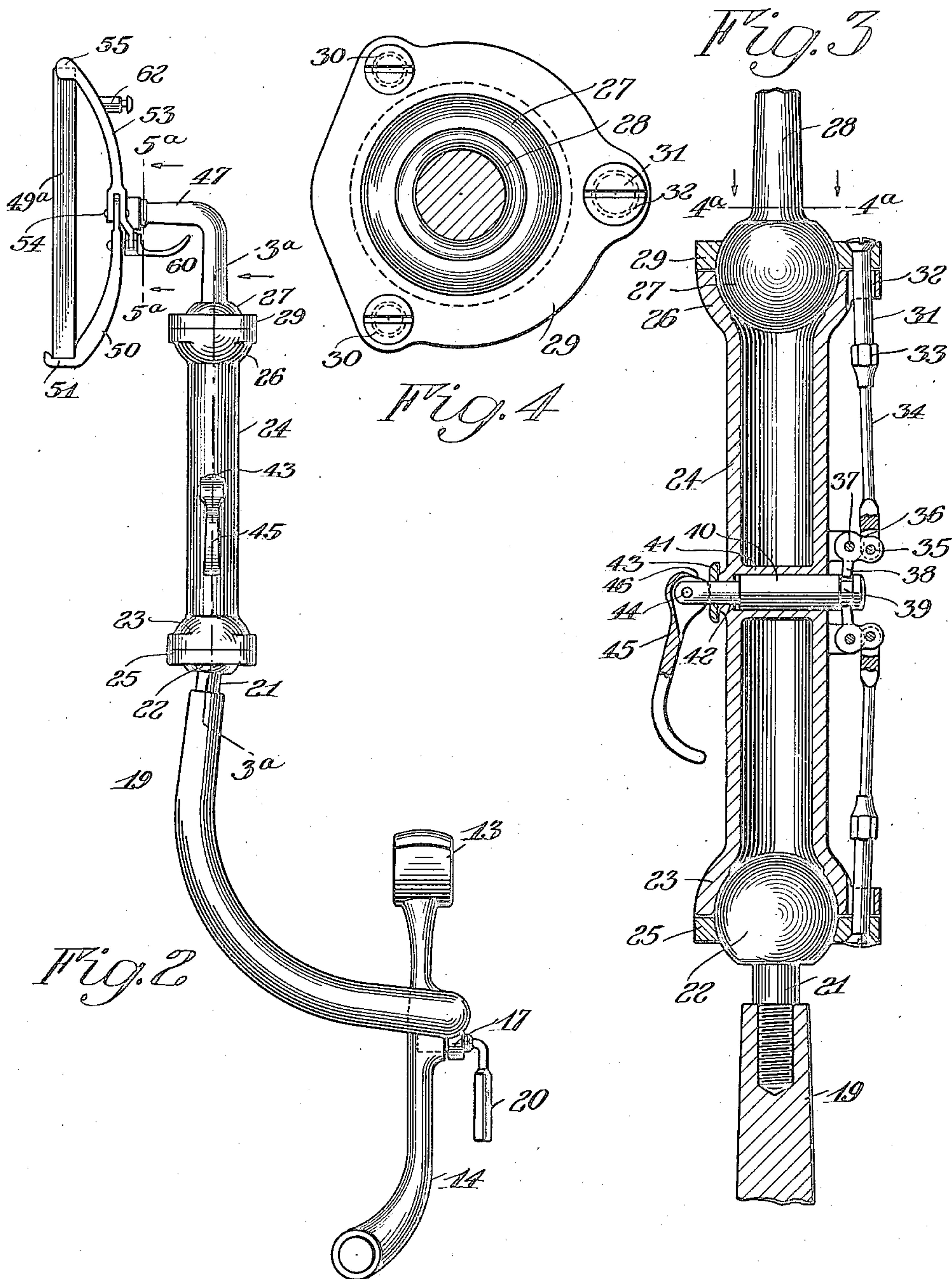


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A. J. MAY.
ARTICLE SUPPORTING MEANS.
FILED JULY 14, 1920.

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2 SHEETS-SHEET 2



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ARTICLE-SUPPORTING MEANS.

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To all whom it may concern:

Be it known that I, ADAM J. MAY, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Article-Supporting Means; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification and to the reference numerals marked thereon.

This invention has to do with article supporting means, and, more particularly, with standards or brackets for supporting articles in convenient position adjacent the work or place of use, the chief object of the invention being to provide a simple, flexible, readily adjustable standard or bracket, of a practical character of construction, capable of securely holding an article in any desired position of use. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side elevation of a portion of a chair and supporting means applied thereto embodying the invention.

Figure 2 is a front elevation showing more particularly the supporting means.

Figure 3 is a sectional view on the line 3^a—3^a of Figure 2.

Figure 4 is an enlarged view in section on the line 4^a—4^a of Figure 3.

Figure 5 is an enlarged fragmentary detailed view partly in section on the line 5^a—5^a of Figure 2.

Similar reference marks throughout the several views indicate the same parts.

The embodiment at present preferred and disclosed herein as illustrating the principal and best mode of application of the invention is adapted for supporting a photographic film holder and is shown as an attachment for the arm of a chair which, in the present instance, is of the variety employed by dentists, the purpose of this adaptation being to provide an advantageous support for the film holder employed in making photographs of the head or other portion of the body of the patient occupying the chair. The latter is shown in Figure 1

as having a seat 10, back 11, and side arms 13 which is supported on the standard 14 adjustably carried in a bearing bracket 15 of any suitable construction having a clamping handle 16 permitting adjustment of the arm toward and from the occupant of the chair, in accordance with the size of the latter and as occasion may require. These parts being old and well known in the art require no further description.

In the present instance the chair arm standard 14 is formed with bearing lugs 17 rotatably supporting the lower reduced end 18 of an angular main supporting arm 19, the forward bearing lug 17 being preferably of any suitable clamping variety operated by handle 20 for clamping arm 19 in an adjusted position of rotation in its bearings. Main arm 19 has the angularly curved shape shown in the drawings and conforming to the shape of the chair arm 13 so that the main supporting arm has its adjusting clamp in accessible position on the outside of the chair arm and curves inwardly and upwardly to clear the chair arm and to approach the occupant of the chair.

Threadedly secured in a socket in the upper end of main arm 19 is a stem 21 having at its upper end a ball 22, Figure 3, rotatably fitting in a spherical socket 23 formed in the lower end of an intermediate arm section 24, a spherically apertured plate 25 being provided to maintain the ball in its socket. The upper end of intermediate section 24 is formed with a similar socket 26 in which rotatably fits a ball 27 on the lower end of an upper or frame arm 28, a similar plate 29 being provided for securing the ball in its socket. Plates 25 and 29 serve also as a means for rigidly clamping the respective balls in their sockets after adjustment, being loosely secured to the respective ends of the intermediate section by means of screws 30, Figure 4. On the opposite side of the plates are stems or rods 31, extending toward each other exteriorly of and parallel with the section, each having a head engaging the plate and passing loosely through an opening 32 in the socket wall, being adjustably connected at its lower end by means of any suitable length adjusting joint 33 to a rod 34 which is pivotally connected at 35 to one arm of a bell crank lever 36. The latter is pivotally supported at 37 in lugs formed on the exterior of the

intermediate section. This construction is the same for both ball and socket joints and clamping plates and rods 34 extend into proximity with each other so that the bell crank levers connected therewith are thus brought adjacent each other on the section. The other arm 38 of each bell crank lever is arranged for engagement in a recess 39 at one end of a rod or spindle 40 which is slidably supported in a bearing 41 extending transversely of the section. Rod 40 projects beyond the latter at its other end where it has a reduced portion 42 carrying a washer 43 resting against a boss on the section, the rod being pivotally connected at 44 with a handle 45 the inner end of which is U shaped in section to embrace the end of the rod and has also a cam portion 46 bearing against washer 43. As shown in the drawings, the handle is conveniently accessible for the operator.

It is apparent from this construction that handle 45 may be turned to the position shown in Figure 2 to move rod 40 longitudinally toward its handle end, thereby turning bell cranks 36, drawing rods 34 toward each other and thus clamping plates 25 and 29 against balls 22 and 27 for holding the latter rigidly in adjusted position. This construction therefore provides for flexible universal adjustment of the upper arm 28 to any desired position relative to the occupant of the chair, and the accessibly located handle 45, controlling both ball and socket joints, facilitates the quick and convenient clamping of the upper arm in position after adjustment.

The upper arm 28 is turned horizontally toward the center of the chair as at 47 having its end fixed in an opening in a boss 48 formed in the body of a frame 49. The latter is preferably provided with a plurality of extended portions or fingers for firmly supporting the article to be held, which in the present instance, is the rectangular holder commonly provided for photographic films as used for the present purposes. Two of the fingers 50 curve downwardly and outwardly from frame 49 and are turned forwardly as at 51 so as to engage under the bottom of the holder at the corners of the latter, while two other fingers are curved outwardly and upwardly and also forwardly to support the holder at each of its upper corners. A rigid support is thus provided for the holder and in addition means are provided for clamping the same in the frame, which will now be described.

The means for clamping the film holder in the frame comprises preferably a pair of levers 53, Figures 1 and 5, pivotally supported at 54 on frame 49 and having their upper ends embracing the sides of the holder at its top and turned angularly as at 55 to engage the top edge thereof. Levers

53 are extended below their pivot points 54 to provide arms 56 which are pivotally connected as at 57 with links 58 pivotally connected in turn as at 59, with a conveniently accessible handle 60 extending at its inner end through a slot 61 in the frame and supported and guided by the sides of the latter for vertical movement. The slot and pivotal points 57 and 59 are so arranged relative to each other that when handle 61 is moved downwardly pivot 59 is moved below pivots 57 thus drawing together the lower ends 56 of the clamping levers by means of links 58, thereby spreading the upper ends of the levers and releasing the film holder. When handle 60 is moved upwardly, however, to the end of slot 61, the pivotal connection 59 of links 58 is moved slightly above the pivotal connections 57 between links 58 and levers 53, thus providing a toggle action which brings the upper ends of lever 53 toward each other, securely clamping the holder in position on the frame and maintaining them in such position by reason of the fact that toggle levers 58 are moved slightly beyond their central or relatively aligned relation.

Means are provided for holding the head or other part of the body of the occupant of the chair stationarily against the face of the film holder, while taking a photograph, comprising preferably anchor posts 62 on the frame arms 52 with which are loosely engaged clips 63 carrying a flexible belt or strap of fabric or other suitable material having a loop 64 adjustable in length by any usual or suitable clamping means indicated generally at 65. By means of this strap the part of the patient's body to be photographed may be securely and stationarily held against the face of the film holder to prevent movement while the photograph is being taken.

In operation, arm 13 of the chair having been adjusted toward or from the patient as required, main arm 19 is likewise adjusted relative to the chair occupant as may be required by the adjustment of the chair arm or other circumstances, and clamped in position by means of handle 20. Handle 45 is then moved upwardly to quickly and simultaneously unclamp the two ball and socket joints at the ends of the intermediate section, and the frame arm and frame are thus conveniently released for universal movement on the main arm to adjust the film holder carried by the frame to the most convenient position, after which handle 45 is moved downwardly, thereby simultaneously clamping both joints and securing the frame and holder rigidly as adjusted. The provision of two joints of the character described provides a thoroughly flexible support for the film holder, so that it may be moved in all directions relative to the patient, and also

tilted to any desired angle with the vertical. The clamping arms 53 for the film holder having been released by moving handle 60 downwardly, the holder is placed on the frame and handle 60 is then moved upwardly, quickly clamping the holder in position where it is securely supported at its four corners. The portion of the patient's body to be photographed is then laid against the face of the film holder and if desired may be securely bound thereto to prevent inadvertent movement by means of the strap 64, which conforms closely but comfortably with the body portion.

The device is simply but strongly constructed, and, while providing for a thoroughly flexible support of the film holder in any desired position, provides also for clamping the holder in its frame and as adjusted in position by a minimum of readily accessible and convenient handles, so that the device may be quickly and conveniently adjusted in position for firmly supporting the film holder as well as the part of the patient's body to be photographed.

I claim as my invention:

1. An article support comprising a main arm and means for supporting the same, an intermediate section having a ball and socket connection with said main arm, an upper arm having a ball and socket connection with said intermediate section, links cooperating with said connections, a handle, levers pivoted on said section and connecting said handle with each of said links for moving said links to clamp and release said connections, and article supporting means on said upper arm.

2. An article support comprising a main arm and means for supporting the same, an upper arm provided with article holding means, an intermediate section having universal joints connecting the same with said main and upper arms, links cooperating with said joints and extending parallel with said section into proximity with each other, a rod extending transversely of said section and having a bell crank connection with each link, and a handle for moving said rod to clamp said universal joints and secure said article holding means in adjusted position.

3. An article support comprising a main arm and means for supporting the same, an intermediate section adjustably supported thereon, a frame arm adjustably supported on said intermediate section, a frame on

said frame arm comprising a plurality of fingers having a relatively clamping movement toward and from an article for holding the same at spaced points, and toggle joint means for effecting said clamping movement of said fingers to clamp the article in position.

4. The combination with a dental chair arm of a main supporting arm secured thereto, a frame arm, an intermediate section adjustably connected with said main arm and frame arms and means for clamping the same rigidly to said arms, a frame on said frame arm adapted to support a film holder with means for clamping the holder in position, and a strap on the frame for holding the head of the occupant of the chair against the film holder.

5. The combination with a dental chair of a main supporting arm secured thereon, a film holder frame supported on said main arm for universal adjusting movement, means for rigidly clamping said frame in position, means for clamping the film holder in said frame, and an adjustable strap for holding the head of the occupant of the chair against the film holder.

6. An article support comprising a main arm and means for supporting the same, an outer arm provided with article supporting means, an intermediate section formed at each end with a socket, ball members on said main and outer arms cooperating with said sockets, clamping plates engaging said ball members opposite said sockets to press and clamp the same in said sockets, links engaging said plates and extending along the outside of said section into proximity with each other, and a handle connected with said links for moving the same to clamp said arms and section together and secure said article supporting means in adjusted position.

7. An article support comprising a main arm and means for supporting the same, an intermediate section adjustably supported thereon, a frame arm adjustably supported on said intermediate section, a frame on said frame arm comprising a plurality of spaced fingers for supporting engagement with an article, a plurality of levers pivoted on the frame and provided with fingers movable to clamp the article against said frame fingers, and toggle joint means for effecting pivotal clamping movement of said levers and maintaining said lever fingers in clamping engagement with the article.

ADAM J. MAY.