An article describing the techniques employed in the use of "Karo" by various workers is being written.

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A SIMPLE COMPARATOR FOR ABSORPTION SPECTROGRAMS

THERE is here described a simple device for reading spectrograms with fair accuracy and with a minimum of fatigue. Instead of being viewed through a low power microscope, as is customarily done, the image on the photographic plate is projected on a ground glass screen.

The light from a 100 watt lamp (L) contained in a ventilated metal housing (V) is focussed by a condenser (C) on to the lens (R) which may be an ordinary rectilinear or anastigmat camera lens, and which is in turn focussed on the ground glass screen (G). Immediately in front of the camera lens is placed a totally reflecting right-angle prism (P) of good optical quality, large enough to cover the field. The plate to be read (S) is inserted in a slide (D) between the condenser (C) and the lens (R) in such a position as to be brought to a focus on the screen (G). The slide (D) moves on a double rack and pinion (Y, Z) device, whose shaft (I) supported by the flat springs (Sp) is connected to a flexible steel shaft (U) terminating with a knob (K). Directly behind the screen (G) is a thin vertical wire (W) whose shadow produces the hair line. This wire (W) is attached at the top of the frame in a fixed position, and at the bottom to a short spring (B) which keeps the wire taut. The other end of this spring is attached to a sliding member (E) having the horizontal spring (F) and the screw (H). Thus by turning the knob (M) the hair line is aligned with the wave-length scales at top and bottom projected from the plate. This is necessary since the plates vary slightly in size; the slide (D) must be made a trifle oversize, and the plates will not always be precisely square with the slide (D). A movable pointer (J), sliding on a square or rectangular metal rod (N) and having a thumbscrew (O) so that it may be set at any position, serves to locate the particular pair of spectra under observation. The ground glass screen (G) is provided with a vertical row of numbers which are seen through an opening in the pointer (J) and which correspond to settings of the plate rack on the spectrograph.

The entire instrument is constructed on a rigid wood framework and is covered with masonite or similar material. Doors are provided for access to the lamp and optical system. The ground glass screen (G) may be removed from the metal frame (Q) in which it is held in position by four flat phosphor-bronze springs (Ph). A switch in the lamp circuit is provided near the operating end of the device. Rubber feet (T) are fixed to the bottom to eliminate vibration.

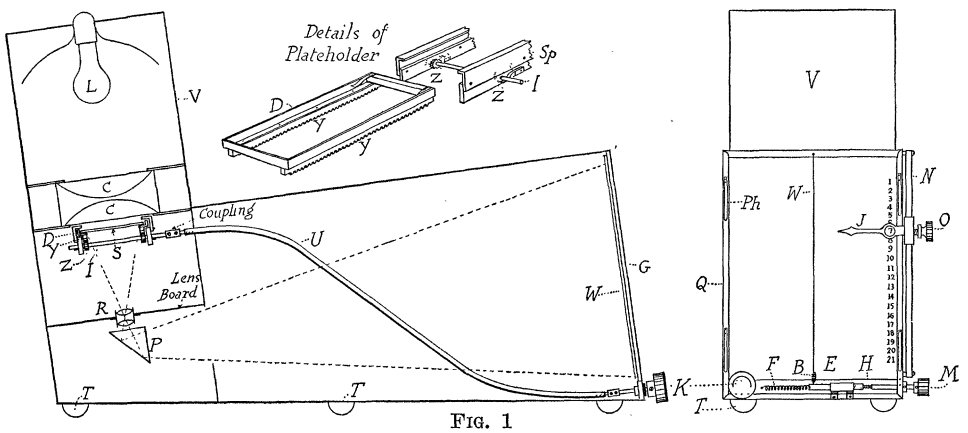

FIG. 1

In addition to its use as a comparator for spectrograms, the device can be used to study any photographic plate or for classroom demonstrations. Various other uses will suggest themselves.

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