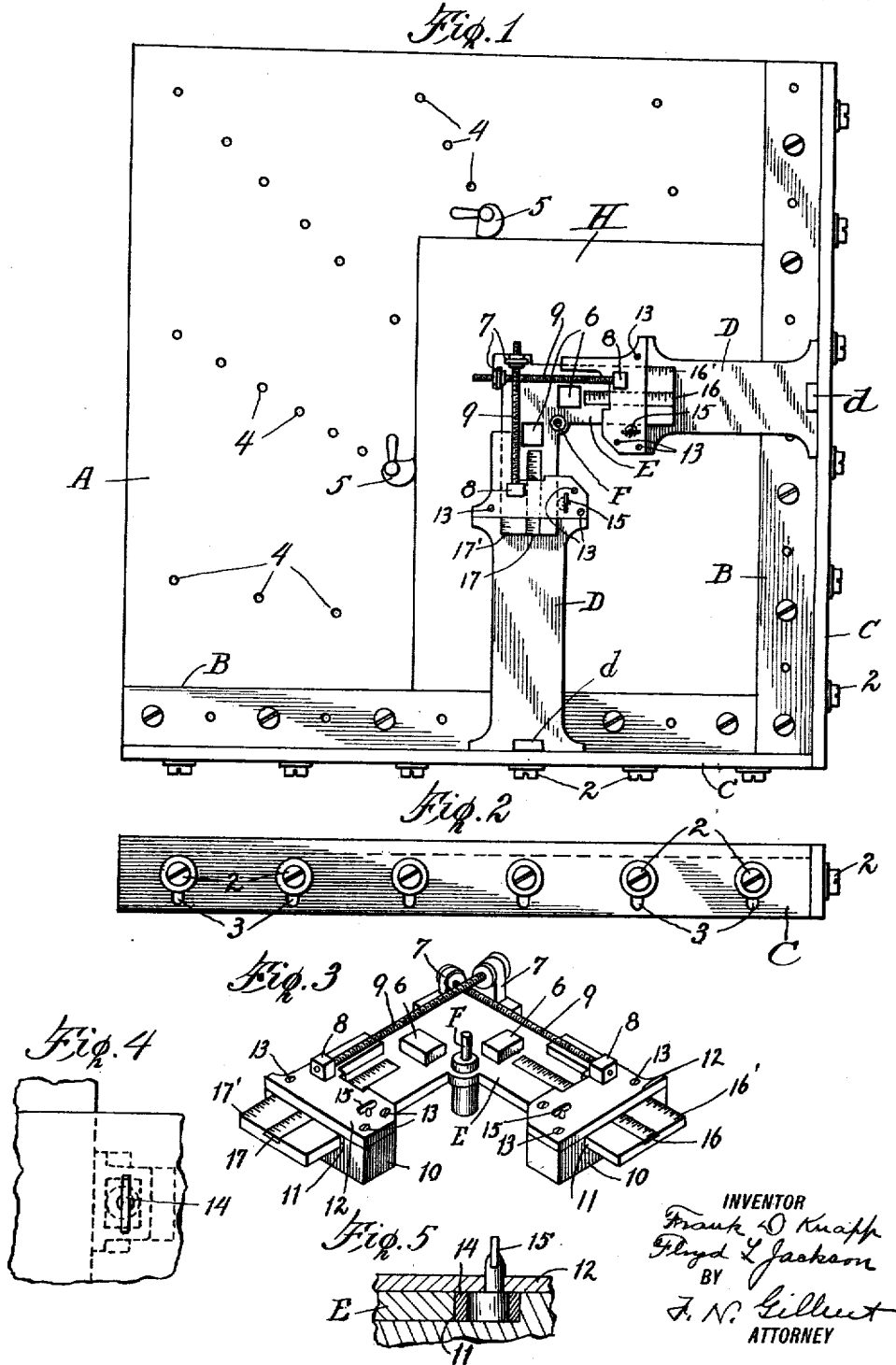


F. D. KNAPP AND F. L. JACKSON.
 TOOL FOR LAYING OUT TEMPLATES AND JIGS.
 APPLICATION FILED JAN. 29, 1918.

1,408,098.

Patented Feb. 28, 1922.



UNITED STATES PATENT OFFICE.

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TOOL FOR LAYING OUT TEMPLATES AND JIGS.

1,408,098.

Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed January 29, 1918: Serial No. 214,331.

To all whom it may concern:

Be it known that we, FRANK D. KNAPP and FLOYD L. JACKSON, citizens of the United States, residing the former at Binghamton, the latter at Endicott, in the county of Broome and State of New York, have invented certain new and useful Improvements in Tools for Laying Out Templates and Jigs, of which the following is a specification.

The present invention has reference generally to improvements in that class of inventions known as measuring instruments and more particularly relates to a measuring device for use in marking templates or like work.

The invention as its primary aim and object, contemplates the provision of a device of the above mentioned character wherein there is employed a measuring element of a right angle shape, the arms of which are inscribed with scales and have slidably associated therewith adjustable blocks in order to insure of accurate marking of the work.

As an additional and equally important object, the invention embraces the provision of distance pieces or spacers in connection with the measuring element and has parallels and guides on the work support to assist in the measuring and marking of the work.

It is a further object of the invention to provide means for adjustably connecting the parallels and guides to the work support to permit of the marking of work of varying thicknesses.

More specific objects of the invention consist in the provision of a device of the above character wherein novel locking means is employed to lock the blocks on the scaled arms of the measuring element to permit of other pieces of similar work being similarly marked; to provide means for releasably clamping the work in position on the support and to provide a measuring and marking element of novel construction.

Among the other aims and objects of the present invention, may be recited the provision of a device of the above mentioned character with a view to compactness and wherein the number of parts is comparatively few, the construction simple, the cost of production low and the efficiency high.

Other objects, as well as the nature, characteristic features and scope of this invention will be more readily apparent from the

following description taken in connection with the accompanying drawings and pointed out in the claims forming a part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:

Figure 1 is a top plan of the invention showing work in position for marking;

Figure 2 is a side elevation of the same;

Figure 3 is a perspective of the measuring and marking element;

Figure 4 is a fragmentary top plan view showing the locking means for the blocks on the scaled arms; and

Figure 5 is a transverse sectional view of the same.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now more particularly to the drawings, A represents the base plate or work support, the same having certain of the marginal portions thereof provided with removably mounted horizontal parallels B, which, as will be noted, are preferably secured to the base A, by screws or like fastening devices. To those edges of the work support A adjacent the parallels B, guides C are secured vertically, preferably by screws 2, which, pass through slots formed in said guides C in order that the same may be adjusted vertically for a purpose, hereinafter described. A plurality of sockets generally indicated by the numeral 4 is formed in the upper face of the work support A which removably receive the pivot pins of locking cams 5 while the cams are positioned adjacent the work H arranged on the support and then turned into engagement with the work so as to releasably clamp it against further movement during the measuring and marking operation.

With a view toward providing the improved measuring and marking element, generally designated E, the same may be said to consist broadly of a pair of right angularly disposed adjusting screws and comprises a right angularly shaped body forming arms and slidably supporting at the juncture thereof a marking punch F. Blocks 10 are slidably mounted on the arms and are each constructed preferably in sections one of which sections is recessed as at 11 while the other is in the form of a cover plate 12 held to the recessed section 11 as by screws 13. Apertured bearing lugs 7 are formed

integral with the body of the element E and rotatably receive adjusting rods 9, the opposite end portions thereof being threaded, and operating through the correspondingly screwthreaded bores of other lugs 8 carried in turn upon the cover plate sections 12 of the blocks 10. As is apparent, by this construction, the blocks may be readily adjusted on the arms to coact with the scales 16, 16' and 17, 17' inscribed thereon.

In order to releasably clamp the blocks in their adjusted positions to permit of the device being used for similarly marking other pieces of work of the same size, locking cams, 15, are employed and have their operating stem portions rotatably mounted in the cover plate sections 12 of the blocks 10, the cam portions proper being positioned in the recessed sections 11 of the blocks and coact with substantially D-shaped clamping elements 14, which, are also slidably accommodated in the recessed sections and, upon the turning of the cams, forced into clamping relation with the edges of the adjacent arms of the measuring element E.

Coacting with the arms of the measuring element E are the improved distance pieces or spacers D having lugs *d* on their outer ends which abut the strips or guides C. In this connection, it is also to be observed that the distance pieces or spacers lie on the work H on the support, and on the parallels or guides B, the inner end portions lying under the arms of the measuring element and abutting the adjacent edges of the blocks 10. The width of the parallels or guides B is similar and known while the distance pieces themselves are also of known lengths.

Each arm of the element E is formed with a lug 6, the faces of the adjacent inner ends thereof being on imaginary straight lines with the center of the punch F so that another measuring implement (not shown) may be used if desired in connection with the said lugs 6 and the lugs *d'* for verifying the adjustments made by the measuring element 14 and spacers D.

In operation the work H is placed on the work support A and clamped thereto by the locking cams 5. The supports or spacers D are now properly positioned over the work upon the support and the element E then measured or adjusted against the spacers with relation to the work by turning the screws 9. When adjusted, the locking cams 15 are turned to cause the strips 14 to securely clamp the blocks 10. At this time the punch F is sharply tapped with a hammer or other implement, thereby marking the work and clearly indicating thereon the proper center of the hole to be drilled therein.

Due to the manner in which the arms of the measuring element are engaged with the adjacent ends of the spacers D, it will be un-

derstood that the same may be adjusted longitudinally and transversely of the work support A to any desired point, such as by substituting other spacers D.

It is of course to be understood that the work support may be made of a size to receive different sizes of work. Further, by loosening the screws 2, the guides or strips C may be raised by reason of the slots so that the device may be used in connection with work differing in thickness. Fillers (not shown) may be arranged under the parallels or guides B so that the upper surfaces thereof will lie flush with pieces of work of greater thickness.

We claim,—

1. In a device of the character described, a support adapted to receive a pair of work spacers associated with the work and support, a measuring and marking element disposed on the work and coacting with the spacers, and means for adjusting the element with respect to the spacers.

2. In a device of the character described a support adapted to receive a piece of work to be marked, spacers slidably disposed on the work and against the support, a measuring and marking element disposed on the work and engaging the spacers and means for adjusting the element in the direction of any margin of the work support.

3. In a device of the character described, a support adapted to receive a piece of work, spacers slidably disposed on the work and the support, a right angular measuring and marking element slidably engaged against the adjacent ends of the spacers, and means for adjusting the measuring element with respect to the spacers and longitudinally and transversely of said work support.

4. In a device of the character described, a work support, spacing means adjustably arranged on said support, a measuring element slidably mounted against the spacing means, means for adjusting said measuring element longitudinally and transversely of the work support, and marking means mounted on the measuring element.

5. In a device of the character described, a work support, work clamping means adjustably engaged with said support, spacing members adjustable over said support, a measuring element slidably mounted against the adjacent ends of said spacing members, means for effecting adjustment of the measuring element longitudinally and transversely of the support, and marking means mounted on said measuring element.

6. In a device of the character described, a work support, parallels arranged adjacent certain of the marginal portions of said work support, adjustable guides secured to certain of the edges of said support adjacent the parallels, spacing members slidably engaged with the parallels and said guides, a

right angular measuring element slidably mounted against the adjacent ends of the spacing members, means for effecting adjustment of the measuring element longitudinally and transversely of the work support, and marking means mounted on said element.

7. In a device of the character described, a work support having a plurality of spaced sockets formed in one face thereof, work clamping cams engageable in said sockets, spacing members slidably engaged with the support, a measuring element slidably engaging against the adjacent ends of the spacing members, means for effecting adjustment of the measuring element longitudinally and transversely of the support, and marking means mounted on said element.

8. In a device of the character described, a work support having a plurality of spaced sockets formed in one face thereof, work clamping cams engageable in said sockets, parallels arranged adjacent certain of the marginal portions of the support, vertically adjustable guides secured to certain of the edges of the support adjacent said parallels, spacing members slidably engaged with said parallels and guides, a right angular meas-

uring element slidably mounted against the adjacent ends of the spacing members, means for effecting adjustment of the measuring element longitudinally and transversely of the support and marking means mounted on said measuring element.

9. In a device of the character described, a support adapted to receive a piece of work, spacers slidably disposed on the work and the support, a measuring element disposed on the work and including right angularly disposed scaled arms, blocks slidably mounted on the arms and engaged against the adjacent ends of the spacers, means for effecting adjustment of the blocks independently to insure of the adjustment of the measuring element with respect to the spacers and longitudinally and transversely of said work support and a marking punch mounted on the element at the juncture of the arms.

In testimony whereof we have affixed our signatures in the presence of two witnesses.

FRANK D. KNAPP.
FLOYD L. JACKSON.

Witnesses:

A. L. SCHWAB,
E. M. HOWEY.