

(No Model.)

P. BERNARD.
MACHINE FOR POLISHING GLASS.

No. 348,311.

Patented Aug. 31, 1886.

FIG. 1.

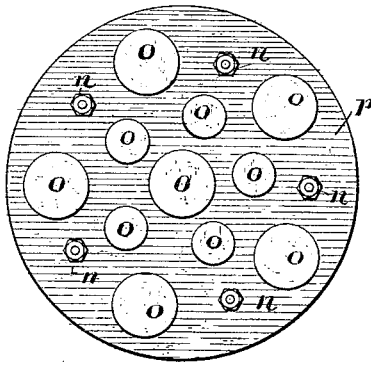


FIG. 2.

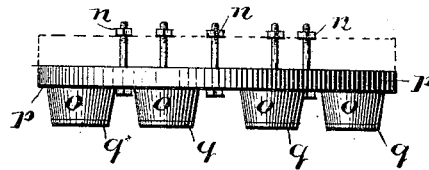
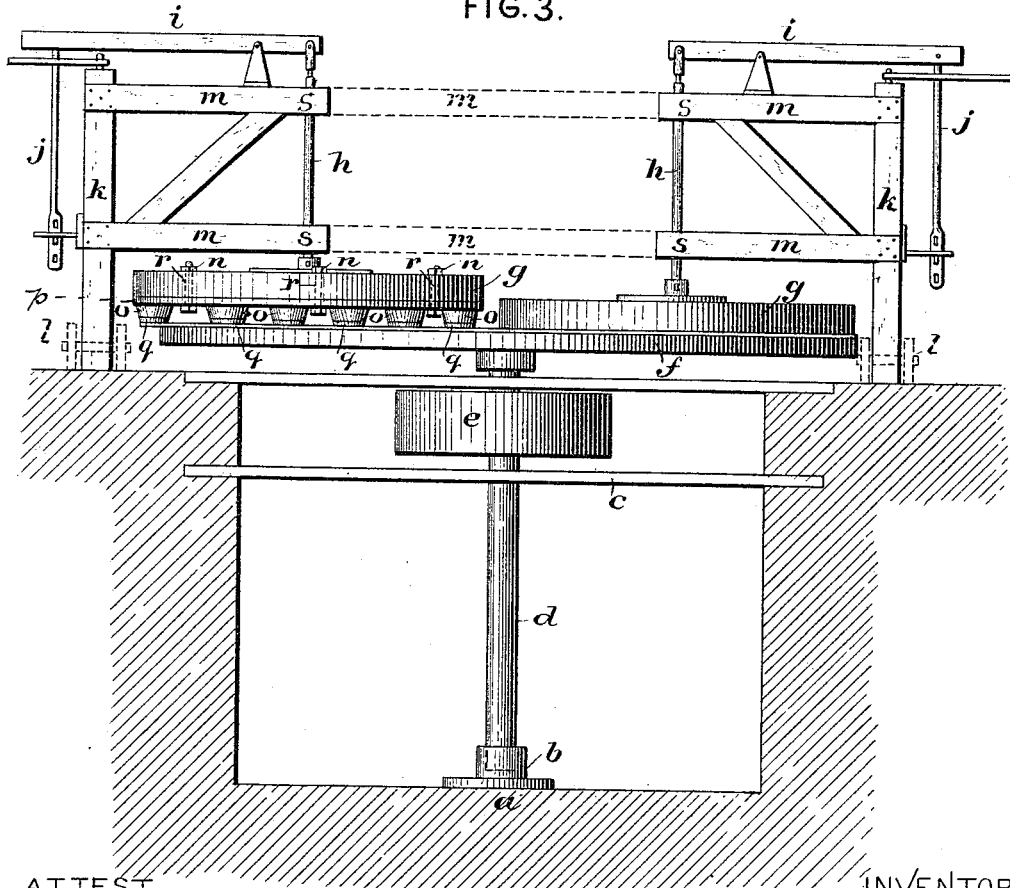


FIG. 3.



ATTEST.
J. Henry Kaiser.
Harry L. Ames.

INVENTOR
Philippe Bernard,
by Phil B. Thompson Jr.
his attorney in fact

UNITED STATES PATENT OFFICE.

PHILIPPE BERNARD, OF NEW ALBANY, INDIANA, ASSIGNOR TO W. C. DE PAUW, OF SAME PLACE.

MACHINE FOR POLISHING GLASS.

SPECIFICATION forming part of Letters Patent No. 348,311, dated August 31, 1886.

Application filed May 17, 1886. Serial No. 202,483. (No model.)

To all whom it may concern:

Be it known that I, PHILIPPE BERNARD, a citizen of Belgium, residing in New Albany, in the county of Floyd and State of Indiana, have invented a new and useful Improvement in Machinery for Polishing Glass and Other Substances, of which the following is a specification.

My invention relates to machines for grinding, smoothing, and polishing glass and other substances, and has for its object certain improvements in that class of machines in which the rough glass as delivered from the casting, blowing, and annealing departments of the respective works when once fastened or secured in the usual manner to the table or platform is successively ground, smoothed, and polished on the side exposed without resetting or removing the glass therefrom until it is entirely finished.

The invention consists in providing the runners and polishers with suitable means of attachment by which when the glass has been ground and smoothed in the usual manner the polishers can be detachably secured to the under side of the runners and the glass polished on the same machine without resetting. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a plan view of the apparatus I have adopted for inserting into the ordinary grinding and smoothing machine when the glass is ready for being polished. Fig. 2 illustrates the side elevation of the same apparatus. Fig. 3 represents a grinding and smoothing machine with a polisher attached to one of the runners and in operative position for polishing, the other being shown in position for grinding and smoothing only.

Similar letters refer to similar parts throughout the several views.

I will now describe the various parts of the machine and its operation. *a* represents the foundation, *b* a foot-bearing, and *c* an upper bearing for the vertical shaft *d*. This vertical shaft is driven by means of a belt actuating the pulley *e*, (or any other mode of driving the same may be adopted,) and carries at its upper end the platform *f* of any

convenient construction which revolves with the shaft, and as the glass is fastened in the usual manner upon the upper surface of the said platform, it follows that this glass assumes the same rotative movement which is imparted to the platform. Above the latter are suspended the so-called "runners" *g*, each attached to a vertically-adjustable shaft, *h*, single lever *i*, and regulating-bar *j*, all connected to either stationary frame-work *k* or to a frame, as shown, provided with wheels *l* and capable of being moved crosswise the platform. Each runner may be mounted on a separate frame, *k*, as shown in full lines in the drawings, so that the frames can be moved independently of each other, or both frames may be connected by continuing the beams *m*, in which the runner-shafts are journaled entirely across the machine, as shown in dotted lines in the drawings, and thus the carriage as a whole may be wheeled out of the way or to any position desired in relation to the platform.

The foregoing description relates to those parts which compose the rotary machine as used now for grinding and smoothing the glass.

In machines of this class it has hitherto been necessary either to remove the glass from the table after it had been ground and smoothed and transfer it to another machine whereon the polishing was then effected, or to remove the grinding and smoothing apparatus and its carrying-frame and substitute another frame carrying polishing apparatus for it. In the former case the removal of the glass to a separate machine involved additional labor and expense in handling, and the liability of breakage in removing, transferring, and resetting the glass was increased, and in the latter case an additional frame for carrying the polisher and its mechanism is required.

In my machine I attach the polishers to the under side of the runners, thus dispensing with the necessity of an additional frame, and also with the necessity of removing, transferring, and resetting the glass. The polishers are attached to the runners in any convenient way, as by means of bolts *n* passing through openings *r* in the runners *g* and secured by

nuts, as shown. By these means the polishers and runners are detachably connected, and the polishers can be removed and replaced whenever it is desired either to grind and smooth or to polish the glass.

In the drawings I have shown one of the polishers removed from the runner and the other attached to the runner and in position for use.

- 10 The polishers *o* may be of equal or unequal dimensions, and are secured to the framework *p* of the polishing apparatus in any convenient manner and covered by felt *q* or similar substance. Before this connection is made, 15 however, the operation may be continued in manner similar as is done while grinding, except that a finer substance is used as smoothing material, for which purpose I prefer to use a fine grade of sand or sand refuse properly 20 prepared from the preceding operation of grinding instead of the more expensive emery used hitherto. By the rotation of the platform *f* and the pressure applied to the runners *g* by means of forcing up the lever *i* 25 at its outer end, and consequently down upon

the shaft and runners *g* on the opposite end, these runners with polishing apparatus attached are caused to also revolve in their respective bearings *s*, thus touching every part of the glass on the platform.

Having thus described my apparatus and the manner in which the same is to be operated, I claim and desire to secure by Letters Patent—

1. In a machine for grinding, smoothing, 35 and polishing glass, the combination of the runners and the polishers detachably secured thereto.

2. In a machine for grinding, smoothing, 40 and polishing glass, the combination of the rotative table *f*, runner-frames *k*, runners *g*, and polishers *p q*, detachably secured to the runners, whereby glass can be ground, smoothed, and polished in the same machine without re-setting.

PHILIPPE BERNARD.

Witnesses:

N. T. DE PAUW,
IGN. HAHN.