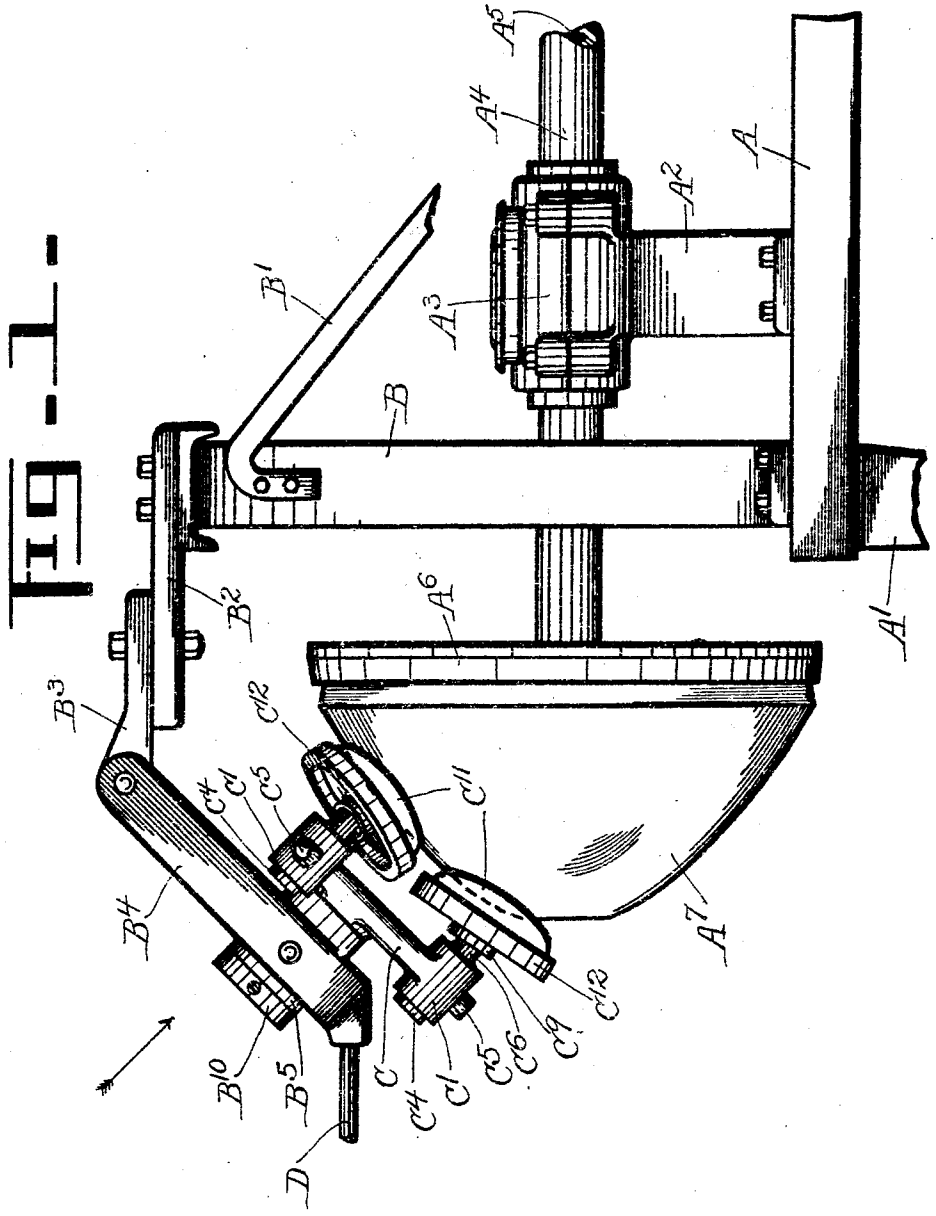
April 26, 1927. 1,626,026

C. W. DAKE ET AL

GLASS POLISHING MACHINE

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Fig. 1.



INVENTORS.
Charles W. Dake
Robert S. Lewis
by Parker & Carter
ATTORNEYS

April 26, 1927. 1,626,026

C. W. DAKE ET AL

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Fig. 2.

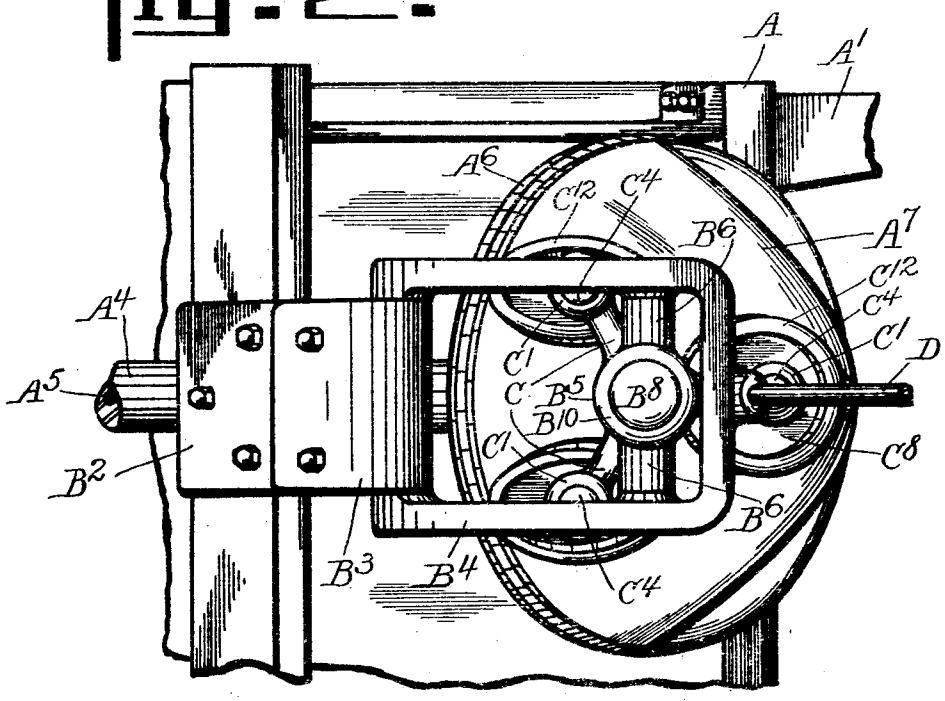
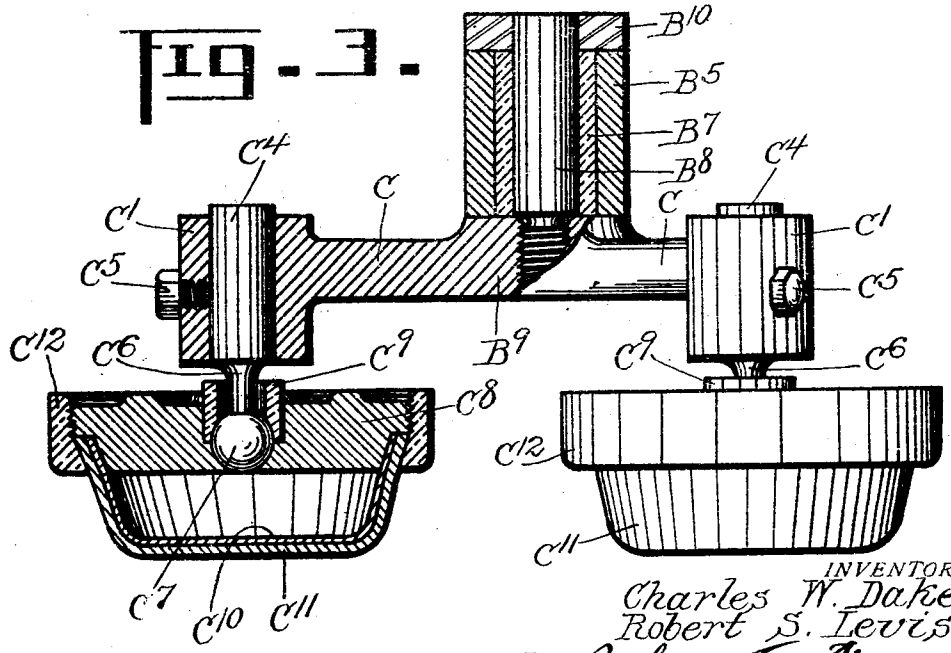


Fig. 3.



INVENTORS.
Charles W. Dake.
Robert S. Levis.
by Parker & Carter
ATTORNEYS

Patented Apr. 26, 1927. 1,626,026

UNITED STATES PATENT OFFICE.

CHARLES W. DAKE AND ROBERT S. LEVIS, OF CHICAGO, ILLINOIS, ASSIGNORS TO THE PYLE-NATIONAL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

GLASS-POLISHING MACHINE.

Application filed October 2, 1922. Serial No. 591,757.

Our invention relates to improvements in polishing machines for polishing such objects as headlights, reflector bowls and the like. It has for one object to provide a multiple pad arrangement whereby a plurality of pads work across the face of the material to be polished, each of them assisting in the polishing. It has for another object to provide a new and improved form of polishing head. Other objects will appear from time to time in the specification and claims.

Our invention is illustrated more or less diagrammatically, wherein—

Figure 1 is a side elevation of the head end of a polishing machine;

Figure 2 is a plan view looking in the direction of the arrow in Figure 1;

Figure 3 is a detail part section of the polishing head.

Like parts are designated by like characters throughout the specification.

A is a machine base mounted on supporting legs A′ projecting from it is a bracket A^2 carrying a bearing A^3 for a spindle A^4 which is adapted to be rotated by any suitable source of power, not here shown. The spindle shaft is hollow as at A^5 and carries at its end a flat pneumatic chuck plate A^6 upon which is carried a bracket or headlight reflector bowl A^7 which is preferably held in position by a vacuum in the well known manner.

B is a polishing head bracket extending upwardly from the main base A and held in position by the stay bar B′. It carries a yoke B^2 held in position overlying the chuck. On this yoke is a hinged block B^3 and on this is pivoted an open frame B^4. B^5 is a bearing block provided with trunnions B^6, B^6 pivoted in the frame B^4. This bearing block is lined with anti-friction metal as at B^7 and has rotatably mounted therein a stub shaft B^8 screw threaded into the polishing wheel B^9. B^{10} is a holding cap positioning the stub shaft B^8 in the bearing block.

The polishing wheel has three projecting spokes C each of them terminating in an enlarged sleeve C′ in which is removably mounted a stub shaft C^4 and held in position by set screws C^5. This stub shaft C^4 terminates in a reduced portion C^6 and ball C^7. C^8 is a polishing block having a spherical bearing surface to engage the ball C^7. C^9 is a sleeve screwthreaded in the block C^8 and having a spherical surface to engage the ball whereby the ball may be held in position on the block C^8. C^{10} is a rubber or other impervious bag supporting the bag C^{11} and held on the face of the block by the screw threaded adjusting ring C^{12}, the arrangement being such as to provide an air tight pocket between the rubber or other bag and part of the block which may be filled with compressed air at any suitable pressure to provide a yielding support for the polishing pad. Three polishing pads are all similar and all three of them engage the face of the work.

D is a lever extending outwardly from the frame B^4 whereby weight may be applied to increase the pressure of the engagement of the polishing pads with the work if that is desired.

It will be evident that while we have shown in our drawings an operating device still many changes might be made in the size, shape and arrangement of parts without departing materially from the spirit of our invention and we wish therefore that the drawings be regarded as in a sense diagrammatic.

The use and operation of our invention are as follows:

When the work is positioned on the chuck and the previously inflated polishing pads have been swung down against the face of the work or surface to be polished, the operator will start the machine to commence rotation of the work, and the three polishing pads all engaging the work will immediately commence to polish. But because at any time one of the pads engage the work further out toward its periphery, there will be a tendency for that pad to exert more force on the wheel than the other and as a result the polishing wheel will rotate. As it rotates each pad will describe a spiral path across the face of the work and thus as the work goes on each pad will polish every part of the work.

Because the pads are inflated, the part of the polishing element in contact with the work will be forced thereagainst only by air pressure and thus the pressure will be the same for every unit of air of the polishing pad and there will be no tendency for deformation of the work because the work

itself controls the position and contour of the pad, the ball and socket joints making it easy for the parts to assume any desired position.

We claim:

1. In a glass polishing machine, a mandrel upon which the work is mounted for rotation, a spider mounted for rotation about an axis inclined to the axis of rotation of the work, a plurality of separate polishing pads mounted each for rotation upon the spider adapted to engage the work, the pads being free to oscillate to conform to the surface of the work, each pad being rotatably mounted upon the spider, a pivoted support for the spider, the spider being free to move toward and from the work.

2. In a glass polishing machine, a mandrel upon which the work is mounted for rotation, a spider mounted for rotation about an axis inclined to the axis of rotation of the work, a plurality of separate polishing pads mounted each for rotation upon the spider adapted to engage the work, the pads being free to oscillate to conform to the surface of the work, each pad being rotatably mounted upon the spider, a pivoted support for the spider, the spider being free to move toward and from the work, the spider being held against the work by gravity and being adapted to be rotated by engagement of the pads with the work.

Signed at Chicago, Illinois, this 23rd day of September, 1922.

CHARLES W. DAKE.

Signed at Chicago, Illinois, this 23rd day of September, 1922.

ROBERT S. LEVIS.