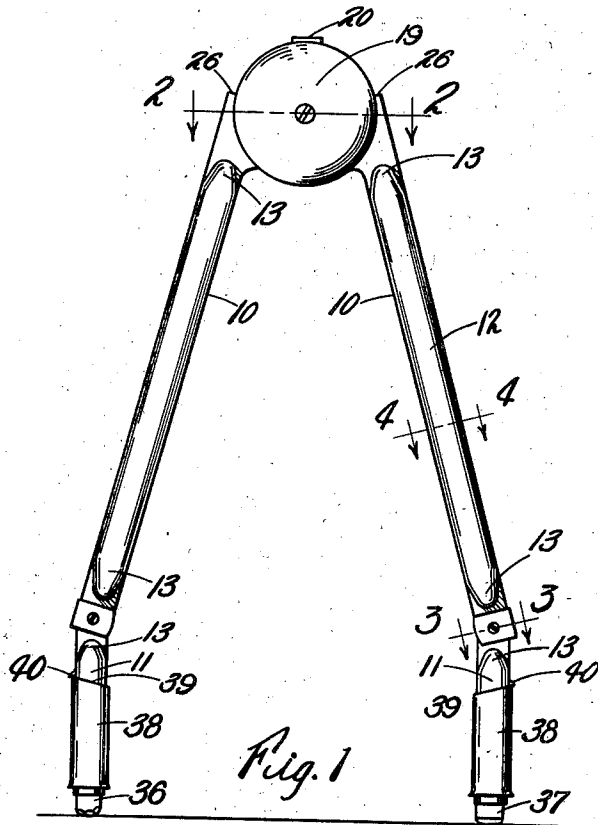
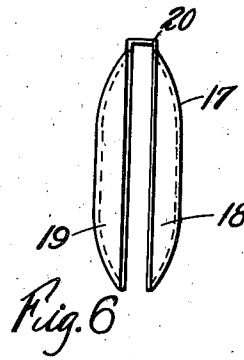
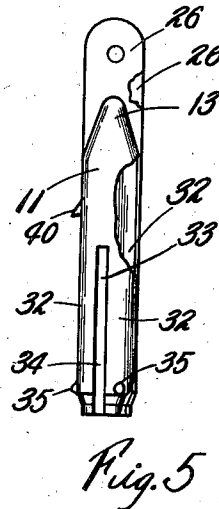
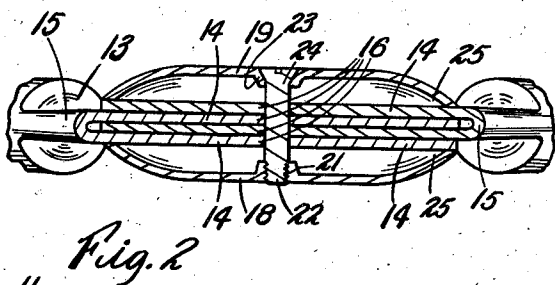
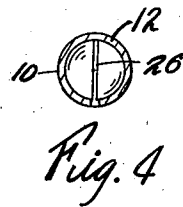
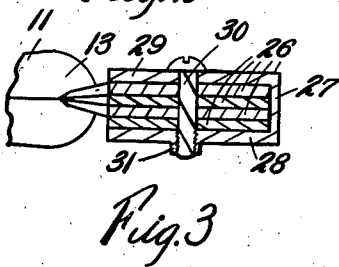


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BLACKBOARD COMPASS
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BLACKBOARD COMPASS

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5 Claims. (Cl. 33—27)

The present invention relates to compasses of the larger sizes that are adapted for use on blackboards and elsewhere for general layout and graphic work commonly requiring the use of a compass or divider, and has for an object the provision of a light, strong and relatively inexpensive device that is easily manipulated for use in approved manner.

Another object of the invention is to provide a compass of this kind that is made of sheet metal stampings having integral hinged joint members on the several parts providing an exceptionally effective holding of the parts in adjusted position for use.

A further object of the invention is to provide a simple and easily operated holding means for chalk, pencils and center points.

These and other objects are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is a side view of a device embodying the present invention.

Fig. 2 is a view taken on line 2—2 of Fig. 1.

Fig. 3 is a view taken on line 3—3 of Fig. 1.

Fig. 4 is a view taken on line 4—4 of Fig. 1.

Fig. 5 is an enlarged fragmental view of one part of the device forming a detail of the invention.

Fig. 6 is an edge view of a part forming a detail of the invention.

Heretofore compasses for blackboard work and the like have been made largely of wood and have been somewhat cumbersome to handle and have had joints of various constructions which invariably were difficult to properly adjust and the holders for the marking material, such as chalk have afforded a degree of trouble and nuisance.

The present invention avoids the difficulties experienced heretofore with compasses of this type and provides furthermore a neat appearing relatively light weight sturdy and effective device.

The device comprises a pair of hingedly connected leg members 10 which constitute the long legs of the compass and each of these has a short leg 11 hinged thereto and forming the major portion of a chalk holding chuck. These parts are all formed from sheet metal stampings which are shaped to provide intermediate tubular portions 12 closed as at 13 by curving the wall of the metal until it forms a pair of integral spaced leaves 14 connected by an integral rib 15. The legs 10 are uniform and have the flattened parallel leaves 14 developed into generally circular disc shape with the perforate center 16 out of

alignment with the longitudinal axis of the cigar-shaped body.

The members 14 of a pair of legs 10 are interleaved as clearly shown in Fig. 2 whereupon an integral member 17 (see Fig. 6) comprising a cup shaped member 18 and a substantially similar member 19, connected together by a neck 20 is passed over the interleaved discs 14. Member 17 constitutes a connected double washer with a space between sufficient to slidably receive the assembly of hinge leaves or disc-like portions 14. Member 18 has an extruded interiorly threaded portion 21 surrounding the central bore 22 and member 19 has a countersunk extruded seat 23 so that an ordinary oval head machine screw 24 is effective to provide a readily adjusted degree of frictional binding between the four leaves 14 by adjusting the pressure of the washers at the periphery 25. The screw 24 is not loosened or tightened by the repeated hinged movement of the legs 10.

As can be readily appreciated the outer shoulders 26 will abut the ends of neck 20 on washer 17 thereby limiting the spreading of legs 10 to a position wherein said legs are axially aligned.

The leg members and their hinge portion are extremely rigid even when made of relatively thin sheet metal due to the particular forming of the legs and to the interleaving of the hinge portions between the binding and supporting washer and the further reinforcing action of the screw. This precludes any looseness or weakness that is often found in blackboard compasses and which is usually attempted to be overcome by making the hinged joint so tight as to be difficult to accurately adjust it to a desired radius.

As can be best seen in Fig. 3, the hinged joint between the long leg 10 and the short leg 11 (which is also the crayon holder) is essentially like the central or upper joint previously described. The sheet metal wall is flattened beyond the conical or curved sections 13 to provide a U shaped member comprising leaves 26 interleaved in a manner previously explained but in this instance being centrally perforated on an axis of the associated substantially tubular leg. The washer 27 may be made somewhat like the member 17 but smaller (if desired) or, as shown, it may be a mere U shaped body with the arms 28 and 29 astraddle the leaves 26. All of these parts lie within the body lines of the legs and a screw 30 passes through perforations in members 29 and the leaves 26 into an extruded, interiorly threaded, perforated portion 31. Member 27 limits the outward movement to the alignment of legs 10

and 11 and enables legs 11 to be adjusted to parallelism and perpendicular to the blackboard in any position of legs 11.

The joint is strong despite the ease of adjustment, and there are no parts that can pinch the fingers of the user during adjustment and use. In each of the three joints of the compass, there are ten metallic faces in adjustable frictional engagement so that the adjustment is maintained to a highly satisfactory degree without requiring any attention.

Each hollow leg 11 will accommodate a whole stick of standard crayon and is formed as a chuck with three fingers 32, separated by the slot 33 occasioned by the edges of the integral sheet from which the leg is formed and by the slots 34 cut therein during the initial flat stamping operation. The fingers have bosses 35 near the ends thereof which ends are moved together, to clamp a crayon 36 or a rubber point 37 securely, by means of a flared tubular collar 38 having an inclined top edge 39 cooperating with a lug 40 struck from the body of the leg 11. The crayon of any length from as short as $\frac{3}{8}$ " or less to a full stick length is readily clamped in the crayon chuck since no shifting of the crayon is effected in tightening the chuck and only about $\frac{1}{8}$ " length of crayon is actually required to effect a secure clamping between the ends of fingers 32. The long slot 33 facilitates removal of broken or short pieces of crayon but the chuck normally opens sufficiently to remove the necessity of using any instrument to effect dislodgment of crayon.

It will be noted that the simple and inexpensive arrangement permits the employment of the heretofore unused intermediate joint in each leg of a blackboard compass.

What is claimed is:

1. In a blackboard compass the combination of a pair of sheet metal stampings each comprising integral portions further comprising closely spaced parallel hinge leaves connected together along an edge thereof, an integral double washer adapted to straddle the interfitted leaves of said pair of stampings, and a pivot member seating in one side of the double washer and threadedly connected to the other whereby the frictional binding of the leaves and said washer members is adjusted.

2. In a compass the combination of a pair of

leg members, pairs of flat leaf members on the ends of the leg members, a double washer comprising a connecting portion whereby the washer parts are spaced, said leaf members of adjacent legs being interleaved and introduced into the space between the washer parts, and a screw passing freely through one of said washer parts and the leaves on said legs and threadedly connected in the remaining washer member whereby adjustable frictional clamping of the parts is effected permitting adjustment of the legs without disturbing the threaded adjustment of the screw in said washer part.

3. A frictionally adjustable hinged joint comprising connected pairs of perforate members in interleaved relation, a connected pair of washers receiving said interleaved members between them, one of the washers being interiorly screw threaded, and a screw member passing through the remaining washer and the pairs of perforate members and engaging in the threaded washer for effecting adjusted self-retaining frictional engagement on the perforate members on each other and permitting repeated hinged adjustment of the perforate members without influencing the adjustment of the screw in said washer.

4. A blackboard compass comprising a pair of similar legs hingedly connected together and each comprising a hingedly connected chuck adjacent the free end of the leg, integrally connected pairs of washers straddling the hinged joints and a screw forming the hinge connection for each joint and having adjustable threaded connection with one of the washers thereof whereby the chuck portions may be held selectively in substantially perpendicular and nonperpendicular relation with a surface to be drawn upon in all adjusted positions of the legs.

5. As a new article of manufacture, a pair of spaced cup-shaped washer members having concentric concavities opening toward the intervening space and a neck member connecting them along a restricted portion of the periphery thereof one of said washers having a smooth bore therein permitting rotation of the head portion of a screw, the other of said washers being concentrically perforated and interiorly threaded for engagement with the threads of a screw.

ELMER W. CHRISTY.