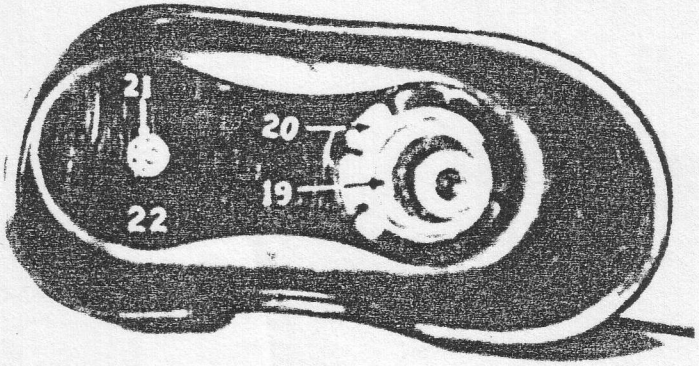

Fig. 5

C. Adjust Eye Shield On Telescope

The telescope, of a standard instrument, is shipped with the eye shield arranged to use the right eye in sighting through the telescope. However, it is readily possible to change the eye shield for use with the left eye if so desired. To change the eye shield so as to use the other eye with the telescope, proceed as follows:

Remove knurled collar "19", Fig. 5, and spring washer "20", Fig. 5, and lift the shield from the telescope. Then remove nut "21", Fig. 5, the washers and the screw at "21" and the washer under the head of the screw. This will allow plate "22", Fig. 5, and a similar plate on the other side of the shield, to be removed along with a metal spacer between these plates (in the unused hole in the shield).

Place the blank end of the two plates over the opposite hole in the shield with the metal spacer in the hole between the plates and see that the plates are placed so that the slots are at the top of the eye shield. Insert the screw at "21", Fig. 5, (from the front of the shield and with a washer under the head of the screw). Then replace the two washers and nut at "21", Fig. 5, and tighten the nut just enough to hold the plates in position. Fit the eye shield on the telescope so that the slot in the front plate on the shield fits over the pin in the telescope. Then replace spring washer "20", Fig. 5, and knurled collar "19", Fig. 5. Tighten knurled collar "19". This will keep the shield in a given position but still permit the shield to be easily turned by hand.

D. Adjust Zero Of Galvanometer

Place the control box so that the upper face "23", Fig. 6, is horizontal and be sure that switch "24", Fig. 7, is open. Then

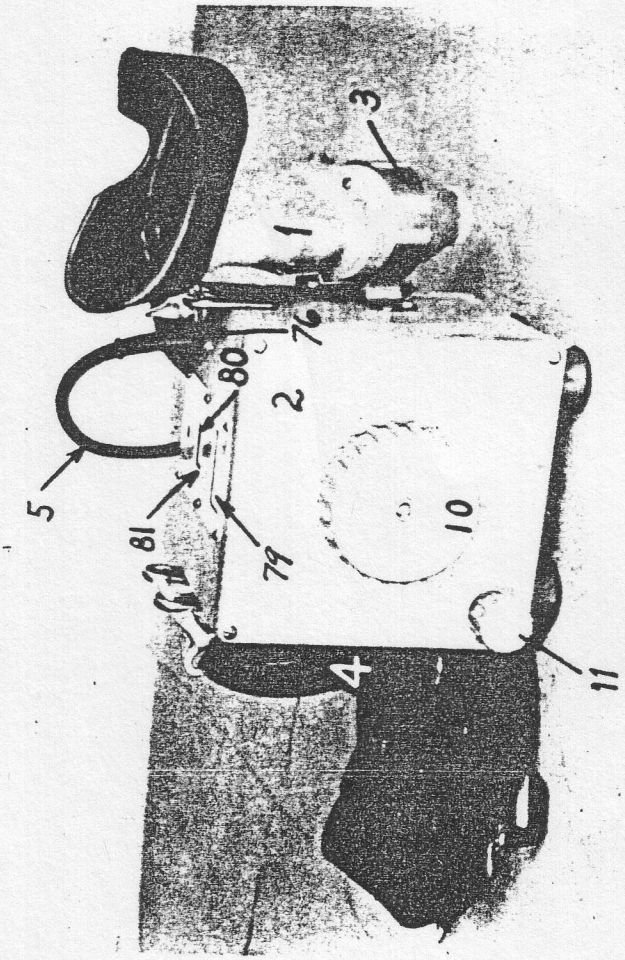

Fig. 1

eye shield for use when sighting on the body whose temperature is to be measured. The control box "2", Fig. 1, is provided with a bracket "3", Fig. 1, on one side for supporting and clamping the telescope when not in use, as in Fig. 1, and with an adjustable harness "4", Fig. 1, for use in supporting the instrument on the observer while the instrument is in use and also for carrying the instrument. The electrical connections between the control box and the telescope are made by means of wires in the flexible cable "5", Fig. 1, with the wires soldered to terminals in the control box at one end and sol-

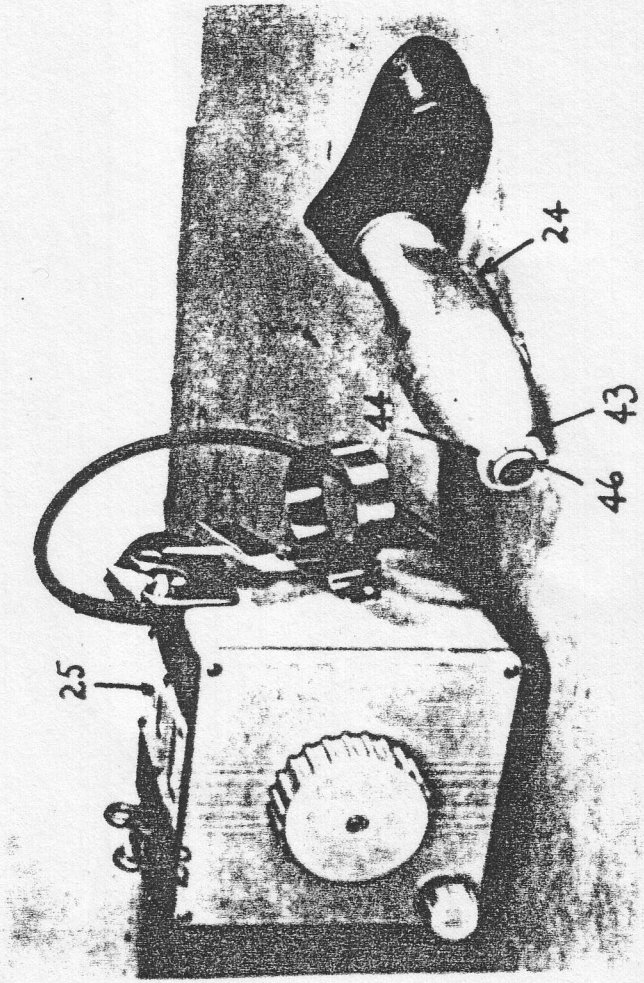

FIG. 9

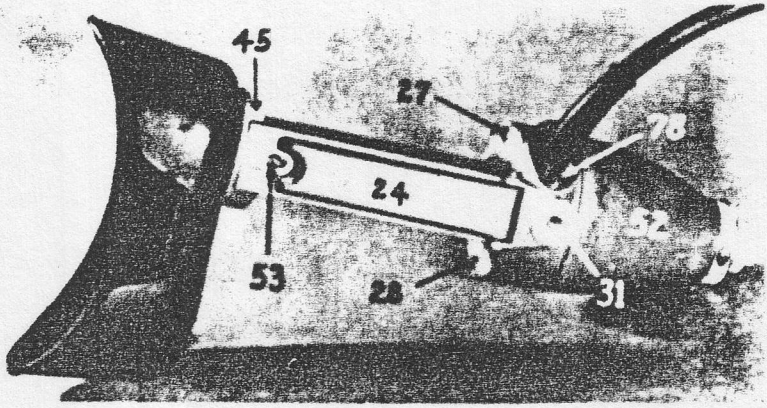

Fig. 7

insert a small screw driver in screw "25", Fig. 6, and adjust this screw until the galvanometer pointer balances at zero on its scale.

E. Attach Pistol Grip To Telescope

The pistol grip "26", Fig. 8, is shown mounted on the telescope. This pistol grip is a special part and is furnished only when ordered as a separate item.

In order to mount the pistol grip, proceed as follows: Remove the two screws "27" and "28", Fig. 7. Hold the two sections of the telescope together and place the pistol grip in place as in Fig. 8, with the hole in arm "29", Fig. 8, lined up with the hole from which screw "28", Fig. 7, was removed; with the hole in the other similar arm lined up with the hole from which screw "27", Fig. 7, was removed and with the hole in arm "30", Fig. 8, lined up with hole "31", Fig. 7. Insert the two new longer screws in arm "29", Fig. 8, and the similar arm at the other side and turn these screws in until they are almost tight. Insert the short screw at "32", Fig. 8, and tighten it. Then completely tighten the screws in arm "29", Fig. 8, and in the other similar arm.

Release switch "35", Fig. 8, and allow switch "24", Fig. 8, to drop out as far as it will go. With the switches released as above, switch "24" should rest down against the small stop at "53", Fig. 8, and the roller operated by switch "35", Fig. 8, should just touch switch "24". If these conditions do not exist, remove the locking screw from the hole at "60", Fig. 8, and adjust the other screw in this hole until the above conditions are obtained. Then replace the locking screw in the hole at "60" to keep the adjusting screw in place.

Fig. 10

As previously mentioned, the standard No. 8621 and No. 8623 instruments have this adjustment made in the factory for a distance of eight feet (from object to telescope) and knurled ring "46", Fig. 6, is then locked in this position by tightening the clamping screw in knurled ring "43", Fig. 6. With this arrangement the instrument can be used as a fixed focus instrument and thus save time when taking typical commercial readings. However, if the highest degree of accuracy is required for each reading, the objective lens should be focused for each distance. In order to do this it is necessary to loosen the clamping screw in knurled ring "43", Fig. 6, so that knurled ring "46" can be turned independently.

F. Take A Reading

If the low range is to be used, turn knurled ring "43", Fig. 6, until L is opposite the index mark "44", Fig. 6. If the high range is to be used, turn knurled ring "43" until H is opposite the index mark "44". If the instrument has a third range and this range is to be used, turn knurled ring "43" until $_{X}$H (or other designation) is opposite the index mark "44".

See that the adjustments are made as directed in Parts D and E above in this Section.

Then sight on the object whose temperature is to be mea-

Fig. 11

sured. If the instrument is being used as a fixed focus instrument, proceed to the next paragraph. If the instrument is being used as a variable focus instrument, turn knurled ring "46", Fig. 6, until the object is focused properly and then proceed to the next paragraph.

Keep the telescope sighted on the hot object, press switch "24", Fig. 7, or "35", Fig. 8, to close the contacts. Keep these contacts closed and rotate knob "10", Fig. 1, until the filament of the lamp blends with (has the same brilliance as) the image of the hot object (until an optical balance is obtained). In making this optical balance use the section of the lamp filament which is opposite the index in the lamp.

Remove the telescope from the eyes, keep switch "24", Fig.7, or "35", Fig. 8, closed, press knob "11", Fig. 1, in and, while holding it in, rotate it until the galvanometer pointer balances at zero on its scale. Then read the value of temperature (on the proper scale) which is under the hair line index over the scale.

5. MAINTENANCE

A. Replace Dry Cells

When it is no longer possible to obtain a balance of the galvanometer as directed in Section 4-F (with the scale at the high