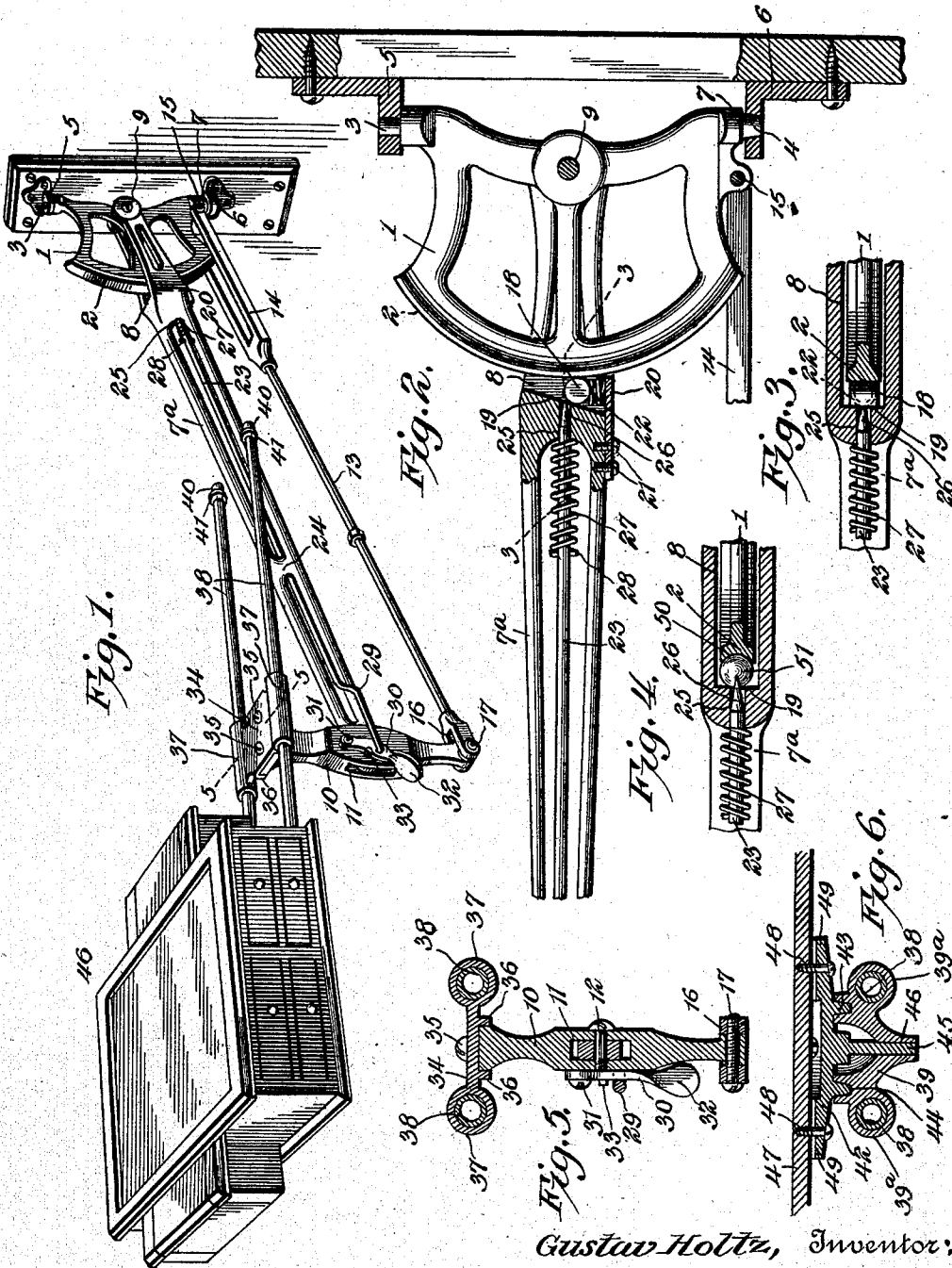


G. HOLTZ.  
ADJUSTABLE WALL BRACKET.  
(Application filed Oct. 15, 1901.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE WALL-BRACKET.

SPECIFICATION forming part of Letters Patent No. 714,694, dated December 2, 1902.

Application filed October 15, 1901. Serial No. 78,721. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAV HOLTZ, a citizen of the United States, residing at Jamesburg, in the county of Middlesex and State of New Jersey, have invented a new and useful Adjustable Wall-Bracket, of which the following is a specification.

This invention relates to wall-brackets, and is designed to provide an improved device of this character which is particularly adapted for dentists' use to support tool-trays and the like and is capable of swinging movements in both vertical and horizontal directions and also adapted to be extended in a horizontal direction.

It is furthermore designed to permit of a free upwardly-swinging movement of the bracket for vertical adjustment thereof and provide for an automatic interlocking of the parts when upward pressure is removed therefrom, so as to conveniently support the bracket in any vertical adjustment and also to arrange for conveniently releasing the interlocked engagement of the parts, so as to permit of a quick downward adjustment of the movable portion of the bracket.

Another object is to provide for supporting a tray or other device always in a horizontal position and also to provide for extending the tray-supporting portion independently of the adjustable movements of the other portions of the brackets and also to permit of an independent rotatable adjustment of the tray or other article supported upon the bracket.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a wall-bracket constructed and arranged in accordance with the present invention. Fig. 2 is an enlarged vertical detail sectional view to illustrate the means for lock-

ing the vertically-swinging portion of the bracket. Fig. 3 is a detail sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a similar view showing a modified form of the locking means. Fig. 5 is a vertical sectional view taken on the line 5 5 of Fig. 1. Fig. 6 is a detail sectional view of the adjustable connection between the outer end of the bracket and the part to be supported thereon.

Like characters of reference designate corresponding parts in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates a skeleton bracket-body, which is disposed in a vertical plane and has an outer arcuate edge portion 2. The top and bottom of the back of the body are provided with respective trunnions 3 and 4, which are rotatably mounted in suitable bearing-brackets 5 and 6, which are to be connected to a wall or other support, as clearly illustrated in Figs. 1 and 2 of the drawings. It will here be noted that the lower trunnion 4 is tapered or substantially conical and is of a length to bind in the opening in the adjacent bearing-bracket 6, so as to prevent the adjacent shoulder portion 7 from bearing against the bracket 6, whereby the trunnion 4 has a comparatively snug fit, so as to obviate looseness and to require more or less force to swing the bracket-body 1 upon its pivotal support.

A vertically-swinging skeleton bracket-arm 7<sup>a</sup> projects outwardly from the body 1 and has its rear end bifurcated or forked, as indicated at 8, so as to straddle the body 1 and for pivotal connection thereto, as at 9, said pivotal connection being located at the center of a circle of which the curved portion 2 is an arc.

At the outer free end of the arm 7<sup>a</sup> there is a vertical cross-head 10, which is provided with an intermediate slot or opening 11 for the reception of the free end of the arm, which is pivoted thereto by means of a suitable pivot-pin 12. Located below the arm is a brace-rod 13, which is provided with a forked or bifurcated rear end portion 14, which straddles the lower end of the bracket-body 1 and is pivoted thereto at 15, the opposite front end of the rod also being bifur-

cated or forked, as at 16, to straddle the lower end of the cross-head, to which it is pivotally connected by means of the pivot-pin 17. The pivotal connections 9 and 15 are so arranged that the cross-head is maintained in a vertical position throughout the vertical movement of the arm 7<sup>a</sup>.

To lock the arm 7<sup>a</sup> at any vertical adjustment, a loose wedging-roller 18 is inserted between the arcuate face 2 of the body 1 and the back of the rear bifurcated end of the arm, said rear end of the bifurcation being inclined upwardly and rearwardly, as indicated at 19, so that the weight of the arm 7<sup>a</sup> tends to wedge the roller 18 between the inclined surface 19 and the arcuate surface 2, thereby locking the arm against downward movement upon its pivotal support 9, although free to be moved upwardly, as an upward movement of the arm moves the inclined back of the bifurcation away from the wedging-roller. To prevent displacement of the roller 18, a plate 20 covers the lower end of the space between the back of the bifurcation and the body 1 and is detachably connected to the arm by means of suitable fastenings 21. A helical spring 22 is interposed between the plate 20 and the lower side of the roller 18, so as to normally hold the latter in frictional engagement with the arcuate portion 2 and the back of the bifurcation and to permit of a yielding movement of the roller when the arm is lifted upon its pivotal support as a center.

In order that the arm may be swung downward, it is necessary to overcome the binding engagement between the arm and the body of the bracket 1, and this is accomplished by means of an endwise-movable trip-rod 23, mounted upon the arm 7<sup>a</sup> and working through a perforation in an intermediate web portion 24, which connects the opposite members of the arm, and another perforation 25, formed in the back of the rear bifurcated end of the arm. The inner or rear end of the rod is pointed or beveled, as indicated at 26, and this end is held out of the bifurcation 8 by means of a helical spring 27 embracing the rod and bearing in opposite directions against the fork-head 8 and a pin or shoulder 28, carried by the rod. The outer free end of the rod is offset laterally, as indicated at 29, and pivotally connected to an intermediate portion of a finger-lever 30, which has its upper end pivotally connected to the cross-head 10, as indicated at 31, and its lower free end formed into a flat finger-piece 32 for convenience in manipulating the lever. A suitable stop projection 33 is carried by the cross-head 10 and located in the forward or outer path of the finger-lever, so as to limit the movement thereof. By pressing upon the finger-piece 32 the tension of the spring 27 may be overcome, so as to thrust the trip-rod 23 into the bifurcation 8 at the rear end of the arm and also to force the pointed or beveled end of the rod into frictional engagement with

the binding-roller 18, thereby to depress the latter against the action of the spring 20, and thereby break the frictional engagement between the arm and the body-bracket 1 to permit of a rapid downward swing of the arm. Upon release of the finger-piece 32 the spring 27 will force the trip-rod 23 outwardly, thereby freeing the binding-roller 18, which is again returned to its normal position under the influence of the spring 20, thereby to lock the arm against further downward movement.

It will here be noted that the vertical adjustment of the swinging arm may be accomplished in a quick and convenient manner, as the adjusting finger-piece 32 is at the outer extremity of the arm, and therefore in a conveniently accessible position, and by reason of its peculiar disposition the lower portion of the cross-head may be grasped by the fingers and the thumb employed to operate the finger or thumb piece 32, so that the arm may be freed and also swung vertically by the employment of one hand only.

Upon the upper end of the cross-head 10 there is a flat plate or bracket 34, which is secured thereto by means of suitable screw-threaded fastenings 35, piercing the plate and entering the top of the cross-head. The bottom of the plate or bracket is provided with a pair of parallel ribs or flanges 36, which embrace the top of the cross-head, so as to prevent turning of the bracket thereon. At opposite edges of the bracket or plate and disposed parallel with the arm 7<sup>a</sup> are the opposite open-ended tubular sockets 37, which slidably receive the opposite hollow rods 38, which have their forward or outer ends received in tubular sockets 39<sup>a</sup>, carried by a bracket 39, the opposite rear ends of the rods being provided with screw-threaded plugs 40, removably fitted into the ends of the rods and provided with marginal flanges 41 to form stops for engagement with the rear ends of the sockets 37, so as to limit the outward movement of the rods 38. Upon the outer terminal bracket 39 there is mounted a rotatable plate 42, which is provided with a pendent tapered marginal flange 43, fitting within a corresponding groove 34, formed in the top of the bracket, the plate also having a central pendent pivot-pin 45, received within a socket or opening 46 in the bracket, whereby the plate is rotatable upon and also detachable from the bracket. This bracket is designed for the support of any article—as, for instance, a tray or cabinet 46, as illustrated in Fig. 1, the bottom 47 of said cabinet being secured to the rotatable plate or bracket member 42 by means of suitable screw-fastenings 48, which pierce semitubular arms 49 of the plate and enter the bottom 47. By this means the tray or cabinet 46 may be rotated so as to give access to any side thereof, and this adjustment is independent of any of the other adjustments of the entire bracket.

In Fig. 4 of the drawings there has been shown a modification of the frictional engagement between the bracket-arm and the body wherein the arcuate portion 2 of the latter is provided with a longitudinal groove or way 50, in which is received a ball 51, which corresponds to the roller 18, the other parts of the apparatus being exactly the same as hereinbefore described.

From the foregoing description it is apparent that the present bracket may be conveniently manipulated from the outer end of the main arm thereof, so as to swing the latter in both horizontal and vertical directions and also to extend the rods 38 through the tubular sockets 37.

A very important feature of the present device resides in the fact that the rods 38 are disposed at opposite sides of the arm 7<sup>a</sup>, whereby the weight of the object supported upon the rods is equally distributed upon the arm, so as to obviate twisting of the latter, as would occur should there be only one rod 38 at one side of the arm. This balancing feature of the device is further carried out by mounting the cross-head 10 in the same vertical plane with the arm and also having the rear end of the latter bifurcated, so as to straddle the supporting-body, whereby all of the parts of the device are balanced with respect to one another, so as to obviate torsional strain upon any portion of the bracket.

What I claim is—

1. In an adjustable bracket, the combination with an attaching-body having an arcuate friction-surface, of a swinging arm having a bifurcated rear end straddling the body and pivoted thereto concentrically with respect to the arcuate surface thereof, the back of the bifurcation being inclined, a movable wedge device located in the bifurcation and in frictional engagement with the back thereof and the arcuate surface, and means to move the wedge device out of operative position to permit of a swinging movement of the arm.

2. In an adjustable bracket, the combination with a vertically-disposed attaching-body having an arcuate friction-surface, of a vertically-swinging arm having its rear end bifurcated to straddle the body and pivoted thereto concentrically with respect to the arcuate surface, the back of the bifurcation being inclined upwardly and rearwardly, a spring-actuated friction device within the bifurcation and in frictional engagement with the back thereof and the arcuate surface, and means to force the wedge out of its frictional operative position.

3. In an adjustable bracket, the combination with a vertically-disposed attaching-body having an arcuate friction-surface, of a vertically-swinging arm having its rear end bifurcated to straddle the body and pivoted thereto concentrically with respect to the arcuate surface thereof, the back of the bifurcation being inclined upwardly and rearwardly, a detachable plate secured to the arm

and closing the space between the back of the bifurcation and the body, a loose friction device located within the bifurcation and in frictional engagement with the inclined back thereof and the arcuate part of the body, a spring interposed between the plate and the wedge to yieldingly hold the latter in frictional engagement with the arm and the body, and means to force the wedge against the tension of the spring and out of frictional engagement with the arm and the body.

4. In an adjustable bracket, the combination with an attaching-body having an arcuate friction-surface, of an arm pivoted to the body and having a friction-surface to cooperate with the friction-surface of the body, a wedge device in frictional engagement with the two frictional surfaces, a spring-actuated trip-rod slidably mounted upon the arm and having its inner end in operative relation to the wedge, and a finger-piece pivotally carried by the arm and also connected to the trip-rod.

5. In an adjustable bracket, the combination with a vertical attaching-body having an arcuate friction-surface, of a bifurcated vertically-swinging arm straddling the body and pivoted thereto concentrically with respect to the arcuate surface of the body, the back of the bifurcation being inclined upwardly and rearwardly, a spring-actuated wedge device interposed between the back of the bifurcation and the arcuate surface of the body, an endwise-movable trip-rod mounted upon the arm and having its rear end pointed or beveled and piercing the back of the bifurcation, a spring bearing in opposite directions against the arm and the rod to hold the latter at its outward limit.

6. In an adjustable bracket, the combination with a vertically-disposed attaching-body having an arcuate friction-surface, of a vertically-swinging arm having its rear end bifurcated to straddle the body and pivotally connected thereto concentrically with respect to the arcuate surface, the back of the bifurcation being inclined upwardly and rearwardly, a detachable plate closing the bottom of the space between the back of the bifurcation and the body, a loose wedge device interposed between the back of the bifurcation and the arcuate surface of the body, a spring resting upon the plate and supporting the wedge, an endwise-slidable trip-rod mounted upon the arm and having its rear end pointed or beveled and working in a perforation in the back of the bifurcation, the trip-rod working in substantially the plane of the upper side of the wedge, a helical spring embracing the trip-rod and bearing in opposite directions against the latter and the arm to hold the rod at its outer limit, and a thumb-piece pivoted to the arm and also having a pivotal connection with the trip-rod.

7. In an adjustable bracket, the combination with an attaching-body, of a pair of vertically-alined parallel arms pivoted thereto,

means carried by one of the arms to adjustably interlock the same with the attaching-body, a vertically-disposed cross-head pivotally connected to the outer ends of the arms, 5 a bracket carried by the top of the cross-head, a pair of horizontally-alined endwise-shiftable parallel rods carried by the bracket and disposed at opposite sides of the arms so as to be out of the path of said arms, and a bracket 10 carried by the outer ends of the rods.

8. In an adjustable bracket, the combination with an attaching-body, of a pair of vertically-alined parallel arms pivotally connected thereto, means carried by one of the arms for 15 adjustably interlocking the same with the attaching-body, a vertical cross-head pivotally connected to the outer ends of the arms, parallel horizontally-disposed open-ended tubular sockets carried by the cross-head and disposed 20 at opposite sides of the arms, endwise-shiftable rods fitted in the respective sockets and thereby disposed at opposite sides of the arms and out of the path thereof, and a bracket carried by the outer ends of the rods.

9. In an adjustable bracket, the combination with an attaching-body, of a pair of vertically-alined parallel arms pivotally connected thereto, means carried by one of the arms to 25 adjustably interlock the same with the attaching-body, a vertical cross-head pivotally connected to the outer ends of the arms, a bracket having pendent flanges embracing the top of the cross-head, and also provided with open-ended parallel horizontally-disposed 35 tubular sockets disposed at opposite sides of the arms, detachable fastenings connecting the bracket to the cross-head, endwise-shiftable rods mounted in the tubular sockets and thereby lying at opposite sides of 40 the arms and out of the path thereof, and a bracket carried by the outer ends of the rods.

10. In an adjustable bracket, the combination with a support, of a vertically-swinging arm, a vertically-disposed cross-head pivotally 45 connected to the arm, means for holding the arm at different elevations, a pair of endwise-shiftable, substantially parallel and horizontally-alined rods carried by the cross-head and arranged at opposite sides thereof, 50 and also lying at opposite sides of the swinging arm, and a support carried by the outer ends of the rods.

11. In an adjustable bracket, the combination with a vertically-swinging arm, of a pair 55 of open-ended horizontally-disposed tubular sockets carried by the outer end of the arm, and located at opposite sides thereof, means for maintaining the sockets in a horizontal position, endwise-shiftable rods fitted in the 60 sockets, and a bracket at the outer end of said rods and comprising a fixed bottom member having tubular sockets receiving the outer ends of the rods, and an upper rotatable plate member.

12. In an adjustable bracket, the combination with a vertically-swinging arm, of a pair 65 of open-ended horizontally-disposed tubular

sockets carried by the outer end of the arm, and at opposite sides thereof, means for maintaining the sockets in a horizontal position, 70 endwise-shiftable rods fitted in the sockets, a bracket at the outer end of said rods and comprising a fixed bottom member having substantially horizontal and parallel tubular sockets receiving the outer ends of the rods, 75 and provided with a central vertical socket located between the sockets and also having a circular groove disposed concentrically with the central socket, and an upper rotatable plate member having a central pendent pivot-pin fitted in the central socket of the bottom 80 member and also provided with a pendent circular flange rotatably fitted in the groove of the bottom member.

13. In an adjustable bracket, the combination with opposite bearing-brackets, of a horizontally-swinging body member having top 85 and bottom pivotal connections with the respective brackets, and also provided with an upstanding convexed front edge, a vertically-swinging arm pivoted to the body concentrically with respect to the convexed edge thereof, means carried by the arm for adjustable 90 engagement with the convexed edge of the body to interlock the arm therewith, an upstanding cross-head pivoted intermediately of its length to the outer end of the arm, and another arm disposed below and parallel with the upper arm and having its opposite ends 95 respectively pivoted to the body and the lower end of the cross-head.

14. In an adjustable bracket, the combination with opposite bearing-brackets, of a horizontally-swinging body member having top 105 and bottom pivotal connections with the respective brackets, and also provided with an upstanding convexed front edge, a vertically-swinging arm pivoted to the body concentrically with respect to the convexed edge thereof, means carried by the arm for adjustable 110 engagement with the convexed edge of the body to interlock the arm therewith, an upstanding cross-head pivoted intermediately of its length to the outer end of the arm, another arm disposed below and parallel with 115 the upper arm and having its opposite ends respectively pivoted to the body and the lower end of the cross-head, a pair of endwise-shiftable rods carried by the upper end of the cross-head and disposed at opposite sides 120 thereof and thereby out of the vertical path of the arms, and a bracket carried by the outer end of the rods.

15. In an adjustable bracket, the combination with an attaching-body having an arcuate friction-surface, of a vertically-swinging 125 arm having a bifurcated rear end straddling the body and pivoted thereto concentrically with respect to the arcuate portion, the back of the bifurcation being inclined upwardly 130 and rearwardly, a loose friction-roller in frictional engagement with the back of the bifurcation and the arcuate surface of the body, a detachable closure for the bottom of

the space between the back of the bifurcation and the body, a spring interposed between the friction-roller and the closure, a rod located below and parallel with the arm and having its rear end pivotally connected to the body, a vertical cross-head pivotally connected to the outer ends of the arm and the rod, an endwise-adjustable trip-rod carried by the arm and having a rear pointed or beveled end working through a perforation in the back of the bifurcation and in operative relation to the upper side of the friction-roller, a spring to hold the trip-rod at its outer limit, a thumb-piece pivoted to the

cross-head and also pivotally connected to the trip-rod, a pair of parallel open-ended tubular sockets carried by the upper end of the cross-head, rods slidably mounted in the respective sockets, and a bracket carried by the outer ends of the rods, and provided with an upper rotatable plate or member.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GUSTAV HOLTZ.

Witnesses:

ROBT. REID,  
JOHN GRANY.