

May 10, 1927.

C. CRAIG

1,627,635

DEVICE FOR SUPPORTING THE HAND WHILE WRITING

Filed Feb. 19, 1925

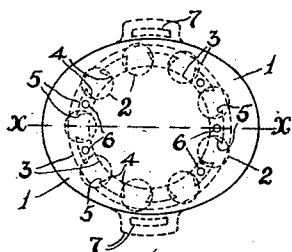


Fig. 1.

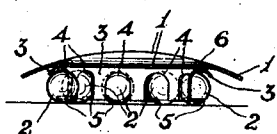


Fig. 2.

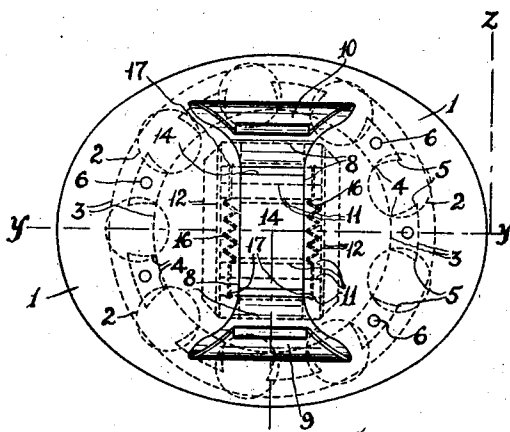


Fig. 3.

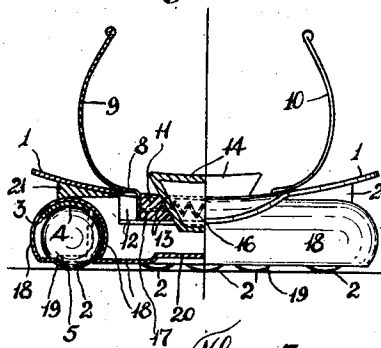


Fig. 5.

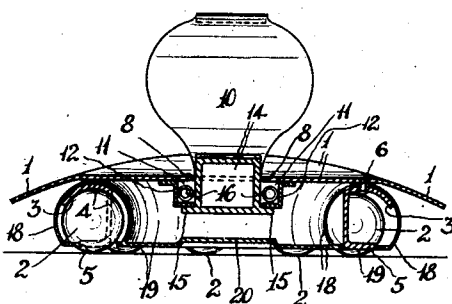


Fig. 4.

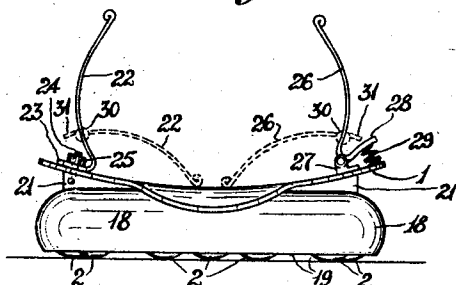


Fig. 6.

Witness:

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Patented May 10, 1927.

1,627,635

UNITED STATES PATENT OFFICE.

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DEVICE FOR SUPPORTING THE HAND WHILE WRITING.

Application filed February 19, 1925, Serial No. 10,411, and in the Union of South Africa August 2, 1924.

This invention relates to a new or improved device primarily designed for supporting the hand while writing, so as to prevent writer's cramp and other muscular pains arising from prolonged use of a pen, pencil or the like. The device is, however, also applicable for supporting the hand in other operations, occupations or pursuits, such as sketching, etching, drawing, polishing, engraving and other work in which the hand holds an instrument or tool of any kind and is moved backwards or forwards, or both backwards and forwards, for example to form, mark, or trace lines or characters on a surface.

The device facilitates writing and the various other operations hereinbefore mentioned, by providing a support or carrier for the hand, which is movable freely in any direction, as required. It allows the pen, pencil, instrument, tool or the like to be applied to the surface on which the lines or characters are to be delineated, et cetera, more evenly over the entire surface. Furthermore, as the device keeps the hand off the surface on which the writing or other work is being done, it precludes the possibility of the soiling, greasing or moistening of such surface by exudations from the pores of the skin.

The invention will be explained in connection with the accompanying drawings, wherein

Fig. 1 is a plan view of an embodiment of the invention in possibly its simplest form.

Fig. 2 is a central sectional elevation of the construction shown in Fig. 1, the plane of section being indicated by the line $x-x$.

Fig. 3 is a plan view, drawn to an enlarged scale, of another form of the invention, illustrating other features of construction.

Fig. 4 is a central sectional elevation of Fig. 3, on line $y-y$.

Fig. 5 is a half-sectional elevation of Fig. 3, the plane of section being indicated by the line $z-z$, and

Fig. 6 is an elevation of a still further embodiment of the invention, also drawn to an enlarged scale, illustrating certain other features of construction.

Referring more particularly to Figs. 1 and 2, in which I illustrate the invention in possibly its simplest form, 1 denotes an appropriately shaped member or plate which is adapted to fit a portion of the side of the

hand near the wrist. The plate 1 on the underside is provided with an universal ball bearing in the form of a ring of balls 2 housed within an annular holder or supporting ring or race 3, the housing or ring 3 being fashioned with a recess 4 for each ball 2, and formed with projecting parts 5 which serve to keep the balls 2 in their recesses 4. As shown in the drawings, the race ring 3 may be riveted at 6 to the plate 1 intermediate the balls 2.

As will be understood, the device is able to move freely on the balls 2 in any direction upon and over the surface on which the writing or other work is being done.

The plate or member 1 may, as indicated by the dotted lines in Fig. 1, be constructed with loops 7 for attaching or securing it to the hand in the desired position by means of a strap or straps or band or bands, (not shown) passing, if desired, around the wrist and/or between the thumb and index finger, or otherwise, as preferred.

Referring to that form of the invention illustrated in Figs. 3 to 5, means is provided for temporarily and detachably securing the device on the hand of the user. This means is such that when the device is brought into use to support the hand while writing, et cetera, the parts which operate to attach it are disengaged from the hand and, when the hand is raised, said parts are automatically operated to re-engage the hand and again attach the device thereto. In this construction the shaped member or plate 1 is constructed with a central hole or opening 8. 9, 10 are two appropriately curved or shaped catches which are adapted to embrace the palm and back of the hand at the other side. These catches 9, 10, in their lower portions project down through opposite ends of the slot 8, and each catch has attached to it a block or sliding piece 11 which blocks 11 are adapted to slide inwardly and outwardly in guides 12 fixed to the bottom of the plate 1 at the sides of the slot 8. The blocks 11 are bevelled in opposite directions, as indicated at 13, and between said blocks 11 there is positioned a plunger or part 14, the ends of which are bevelled to correspond to the bevel of the blocks 11. This plunger 14 may be shaped at the top to follow, more or less, the contour of that portion of the hand which engages therewith when the device is in position, and it is provided at

the bottom with projections 15 which serve as stops for the plunger 14 in an upward direction by engaging the guides 12—see Fig. 4.

In the guideways 12, at the sides of the plunger 14, there are placed helical springs 16 which are attached at their ends, as indicated at 17, to the blocks 11. 3 is the race ring for the balls 2, and 18 is an outer annular casing enclosing the race ring 3 and also almost completely enclosing the balls 2, so that said balls 2 only project below said casing to a slight extent, as indicated at 19. The annular casing 18 preferably encloses the bottom of the device below the guides 12 and plunger 14 and it may, as shown at 20, be constructed to serve as a stop for the plunger 14 in a downward direction, so that when the plunger 14 is pressed down by the hand on to the said stop 20, the blocks 11 are pushed apart to a sufficient extent to open the catches 9, 10, and to release them and remove the pressure exerted by them on the hand. In this position the top of the plunger 14 is level with the top of the plate 1.

With the plunger 14 depressed, the springs 16 are maintained in tension so that they automatically operate, when the pressure of the hand on the plunger 14 is removed, again to draw the catches 9, 10, in the direction of one another and so engage the hand and attach the device thereto.

21 represents appropriately shaped filling pieces positioned between the plate 1 and the outer annular casing 18.

Referring to the further embodiment of the invention shown in Fig. 6, in which I illustrate a modified form of the means for attaching the device to the hand of the user, the numeral 1 denotes the shaped member or plate, 18 the casing enclosing the balls 2, and 21 the filling pieces positioned intermediate the plate 1 and casing 18. In this construction the one catch 22 is formed with a foot or outwardly projecting piece 23 by which it is adjustably attached to one side of the plate or member 1. The projecting piece 23 has a slot formed in it in which engages a stud 24 fixed to the plate 1, said stud 24 being provided with a nut 25, to allow of the catch 22 being secured and adjusted within certain limits.

The other catch 26 is pivotally attached to a small bracket 27 fixed on the top of the plate 1 at the opposite side to the catch 22. This catch 26 is constructed with a finger piece 28 between which and the plate 1 a helical spring 29 is arranged. The spring 29 operates to maintain the catch 26 in the position in which it engages with the hand

and, in co-operation with the catch 22, secures the device thereto.

As indicated by the dotted lines in Fig. 6, portions of the catches 22, 26, may be hinged at 30 to the other portions to allow of their being placed in a folded position when the device is not in use. This allows of the device being folded into a compact form for carrying it in the pocket, packing and other purposes.

31 are extensions of the hinged parts which serve as stops for said parts when they are in the extended or open position.

What I claim as my invention and desire to protect by Letters Patent is:—

1. A device of the kind described, comprising a hand-supporting member provided on the underside with a ball bearing and having shaped catches engaging the sides of the hand for securing the device to the hand, and means for automatically moving said catches outwardly to disengage them from the hand when the hand is resting in the member, and for automatically moving them inwardly to engage with the hand when the hand is raised above the member, as set forth.

2. A device of the kind described, comprising a hand-supporting member provided on the underside with a ball bearing and having shaped catches engaging the sides of the hand for securing the device to the hand, and means for automatically moving said catches outwardly to disengage them from the hand when the hand is resting in the member, and for automatically moving them inwardly to engage with the hand when the hand is raised above the member, said means including a part adapted to be engaged by the hand and actuated by the pressure thereof to move the catches outwardly, as set forth.

3. A device of the kind described, comprising a hand-supporting member provided on the underside with a ball bearing and having shaped sliding catches engaging the sides of the hand for securing the device to the hand, and means for automatically moving said catches outwardly to disengage them from the hand when the hand is resting in the member, and for automatically moving them inwardly to engage with the hand when the hand is raised above the member, said means including blocks to which the catches are attached, guides for said blocks, a plunger engaging said blocks, and springs for moving said blocks in the direction of each other, as set forth.

In testimony whereof I have signed my name to this specification.

CHARLES CRAIG.