

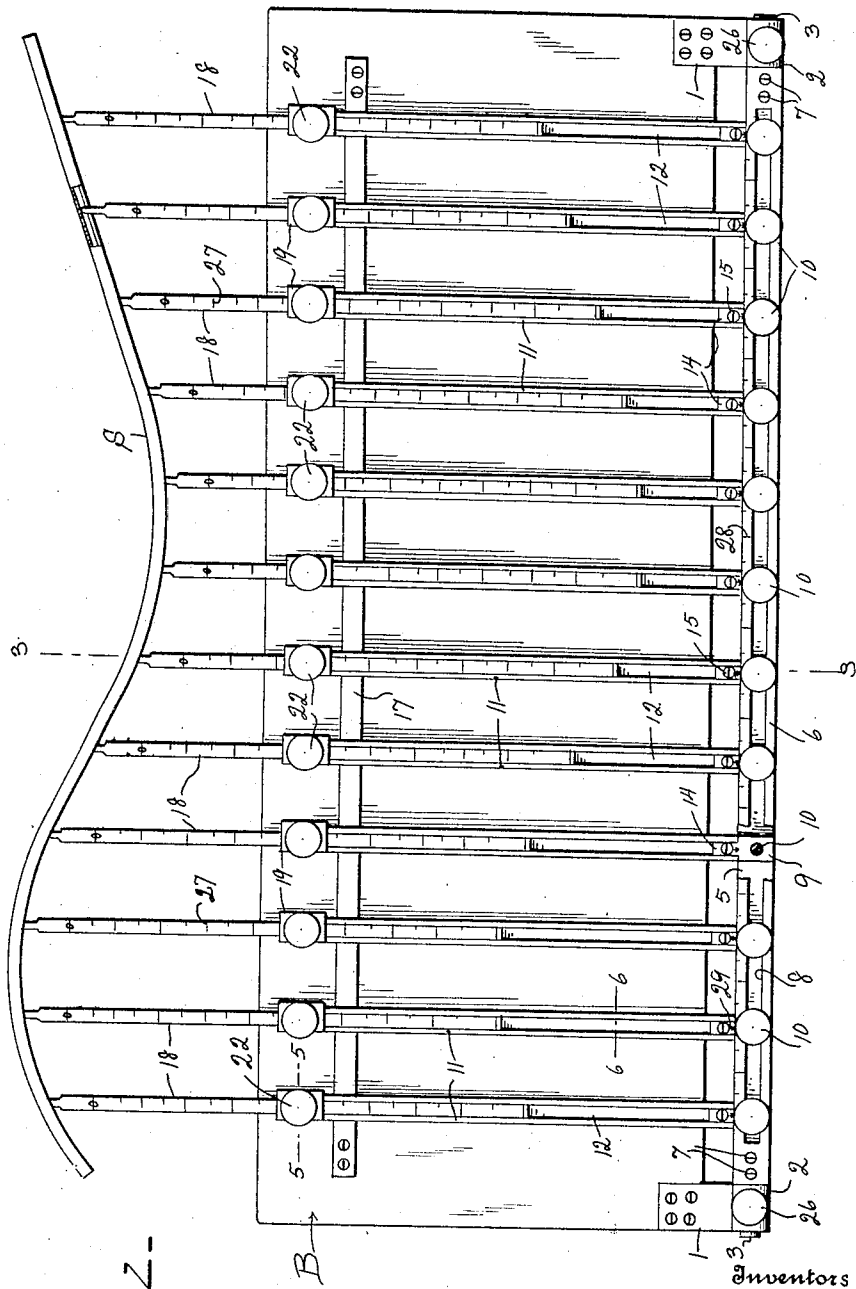
C. A. NEWBERG AND E. I. WEISBERGER,
CONFORMATOR.

APPLICATION FILED JAN. 13, 1919.

1,328,538.

Patented Jan. 20, 1920.

2 SHEETS—SHEET 1.



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By *Watson E. Coleman*
Attorney

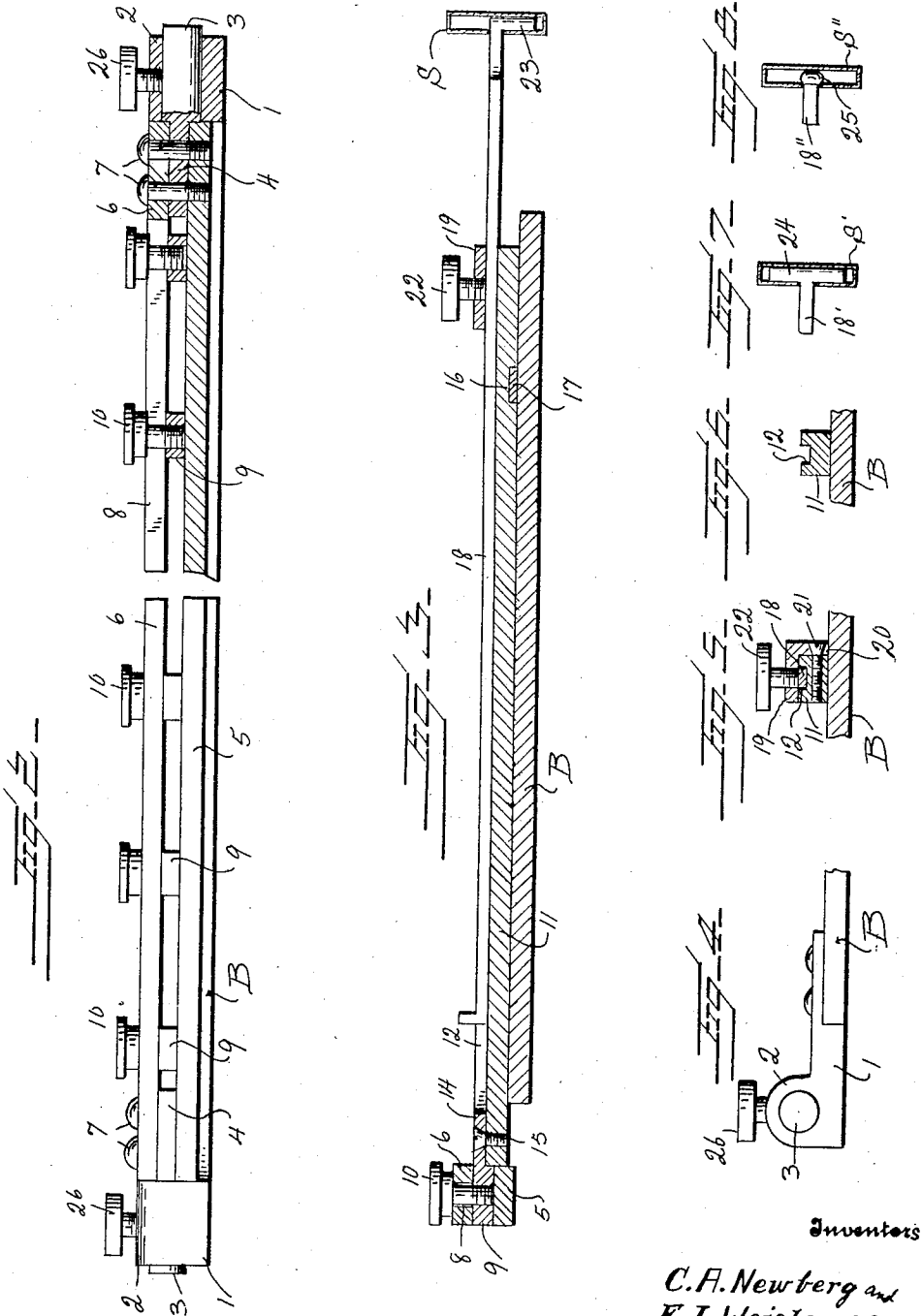
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Inventors

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UNITED STATES PATENT OFFICE.

CHARLES A. NEWBERG AND EDWARD I. WEISBERGER, OF BROOKLYN, NEW YORK.

CONFORMATOR.

1,328,538.

Specification of Letters Patent.

Patented Jan. 20, 1920.

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To all whom it may concern:

Be it known that we, CHARLES A. NEWBERG and EDWARD I. WEISBERGER, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Conformators, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to certain improvements in conformators, and has relation more particularly to a device of this general character including a flexible band or spline, and it is an object of the invention to provide a device of this general character having novel and improved means whereby the band or spline may be readily and conveniently adjusted into different curvatures compound or otherwise and effectively maintained in a desired arrangement.

It is also an object of the invention to provide a novel and improved device of this general character including a body adapted to rest upon a drawing or other surface, and which is provided with a multiplicity of arms having their outer extremities adjustably engaged with a flexible band or spline, and wherein the arms are capable of both lateral and longitudinal adjustment.

30 An additional object of the invention is to provide a novel and improved device wherein the flexible band or spline has its rear or inner face provided with a longitudinally disposed groove or channel in which the extremities of a plurality of arms are slidably engaged, and wherein said arms are supported for adjustment both laterally and longitudinally.

40 A still further object of the invention is to provide a novel and improved device of this general character wherein the arms may be adjusted laterally or longitudinally in accordance with a scale of units of linear measure, so that the device or instrument is adapted to the production of curves of known coördinates.

50 The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved conformator whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of our invention will hereinafter be definitely claimed.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in top plan with a portion broken away of a conformator constructed in accordance with an embodiment of our invention;

Fig. 2 is an enlarged view partly in rear elevation and partly in section of the device as illustrated in Fig. 1;

Fig. 3 is an enlarged sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged fragmentary view in end elevation illustrating a pivotal mounting for the arms as herein embodied;

Fig. 5 is an enlarged sectional view taken substantially on the line 5—5 of Fig. 1;

Fig. 6 is an enlarged sectional view taken substantially on the line 6—6 of Fig. 1;

Fig. 7 is a fragmentary view partly in section and partly in elevation illustrating a modified form of connection between the flexible band or spline and outer extremity of one of the arms;

Fig. 8 is a view similar to Fig. 7, but illustrating a slight further modified form of connection between the outer extremity of an arm and the flexible band or spline.

As disclosed in the accompanying drawings, B denotes a base herein disclosed as rectangular in form and extending outwardly from the opposite end portions of a longitudinal margin of said base are the arms 1 terminating in the upstanding bearings 2. As is clearly illustrated in Figs. 2 and 4, the lower or bottom face of the extended portion of each of the arms 1 is flush with the under or bottom face of the base B.

Extending within each of the bearings 2 is a short shaft or trunnion 3, and the inner end portion of said shaft or trunnion 3 at its central portion is provided with a flat extension 4 which overlies an end portion of a flat bar 5. The bar 5 snugly fits between the shafts or trunnions 3 and the overlying extensions 4 serve as spacing members and upon which rest the opposite end portions of a second flat bar 6 arranged in parallelism with the bar 5. The bars 5 and 6 are secured or anchored to the inwardly directed extensions 4 of the shafts or trunnions 3 by the screws 7, as is particularly

illustrated in Fig. 2. The second bar 6 is provided with a slot 8 disposed longitudinally thereof substantially its entire length, and snugly fitting between the bars 5 and 6 are the blocks 9 having in threaded engagement therewith clamping screws 10, and which screws are disposed through the slot 8. It will be self evident that upon requisite turning of each of the screws 10 the coacting block 9 will be effectively held in its desired position longitudinally of the bars 5 and 6.

11 denotes one of a multiplicity of elongated members having its upper face provided with a groove 12 extending the entire length thereof and opening at its opposite ends, and seated within the rear end portion of said slot 12 is a forward extension 14 carried by a block 9 and which extension 14 is secured to the member 11 by a screw 15 or the like. The bar 11 freely contacts with the upper surface of the base B and the under face of said member 11 adjacent its forward or free extremity is provided with a transversely disposed groove or channel 16 which snugly receives the guiding key 17 secured to the upper face of the base B and arranged in parallelism with the bar 5.

Slidably engaged within the groove 12 of each of the members 11 is an elongated arm 18, and which arm is adapted for sliding movement longitudinally of the member 11. The forward end of the arm 18 terminates in advance of the outer or free end of the member 11 and said arm 18 is also disposed beneath a plate 19 overlying the upper face of the member 11 and bridging the slot 12 thereof. One end portion of the plate 19 is provided with a depending extension or flange 20 contacting with a side face of the member 11, and said extension or flange 20 is anchored to the member 11 through the medium of a screw 21 or the like. Threaded through the plate 19 is a binding screw 22 which coacts with the arm 18 for locking the same against longitudinal movement after said arm 18 has been properly adjusted.

As is particularly illustrated in Fig. 3, the outer end of each of the arms 18 is provided with a laterally directed extension or lug 23 which is engaged within a groove or channel produced longitudinally of the spline or flexible band S, so that the desired flexure may be applied to the spline or band S upon movement of the arm longitudinally or laterally. If preferred, however, the outer end portion of each of the arms 18' may be provided with a cross head 24 engaged within the groove or channel of the spline or band S' or the outer extremity of an arm 18'' may be provided with a rounded member 25 for coaction with the spline or band S''. The spline or band S may be made of celluloid or other material

readily bendable, and said spline or band S is of a width whereby the same may engage a drawing surface or the like when the arms 18 are in the position shown in the accompanying drawings or have been swung backwardly an angle of 180 degrees. The swinging of the arms 18 in this manner is afforded by the mounting of the shafts or trunnions 3 with which the bars 5 and 6 are engaged. In order to lock the arms 18, or more particularly the members 11, in the position shown in the drawings, the bearings 2 have threaded therethrough clamping screws 26 for binding engagement with the shafts or trunnions 3.

The upper surface of each of the arms 18 has produced thereon graduations 27 arranged in accordance with units of linear measure, and which graduations coact with the outer end of the member 11 so that said arm may be extended or retracted in accordance with the occasions of practice. The upper face of the bar 6 is also provided with the graduations 28 arranged in accordance with units of linear measure, and coacting with said graduations is an index or mark 29 produced on the upper face of the extension 14 of each of the blocks 9, so that said blocks 9 or more particularly the arms 18 may be laterally adjusted or adjusted in a direction longitudinally of the base B as may be required in practice.

Through the medium of the graduations 27 and 28, a curve having known coördinates may be readily laid out, as the necessary longitudinal or lateral adjustment of the arms 18 may be obtained with exactness. To draw a curve through any number of known points, it is only necessary to move the members 11 laterally or in a direction longitudinally of the base B to the required relative lateral distances and then to extend or retract the arms 18 in accordance with the various longitudinal distances. To draw a symmetrical curve it is only necessary to loosen the screws 26 and to swing the members 11 through 180 degrees.

It will also be self evident that the base B will afford sufficient weight whereby the instrument may be effectively maintained in desired position upon the surface being worked.

From the foregoing description, it is thought to be obvious that a conformator constructed in accordance with our invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that our invention is susceptible of some change and modification without departing from the principles and spirit thereof, and for this reason we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts

herein shown in carrying out our invention in practice except as hereinafter claimed.

We claim:

1. A device of the class described comprising a base, a bar supported by said base for rotary movement, a multiplicity of members engaged with said bar and being capable of adjustment one independently of the other longitudinally of the bar, said members being in parallelism, arms slidably engaged with said members and movable longitudinally thereof, said arms extending beyond the members, a flexible spline with which the extended portions of the arms are slidably engaged, and means for locking each of the arms against movement longitudinally of the member.

2. A device of the class described comprising a base, a bar supported by said base for rotary movement, a multiplicity of members engaged with said bar and being capable of adjustment one independently of the other longitudinally of the bar, said members being in parallelism, arms slidably engaged with said members and movable longitudinally thereof, said arms extending beyond the members, a flexible spline with which the extended portions of the arms are slidably engaged, means for locking each of the members against movement longitudinally of the bar, and means for locking each of the arms against movement longitudinally of the member.

3. A device of the class described comprising a base, a plurality of members overlying said base, means connecting the members to the base whereby the same may be laterally adjusted one independently of the other, a face of each of said members being

longitudinally grooved, an arm slidably engaged within the groove of each member, and extending beyond an end of said member, a plate carried by each of the members and extending across the groove and the arm therein, a flexible spline with which the extended portions of the arms are slidably engaged, and a clamping member carried by each of the plates and coacting with an arm for holding said arm against longitudinal movement.

4. A device of the class described comprising a base, a plurality of members overlying said base, means connecting the members to the base whereby the same may be laterally adjusted one independently of the other, a face of each of said members being longitudinally grooved, an arm slidably engaged within the groove of each member and extending beyond an end of said member, a plate carried by each of the members and extending across the groove and the arm therein, and a flexible spline with which the extended portions of the arms are slidably engaged, the opposite face of each of the members being provided with a transversely disposed groove, and a guiding key carried by the base and snugly fitting within the groove of each of the members when said member is in contact with the base.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

CHARLES A. NEWBERG.
EDWARD I. WEISBERGER.

Witnesses:

PHILIP FERTEL,
MORTIMER LIFLAND.