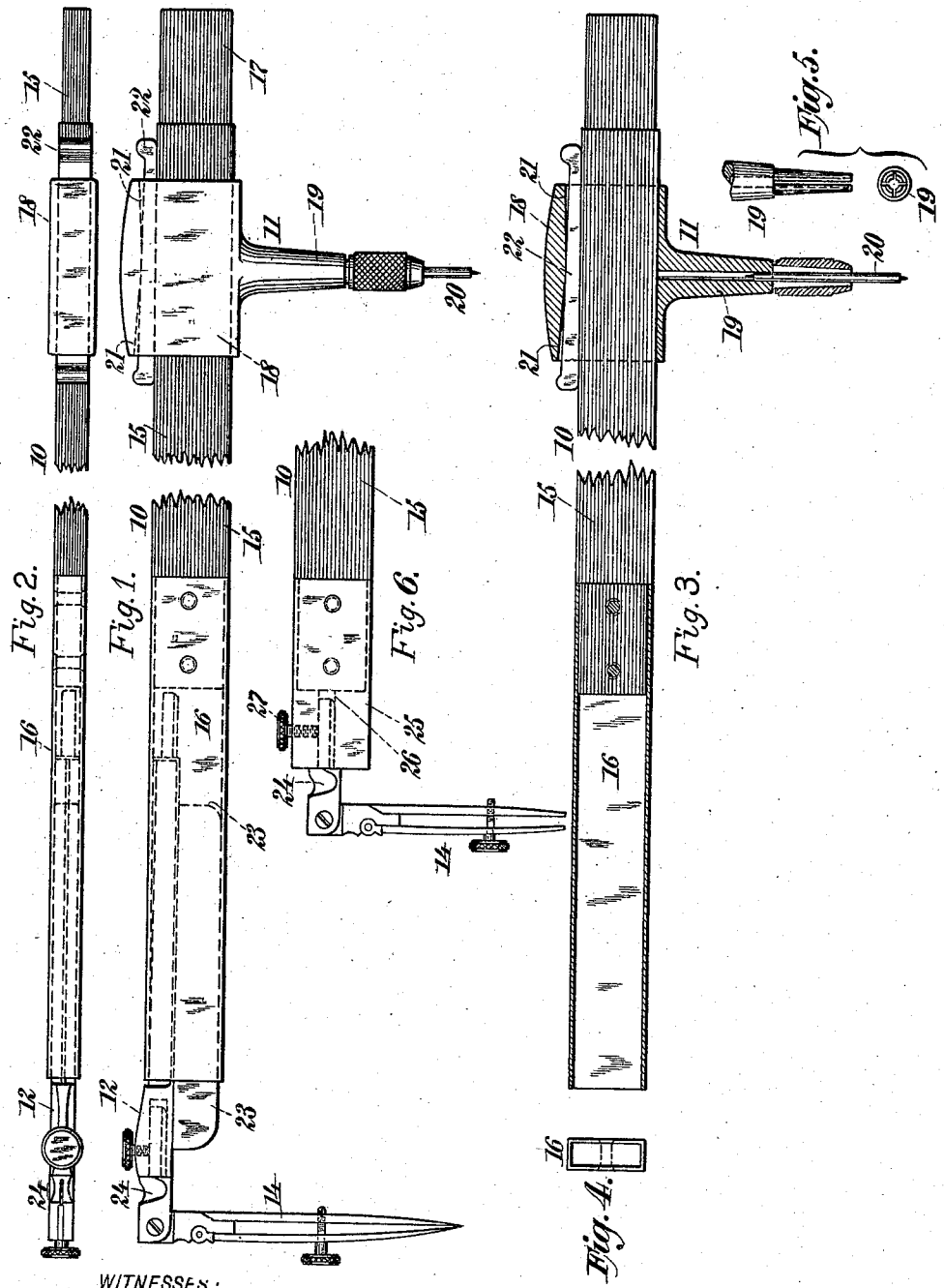
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A. C. MOHNIKE.

BEAM COMPASS.

APPLICATION FILED MAY 28, 1904.



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BEAM-COMPASS.

No. 858,408. Specification of Letters Patent. Patented July 2, 1907.

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To all whom it may concern:

Be it known that I, ALBERT C. MOHNIKE, a subject of Germany, and a resident of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Beam-Compasses, of which the following is a specification.

The invention relates to improvements in drawing instruments, and pertains more especially to improvements in beam-compasses, and the said invention consists in the novel features and combinations of parts hereinafter described and particularly pointed out in the claims.

One of the objects of my invention is to provide a beam compass capable of conveniently receiving the pen or pencil from the usual set of drawing instruments in possession of a draftsman, and thus obviate the expense incident to the necessity, heretofore existing, of purchasing and using special pens and pencils constructed solely for a beam compass.

In accordance with my invention I am enabled to employ in connection with the beam of the compass, the usual pen or pencil, either with or without the usual lengthening bar, constituting a part of all sets of drawing instruments.

A further purpose of my invention is to provide means for the convenient and secure application of the pen or pencil to the beam, with the hinged shank portion of the pen or pencil disposed horizontally or in line with the length of the beam, so as to permit, in a proper manner, the pen or pencil to be moved upon its hinge as occasion may require.

A further object of my invention is to provide a novel frame for carrying the center point or pin, this frame being provided with convenient means of adjustment upon the beam; and a further object of the invention is to provide a novel construction of beam for enabling the joining together of two or more beams for the purpose of securing a long beam for use in large work, the beam of my invention having at one end a socket to fit upon the rear end of another beam whereby the two beams become joined together in such manner that their surfaces are on the same plane and the center-point carrying-frame may be slid from one beam to the other across the joint connecting the beams.

The several features constituting my invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation, partly broken away, of a beam-compass constructed in accordance with and embodying my invention, the beam being shown as carrying the lengthening bar and pen taken from a set of usual drawing instruments; Fig. 2 is a top view of same; Fig. 3 is a side elevation partly in section of the beam and the frame carrying the center-point, the lengthening bar and pen and lock for securing the same being omitted; Fig. 4 is a front end view of the beam; Fig. 5 represents in a side elevation and a lower end view a portion of the means for carrying the center-point or pin, and Fig. 6 is a side elevation of a portion of a modified construction of beam.

In the drawings 10 designates the beam, as a whole, 11 the adjustable frame carrying the center-pin, 12 the usual lengthening bar detachably secured to the end of the beam 10, and 14 the usual pen detachably connected with the lengthening bar 12.

With reference to Figs. 1, 2 and 3, the beam 10 is composed of a wooden section 15, and a metal socket section 16, the latter at its inner end being fitted upon and secured by pins or rivets to one end of the wooden section 15, said end of said section 15 being reduced to receive the thickness of the metal in the socket section 16 as shown in Fig. 3, so that the exterior surfaces of the sections 15 and 16 may be substantially plain or unbroken. At its outer or rear end the wooden section 15 is preferably reduced at its sides and upper and lower edges, as denoted at 17 in Fig. 1, so that when desired the socket section 16 of a beam corresponding with the beam shown in Fig. 1, may be applied upon the said reduced end and the two beams thus made to constitute a single long beam having uniform exterior surfaces adapted for the passage over them of the frame 11. I construct the beam 10 of the wooden section 15 and metal socket section 16 as a matter of preference, but if desired the entire beam may be in one continuous hollow metal piece corresponding with the hollow section 16, in which event, however, when it is desired to lengthen the beam, the extra beam to be applied to the then continuous hollow beam should be of wood having an end corresponding with the end 17 of Fig. 1 and adapted to fit within the end of the hollow beam.

Upon the beam 10 is applied a frame 11 comprising a sleeve 18 to pass upon the beam, and a post 19 to carry the pin 20. The sleeve 18 has inwardly and downwardly inclined or converging surfaces 21, 21 at the lower side of its upper portion, and these surfaces 21 are sufficiently above the upper edge of the beam to permit the interposition between them and the beam of a wedge 22, which has enlargements or upwardly projecting finger pieces at its opposite ends and is incapable of sliding wholly from the sleeve 18 when said sleeve is upon the beam. The wedge 22 coöperates with the sleeve 18 in locking the latter in position upon the beam and in enabling the adjustment of said sleeve along the beam. When by the pressure of the finger against the right hand or thinner end of the wedge 22 the latter is pressed slightly toward the left the said wedge will cease to bind against the surfaces 21 of the sleeve and the latter may then be moved along the beam to the next position desired, and thereupon the draftsman by pressing his finger or thumb against the left hand end of the wedge 22 may push the latter

toward the right and cause the wedge to bind against the sleeve and lock the latter in position. The wedge 22 and sleeve 18 present very convenient means for locking the frame 11 at any point along the beam and dispense with the employment of screws and like accessories. The novel feature of the frame 11 resides in the combination of the sleeve 18 and wedge 22, the post 19 and means for holding the pin 20 being of usual character.

The beam 10 both at its section 15 and section 16 is rectangular in cross-section, as shown in Fig. 4, and the section 16 being hollow constitutes a socket to, at one end, receive the end of the wooden section 15 and, at the other end, the lengthening bar and block 23, the latter being a means for binding or wedging the bar 12 firmly in position within the socket section 16, as represented in Fig. 1. The block 23 may conveniently be made of wood and the width of its upper edge corresponds substantially with the width of the bar 12 and of the socket in the section 16 within which the said block and bar are placed. The bar 12 receives in the usual manner the hinged shank 24 of the pen 14, and in the present instance the bar is secured horizontally in the beam 10 and consequently the hinge of the pen 14 is at the extreme end of the instrument with the shank 24 lying horizontally and the pen 14 disposed vertically, which position of the said shank and pen is one I seek to have and is important in that, among other reasons, it allows the pen 14, during the use of the beam to be moved on its hinge inwardly and outwardly as may be required. There is ordinarily a slight increase in thickness in lengthening bars toward their outer or socket ends and hence when the bar 12 and block 23 are in position within the section 16 the bar 12 becomes wedged or bound therein. If in any instance the bar 12 should not possess this feature of increasing thickness toward its socket end, it would be proper to make the block 23 slightly of wedge shape so as to securely bind the said bar within the section 16.

The instrument shown in Figs. 1, 2 and 3 is capable of receiving the usual lengthening bar 12 from a set of drawing instruments and the bar 12 is capable of receiving the usual pen or pencil constituting parts of such set of instruments, and hence the purchase by a draftsman of the beam, less the lengthening bar, pen and pencil, will be sufficient for his purposes and he will be saved the expense of purchasing special instruments for the beam and be enabled in his work to use the instruments he is accustomed to. Thus my invention not only provides a suitable beam compass but avoids unnecessary expense to the draftsman and enables him to employ his own instruments which he is constantly using and therefore accustomed to and prefers to use. I illustrate the preferred construction in Figs. 1, 2 and 3 and it is believed that the conveniences of this construction will be appreciated without further detailed explanation. I am aware, however, that some of the advantages of my invention may be realized in a modified construction of beam, such as I illustrate in Fig. 6, in which I illustrate upon the end of the beam a metal socket section 25 to fit upon the wooden section and having at its outer end a socket 26 to receive the end of the shank portion 24 of the pen or pencil 14, a screw 27 being provided to secure the shank portion 24 to the socket section 25. In the construction shown in Fig. 6 it will be observed that the pen is vertically disposed, that its hinge is at the extreme front end of the instrument and that its shank portion 24 is horizontally disposed, as in the construction shown in Fig. 1. The construction shown in Fig. 6 also enables the use, by a draftsman, of his customary compass—pen and pencil with which he is familiar. In both the construction shown in Fig. 1 and that illustrated in Fig. 6, the beam or a part carried by the beam presents a horizontal socket opening outwardly at the extreme outer end of the beam to receive the horizontally disposed shank portion 24 of the usual pen or pencil, and this is an important feature of my invention, the said horizontal socket being, in Fig. 1, presented by the lengthening bar 12, which when in position becomes a detachable part of the beam.

The wedge 22 when in locking relation to the sleeve 18 engages only a limited surface of the same, as shown, and hence may by very slight movements release and relock said sleeve.

I do not limit my invention to the holding of the lengthening bar or shank of the pen or pencil in an absolutely technically true horizontal position, since the said bar or shank might be held on a more or less upwardly or downwardly tilted or inclined position without departing from the spirit of my invention or the scope of the following claims, which employ the word horizontal in a reasonable and general rather than a narrow technical sense.

What I claim as my invention and desire to secure by Letters-Patent, is:—

1. A beam-compass comprising the elongated rigid-beam having uniform surfaces, the center-point frame having an adjustable point and also a sleeve encompassing and adjustable along said beam, and means for securing said frame in its adjusted positions, said beam having in one end a horizontally disposed socket in line with the length of said beam, combined with means at said socket-end for detachably securing the hinged shank portion of a drawing instrument horizontally therein, with the body of said instrument disposed vertically; substantially as set forth.

2. A beam-compass comprising the elongated rigid beam having uniform surfaces, the center point frame having an adjustable point and also a sleeve encompassing and adjustable along said beam, and means for securing said frame in its adjusted positions, said beam having at its outer end means adapted to receive the lengthening bar 12 of a set of drawing instruments in line with the length of the beam with the socket of said bar exposed to receive the hinged shank portion of a drawing instrument and hold the same horizontally with the body of said instrument disposed vertically, combined with means for detachably securing said lengthening bar in said receiving means, and means for detachably securing said shank portion in said lengthening bar; substantially as set forth.

3. A beam-compass comprising the elongated rigid beam having uniform surfaces, the center point frame having an adjustable point and also a sleeve encompassing and adjustable along said beam, and means for securing said frame in its adjusted positions, said beam having on its outer end an elongated horizontally disposed socket adapted to detachably receive the lengthening bar 12 of a set of drawing instruments with the socket of said bar exposed to receive the hinged shank portion of a drawing instrument and hold the same horizontally with the body of said instrument disposed vertically, combined with means for detachably securing said bar in said socket, and means for detachably securing said shank portion in said bar; substantially as set forth.

4. A beam-compass comprising the rigid beam, the center point frame having a sleeve encompassing and adjustable along said beam, and means for securing said frame in its adjusted positions, said beam having at its outer end a

horizontally disposed socket to detachably receive the lengthening bar 12 and hold the same horizontally with the socket thereof disposed horizontally and adapted to detachably receive the hinged shank portion of a drawing instrument and hold the same horizontally, with the body of said instrument disposed vertically, and the block 23 adapted to enter said beam socket lengthwise and bind said bar in position; substantially as set forth.

5. A beam-compass comprising a beam and center-point, said beam comprising a wooden section 15 and a hollow socket section 16 adapted to receive the lengthening bar 12, combined with the block 23 adapted to said socket and bar for binding the latter in position; substantially as set forth.

6. A beam-compass comprising the rigid beam, the center-point frame having a sleeve encompassing and adjustable along said beam, and means for securing said frame in its adjusted positions, said beam comprising the wooden section 15 and the hollow metal section 16 on the end thereof and adapted to receive the lengthening bar 12 and hold the same horizontally with its socket exposed to receive the shank of a drawing instrument, the end of said section 15 being reduced to receive said socket and permit the exterior surfaces of the latter to lie flush with the surfaces of said section, and the other end of said section being of reduced dimensions to receive the socket end of a correspondingly constructed beam, for creating a beam of extra length; substantially as set forth.

7. In a beam-compass, the rigid beam and the center point frame therefor and comprising the sleeve and wedge, said sleeve encompassing the beam and having the downwardly and inwardly converging surfaces 21, 21, and said wedge being interposed between the converging point of said surfaces and said beam and adapted for manual operation; substantially as set forth.

8. In a beam-compass, the rigid beam and the center point frame therefor and comprising the sleeve and wedge, said sleeve encompassing the beam and having the downwardly and inwardly converging surfaces 21, 21, and said wedge being interposed between the converging point of said surfaces and said beam and having the enlargement at its smaller end preventing the escape of the wedge while the sleeve is on the beam; substantially as set forth.

Signed at New York city, in the county of New York and State of New York this 27th day of May A. D. 1904.

ALBERT C. MOHNIKE.

Witnesses:
CHAS. C. GILL,
ARTHUR MARION.