant end of the blade is provided at its lower end, which lies adjacent to the closed edge of the blade, with an arm 18, disposed at right angles to the block and adapted to serve as a guide to the scoring-plate by engaging one end of the latter. The other filling-block 17 is provided near its upper end with a recess 19, forming an arm 20, said re-

cess of the filling-block adapted to receive a projection on the scoring-plate, while the arm 20 fits in the slot of the scoring-plate, as will presently appear.

The scoring-plate 21 is of such shape and dimensions as to fit within the channel 14 of the blade in a manner to reciprocate easily and freely therein. In the preferred construction of this scoring-blade (shown more clearly by Figs. 2 and 3 of the drawings) it is slitted or cut on parallel lines part way across the same, so as to produce a plurality of elastic or spring tongues, (indicated by the numerals 22 23.) The tongues 22 23 are provided with lips or prongs 24, which are bent at right angles to the length of the tongues, each prong being beveled or tapered to produce a sharp scoring-point. The prongs or lips of the alternate prongs 22 are bent in one direction, while the lips or prongs of the remaining tongues 23 are bent in opposite directions, and thus the scoring-blade has its adjacent tongues provided with lips which extend in opposite directions, as clearly shown by Fig. 3. This construction of the scoring-plate is one of the peculiar and advantageous features of my invention, because the flexibility of the tongues makes the points or teeth yield elastically to irregularities in the surface of the work or stock, and in practical service of the implement the scoring-plate as thus constructed will produce a plainly-visible line or mark on the stock notwithstanding that the implement may be used to score the unfinished surface of the stock. The scoring-plate is provided at one end, below the inner terminals of the slits which form the spring-tongues, with a longitudinal slot 25, which opens through one end of said plate. At its other end said scoring-plate is reduced in width to form the tang 26, said tang being provided with a longitudinal slot 27 and with a recess 28. The slot 27 is formed in the tang at the end thereof to open therethrough, while the recess is produced in the lower edge of the tang at a point within the open-ended slot. The scoring-plate is fitted in the channel 14 of the blade 11 for the slot 25 in one end of said plate to receive the arm 18 on the filling-piece 16, the slot 27 at the other end of said scoring-plate to receive the arm 20 on the other filling-piece 17, and the recess 28 is in the plane of the recess 18 in the handle 10. This arrangement of the scoring-plate makes the arms 18 20 engage with the slotted ends of said plate in a manner to permit the scoring-plate to have an endwise movement within the channeled blade, and said arms 18 20 not only direct the scoring-plate to rectilinear movement within the blade, but they also retain the scoring-plate against accidental displacement, because the arms always remain in engagement with the plate. The elastic tongues of the scoring-plate are long enough to project beyond the open edge of the channeled blade, so that the right-angled lips or prongs 24 will be exposed beyond the edge of the blade under all conditions of service. These lips or prongs extend over and beyond the flanges 15 on the blade, (see Fig. 4,) and to increase the efficiency of the scoring-blade I may bend the contiguous prongs 22 23 of the series in opposite direction 5, (see Figs. 3 and 4,) thus giving the necessary play to the tongues when they yield to unevenness in the surface of the stock and presenting the pointed lips or prongs in proper condition for service.

As a means for conveniently giving the necessary reciprocatory play to the scoring-blade I employ a lever 29, arranged longitudinally of the handle, within the recess 13 thereof, said lever being fulcrumed at a point intermediate its length, as at 30, and having one end thereof fitted loosely in the recess 28 of the scoring-blade, whereby the lever is connected operatively with said scoring-blade. A push-pin 31 is fitted slidably in the slot 12 of the handle in a manner to overlap the otherwise free end of the lever, and this lever and the push-pin are connected loosely by a pin-and-slot connection, as at 31^a. (See Fig. 2.) One end of the push-pin is exposed beyond one edge of the handle to enable a head 32 to be operated conveniently by the hand, and against the other end of this push-pin operates a spring 33, which is seated against a face-plate 34, that is secured to the inner edge of the handle.

Although I have described the scoring-plate as consisting of a single flat piece of metal which is provided with a number of transverse slits or incisions to produce the plurality of elastic tongues, I do not desire to strictly confine myself to the employment of this particular construction of said scoring-plate, because I am aware that the plate may be constructed as shown by Fig. 5. In this embodiment of the invention the scoring-plate consists of a piece of metal folded upon itself to provide a doubled plate 35, the edges of which are bent in opposite directions to produce the series of teeth 36, adapted to extend beyond the edges of the flanges 15 on the channeled blade. It is to be understood that the doubled plate with the duplex scoring-teeth 36 has its ends slotted in the manner shown by Fig. 3 to enable said plate to be used in connection with the filling-pieces and the actuating devices shown by Fig. 2.

The implement of my invention may be used as a try-square for testing the work in the manner familiar to those skilled in the art; but for scoring the work the square should be laid against one face of said work, with the inner edge of the handle against the edge of the stock. While the operator holds the square in position with one hand, the finger-piece 31 may be pressed to force it inward against the tension of the spring 33, and the lever 29 will thus be actuated to move the scoring-plate in one direction, the spring reacting on removal of the pressure from the push-pin to force the lever and scoring-plate

in the reverse direction. This reciprocation of the plate draws the teeth or prongs across the face of the stock in order to score thereon a plainly-visible line without requiring the use of a pencil or a tool, and in the event of irregularity on the surface of the stock the spring-tongues yield or give slightly, so as to press the lips into the surface of the stock.

In my improved implement the scoring lips or teeth on the spring-tongues of the scoring-plate are normally exposed beyond the open edge of the channeled blade, and this scoring-plate is actuated by direct connections with a push-pin, said plate being slidably connected with guide devices which limit its movement to a rectilinear path within the channeled blade.

The described implement is extremely simple in construction and efficient in operation.

The simplicity of the implement reduces the cost of manufacture and promotes durability of the device.

Changes may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. A self-marking try-square having a channeled blade, filling-pieces secured in the ends of said blade, a scoring-plate engaged slidably with said filling-pieces to be limited thereby to rectilinear movement and provided with scoring-teeth which are normally exposed beyond the open edge of said blade, and means for moving the scoring-plate in a path parallel to the axis of the blade, substantially as described.

2. A self-marking try-square having a channeled blade, filling-pieces secured in the ends of the blade and provided with guide-arms, a scoring-plate having the slotted ends engaged slidably with the arms of the filling-pieces and having the scoring-teeth normally exposed beyond the open edge of the channeled blade, and means for moving the scoring-plate in a path parallel to the axis of the blade, substantially as described.

3. A self marking and scoring implement, having a marking and scoring device, comprising a plurality of laterally-yieldable spring-tongues projecting at one side of the implement, and provided with pointed lips or prongs at the free ends of the tongues.

4. A self marking and scoring implement, having a longitudinally-slidable scoring device, comprising a plate slitted at numerous points to provide a series of individually laterally and elastically yieldable tongues, each tongue being provided at its free end with a scoring lip or prong, which is disposed laterally of the series of tongues, and operating means for the scoring device.

5. A self marking and scoring implement, having a longitudinally-slidable scoring device, comprising a plate provided with a plurality of yieldable tongues, the alternate tongues being bent at their free ends to provide lips, which extend in corresponding directions from the plane of the plate, and an operating device connected to the latter.

6. A self-marking try-square, comprising angularly-disposed members, a reciprocatory marking device movable longitudinally of one of the members, a spring-actuated push-pin disposed transversely of the other member, and an operative connection between the push-pin and the marking device.

7. A self-marking try-square, comprising angularly-disposed members, a reciprocatory marking device movable longitudinally of one of the members, a spring-actuated push-pin disposed transversely of the other member, and a lever disposed longitudinally of the latter member and fulcrumed intermediate of its ends, the opposite ends of the lever being operatively connected to the marking device and the push-pin, respectively.

8. A self-marking try-square, comprising angularly-disposed members, a reciprocatory marking device movable longitudinally of one of the members, and provided with a notch or recess, a spring-actuated push-pin disposed transversely of the other member, and a lever located between the push-pin and the marking device and fulcrumed intermediate of its ends, one end of said lever being loosely received within the notch or recess in the marking device, and the opposite end of the lever having a slot-and-pin connection with the push-pin.

9. A self-marking try-square comprising angularly-disposed members, one of the latter having a longitudinally-disposed channel opening at the outer edge of the member, and the other member having a longitudinal slot communicating with the channel, and also a transverse slot intersecting the longitudinal slot, a reciprocatory plate mounted within the channel, and provided with marking devices projecting outwardly through the open side of the channel, a push-pin mounted in the transverse slot, and a lever fulcrumed intermediate of its ends within the longitudinal slot, and having operative connections with the plate and the push-pin, respectively.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ISAAC W. STEPHENS.

Witnesses:
J. M. BRYANT,
J. W. FOWLER.