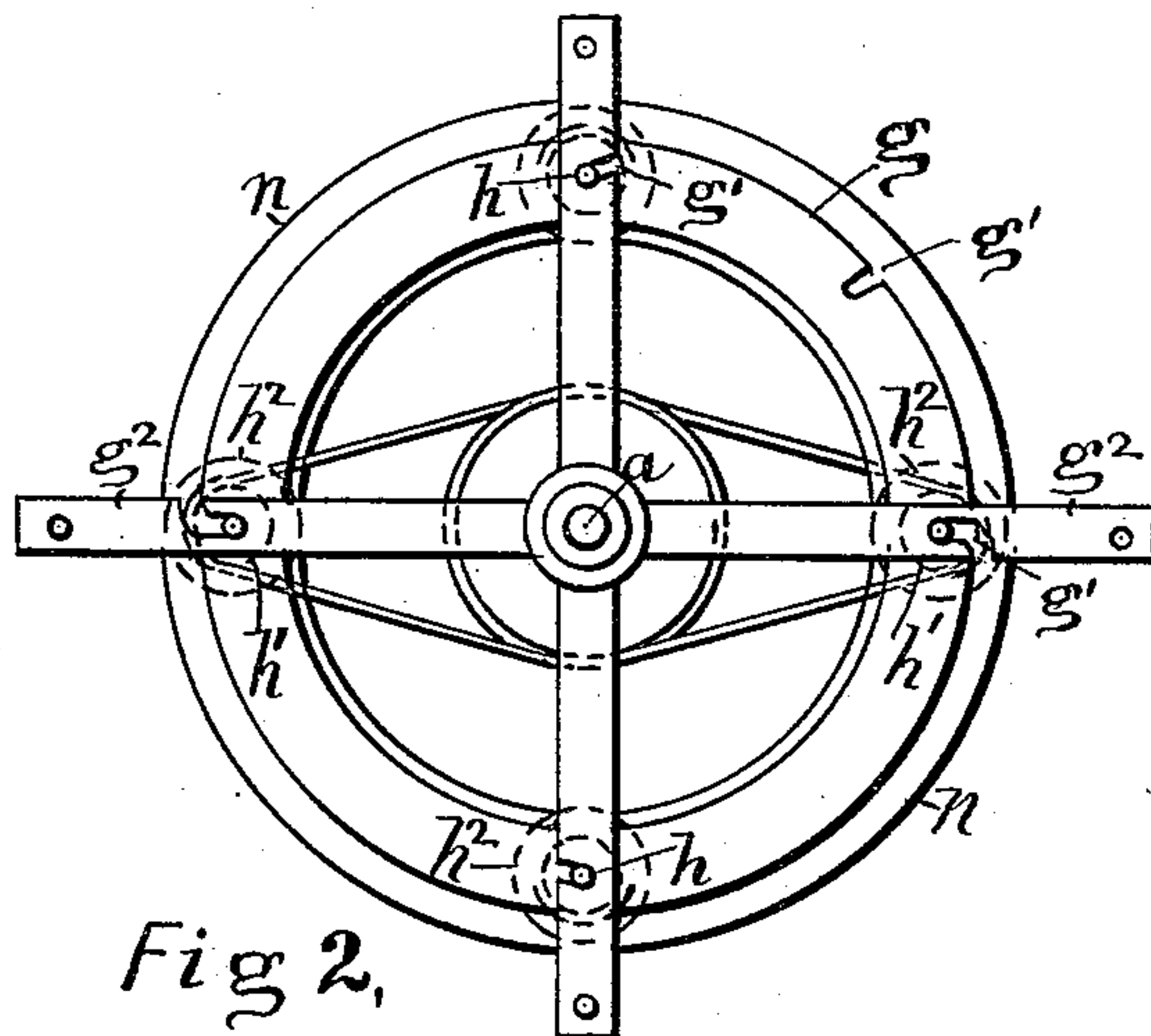
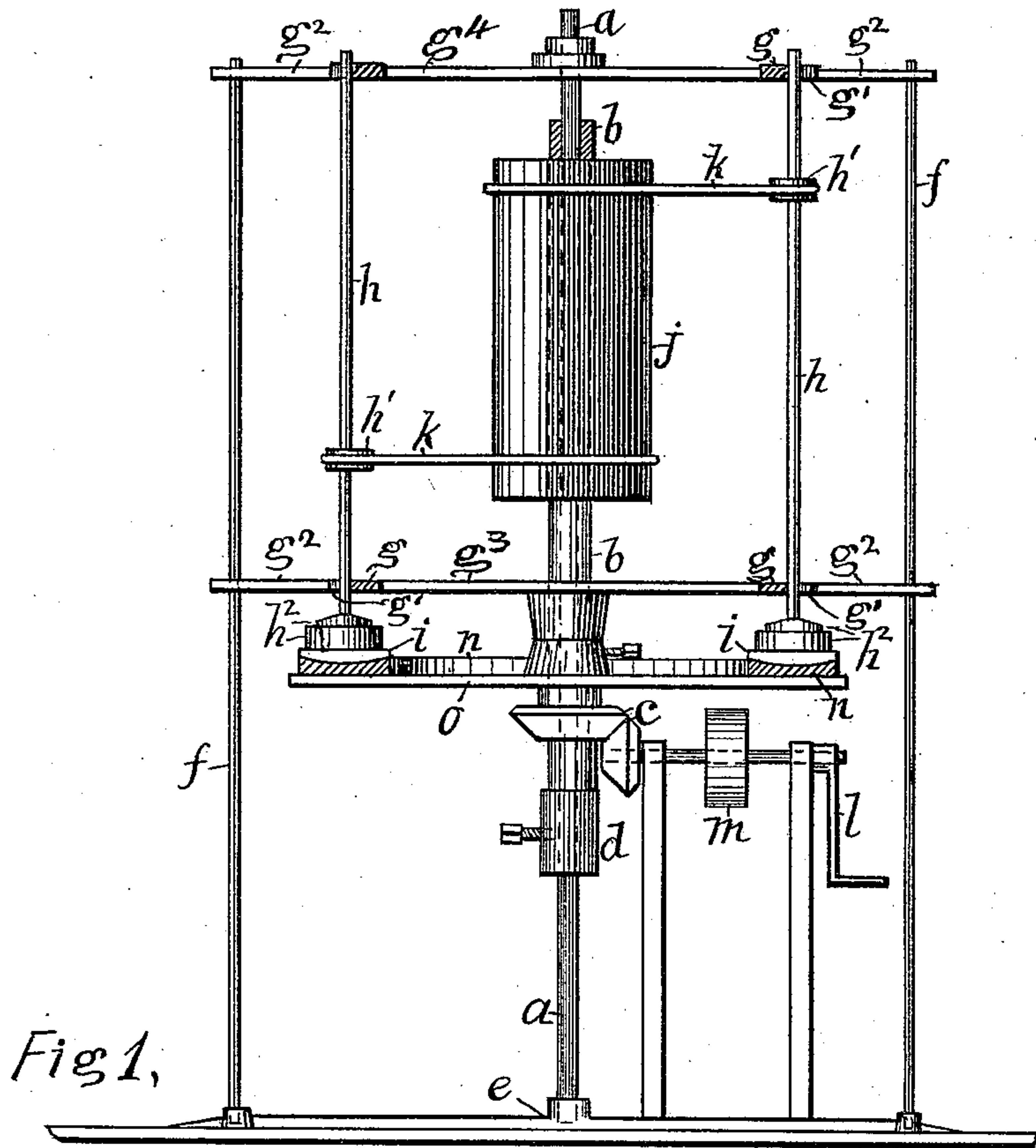


(No Model.)

L. REESE.
MACHINE FOR GRINDING LENSES.

No. 449,947.

Patented Apr. 7, 1891.



Witnesses
Anton Jangner
William J Taylor

Inventor
Lewis Reese
By his Attorney Wm Zimmerman

UNITED STATES PATENT OFFICE.

LEWIS REESE, OF CHICAGO, ILLINOIS.

MACHINE FOR GRINDING LENSES.

SPECIFICATION forming part of Letters Patent No. 449,947, dated April 7, 1891.

Application filed June 16, 1890. Serial No. 355,684. (No model.)

To all whom it may concern:

Be it known that I, LEWIS REESE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Machines for Grinding and Polishing Optical Lenses, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming
10 a part hereof, and in which—

Figure 1 shows my said improved machine in elevation, partly in section. Fig. 2 shows a plan view of the same.

Like letters refer to like parts.

15 The object of my invention is to construct a machine for grinding and polishing optical lenses of any desired form, such as hyperbolic, parabolic, spherical, &c., and to attain such ends I construct my said improved
20 machine substantially as follows, namely:

On a base *e*, consisting of a central boss or hub having several arms, is erected a central and stationary shaft *a*, provided with a loose sleeve *d*, held to the shaft by a binding-screw,
25 and upon said sleeve rests and turns another sleeve or tubular shaft *b*, extending to near the top of the shaft *a*. Said shaft is shown in section above the drum *j*. To the lower end of said shaft is attached a gear *c*, which
30 turns it and the drum *j*, attached thereto, and also the channeled flat ring *n*, carried on arms *o*, having a hub and set-screw to fasten to the shaft *b*, as shown, and above said ring is mounted a ring *g*, having arms *g*³ and a hub
35 resting on said fixed hub, through which the shaft *b* passes freely, and above the drum *j* is a duplicate ring *g*, having arms *g*⁴. Said rings each have lugs *g*², which are continuations of said arms. Through the outer ends of said
40 arms pass vertical rods or posts *f*, which rest on the base *e*, and thus hold the said rings *g* in a fixed position. Into said rings are cut notches *g*¹, which form bearings for the shafts *h*, which are provided with pulleys *h*¹, over
45 which and the drum *j* pass belts *k* to turn and hold said shafts in place. Said shafts carry at their lower ends the chucks *h*², to the lower ends of which the glass disks *i* are attached for the purpose of grinding them into the de-

sired shape. For the purpose of giving the 50 desired shape to said glass the ring *n* is provided with a channel of desired cross-section, corresponding to a vertical central section of the finished glass *i*.

To the horizontal shaft of the gears *c* is at- 55 tached a pulley *m*; also a crank *l*, so that either hand or other power for driving may be used. Said gearing, the shaft *b*, ring *n*, and drum *j* all turn together, and said drum turns the shafts *h*, which may be placed as 60 near as circumstances will permit, each having a belt *k* to both turn and hold it in place. Said rings *g* and *n* are also shown in section.

When all the parts are constructed and placed as shown, the channel in the ring *n* is 65 charged with grinding or polishing material and motion given to the mechanism, thus causing said channeled ring to revolve around the axis of the shaft *a* and under the glasses *i*, which each revolve on their own axes, which 70 is but a continuation of the axis of the shaft *h*.

The device here shown is particularly adapted to the making of lenses of forms heretofore unattainable in practice, such, more 75 especially, as the hyperbolic, elliptical, and all other forms.

What I claim is—

1. In a lens grinding and polishing machine, the combination, with the channeled and moving member *n* and fixed shaft *a*, carrying a 80 tubular shaft *b*, which carries a fixed drum *j*, of the fixed members *g*, carrying shafts *h*, actuated by belts from said drum, and mechanism to rotate said tubular shaft, substantially as specified. 85

2. In a lens grinding and polishing machine, the combination, with the channeled and moving member *n*, shaft *b*, and drum *j*, fixed to said shaft, and shaft *a*, of the exteriorly-notched and fixed members *g*, carrying re- 90 volving shafts provided with chucks centered with the center of the channel in the member *n*, substantially as specified.

LEWIS REESE.

Witnesses:

WM. ZIMMERMAN,
S. LAURENCE.