UNITED STATES PATENT OFFICE.

CHAUNCEY BUCKLEY, OF WEST MERIDEN, CONNECTICUT, ASSIGNOR TO CHARLES PARKER, OF SAME PLACE.

IMPROVEMENT IN MANUFACTURE OF LENSES FOR SPECTACLES.

Specification forming part of Letters Patent No. **51,776**, dated December 26, 1865.

To all whom it may concern:

Be it known that I, CHAUNCEY BUCKLEY, of West Meriden, New Haven county, Connecticut, have invented certain new and useful Improvements in Manufacturing Spectacles and Eyeglasses; and I do hereby declare that the following is a full, clear, and exact description of the same.

In the manufacture of spectacles and eyeglasses it has long been a desideratum to construct the lenses so mathematically exact and uniform in contour upon the edge that all of each size shall be interchangeable, and this is particularly the case since the frames have been made so extensively and accurately of hard rubber. Of course this can be done by repeated trials of each lens in a gage during the process of grinding the edge, but that makes them too costly for ordinary use.

Hitherto these lenses have been made by cutting out either squares or oblong pieces, as for round or oval lenses, then grinding the faces of these to the proper curve. These are then cut to an approximate size with a diamond, around a pattern laid on, and the edge is clipped off to the line of cutting. In this clipping it often occurs, even with the most skillful operators, that the glass breaks out within the line of cutting, thereby spoiling the lens for the size intended, while many are broken across. The edge is now ragged, and is to be ground, first, to the circular or desired oval form, and then to have a bevel from both faces meeting in an edge at the central plane, whereby the lens is held in the frame in the manner well known.

My invention is an improved method of making the lens, whereby its edge shall have the required oval or circular form as well as the double bevel, without the necessity of grinding the edges at all, and it consists in forming the blanks by casting them in molds which will give to the edge of the blank the desired form and to the faces a curve, either convex or concave, approximating to that the lens is to have when ground.

The manner in which I prefer to carry out my invention is to employ a mold which opens so that the joint will be transversely across the faces of the blank rather than along the edge of the bevel, although this latter makes a very good blank. An opening is left at the joint whereby the mold is in communication with a small receptacle above it. A suitable portion of melted glass is cut off into this receptacle, and is driven down into the mold by a plunger, all of which is as usual in casting glass. The mold is then opened, and the blank broken off from the "sprue," when it is ready to be finished by simply having its faces ground and polished to the proper curve. The labor of this is less than in grinding the ordinary blanks, since the surface of the faces is now at its minimum size, and the edges require no grinding at all, while they are also so smooth as to appear as if polished.

It will be obvious that for spectacles in which the frame is very light and fitted into a groove around the edges of the lenses, the appropriate groove may be made on the blank by giving the proper shape to the mold.

Spectacles and eyeglasses may thus be made which are far superior in accuracy of form and in finish to any that can be made, except by the highest grade of skilled labor, and at a cost far below those. None of the lenses are lost by breakage, which, by the old method, is a considerable percentage, and occurs, too, as described, after the work of grinding has been done.

I claim—

Forming the lenses by casting the blanks therefor in molds which will give to the edge of the blank the exact form and finish which it is desired that the edge of the lens shall have, and finishing the lens by grinding and polishing the faces of the blank, substantially as set forth.

CHAUNCEY BUCKLEY.

Witnesses:

ALMON MILES,

JOHN W. MILES.