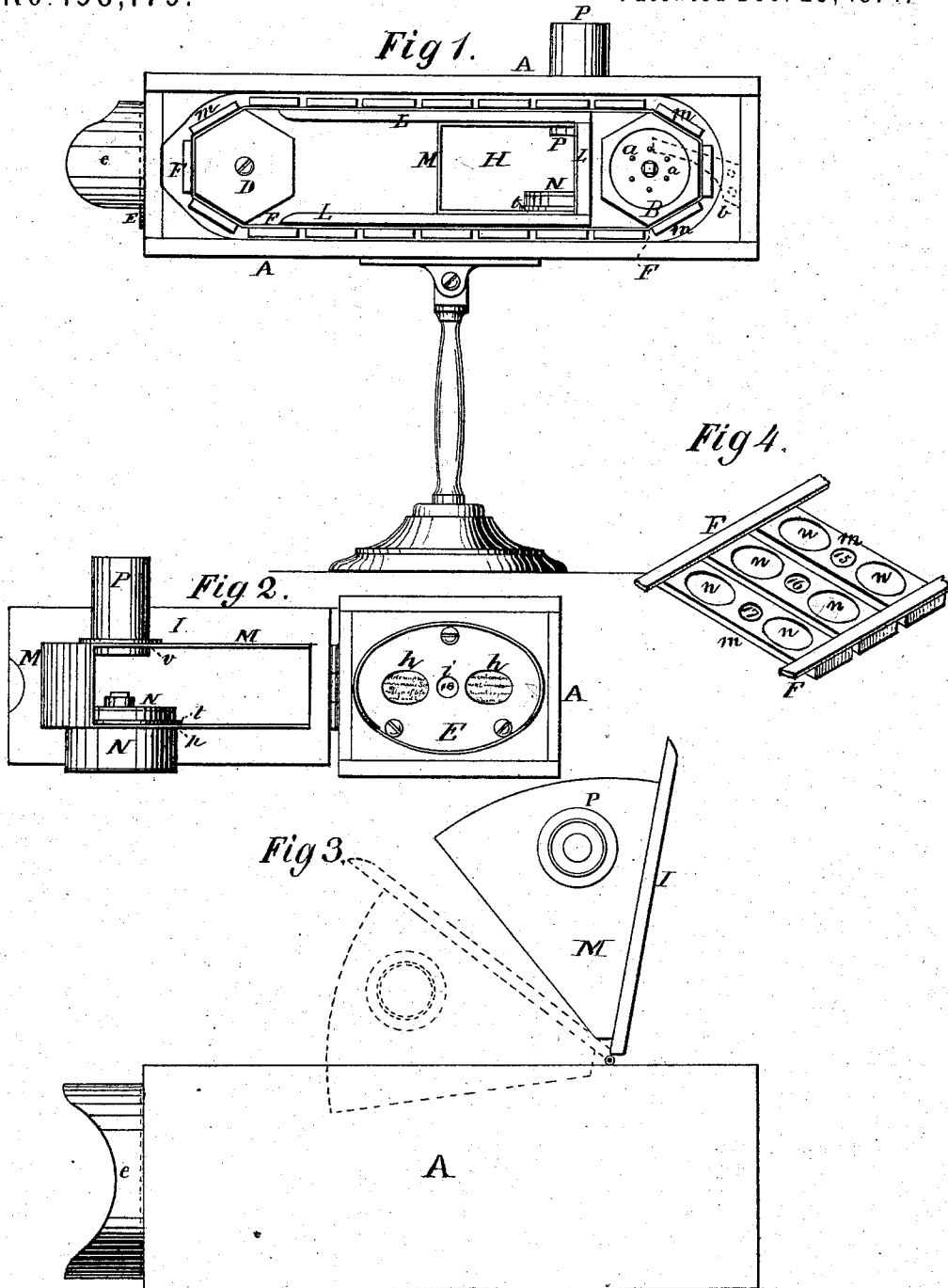


G. MEYER.

Devices for Selecting Lenses.

No. 158,179.

Patented Dec. 29, 1874.



Witnesses:
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UNITED STATES PATENT OFFICE.

GUSTAVUS MEYER, OF QUINCY, ILLINOIS, ASSIGNOR OF ONE-HALF HIS
RIGHT TO JULIUS FRANKE, OF SAME PLACE.

IMPROVEMENT IN DEVICES FOR SELECTING LENSES.

Specification forming part of Letters Patent No. **158,179**, dated December 29, 1874; application filed
October 21, 1874.

To all whom it may concern:

Be it known that I, GUSTAVUS MEYER, of Quincy, Illinois, have made and invented a new and useful Improvement in Devices for Selecting Lenses, of which the following is a specification.

The invention relates to a device for testing the eyesight, to enable a proper selection of lenses used in instruments for improving the vision.

The invention consists of an endless belt or other suitable device, in which are formed apertures to receive the lenses, the same being arranged in succession, according to their power. The belt rotates in a case before a face-board provided with apertures placed correspondingly to each pair in the belt. Opposite the face-board, and within the case, is properly placed the object of test, a piece of printed matter preferred. Light is admitted from one side of the case through an aperture provided with a swinging door, which may be closed as desired, and which has upon its inner surface a case arranged to fit snugly in the aperture; this case being one on its inner side and properly provided with means to receive a lamp and chimney. Thus the test may be made either by day or night.

The object of the invention is to provide a convenient device for testing the eyesight, with a view to a proper selection of lenses to be used in implements for the improvement of the vision, such as may be used by any one skilled or unskilled in the science of optics.

Figure 1 is a side elevation of a device embodying the elements of the invention, one side of the case A removed. Fig. 2 is an end view of same. Fig. 3 is a top view of same. Fig. 4 is a detached view of a part of the belt F.

A in the accompanying drawings is an oblong case, provided at one end with the angular roller B, and at the other, on each side, with the angular disks D, the peripheries of both roller and disks being suited to receive the slats of the endless belt hereinafter mentioned. At one end of the roller B is provided an annular groove, in which is fixed a ratchet or ratchet-pins, *a*, which engage a spring-pawl, *b*, secured in the side of the case in such man-

ner that the pawl passes over a pin as each slat comes opposite the apertures in the face-board. The roller and disks work on shafts having bearings in the case, the shaft of the former extending through the case, and provided on its extremity with a milled wheel, *d*, or other suitable means for rotating it. The face-board E is secured at the end of the case opposite the roller B, and is provided with the hood *e* for shading the eyes; also with the apertures *h* and *i*, arranged so that when the slats of the belt lie upon the surfaces of the disks D next the face-board the apertures *h* shall be directly opposite N, the chimney P of which is secured in the aperture *v* directly above. When the lamp is placed the case M enters the case L a sufficient distance to exclude all light save that from the lamp. The device is secured by a hinge to a standard, so that it can be adjusted as desired.

The operation is as follows:

The belt is rotated until the highest numbered lenses are opposite the apertures *h*. The person selecting should approach the face sufficiently near the apparatus so that the hood *e* excludes the upper and lateral light. The belt being now rotated, each pair of lenses passes before the spectator, enabling an accurate selection, the proper focus being determined by the printed matter becoming clearly and easily legible. A glance at the index number will then determine the order of lenses required. In using the device at night the lamp and chimney are properly placed and the former lighted; the door I is then swung until the case M enters the aperture H a proper distance, the operation then being conducted as above described. One side of the case M being concave, it may answer in a degree for a reflector, concentrating the light upon the object examined; the apertures in the slat holding the lenses, the aperture *i* then being opposite the space between the lenses whereon the number or index is placed. The endless belt F consists of a series of slats, *m*, secured together by some flexible material, and passing over the roller B and disks D, each slat being provided with the apertures *n* to receive lenses of the same power, a space to receive the index or number of the lenses being left be-

tween the apertures *n*. Light is admitted through the aperture *H*, having the hinged door *I*, and serving, in the present instance, as the mouth of the chamber or case *L*, which occupies the interior of the case *A* between the roller *B*, disks *D*, and belt *F*, allowing a sufficient space for the movement thereof. The object used in the test is placed on the inside of the case *L* opposite the apertures *h*. The inner length of the case *L* should be ten inches, that being the usual focus of unimpaired eyes; but if the case *L* is not used the object—printed matter preferred—should be placed correspondingly in relation to the apertures *h*. The inner surface of the door *I* is provided with the case *M*, arranged to enter snugly the aperture *H*, and so into the case *L*, or between the space separating the belt and roller and disks. The case *M* is provided with an aperture, *p*, about which is placed the upright flange *t* to receive a lamp.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A series of movable surfaces capable of successive rotation, each surface provided with a pair of the same-power lenses, for the purpose of testing the eyesight, substantially as set forth.

2. The combination of the endless belt *F*, containing the lenses, with the containing-case *A* and hooded face-board *E*, substantially as specified.

3. The endless belt *F*, containing the lenses, in combination with containing-case *A* and case *L* for containing the object of vision, substantially as set forth.

In testimony that I claim the foregoing improvement in devices for selecting lenses, as above described, I have hereunto set my hand and seal this 9th day of October, 1874.

GUSTAVUS MEYER. [L. S.]

Witnesses:

RICHARD JANSEN,
H. H. JANSEN.