

June 1, 1937.

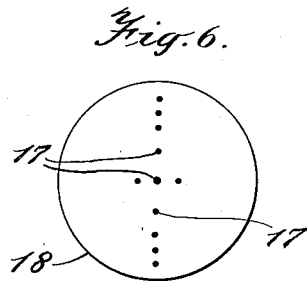
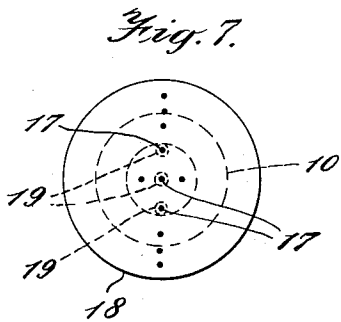
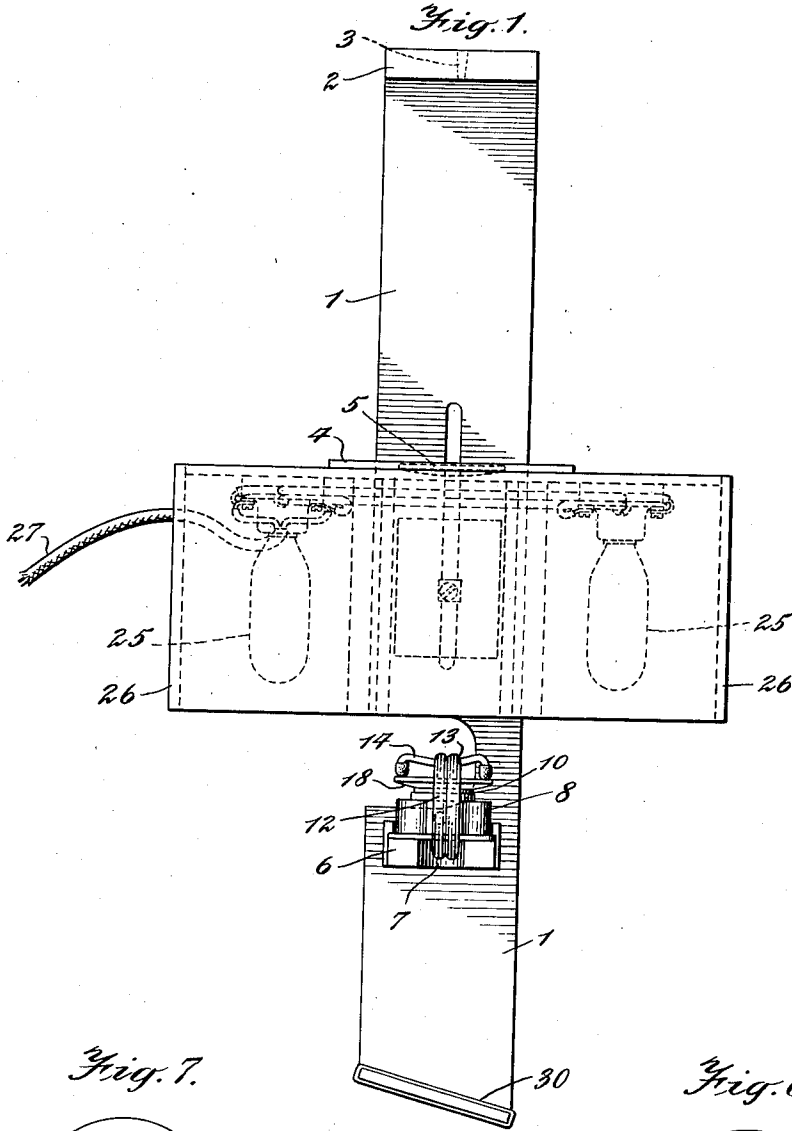
J. A. KEENAN

2,081,936

LENS CENTERING APPARATUS

Filed Oct. 12, 1935

2 Sheets-Sheet 1



BY

INVENTOR.
John A. Keenan
Chas. F. Dane
ATTORNEY.

June 1, 1937.

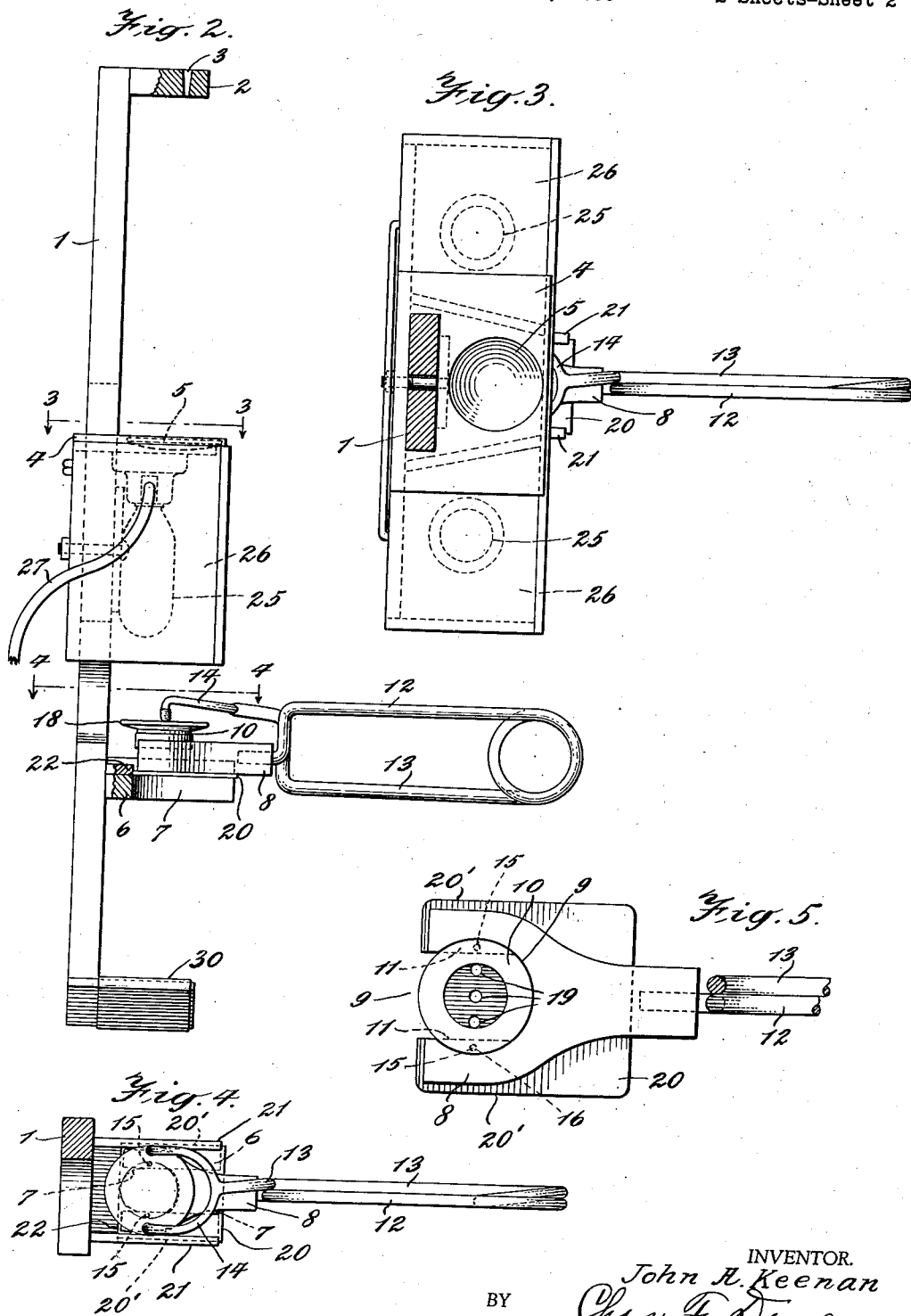
J. A. KEENAN

2,081,936

LENS CENTERING APPARATUS

Filed Oct. 12, 1935

2 Sheets-Sheet 2



INVENTOR.
John A. Keenan
BY *Chas. F. Dale*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,081,936

LENS CENTERING APPARATUS

John A. Keenan, Flushing, N. Y.

Application October 12, 1935, Serial No. 44,679

9 Claims. (Cl. 88—56)

It is a usual practice to position a cut and marked lens on the holder pad of an edge grinding machine preliminary to being placed in the latter, in order that the optical center and axis of the lens may be accurately positioned with relation to the pattern or form of the grinding machine when the lens is placed in the latter. For so preliminarily positioning the lens on the holder pad, the latter is removably mounted in a holder device comprising a pair of cooperative clamping members, on one of which the holder pad is mounted while the other is spring-pressed and operative to engage a lens and hold it in adjusted position on the pad. In positioning the lens on such pad, the operator grasps the holder with one hand and opens the clamping jaws, while with the other he places the marked lens on the holder pad and adjusts it thereon to bring the dots or markings thereon into registry with the corresponding markings—usually openings—in the holder pad, after which the movable or spring-pressed clamping member is released and permitted to engage and hold the lens in its adjusted position. In view of the fact that the holder is held by one hand during such positioning of the lens, it will be understood that it is practically impossible to obtain exact coincidence of the markings on the lens with those of the holder pad, as any slight angular movement of the hand grasping the holder may destroy the correct alignment of the markings on the lens with those of the pad and so result in error in the subsequent grinding of the lens. Because of this, it has been the object of my invention to provide a simple and inexpensive apparatus by means of which the lens may be readily and accurately positioned on the holder pad while the latter is held in any of the usual types of pad holder. Such object is attained by means of the apparatus hereinafter described and claimed and as illustrated in the accompanying drawings, in which—

Fig. 1 is a front elevation of the apparatus with a conventional form of lens clamping or holding device connected therewith.

Fig. 2 is a side elevation of the same partly broken away.

Fig. 3 is a cross section through line 3—3 of Fig. 2.

Fig. 4 is a cross section through line 4—4 of Fig. 2.

Fig. 5 is an enlarged plan view of the lower or base member of the lens holder with the lens pad positioned therein.

Fig. 6 is a plan view of a marked lens.

Fig. 7 is a view of the marked lens positioned on the holder pad.

Similar reference characters indicate like parts on the several figures of the drawings.

The apparatus embodying my invention in the form here shown comprises a main supporting standard 1 which is adapted to be rigidly attached, by means of screws or other suitable fastening means, to a work bench or other support in convenient position for the operator's use. Mounted on this standard, in vertical alignment, is a member 2 having a sight-opening 3, a member 4 supporting a magnifying lens 5, and a lens holder support 6, the latter being in the form of a horizontally arranged shelf having a central cut-out or opening 7 to permit of proper lighting of a lens and its supporting pad at the under side thereof when positioned on the shelf.

The lens holder here shown comprises a main or base member 8 having a cut-out or opening 9 at its front end adapted to receive the lens pad 10 of an edge grinding machine, and the inner side walls of which cut-out are formed with relatively narrow ledges 11, 11 to receive and support the lens pad when placed in said cut-out. This base member 8 is rigidly attached to the front end of a supporting arm 12 which, in the present case, is made of spring metal and of a length sufficient to extend some distance rearwardly of the member 8 where it is coiled and then returned in the form of a spring arm 13 back to the base member 8, where it is provided with a forked member 14 overlying said base and exerting a normal downward pressure against the same for the purpose of retaining a lens in adjusted position on the pad carried in said base.

The lens pad here shown is adapted to be located on the base 8 of the holder in predetermined position by means of pins 15 on one part engaging within openings 16 in the other, and the lens is adapted to be properly positioned on this holder for subsequent transference to the grinding machine by bringing ink dot markings 17 on the lens 18, indicating the optical axis and center respectively of the lens blank, into registry with positioning indicia on the pad, in the form of a series of aligned openings 19.

As hereinbefore referred to, it is the usual practice to position the lens on the lens pad in the holder by grasping the latter with one hand and holding the clamping member in raised or clamp-releasing position, while adjusting the lens with the other hand to bring its markings into registry with those of the pad. To do this with accuracy however, it is necessary to hold the lens in fixed position with the line of vision perpendicular to the lens and this obviously is practically impossible. Therefore, in accordance with my invention, I have provided the sighting device first described herein, including its holder support 6, and have also provided the holder with means for effecting its readily detachable connection with said support 6 to be held thereby in fixed relation

to the sight-opening 3 and in a manner permitting of the ready manipulation of the lens clamping member 14 with one hand and the adjustment of the lens with the other. Such connecting means comprises a plate 20 fixedly secured to the under side of the holder base 8, as by means of fastening screws (not shown), and having projecting lateral edges 20', 20' adapted for sliding engagement with overhanging guide members 21, 21 secured to the opposite edges of the supporting shelf 6. When the holder is thus slidably engaged with the shelf 6, its inward movement on the latter is determined, in order to bring the center of the lens in the direct line of vision through the sight-opening 3 and intermediate magnifying lens 5, by the engagement of the inner end of the plate 20 with a stop surface 22 on the shelf.

With the holder thus positioned on the supporting shelf 6, the operator, viewing the lens through the sight-opening 3 and intermediate magnifying lens may, by releasing the lens clamping member with one hand and manipulating the lens with the other, readily and accurately position the lens on the pad by bringing the dots 17 on the lens into exact registry with the openings 19 in the pad, as shown in Fig. 7. When such registry has been effected, the clamp will be released to hold the lens in its adjusted position on the pad, after which the holder will be slidably disengaged from the shelf 6 and the pad and supported lens transferred to the grinding machine in usual manner.

In order to facilitate the adjustment of the lens on its pad, means are provided for illuminating such parts in order that the operator may more clearly see the ink markings on the lens and the corresponding registering indicia of the pad, i. e. the openings 19. Such illuminating means comprises light bulbs 25, 25 mounted in box-like compartments 26, 26 depending from the support 4 and being open at their lower ends to direct the light onto the parts to be illuminated. These light bulbs are connected with a source of electric power through leads 27.

As a further means for facilitating the adjustment of the lens on its pad, I have mounted a reflector 30 on the standard 1 at a point below the holder support 6, which is preferably arranged at an angle to the horizontal, as shown in Fig. 1, for the purpose of reflecting the light from one of the light bulbs 25 through the positioning openings in the lens pad from the under side thereof; such reflector preferably being colored for the purpose of providing a more vivid light showing through said positioning openings in the lens pad.

It will be understood that the lens clamp or holder herein shown may be of any usual or suitable construction provided, that when equipped with means, such as the plate 20, for effecting its detachable sliding connection with the supporting member 6, it may be readily manipulated by one hand to either grip or release the supported lens while the latter is being adjusted on the pad with the other hand.

What I claim is:

1. An apparatus for aligning a working dot on an unedged lens with a center hole of a lens pad for an edging machine, comprising a lens holder support, a member having a sight-opening, a magnifying lens interposed between said support and sight-opening, a lens pad for an edging machine having a center hole, and a holder for said pad having an adjustable clamping member for ad-

justably retaining the lens in adjusted position on the pad whereby the working dot on said lens can be aligned with the center hole and the sight opening, said holder and said holder support having cooperating means for effecting sliding engagement of the holder with the support and retaining it in predetermined position thereon.

2. The apparatus described in claim 1, including means for illuminating the lens pad and supported lens when positioned on the holder support.

3. The apparatus described in claim 1, including color reflecting means located at the under side of the holder support and in spaced relation thereto.

4. The apparatus described in claim 1, including means located above the plane of the holder support for illuminating a lens pad and lens positioned on the latter, and color reflecting means located beneath the holder support within the zone of light from said illuminating means.

5. The apparatus described in claim 1, in which the cooperating means for effecting engagement of the holder with the holder support comprises grooved guides on the support and a plate on the holder slidably fitted to said guides.

6. An apparatus for aligning a working dot on an unedged lens with a center hole of a lens pad for an edging machine, comprising a supporting standard having mounted thereon in vertical alignment a sight-opening member, a magnifying lens and a lens holder support, the latter being in the form of a horizontally arranged shelf having a central cut-out portion and lateral guides; and a lens holder having a removable pad member for an edging machine having a center hole, a clamping member for adjustably holding a lens in adjusted position on said pad whereby the working dot on said lens can be aligned with the center hole and the sight opening, and a fixed guiding and positioning member slidably fitted to the said lateral guides of the holder support.

7. The apparatus described in claim 6, including cooperating stop faces on the lens holder and its support for positioning the holder relatively to the sight-opening and intermediate magnifying lens.

8. An apparatus for aligning a working dot on an unedged lens with a center hole of a lens pad for an edging machine comprising a lens holder support, a member having a sight opening operatively associated with said support, a lens pad for an edging machine having a center hole and a holder for said pad having an adjustable clamping member for adjustably retaining the lens in adjustable position on the pad whereby the working dot on said lens can be aligned with the center hole and the sight opening.

9. An apparatus for aligning a working dot on an unedged lens with a center hole of a lens pad for an edging machine comprising a lens holder support, a member having a sight opening operatively associated with said support, a lens pad for an edging machine having a center hole and a holder for said pad having an adjustable clamping member for adjustably retaining the lens in adjustable position on the pad whereby the working dot on said lens can be aligned with the center hole and the sight opening, and illuminating means to illuminate said holder and said center hole in said lens pad.