

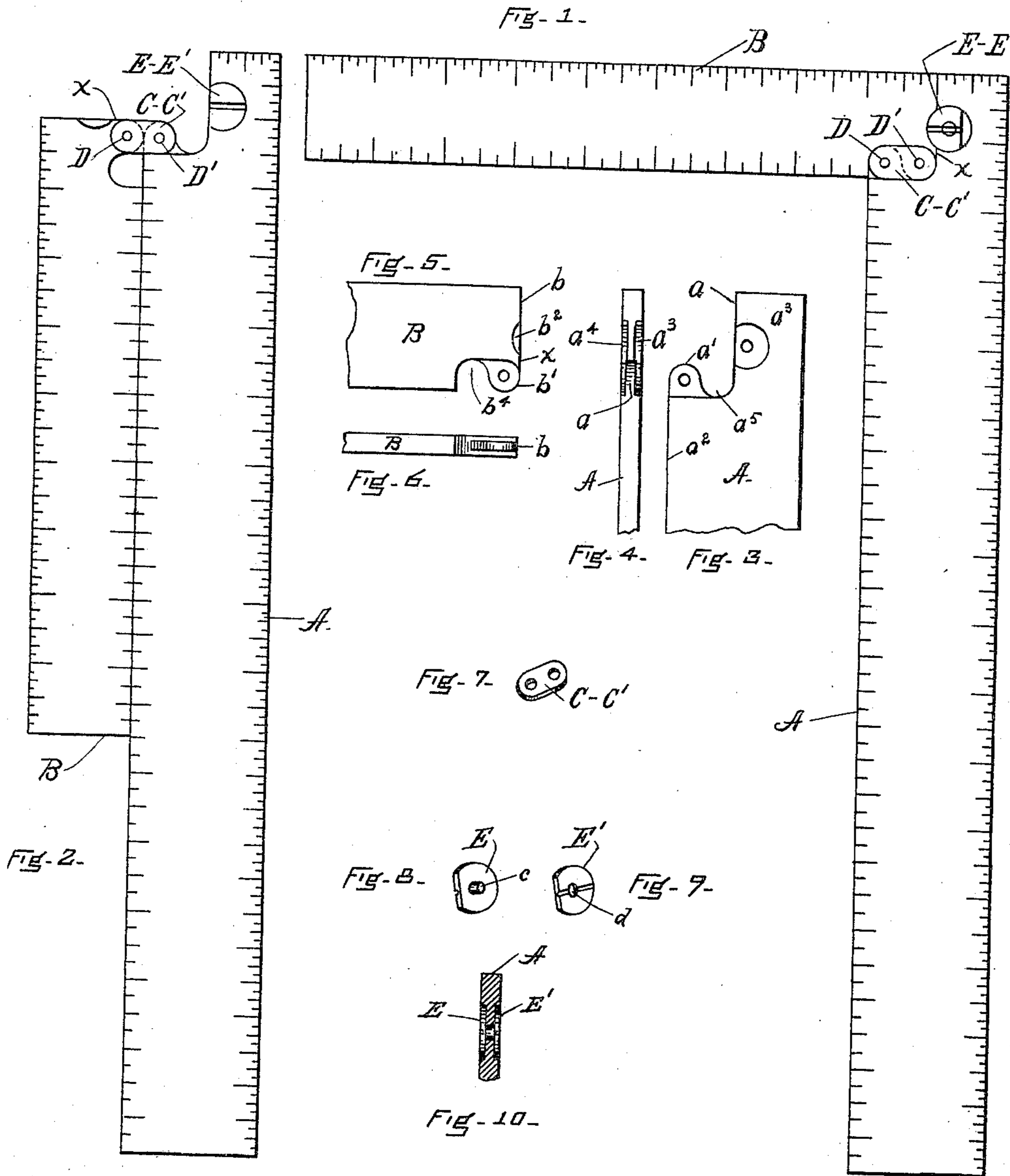
No. 684,759.

F. W. LYNDE.
STEEL SQUARE.

Patented Oct. 15, 1901.

(Application filed Sept. 29, 1900.)

(No Model.)



WITNESSES:

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STEEL SQUARE.

SPECIFICATION forming part of Letters Patent No. 684,759, dated October 15, 1901.

Application filed September 29, 1900. Serial No. 31,494. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. LYNDE, a citizen of the United States, residing at Melrose, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Steel Squares, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

Steel squares as commonly made and used have two flat steel blades integral with each other and arranged to form an inner and an outer right angle. Because of their construction and shape they have always been considered an undesirable and awkward tool for packing and transportation and for a tool-chest, and still, as the square must be absolutely accurate, but little effort has been made to overcome this objection by making the blades so movable that they will lie together or side by side when not in use and yet bear an accurate angular relation to each other when employed as a square. I have discovered means, however, by which the blades may be made separate yet so united to each other and so locked together that while they may be folded into small compass for packing or transportation they preserve when in use the accuracy of the rigid or one-piece square.

In practicing the invention I take two blades, which preferably are indexed or marked as the blades of such squares are commonly marked, shape their ends as herein-after specified, join them together by links, and provide them with a swiveling lock or button, by means of which they may be locked in their angular relation to each other, as hereinafter specified.

I will now describe the construction of the joint and of the lock in connection with the drawings, wherein—

Figure 1 represents the square as open and ready for use. Fig. 2 shows the square folded or closed for transportation and illustrates in comparison with Fig. 1 the economy of space obtained. Fig. 3 is a side view of the head portion of the long blade or arm of the square, showing the shape of the cuts or recesses therein for forming the joint and the lock. Fig. 4 is an edge view of the portion of the blade or arm shown in Fig. 3. Figs.

5 and 6 are side and end views of the head portion of the short blade or arm of the square, showing portions of the joint or lock. Fig. 7 is a view of one of the links which connect the two parts. Figs. 8, 9, and 10 are views of the lock for locking the blades together in their angular relation shown in Fig. 1.

In the drawings, A is the long blade or arm. Its head or end is cut or shaped to the form represented by plan in Fig. 3 and elevation in Fig. 4—that is, it is reduced in width and is provided with an edge a and the ear a' , which is arranged in relation to the edge a and the inner edge a^2 of the arm, as represented in Fig. 3, and the locking-recesses a^3 a^4 , which open to the edge a . The edge a acts as an abutment and receives the end b of the blade or arm B, which is caused when the square is open to lie closely against it from end to end. The curved recess a^5 between the ear and the edge a acts to receive the ear b' on the end of the blade or arm B. The blade or arm B not only has the straight edge b and the ear b' just mentioned, but also the recesses b^2 b^3 , forming a part of the square-lock, and a recess b^4 , which receives the ear a' when the square is open. The ears a' and b' are closely connected by the link C, which is held in the cavity between the ears and is connected to the ears by suitable pivots. When the square is fully open, the recesses b^2 b^3 on the end of the arm B are brought accurately in line with the recesses a^3 a^4 on the end of the blade A, so that the two recesses then describe complete circular cavities on each side of the square, and the two blades are then rigidly locked together in their angular position by the lock E, contained in the recesses a^3 a^4 , adapted to be turned therein to extend into the recesses b^2 b^3 of the blade B and to engage by the portions of the edges turned into said recesses the edges of the recesses b^2 b^3 . The lock E is not circular throughout, but is of the shape of the recesses a^3 a^4 . The lock is in two parts E E', (see Figs. 8, 9, and 10,) and one part may have the projecting portion c to serve as a pivot for the lock and also as a rivet or means for uniting the two parts in the recesses a^3 a^4 , the pivot extending through the hole d . Both these parts E E' of the lock may have in their faces the diametrical screw-

driver slots or recesses to permit a screw-driver to be used in turning the lock. The faces may be knurled or roughened, so that they may be turned by the fingers, if desired. The links are joined to the blades by rivets D D', which pass through holes in the links and blades and which serve as pivots upon which the blades and links turn.

The various parts are so shaped and united that when in the folded position (represented in Fig. 2) no obstructive extension from the edge of any part of the blades is present and the blades may be swung into their operative position or the position shown in Fig. 1 at will. This brings the portions *a' b'* of each into recesses provided for them and they, together with the abutting square edges and the links, whose long axes are then parallel with the length of the blade B, tend to prevent movement in the direction of the length of the blade. This also brings the locking-recesses so that the lock may be turned to the position represented in Fig. 1, its curved edges fitting and filling the recesses provided for them in the blade B. The lock is so constructed and arranged that there can be no movement of the blade B in the direction of the length of the blade A, as the point *x* of the blade swinging, as it does, on a pivot would have to swing through the space occupied by the overlapping and projecting edges of the lock.

I have described the employment of two links and two lock-sections; but I would not be understood as confining myself to this construction, as one ring and one lock-section could be employed. It is desirable, however, whichever construction be employed, that the

surface of the blades, the links, and lock-sections be flush with each other.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a steel square two blades each provided with an ear and a recess, the ear of each blade being shaped to fit the recess of the other blade, in combination with a link pivotally connected to each ear, each pivot forming a fixed axis about which the other blade may turn, whereby each blade may be turned about the ear of the other to assume a parallel or angular position with relation thereto, as described.

2. In a steel square two blades each provided with an ear and a recess, the ear of each blade being shaped to fit the recess of the other blade, in combination with a link pivotally connected to each ear, each ear having an edge formed of the segment of a circle, whereby each blade may be turned about the ear of the other to assume a parallel or angular position with relation thereto, as described.

3. In a steel square two blades each provided with an ear and a recess, the ear of each blade being shaped to fit the recess of the other blade, a link pivotally connected to each blade, each pivot forming a fixed axis about which the other blade may be turned to cause said blade to take an angular or parallel position with relation to the other, in combination with a lock adapted to lock said blades in an angular position, as set forth.

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Witnesses:

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