

(No Model.)

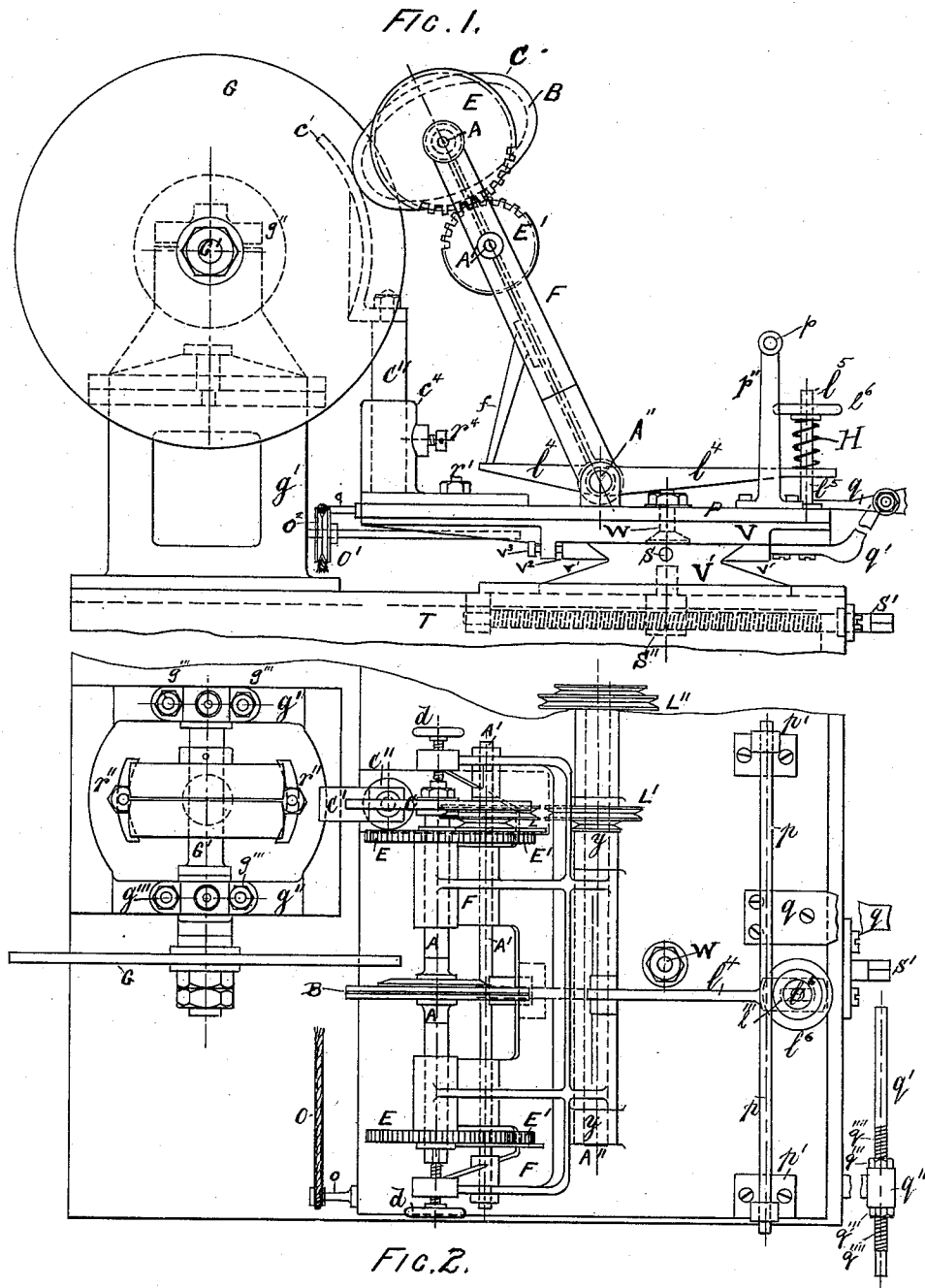
2 Sheets—Sheet 1.

H. BESSON & E. N. KENT.

MACHINERY FOR GRINDING GLASS.

No. 375,332.

Patented Dec. 27, 1887.



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J. W. Reynolds

Donations:-
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and Ernest Niles Kent
by W^m H Babcock
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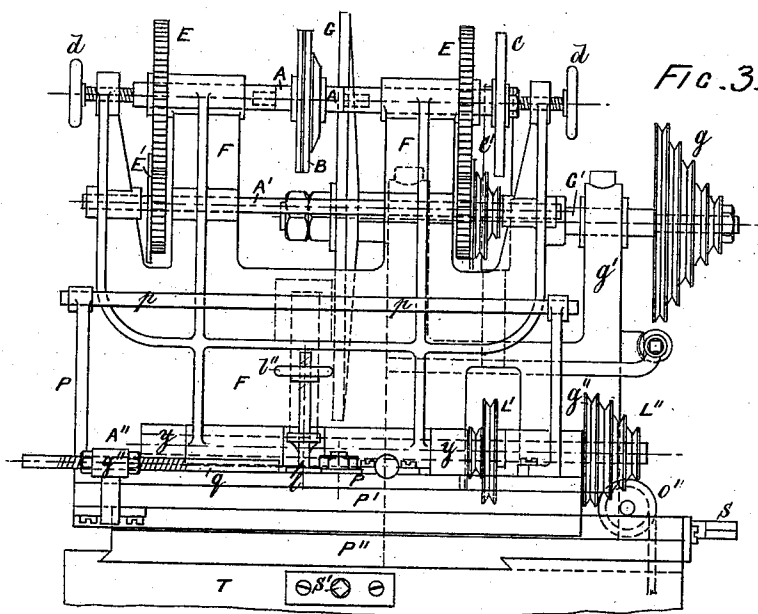
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Patented Dec. 27, 1887.



Witnesses:
W. R. Haight.
J. M. Reynolds

Inventors:
Hippolyte Besson.
and Ernest Nils Kent
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UNITED STATES PATENT OFFICE.

HYPPOLITE BESSON AND ERNEST NEILD KENT, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

MACHINERY FOR GRINDING GLASS.

SPECIFICATION forming part of Letters Patent No. 375,332, dated December 27, 1887.

Application filed May 10, 1886. Serial No. 201,702. (No model.) Patented in England May 9, 1884, No. 7,461.

To all whom it may concern:

Be it known that we, HYPPOLITE BESSON, mechanical engineer, and ERNEST NEILD KENT, brush-maker, subjects of the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented new and useful Improvements in Machinery for Grinding, Shaping, and Beveling Glass, (for which we have obtained Letters Patent in

Great Britain, No. 7,461, dated May 9, 1884;) and we do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the drawings accompanying the same.

This invention relates to machinery for grinding and beveling glass, the shape thereof being determined by a pattern rotating concentrically with the glass.

The said invention consists in the construction and combination of devices hereinafter particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a machine embodying our invention. Fig. 2 represents a plan view of the same, and Fig. 3 represents a front elevation of the same.

In said drawings, G designates the grinding-wheel, which is mounted on a horizontal shaft, G', journaled in bearings formed on standards g', said bearings being covered by caps g'', detachably held to said standards by screws g'''.

F designate a supporting-frame, which inclines upward toward said grinding-wheel and bears at its upper end a pair of spindles, A, arranged end to end. These spindles are forced together by screws d, arranged at their outer ends, and working through parts of said frame, so that the inner ends of said spindles clamp between them the piece of glass, B, which is to be ground. To grasp it more effectually, the said inner ends are enlarged, forming disks, as shown. On this same shaft a pattern, C, is also mounted, having the shape which is to be given to the piece of glass, B. This pattern is in contact with a curved guide, c', supported rigidly upright by a rod, c'', adjustable vertically in a socket, c', by a set-screw, r'.

On one of the spindles A a gear-wheel, E, is mounted, meshing with another gear-wheel, E', on another shaft, A', parallel to the shaft

A and also journaled in the frame F. At the lower end of frame F another shaft, A'', is mounted therein, being parallel to shafts A and A'. This shaft serves as a pivot for said frame, it being journaled in bearings raised on a plate, P. Shaft A'' is provided with pulleys L' L'', the former being arranged for belting to a pulley, L, on shaft A', and the other pulley, L'', for belting to any suitable motor. By these pulleys and shafts and the gear-wheels E E' the spindles A are driven. They turn as a single shaft, and the glass, B, and pattern C turn with them. The contact of the glass B with the grinding-wheel G is determined by the contact of the pattern C with the curved guide c'. Consequently the shape of pattern C regulates that given to the glass, B, by the action of said wheel.

The plate P is attached to a slide, V, by a pivot, W. Said slide overlaps a lower slide, V', arranged transversely of the machine, and engages with a guideway, v', formed in the sides of said lower slide. On one side said slide V has a movable beveled block, v'', which is forced by a clamp-screw, v'', into contact with said bar. By unfastening and withdrawing this beveled block the upper slide, V, is left free to be removed. A screw-threaded rod, S, extending transversely of the machine, adjusts this slide V laterally. The lower slide, V', has forward and back adjustment at right angles to that of upper slide, V, by means of a screw-threaded rod, S', which passes through a nut, S'', extending down from slide V'. The construction of the two adjusting screw-threaded rods S S' is substantially the same, and they operate in the same way. The slides V V', with these adjusting devices, make up a double adjustable slide-support, such as is already in frequent use, and does not need fuller description.

A cord, O, having a terminal weight, passes over a pulley, O', and is attached to a stud or button, o, Figs. 5 and 6, extending backward from the plate P at one corner of the latter. The pulley O' is parallel to the rear edge of said plate, so that the pull of the weight tends to turn said plate on its pivot W and bring the glass, B, obliquely into contact with the grinding-wheel G. The action of this weight

is limited by a rigid arm, q , extending forward from the front of said plate, and another rigid arm, q' , arranged at right angles thereto. The latter arm is stationary with relation to the pivotal movement of plate P , and may be adjusted, by means of nuts q'' and screw-threads q''' , to regulate the distance through which the arm q must move before meeting the arm q' . The latter arm is passed through a sleeve, q'' , which is rigid with the lower slide, V' , the nuts q''' being on each side of said sleeve. When the arm q comes in contact with the arm q' , the plate P , of necessity, stops, and the beveling action of the grinding on the glass will of course cease as soon as the material of the latter in contact with the former is worn away. The weight and cord with the arms q q' thus constitute, taken together, an automatic device for regulating the beveling action of the grinding-wheel.

The rocking frame F leans toward the grinding-wheel G . To regulate this tendency we provide the under side of frame F with a fixed bar, f , which extends downward. A lever, l , of the first kind is fulcrumed on shaft A' , and its rear end extends under said bar f , the forward end of said lever being pressed on by a spiral spring, H , surrounding a fixed rod, l' . This rod passes through a slot, l'' , in lever l , Fig. 2, and serves to guide the same. It is screw-threaded at its upper end to receive a nut, l^6 , whereby the tension of said spring H is adjusted. The weight of the frame F brings the arm f down on the rear end of lever l . The spring H then counterbalances the weight of said frame to a greater or less degree, according to whether said nut is screwed up or down. The adjustment is such as to allow the pattern C to come in contact with the guide c' without too great pressure or friction. A horizontal bar, p , attached to brackets p' , which rise from base T , serves as a rest for frame F when the machine is not in use, the frame F being simply turned back against said horizontal bar.

In operating this machine the glass is inserted and fastened as before described. The frame F is lifted from bar p and turned into the position shown in Figs. 1, 2, and 3. The

plate p is then turned gently on its pivot W , using the arm q as a handle, until the glass, B , meets the face of the grinding-wheel G . If the inclination is not such as to produce exactly the bevel desired, the proper position therefor is secured by adjusting the slides V V' by means of screw-threaded rods SS' . Rotation is given to the spindles A A by means of the belt-gearing and cog-gearing before described. The glass and the pattern are made to rotate slowly, but always with relation to the speed of the grinding-wheel G , and the plate P is turned slowly on pivot W until the arm q comes in contact with arm q' , when the grinding action speedily ceases.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a grinding-wheel, rotary glass-holding spindles, and shafts and gearing for rotating said spindles and grinding-wheel, with a rocking frame in which said spindles are mounted, an arm extending down from said frame, a lever pressed upon by said arm, and an adjustable spring bearing on said lever to counterbalance said frame, substantially as set forth.

2. A grinding-wheel, rotary glass-holding spindles, a pattern carried by said spindles, a fixed guide against which said pattern turns, and shafts and gearing for rotating said spindles and grinding-wheel, in combination with a frame in which said spindles are mounted, a pivoted plate to which said frame is attached, a weight, cord, and pulley for turning said plate on its pivot, and two arms, one carried by said plate, the other relatively fixed but adjustable, for regulating the amount of pivotal motion allowed said plate, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HYPPOLITE BESSON.
ERNEST NEILD KENT.

Witnesses:

ARTHUR E. EDWARDS,
E. SCRIVEN.