W. JACOBSEN.

DRAFTING APPLIANCE.

APPLICATION FILED FEB. 14, 1913.

1,092,107.

Patented Mar. 31, 1914.

2 SHEETS—SHEET 1.

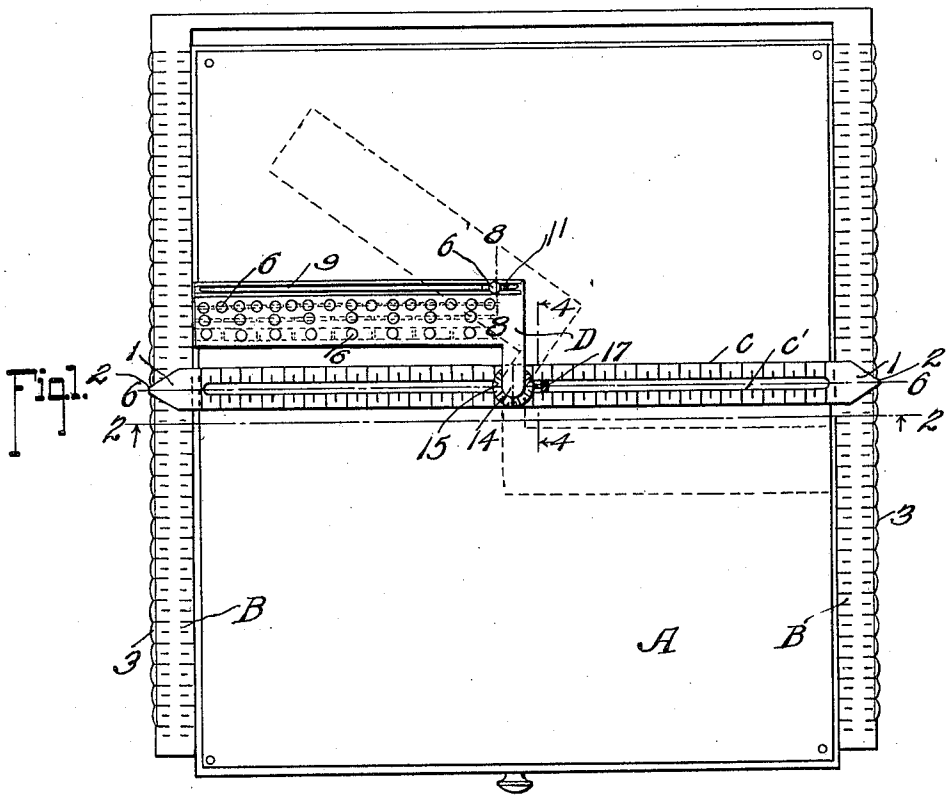


Fig. 1.

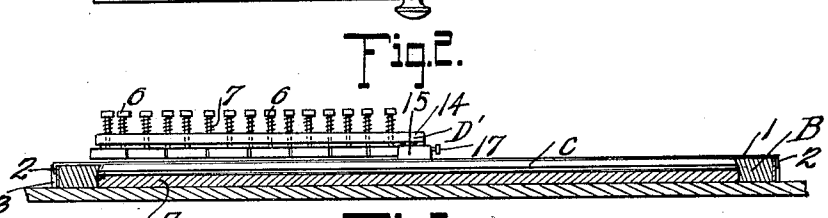


Fig. 2.

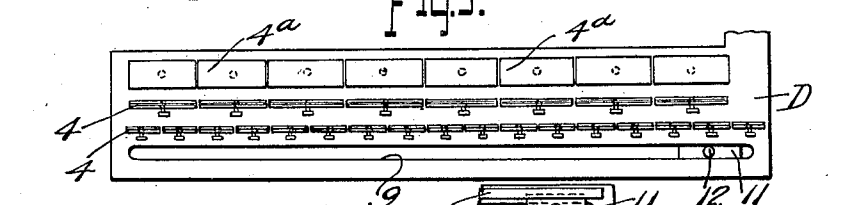


Fig. 3.

Fig. 4.

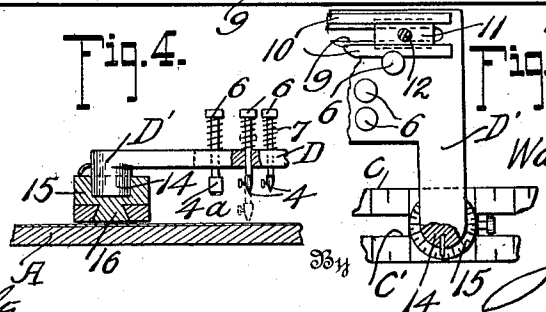


Fig. 5.

Witnesses

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2 SHEETS—SHEET 2.

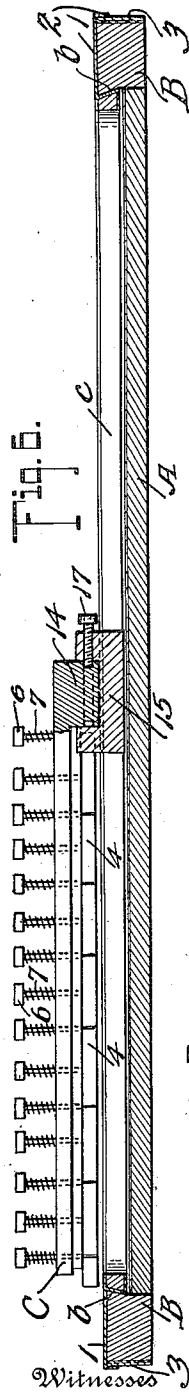


Fig. 6.

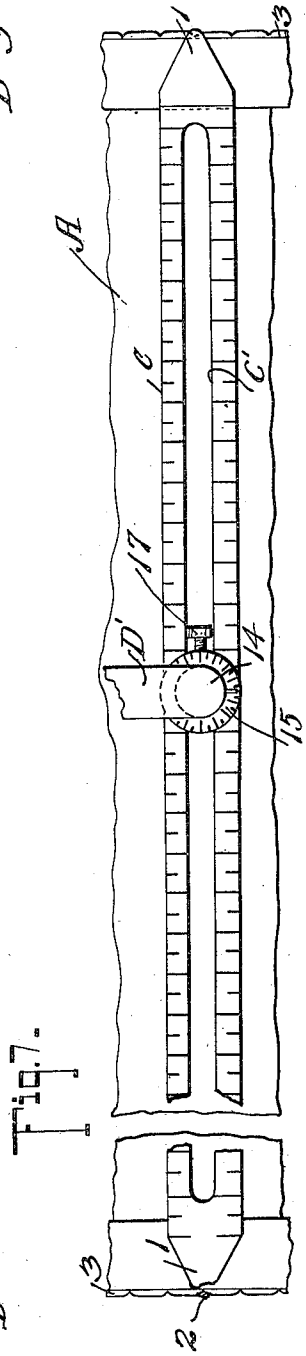


Fig. 7.

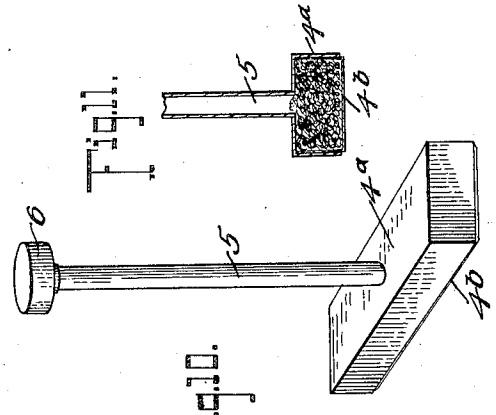


Fig. 10.

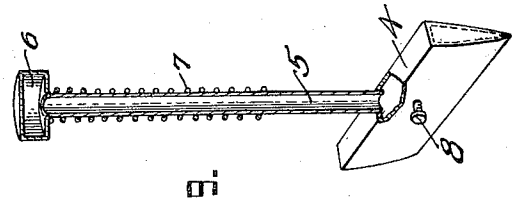


Fig. 9.

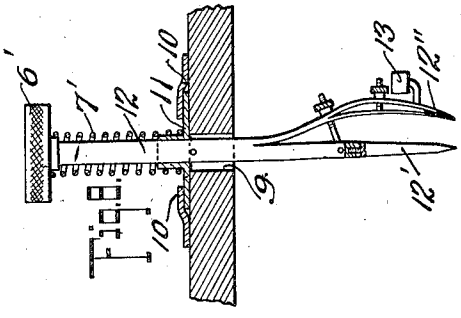


Fig. 8.

Witnesses

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DRAFTING APPLIANCE.

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Application filed February 14, 1913. Serial No. 748,498.

To all whom it may concern:

Be it known that I, WALDEMAR JACOBSEN, a subject of the King of Denmark, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Drafting Appliances, of which the following is a specification.

This invention embodies an improved drafting appliance for facilitating the drawing of plans and the plotting out of diagrams of various kinds.

The essential object of the invention has been to produce an appliance of the class mentioned which has a comparatively wide range of use for drafting purposes and includes mechanism adjustable upon a base, and having marking elements of special forms to meet the requirements. The mechanism referred to is adapted to operate above the base, the latter supporting the drawing paper, or other material upon which the plans, drawings or diagrams are to be made.

The invention is directed particularly to the general mechanism which will be hereinafter set forth quite clearly, and to the specific marking devices included in said mechanism, as well as other details of construction that will be understood more fully upon reference to the following detailed description, and the accompanying drawings, in which—

Figure 1 is a plan view of an appliance made in accordance with the invention, dotted lines showing the positions in which the carrier for the markers may be disposed by adjustment. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is a fragmentary bottom plan view of the carrier. Fig. 4 is a sectional view on the line 4—4 of Fig. 1, looking toward the carrier, the base being broken away. Fig. 5 is a fragmentary view bringing out more clearly by enlargement, the mounting of the carrier upon its supporting slide, the pivot arm of the carrier being broken away and shown in section. Fig. 6 is a sectional view on the line 6—6 of Fig. 1. Fig. 7 is a plan view bringing out more clearly the form of the slide which pivotally and slidably supports the carrier. Fig. 8 is a sectional view bringing out more clearly the mounting of the compass upon the carrier. Figs. 9 and 10 are perspective views of certain markers, that in Fig. 9 having its filling cap shown in section. Fig. 11 is a sectional view of the lower portion of the marker shown in Fig. 10.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

Describing the invention specifically, A in the drawings denotes a base of any suitable form, preferably square and said base constitutes virtually a drawing board adapted to receive thereon paper, cloth, or other material which is to receive the drawing, plan, or diagram made by means of the invention. The base A is formed at opposite edge portions thereof with guides B, the inner sides of which are somewhat undercut, as shown at *b* in Fig. 6, whereby the ends of a slide C may be interlockingly engaged with the guides. The extremities of the slide C are beveled slightly to correspond with the adjacent portions *b* of the guides B. Furthermore, a plate 1 is attached to the upper side of the slide C so that its ends overlap the guides B. The extremities of the plate 1 are tapered or pointed, and the yielding points 2 engage with notched plates 3 that are secured to the guides B. The slide C is longitudinally slotted, as shown at C′ and said slide is movable freely on the guides B to various points of adjustment between the upper and lower edges of the base A. In its movement, the ends of the slide C operate in frictional contact with the upper surface of the guides B. The necessary pressure to create movement of the slide C is sufficient to cause the detent points 2 to pass from engagement with one notch to another of the plates 3. A fixed adjustment of the slide C is procured by the interlocking of the points 2 with the notches of the plates 3, as shown most clearly in Figs. 1 and 7. It is contemplated that the guides B shall be provided longitudinally thereof with graduations of measurement, according to any suitable system desired, these graduations being preferably in inches and fractions of inches.

Mounted upon the slide C is the carrier D. A plurality of line markers 4 are supported on the carrier D, said markers being preferably arranged in two rows, as shown in the bottom plan view, Fig. 3. The markers 4 really comprise elongated pens and the markers of each row are arranged so close

to one another that, by actuation of any desired number of markers, a practically continuous line may be produced in performing a piece of work.

The detail construction of each marker 4 is shown clearly in Fig. 9, from which it will be observed that a tubular stem 5 extends upward from the marker, passing through an opening in the carrier D. At its upper extremity, the stem 5 is provided with a cap which constitutes a finger piece 6, and a coiled spring 7 encircles the stem 5 and abuts at one end with the under side of the finger piece 6 and at its other end with the upper side of the carrier D, see Figs. 2, 4 and 6. Normally the tension of the spring 7 holds the marker 4 in an upraised or inoperative position, subject to pressure, however, to bring the lower edge of the marker into contact with the material upon which the plan is being drawn. Each marker 4 is composed of sides adjustably connected by a suitable adjusting screw 8. By operation of the screw 8, the marker 4 may be adjusted for the formation of a thin or heavy line, as desired.

Associated with the several markers 4 is a row of auxiliary markers 4^a which, for the purposes of this description will be called object markers. The markers 4^a are of rectangular form, but may be made of different shapes, said markers being designed to simulate an approximately rectangular stone, such as may be used in building construction. The body of each marker 4^a comprises a holder in which an inking pad 4^b is arranged. The markers 4^a are each provided with a stem 5 and fingerpiece 6, such as used in connection with the markers 4 and the springs 7 serve to maintain the markers 4^a in their normal upraised positions. By removing the caps or finger pieces 6, that are preferably screw-threaded on the upper ends of the stems 5 of the markers, it is quite easy to supply ink to the markers 4 and to the pads 4^b of the markers 4^a. The ink feeds from the markers 4 somewhat in the same manner as in the operation of the ordinary drawing pen.

Provided longitudinally of the carrier D is a slot 9 and mounted in guides 10 at opposite sides of said slot is a slide plate 11 in which is depressibly mounted the compass 12. Said compass is held upraised by a spring 7′ and is provided with a finger piece 6′ at its upper end. The compass comprises a suitable centering point 12′ and pen 12″, the latter having a small ink supply reservoir 13. It will be apparent that the pen 12 is adapted for movement lengthwise of the slot 9 and may be conveniently manipulated in order to make circles, such as may be required in producing a drawing or plan.

The carrier D is peculiarly mounted, being formed with an off-standing arm D′ provided with a head 14 which is rotatably mounted in a socket member 15 slidable longitudinally of the slide C. The socket member 15 is formed with a tongue 16 of dove-tail form in section, see Fig. 4, and this tongue is snugly received in slots C′ of the slide D, said slots being of a shape corresponding with that of the tongue 16. A set screw 17 on the socket member 15 is adapted to engage the head 14 in order to hold the carrier D in an adjusted position, either parallel with the slide C, at either side of the same, or in a position in which the carrier extends angularly with respect to the slide. Certain adjustments of the carrier D are illustrated in dotted lines in Fig. 1.

From the foregoing, it will be understood that a very wide and adequate range of adjustment of the carrier D may be obtained in order to hold the markers in many different positions at which they must necessarily be supported in order to permit of the formation of lines in parallelism, or at angles with respect to the slide C. Furthermore, the slide C, being adjustable entirely across the surface of the base A, in spaced relation thereto, affords a further advantageous adjustment of the marking elements. When the slide C and carrier D are properly adjusted, the operator has only to depress one or more of the markers 4, separately, or simultaneously, in order to produce a line of the desired length. If the plan or drawing which is being executed requires the illustration of bricks, the markers 4 would preferably be operated, while, if the operator desires to illustrate a stone wall structure, the auxiliary markers 4^a would preferably be used to imprint upon the drawing or surface carried by the base A the desired arrangement of the stones composing the wall or other formation. Under certain conditions, it will be evident that the carrier D may be rotated so as to utilize the same somewhat after the manner of a compass, the head 14 under such conditions, acting as a centering member.

By the employment of the invention, the necessity of using many and complicated instruments ordinarily required in drafting work, is obviated. Accurate adjustments of the various parts are readily obtained by the provision on the guides B and slide C of graduations, such as will assist the user of the appliance in determining to a nicety the proper disposition of the lines or other features of the plan which are being produced. Furthermore, the socket member 15 is formed with circularly arranged graduations so as to determine the exact angular adjustment of the carrier D in relation to the slide or support C.

The point 12′ of the compass 12 is detachable whereby the pen of said compass may be used alone in a manner similar to

the use of an ordinary ruling pen. This is necessary when making straight continuous lines, and the slide plate 11 forms a holder coöperating with the member D in such a way that the latter virtually performs the function of a ruler when the pen 12″ is moved back and forth under the conditions just referred to.

Having thus described the invention, what is claimed as new is:

1. In a drafting appliance, the combination of a base, a supporting member movable over the surface of the base, a carrier mounted upon said supporting member, markers supported by the carrier, a connection between the carrier and supporting member whereby the former is adapted to move in respect to the carrier, and means for operating each of the markers independently of the carrier.

2. In a drafting appliance, the combination of a base, guides at opposite portions of the base, a slide supported by said guides, a carrier adjustably mounted upon the slide, and markers movably mounted upon the carrier and operable independently of the latter.

3. In a drafting appliance, the combination of a base, guides at opposite portions of the base, a slide supported by said guides, a carrier adjustably mounted upon the slide, markers movably mounted upon the carrier, interlocking means between the base and the slide to hold the latter in adjusted position on the base, and means for holding the carrier in adjusted position on the slide.

4. In a drafting appliance, the combination of a base, a slotted slide supported on said base, a socket member operating in the slotted portion of the slide, a carrier pivotally mounted on said socket member, and markers depressibly supported on the carrier.

5. In a drafting appliance, the combination of a base, a slotted slide supported on said base, a socket member operating in the slotted portion of the slide, a carrier pivotally mounted on said socket member, markers depressibly supported on the carrier, and means normally holding the markers in an inoperative position.

6. In a drafting appliance, the combination of a base, a slotted slide supported on said base, a socket member operating in the slotted portion of the slide, a carrier pivotally mounted on said socket member, a plurality of vertically movable markers mounted on the carrier, a marker slidably mounted on the carrier, and means for holding the carrier in adjusted position on the slide.

7. In a drafting appliance, the combination of a base, a supporting member movable over the surface of the base, a carrier mounted upon said supporting member, markers supported by the carrier, and means for holding said supporting member in adjusted positions with respect to the base.

8. In a drafting appliance, the combination of a base, a support movable across the base, means for pivotally and slidably adjusting said support, a plurality of markers carried by the support, and depressible toward the base, and means normally holding said markers in an inoperative position.

In testimony whereof I affix my signature in presence of two witnesses.

WALDEMAR JACOBSEN.

Witnesses:
H. C. Robb,
G. O. Rose.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."