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1,869,700

ATTACHMENT FOR OPHTHALMOMETERS

Filed May 28, 1930

2 Sheets-Sheet 1

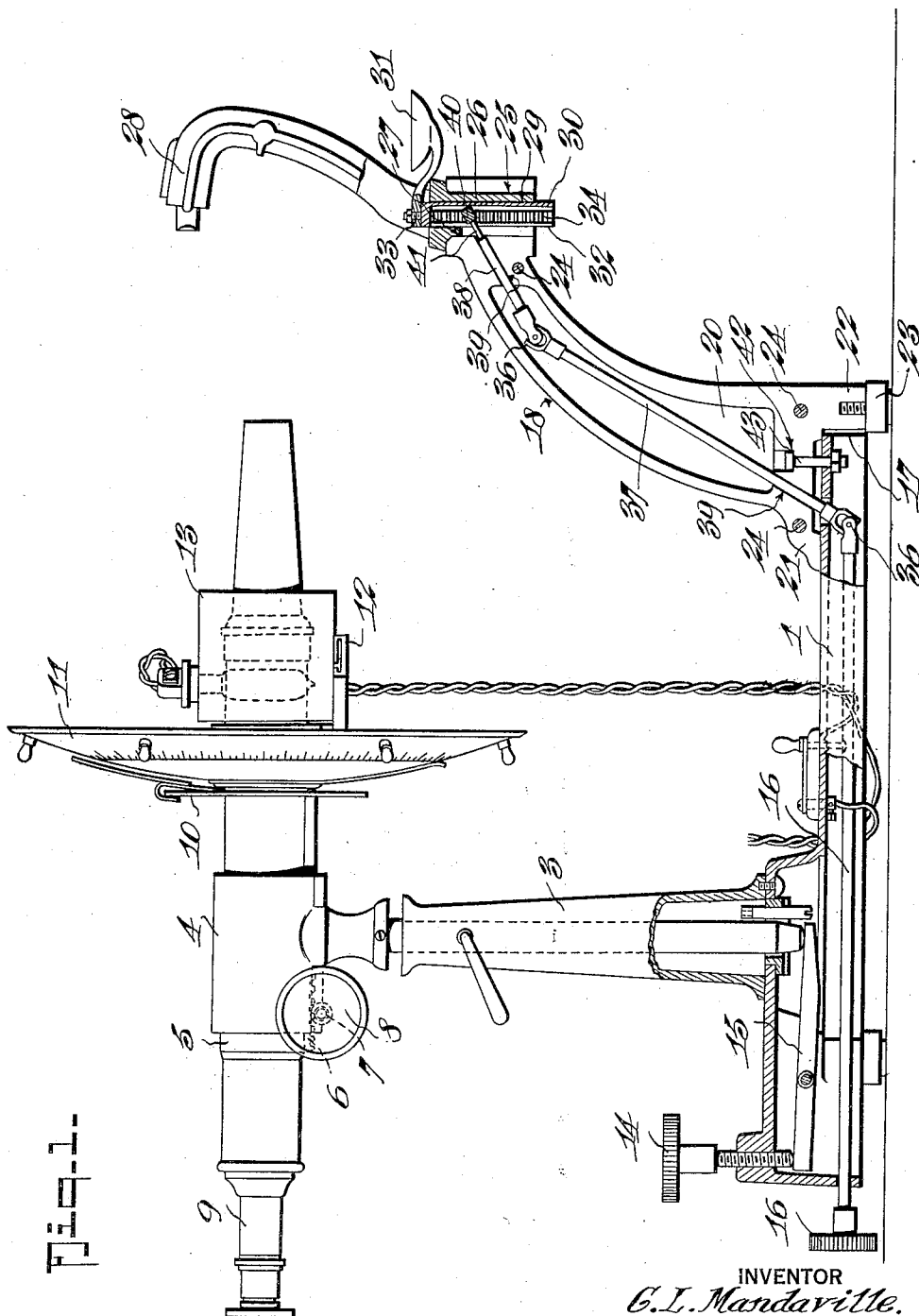


Fig. 1--

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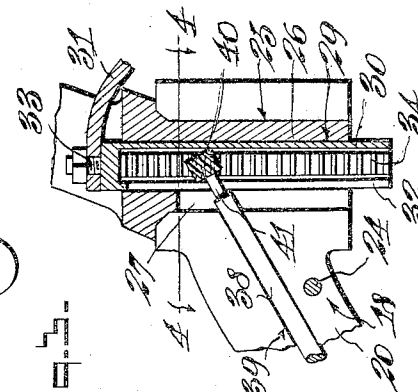
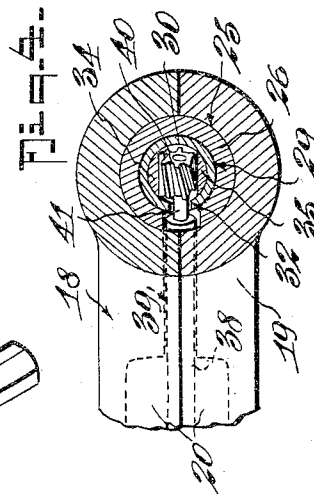
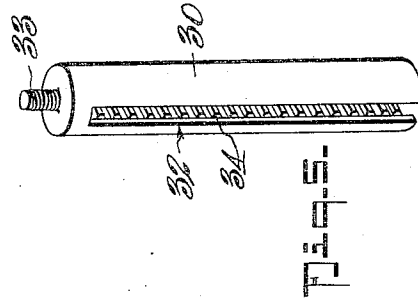
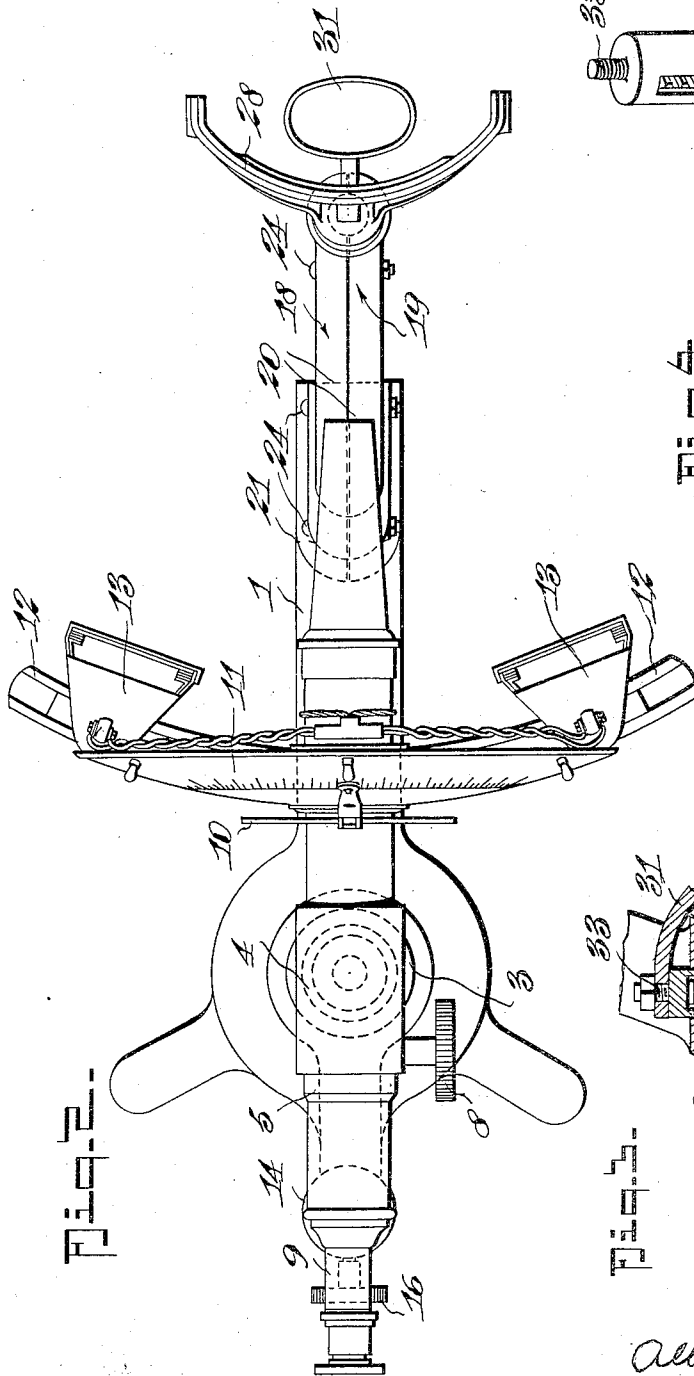
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ATTACHMENT FOR OPHTHALMOMETERS

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Prior to the year 1925 many ophthalmometers were manufactured and sold which had a straight post or standard at the patient's end of the instrument (see Letters Patent No. 1,006,825, issued October 24, 1911, for example). This made it necessary for the patient to lean forward to apply his or her head to the head or chin rest of the instrument. Such instruments were originally made to be used on a table adapted to different heights so that a patient could lay his or her arms on the table and lean forward to place the chin on the chin rest and the head against the head rest of the instrument. At present, optometrists are using a chair made for their purpose that has a head rest which can be adjusted to hold the head firmly in a desired position. With a patient placed in the chair it has been found impossible to bring the old style instrument in contact with the patient's face as the straight part comes in contact with the breast of the patient before the face guard and chin rest can be brought into contact with the patient's face and chin. My invention therefore has for its primary object to overcome the objectionable features above noted and to enable such old style machines to be used as fully and freely as those of later date which have the chin and head rest part projected forwardly somewhat.

Further, the invention has for an object to provide an improved head and chin rest standard bracket with means for adjusting (raising and lowering) the rest from the optometrists' end of the machine.

A further object is to provide a head and chin rest support with raising and lowering mechanism that can be used on new as well as old style machines. Further the invention seeks to provide a novel means for bringing old style machines up-to-date, thereby effecting their length of life considerably.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel features of construction and in the combination, connection and arrangement of parts, hereinafter more fully explained and

then pointed out in the appended claims, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation and part longitudinal section of an ophthalmometer embodying my invention, that portion of the base of the original instrument and the head and chin rest standard, which is removed when my invention is to be applied, being shown in dotted lines.

Figure 2 is a plan view of the machine with my invention applied.

Figure 3 is an enlarged detail vertical section of the forward end of the bracket showing the head and chin rest and the respective securing and adjusting means of those parts.

Figure 4 is a horizontal section on the line 4-4 of Figure 3.

Figure 5 is a detail perspective view of the chin rest plunger.

In the drawings, in which like numerals of reference indicate like parts in all of the figures, 1 represents the base, 3 the main standard which carries a journal 4 in which is a sleeve 5 having a rack 6 that meshes with a pinion 7 on the shaft of a hand wheel 8, the sleeve carrying the usual telescope 9 and other parts associated therewith, such as the dial 10, the dished cam elements 11 and the arcuate frame 12 which carries the mires 13. 14 is the telescope height adjusting screw which operates through the lever 15 to raise and lower the telescope.

16 is the usual chin rest operating rod mounted in the base 1.

In applying my invention to the old style instruments, such as disclosed in the Letters Patent aforesaid, I cut off the forward end of the base 1 at the line 17 (see Figure 1) and discard the part cut off. In lieu of the discarded part I provide an upwardly and forwardly curved hollow bracket composed of halves 18-19, the bracket having a shank 20 and a base 21, the latter being provided with a foot 22 that overhangs and engages the forward edge of the remainder of the base 1. The foot 22 is provided with a foot pad 23 similar to the foot pads at the rear of the base 1.

The two halves 18-19 are secured to-

gether as one by cross bolts 24, as shown. At the upper and forward end of the bracket 18—19 is a vertical socket 25 in which the head rest shank 26 may be located, the shank having a slot 27 to pass over the shaft section 38.

28 is the head rest having a shank 26 and 29 represents the chin rest plunger bearing in the shank 26 in which the tubular chin rest plunger 30 moves up and down. The plunger 30 carries the usual chin rest 31 and it is provided with a longitudinal slot 32 and a securing stud 33. Mounted within the chin rest plunger is a rack 34 and spaced therefrom a suitable distance is a flat guide plate 35.

38 represents a final shaft end section which carries a worm pinion 40 to mesh with the rack 34, the shaft section 38 being mounted in a suitable bearing 39 in the bracket at an angle of about 30° to the axis of the chin rest plunger. Also, where the shaft passes through the slot of the chin rest plunger it is grooved as at 41.

Power is transmitted from the chin rest operating rod 16 through an intermediate shaft or rod 37 to the shaft or rod 38, the several shafts or rods being joined by universal joints 36, the rod 37 also being mounted in a suitable bearing 39 in the bracket 18—19.

The bracket is secured to the base 1 of the machine by a bolt 43 which lies in a bolt receiving recess 42 formed in the bracket halves 18—19.

While my invention has been particularly designed for an attachment for the old style ophthalmometer it is obvious that it may be made a part of new equipment when desired.

While I have disclosed a preferred embodiment of the invention, it is obvious that slight changes in the details of construction and arrangement of parts may be made without departing from the spirit of the invention and scope of the appended claims.

What I claim is:

1. In ophthalmometers of the kind having a base to support a standard with telescope, the combination with the base of a forwardly and upwardly projecting bracket, means securing said bracket to the forward extremity of said base, a head rest mounted on the forward end of said bracket, a chin rest plunger vertically movable in the front end of said bracket, means operable at the base and extending through said bracket to said plunger for raising and lowering the chin rest, said means comprising a rod rotatably mounted in the base, a second rod rotatably mounted in said bracket, a universal joint between said rods, a third rod rotatable in the forward portion of said bracket, a universal joint between said second and third rods, and a pinion and rack connection between said third rod and said chin rest plunger.

2. In ophthalmometers wherein is provided

a base, a vertical standard on the base carrying a telescope; an attachment comprising a forwardly and upwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of the base for elevating and lowering said plunger, said bracket comprising two half members enclosing a chamber between them and each having one-half of a bolt holding recess, and a bolt held in said recess for securing said bracket to said base.

3. In ophthalmometers wherein is provided a base, a vertical standard on the base carrying a telescope; an attachment comprising a forwardly and upwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of the base for elevating and lowering said plunger, said bracket comprising two half members enclosing a chamber between them and each having one-half of a bolt holding recess, and a bolt held in said recess for securing said bracket to said base, said bracket having a foot overlapping the adjacent edge of the base.

4. In ophthalmometers wherein is provided a base, a vertical standard on the base carrying a telescope; an attachment comprising an upwardly and forwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of the base for elevating and lowering said plunger, said elevating and lowering means comprising a tubular chin rest plunger having a longitudinal slot and enclosing a rack, a rod projecting through said slot and carrying a pinion to mesh with said rack, an operating rod mounted in the base, and power transmitting connections between said operating rod and said pinion carrying rod.

5. In ophthalmometers wherein is provided a base, a vertical standard on the base carrying a telescope; an attachment comprising a forwardly and upwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of the base for elevating and lowering said plunger, said bracket comprising two half members enclosing a chamber between them and each having one-half of a bolt holding recess, a bolt held in said recess for securing said bracket to said base, said elevating and lowering means comprising a tubular chin rest plunger having a longitudinal slot and enclosing a rack, a rod projecting through said slot and carrying a pinion to mesh with said rack, an operating rod mounted in the base, and power trans-

mitting connections between said operating rod and said pinion carrying rod.

6. In ophthalmometers wherein is provided a base, a vertical standard on the base carrying a telescope; an attachment comprising an upwardly and forwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of the base for elevating and lowering said plunger, said elevating and lowering means comprising a tubular chin rest plunger having a longitudinal slot and enclosing a rack, a rod projecting through said slot and carrying a pinion to mesh with said rack, an operating rod mounted in the base, and power transmitting connections between said operating rod and said pinion carrying rod, said pinion carrying rod being grooved where it passes through said slot.

7. In ophthalmometers wherein is provided a base, a vertical standard on the base carrying a telescope; an attachment comprising a forwardly and upwardly projecting bracket secured to said base and projecting upwardly and forwardly therefrom, a chin rest with plunger carried by said bracket, means operable from the rear of said base for elevating and lowering said plunger, said bracket comprising two half members enclosing a chamber between them and each having one-half of a bolt holding recess, a bolt held in said recess for securing said bracket to said base, said elevating and lowering means comprising a tubular chin rest plunger having a longitudinal slot and enclosing a rack, a rod projecting through said slot and carrying a pinion to mesh with said rack, an operating rod mounted in the base, and power transmitting connections between said operating rod and said pinion carrying rod, said pinion carrying rod being grooved where it passes through said slot.

8. In ophthalmometers, a base, a telescope carrying standard mounted on the base near one end, a forwardly and upwardly extending bracket mounted on the base at the other end, said bracket itself including a base part with an overhanging foot and a socket part at its upper end, a head rest and a chin rest carried by said upper end, said chin rest comprising a plunger and a rest proper carried thereby, a chin rest raising and lowering mechanism comprising an operating rod mounted in the base, a rack and pinion associated with the plunger and rod connections with flexible joints between said operating rod and said rack and pinion.

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