No. 787,766. PATENTED APR. 18, 1905.

R. JENSEN & P. JUNGNICKEL.

BEAM COMPASS.

APPLICATION FILED JAN. 3, 1905.

Fig. 1.

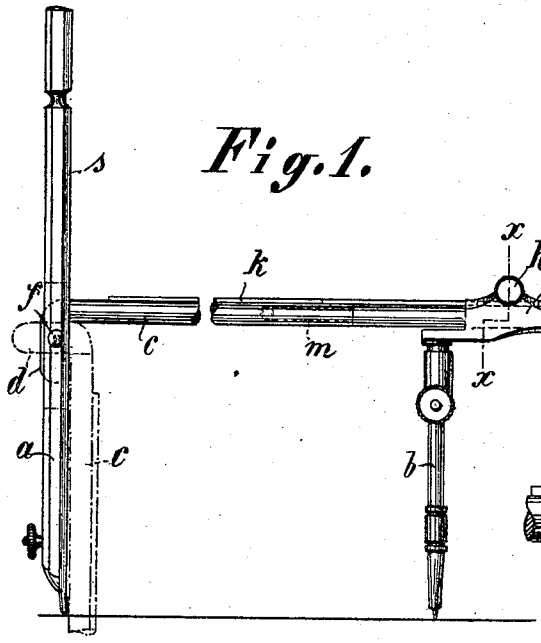
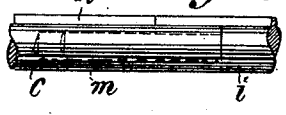


Fig. 3.



Fig. 4.



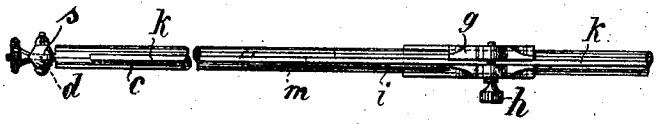


Fig. 2.

Fig. 5.

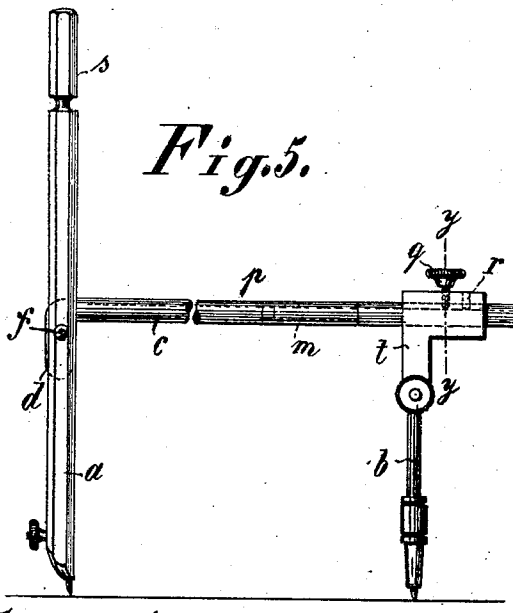
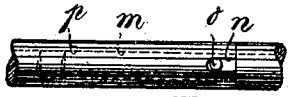


Fig. 6.



Fig. 7.



Witnesses:

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No. 787,766. Patented April 18, 1905.

UNITED STATES PATENT OFFICE.

RICHARD JENSEN AND PAUL JUNGNICKEL, OF BERLIN, GERMANY; SAID JUNGNICKEL ASSIGNOR TO SAID JENSEN.

BEAM-COMPASS.

SPECIFICATION forming part of Letters Patent No. 787,766, dated April 18, 1905.

Application filed January 3, 1905. Serial No. 239,507.

To all whom it may concern:

Be it known that we, RICHARD JENSEN, engineer, and PAUL JUNGNICKEL, foreman, of 32 Dennewitzstrasse, Berlin, in the German Empire, have invented new and useful Improvements in Beam-Compasses, of which the following is a clear and distinct description.

This invention relates to an improved beam-compass for use more especially in the preparation of drawings on the usual drawing-board.

It consists, like beam-compasses heretofore used, of a fixed leg, to which is secured the beam carrying the other leg; but instead of the fixed leg being rigidly connected with the beam this latter is according to our invention rotatably connected with the fixed leg, so that it can be folded upon the said leg when it is desired to restore the instrument to its case or box. This hinge-like connection between the fixed leg and the beam is at the same time of such a nature that the latter can be turned upward to an angle of ninety degrees to enable it to take up a position perpendicular to the fixed leg. By means of this arrangement the fixed and the movable legs always remain parallel to each other, so that most accurate work can be effected with this compass. Means are also provided for preventing the movable leg turning or twisting about the beam and also means for lengthening the distance between the legs, so as to enable large circles to be described.

The invention is shown by way of example in the accompanying drawings, which represent two arrangements.

Figure 1 is an elevation, and Fig. 2 a plan, of one form of the improved beam-compass. Fig. 3 is a section taken on the line $x\,x$ of Fig. 1. Fig. 4 shows, to an enlarged scale, the manner in which the main beam is connected to a lengthening beam or bar for the purpose of extension. Fig. 5 is an elevation of another form of the improved beam-compass. Fig. 6 is a section taken on the line $y\,y$ of Fig. 5, and Fig. 7 shows in like manner to Fig. 4 the connection of the main and the lengthening beams of this modified form.

The improved beam-compass consists of the fixed leg a, which is provided with a handle s for rotating the compass, the beam c being pivoted to this handle. The second leg b is so arranged as to be slid along the beam c. This latter is provided with an elbow d, which is bent at a right angle and is pivoted at f in a slot in the fixed leg. The elbow portion d has a friction fit in the slot in the fixed leg in order to maintain the beam c in operative relation with what we term the "fixed" leg a. Such friction fit is common in various kinds of drafting and mathematical instruments. This connection may, however, be effected in any other suitable manner. The leg b carries at its upper end a socket or clip g, by means of which it can be moved and adjusted upon the beam c, and it is held firmly in position by means of the binding-screw h. The beam is further provided with a longitudinal rib or feather k for the purpose of preventing turning or twisting of the leg b about the beam, and thereby insuring the legs a and b always lying in the same plane.

To enable large circles to be drawn, the beam c can be lengthened by means of one or more lengthening-beams i. For this purpose the said beam i is provided with a stem or shank m, adapted to fit into a suitable aperture in the main beam c. The rib or feather k of the lengthening-beam i furthermore projects over the stem m, while the rib or feather k on the main beam c is shortened to a corresponding extent, and said beam is provided with a recess at the junction of the two beams. On connecting together these latter the projecting portion of the rib k on the beam i enters the corresponding recess in the main beam c, and thus any turning or twisting of the lengthening-beam i is prevented.

In the modified form (shown in Figs. 5, 6, and 7) the ribs or feathers k are dispensed with and are replaced by a groove p, extending along the beam, and for the clip or socket g there is substituted a sleeve t, which completely encircles the beam c. In the arrangement shown in Figs. 1 to 4 the fixing of the leg b is effected by tightening up the clip g by means of the screw h, whereas in the arrangement shown in Figs. 5 to 7 this is effected by

a set-screw q taking into the groove p in the beam. To facilitate the working of the device, a pin r may be fitted in the sleeve of the movable leg and engage the groove p.

To prevent turning or twisting of the lengthening-beam i in the main beam c in this arrangement, the said lengthening-beam is also provided with a stem or shank m, which here, however, carries a pin o, adapted to engage in a slot n cut in the main beam c.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. A compass of the class described involving a beam provided with a feather, a leg to which said beam is foldably connected, a slidable member on the beam, provided with a leg, said feather serving to prevent turning motion of the slidable member, and means to hold said slidable member in an adjusted position.

2. A compass involving a beam, a leg between the ends of which said beam is foldably connected, said leg having a handle at its upper end, a second leg, a slide movable on the beam and to which said second leg is permanently connected, and means for holding the slide in an adjusted position.

3. A compass of the class described involving a beam, a leg to which said beam is foldably connected, a slide on the beam having, as a permanent part thereof, a leg to coöperate with the first-mentioned leg, and the beam having a feather to prevent turning motion of the slide, and means independent of the feather to hold the slide in an adjusted position.

4. A compass of the class described involving a beam, a leg to which said beam is hingedly connected, a second leg, a device adjustable on the beam and carrying said second leg, and an extension, the diameter of which agrees with that of the beam, the extension being removably fitted to the beam to bring the two parts in concentric relation, and said second-leg-carrying device being freely movable from the beam to the extension, means for holding said device in an adjusted position, and means for holding the extension against turning motion.

5. A compass of the class described involving a leg, a beam connected with the leg and having an aperture, an extension provided with a reduced stem to enter said aperture, the beam and extension each having a feather in alinement longitudinally of the beam, and the beam having a recess to receive the feather of the extension, a slide movable from the beam to the extension and provided with a leg complemental to said first-mentioned leg, said feather serving to prevent turning motion of the slide, and means to hold the slide in an adjusted position.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

RICHARD JENSEN.
PAUL JUNGNICKEL.

Witnesses:
HENRY HASPER.
WOLDEMAR HAUPT.