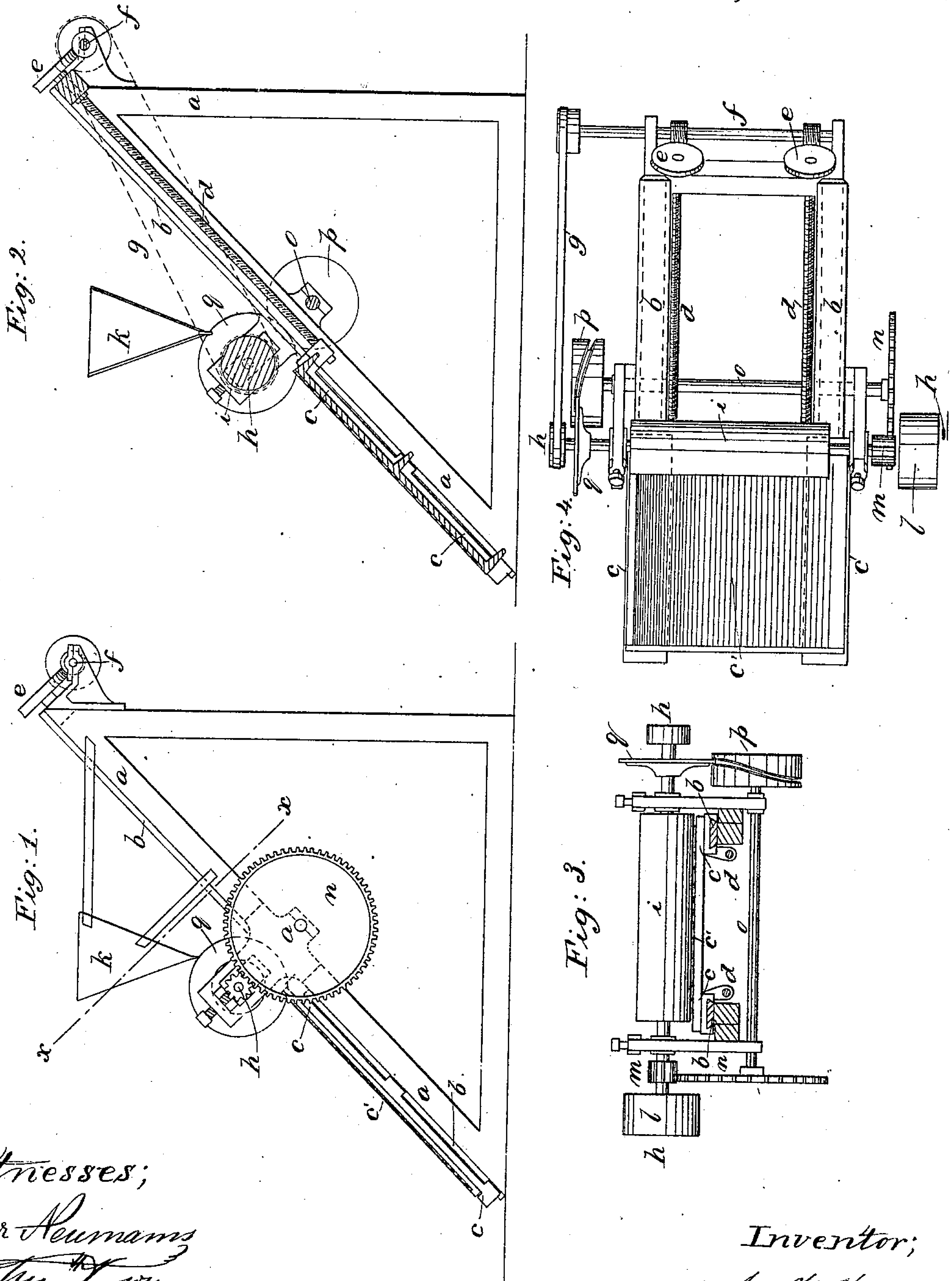
A. H. Hook,

Grinding Glass.

No. 26,103. Patented Nov. 15, 1859.



Witnesses;
Caesar Neumann
John Vow

Inventor;
Alb. H. Hook

UNITED STATES PATENT OFFICE.

ALBERT H. HOOK, OF NEW YORK, N. Y.

MACHINE FOR GRINDING GLASS.

Specification of Letters Patent No. 26,103, dated November 15, 1859.

To all whom it may concern:

Be it known that I, ALBERT H. HOOK, of the city, county, and State of New York, have invented an Improved Machine for Grinding Down or Leveling Plate-Glass Preparatory to Polishing It; and I do hereby declare and describe said invention, referring to the accompanying drawing, in which—

Figure 1, is a side elevation; Fig. 2, vertical section; Fig. 3, section on line *x x*, Fig. 1; Fig. 4, plan.

Heretofore great difficulty has been experienced in grinding down the rough and uneven surface of cast plates of glass after they have been cast, there being great inequalities therein, often requiring a reduction of an eighth and sometimes even a quarter of an inch to bring the higher portions to a level with the lowest ones, which greatly added to the cost of polished plate glass and has hitherto prevented the introduction of its successful manufacture into this country. By my device I am enabled to rapidly cut down the surface and prepare it for the polishing apparatus heretofore patented by me, by which I have reduced one of the costliest and most laborious manual arts to the simple province of labor-saving machinery, without injury or breakage, which I believe has never before been so perfectly effected.

The construction is as follows: I first prepare a stout frame *a*, *a*, the sides of which are of triangular outline, on the hypotenuse or inclined side of which are stout ways or rails of metal *b*, *b*, two in number, which extend from bottom to top of the inclined plane. On these rails *b* a carriage or bed *c* is made to slide, as clearly seen in the drawing, and on the upper surface of this bed, which is an oblong level plate on slides, the plate glass is bedded with its level side down, as at *c'*. Two screws *d*, *d*, are placed in the frame just within the slides or rails *b* and parallel with them. These screws work into nuts on the carriage *c* below, as clearly seen in Fig. 3. The screws extend a distance sufficient to give the requisite length of motion to the carriage, and on their upper ends bear gear wheels *e*, that gear into worms on a cross shaft *f*, running across the head of the frame just below them. This shaft is connected by band *g* with the driving shaft *h*. On the driving shaft *h* there is a grinding cylinder *i*, which is a simple straight cylinder covered with grinding material. The shaft *h* is hung in adjustable boxes so as to set the cylinder at any height from the bed, and thus gage the thickness of the glass when ground level. A hopper *k* is affixed in proper position above the cylinder so as to discharge a continuous supply of sand, water &c., directly on the point between the glass and cylinder where the grinding action takes place. This after passing the cylinder flows off over the unground portion of the glass. The discharge orifice or orifices of the hopper *k* can be regulated in any of the ordinary ways applicable to such devices and well known to every competent mechanic. This cylinder is driven by a band from the driving power over the pulley *l*. Near this pulley *l*, on shaft *h*, there is a pinion *m*, into which a spur wheel *n* gears, said spur wheel being on a counter shaft *o* below, that extends across the frame and bears on its opposite end a groove cam *p*, into which a circular guide piece *q* on the shaft works and by which an end chase is given to the shaft *h* and cylinder *i*.

Before putting this machine in operation the plate of glass is put upon the bed *c*, resting against a ledge at the foot or lower edge of said bed, by which it is held. The machine is put in motion and the bed is drawn up under the cylinder, (first set to the proper gage,) that is in rapid rotation. The grinding sand, &c., is fed in and the work commences, the screws feeding the bed steadily up the inclined plane as the work progresses, and the inclination keeping the work free, while a plentiful supply of grinding material is freshly furnished sharp and ready to do the most efficient execution.

Having thus fully described my new grinding machine, what I claim is—

The combination of the inclined carriage *c* and cylinder *i* arranged and operated in the manner and for the purposes specified.

ALB. H. HOOK.

Witnesses:

CAESAR NEUMANN,

JOHN BROWN.