M. MOLINEAUX.

APPARATUS FOR GRINDING OPTICAL LENSES.

APPLICATION FILED DEC. 3, 1914.

1,237,366.

Patented Aug. 21, 1917.

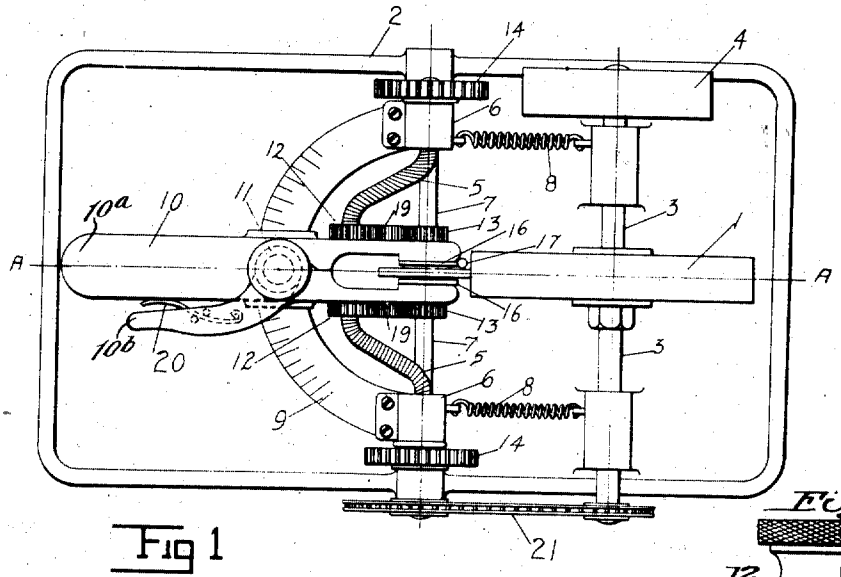


Fig 1

Fig. 5.

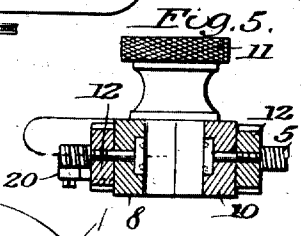


Fig. 2.

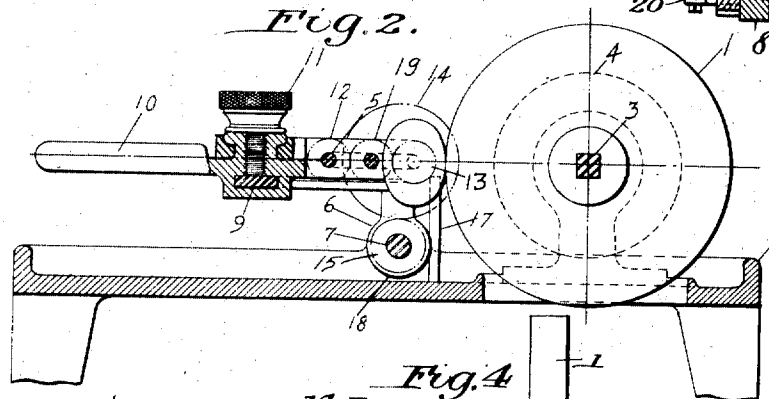


Fig. 3.

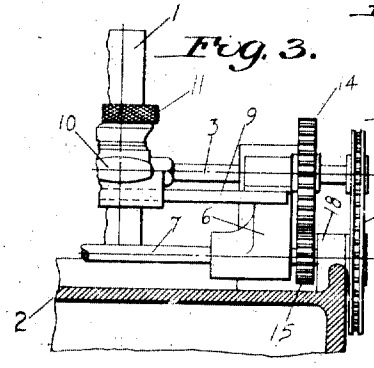
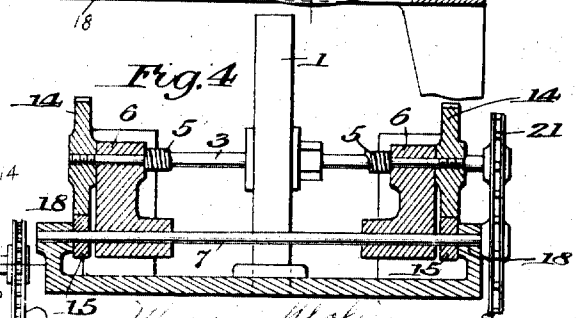


Fig. 4



Inventor

Attorney

UNITED STATES PATENT OFFICE.

MAURICE MOLINEAUX, OF NEW YORK, N. Y.

APPARATUS FOR GRINDING OPTICAL LENSES.

1,237,366. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed December 3, 1914. Serial No. 875,299.

To all whom it may concern:

Be it known that I, MAURICE MOLINEAUX, a citizen of the United States, a resident of the borough of Bronx, city and State of New York, have invented a new and useful Improvement in Apparatus for Grinding Optical Lenses, of which the following is a specification.

My invention relates more particularly to an attachment suitable to be mounted on any machine such as in ordinary use for grinding the rims of optical lenses.

I am aware that it is not new to so mount the fastening frame, carrying the lens, that it may be rotated to present the lens in operative position for beveling the edges to receive a frame, as well as to set the edge. My invention is, however, distinguished by the use of a driving shaft having both rigid and flexible sections, the former journaled in rigid bearings.

I will now specify and describe my invention by reference to the accompanying drawings in which identical letters and ordinals indicate similar parts;

Figure 1, is a plan view of a grinding machine embodying my invention.

Fig. 2, is a section of the same cut through at the line A, A, on Fig. 1.

Fig. 3, is a transverse section broken away, illustrating the rocking frame and gear.

Figs. 4 and 5 are fragmentary transverse sectional views of details.

In Fig. 1, the grinding wheel 1 is shown carried by the power shaft 3, which is journaled in the main frame 2. The power shaft carries at one end the power pulley 4 and the other end is operatively connected and gives motion to the flexible driving shafts 5 through the chain and spur gear shown on Figs. 1 and 3.

The flexible driving shafts 5 are shown as journaled in the rocking frame 6. The latter is carried by the shaft 7 as shown in Figs. 2 and 3, and is provided with the springs 8, 8, which are attached at the other end to the main frame 2 as shown on Fig. 1. These springs operate to normally retain the rocking frame in an advanced position providing a yielding support for the material, and retaining the lens in operative contact with the grinding face. The shaft 7 is journaled in the boss 18 of the main frame 2 as shown in Figs. 2 and 3.

A protractor 9, is carried by the rocking frame 6, as shown in the different figures, and bears on its face a graduated scale by which the angle at which the lens carried by the clutch shall be presented to the grinding face may be determined when the spring clip 10, shown in the different figures is clamped in operative position. The clip 10 is adjustably mounted on the protractor 9 as shown, the thumb-screw 11 being used to clamp it in position. The jaws of the clip 10 have journaled therein the inner ends of the flexible sections of the driving shaft 5 and are provided with gears 12, 12 which are operatively connected, as shown and indicated in Figs. 1 and 2, with the gears 13, 13 of the friction clutch, which are carried by the clip 10 as shown, through the intermediate gear 19, 19 also carried by said clip.

The outer sections of the driving shaft 5 receive motion from the gears 14, 14, shown in Figs. 1 and 3, as mounted on said shaft and journaled in the rocking frame 6. These sections may be made by incasing the flexible material in a tubular sleeve. The gears 14, 14, intermesh with the gears 15, 15, one of which is shown in Fig. 3, mounted on shaft 7, which receives motion through the sprocket chain 21 from the main shaft 3, as shown in Figs. 1 and 3.

The jaws of the spring clip 10 are maintained in operative position by the spring 20, shown in Fig. 1, which spreads the handles 10^a and 10^b and contracts the jaws; a pattern 16, also shown in said figure held with the material in the clutch of the jaws, bears on a stop 17, shown in Figs. 1 and 2, and controls the shaping of the lens in the setting operation.

In mounting my attachment on any grinding machine of the type illustrated in the drawings, I substitute my flexible shaft 5 for the usual rigid shaft mounted on the rocking frame, and attach the protractor to the latter in any convenient manner, providing my flexible shaft with suitable intermeshing gear.

In operating my invention the clip is opened by manually compressing the handles 10^a and 10^b, the proper pattern and the lens with washers are inserted in the clutch and handles are released setting the clutch. The clip is then moved to the proper angle as indicated on the protractor scale to set the lens or to produce the desired bevel of

the rim: the thumbscrew is then set locking the clip in operative position and the power is turned on.

Having thus specified, shown and described the same, I claim as novel and my invention:

1. In a machine for grinding the rims of optical lenses, in combination, a main frame, a grinding wheel thereon, a second frame mounted to rock on the main frame, a driving means having rigid and flexible sections and mounted in the second frame, a rotary clutch driven by the driving means, a spring clip carrying the clutch and adjustably mounted on the rocking frame to permit the lens to be positioned for producing a flat rim or beveling the edges at any desired angle, and means for conforming the motion of the rocking frame to the curvature of the periphery of the lens.

2. In a machine for grinding the rims of optical lenses, in combination, a main frame, a grinding wheel thereon a second frame mounted to rock on the main frame, a sectional driving means having rigid and flexible connections supported by said rocking frame, said frame being rocked by the same source of power as that which actuates the grinding wheel, a spring clip adjustably mounted on said rocking frame, a rotary clutch carried by said spring clip, the flexible sections of said driving means giving motion to said clutch whereby the lens is adapted to be rotated in operative position for adjustably producing a flat rim or beveling the edges thereof at any desired angle, a pattern and a stop.

3. In a machine for grinding the rims of optical lenses, in combination, a main frame, a grinding wheel thereon, a second frame mounted for rocking movement on the main frame, a driving means mounted on said frame, said driving means and grinding wheel being driven from the same source of power, said driving means including two outer rigid sections journaled in the rocking frame through which it receives motion, a protractor fixed to the main frame, a spring clip adjustably mounted on said protractor, a rotary lens clutch carried by said clip, said driving means including two flexible inner sections adapted to impart motion to such clutch, said protractor being graduated to indicate the grinding angle when the clip is in operative position, and means for conforming the motion of the rocking frame to the curvature of the periphery of the lens.

4. In a machine for grinding the rims of optical lenses, in combination, a main frame, a grinding wheel mounted on said frame, a second frame mounted for rocking movement on the main frame, a driving means carried by said rocking frame, said driving means and said grinding wheel being driven from the same source of power, said driving means including two outer and rigid sections through which it receives motion and two flexible inner sections, a clip adjustably mounted on the rocking frame, a rotary clutch carried by said clip, the inner flexible sections of the driving means imparting motion to said clutch whereby to rotate the lens in such adjustable operative position as may be required to bevel the rims of the lens at any desired angle, and means for conforming the motion of the rocking frame to the curvature of the periphery of the lens.

MAURICE MOLINEAUX.

Witnesses:
JULES KANTOR,
WILSON W. HOOVER.