A. H. EMERSON.

MARKING DEVICE.

APPLICATION FILED JUNE 26, 1913.

1,193,676. Patented Aug. 8, 1916.

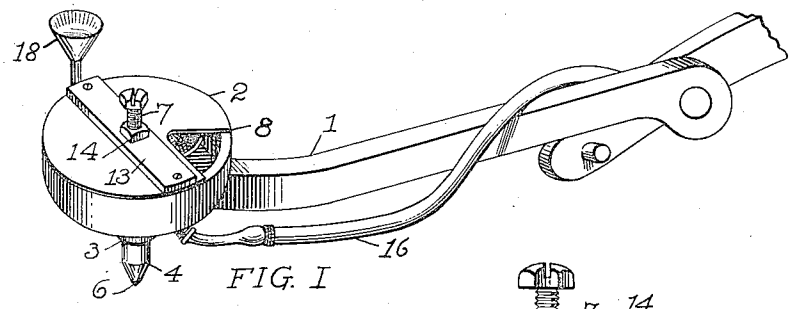


FIG. I

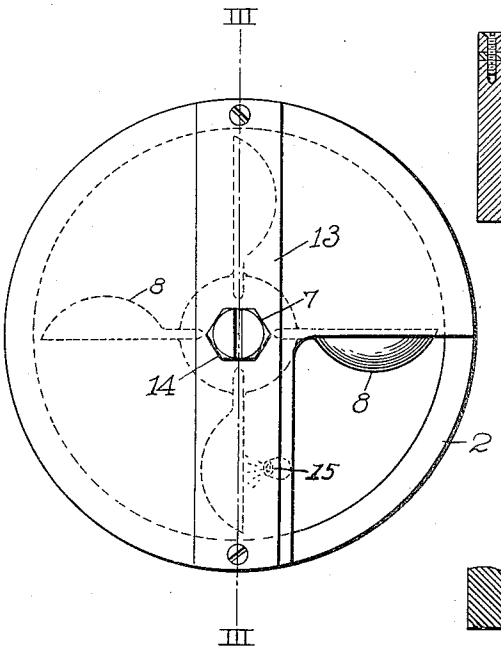


FIG. II

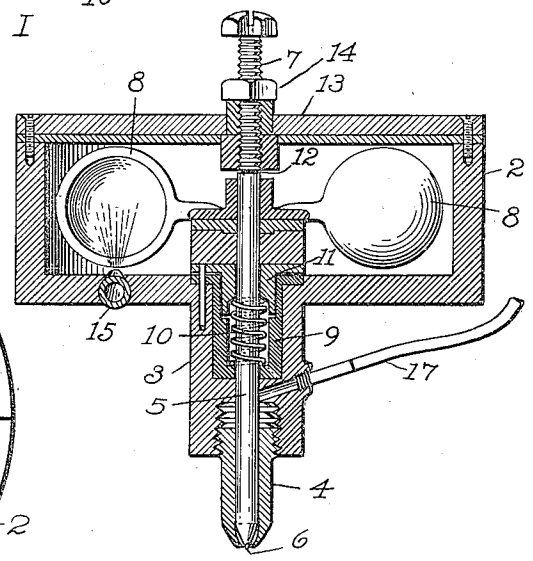


FIG. III

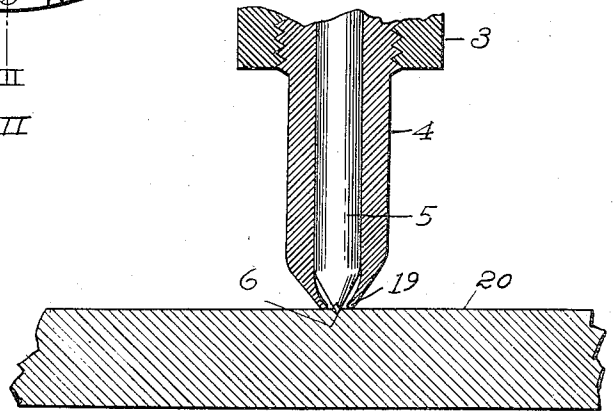


FIG. IV

WITNESSES:

Joseph J. Demers

Florence E. Coderre

INVENTOR

ALFRED H. EMERSON

By H. H. Stytt & H. K. Parsons

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALFRED H. EMERSON, OF SOUTHBRIDGE, MASSACHUSETTS, ASSIGNOR TO AMERICAN OPTICAL COMPANY, OF SOUTHBRIDGE, MASSACHUSETTS, A VOLUNTARY ASSOCIATION.

MARKING DEVICE.

1,193,676. Specification of Letters Patent. Patented Aug. 8, 1916.

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To all whom it may concern:

Be it known that I, ALFRED H. EMERSON, a subject of the King of England, residing at Southbridge, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Marking Devices, of which the following is a specification.

My invention relates to improvements in marking devices, and has particular reference to an improved device for use in marking indelibly on glass.

The leading object of my invention is the provision of a device which may be employed for the rapid and permanent marking of glass or other similar material.

A further object of my invention is the provision of a device which may be employed for various forms of marking which it has been possible to effect hitherto only by the slow and dangerous process of acid etching.

Another object of my invention is the provision of a novel motor and of a novel gage for use in conjunction therewith which shall particularly adapt the motor and parts for use in marking.

Other objects and advantages of my invention should be readily apparent by reference to the following specification taken in connection with the accompanying drawings, and it will be understood that I may make any modifications in the specific details of construction shown and described within the scope of the appended claims without departing from or exceeding the spirit of my invention.

Figure I represents a perspective view of one form of my invention attached to the arm of a pantograph or similar holder. Fig. II represents a top plan view of my device. Fig. III represents a vertical sectional view on the line III—III of Fig. II, and Fig. IV represents an enlarged fragmentary sectional view illustrating the use of my marking device.

In the drawings, in which similar characters of reference are employed to denote corresponding parts throughout the several views, the numeral 1 designates the supporting arm or handle for my device, which may be of any desired form, it being understood that my device may be either manipulated by hand, by being attached to a pantograph or similar apparatus, or in any other desired manner. Secured to the arm 1 is a casing 2 having depending therefrom the sleeve 3, to the lower portion of which is adjustably and detachably secured the gage sleeve 4, within which is journaled the rotor shaft 5 having on its lower end the marking point 6. Said spindle 5 has secured thereto the spoon shaped vanes 8 which are disposed within the casing 2, force being applied to these vanes to rotate the spindle, as hereinafter described. To insure smooth non-vibrating operation of the rotor I preferably mount within the sleeve 3 the bushing member 9 which surrounds but is spaced from the spindle 5 to provide a pocket receiving the spring 10 bearing against the sliding washer member 11, which in turn bears against a suitable collar on the spindle. The upper end of the spindle is hardened and flat, bearing against the bearing point 12 on the screw 7 which extends upward through the cross piece 13 of the casing, a nut 14 serving to lock the screw in desired adjusted position, the adjustment of the screw forcing the spindle downward against the pressure of the spring 10 or allowing the same to rise as desired, this in turn regulating the amount which the point 6 projects beyond the lower end of the gage sleeve 4.

It is to be noted that while the sleeve 4 makes a comparatively tight fit with the spindle, the members 10 and 11 loosely engage the same, allowing a certain amount of lateral play, while the bearing 12 engaging the flattened upper end of the spindle also tends to allow this play, the bearing sliding over the end of the spindle. The purpose of this is to allow the spindle to automatically adjust itself in correct position when rotating instead of the chattering or vibrating, as is liable to be the case when a spindle rotating at a high rate of speed is fixedly held in bearings.

To rotate the spindle and point I preferably employ a blast of suitable actuating fluid such as compressed air, directed against the vanes 8 by the nozzle 15, a supply pipe or hose 16 furnishing the fluid to the nozzle and the force of the fluid preferably being such as to drive the rotor at a speed of not less than 5,000 revolutions per minute.

It will be understood by those conversant with the art of making glass, metal and other like hard substances that it is prefer-

able to have the surface being operated upon suitably moistened, and in the use of my device I cause the said moistening fluid to feed to the work from the rotor and marking point and thus not only insure moistening of that portion of the surface being operated upon but also cause the said fluid to serve as a lubricant and prevent overheating of the sleeve within which the rotor is journaled. To accomplish this result, I form in the sleeve 3 an aperture extending to the bore thereof and then secure to the sleeve the feed pipe 17 preferably having an upwardly projecting portion bearing a reservoir 18 for containing the fluid.

By reference particularly to Fig. IV the operation of my device when used for marking will be readily understood, and it will be seen that the lower end of the sleeve 4 is tapered and terminates in a bead 19 which rests on the surface 20 being operated upon. This shaping of the lower end of the sleeve allows it to rest on either plano, concave or convex surfaces and serve as a depth gage to limit the depth which the point 6 bites into the surface 20 being operated upon. As before mentioned, this biting in, in ordinary marking work is preferably but a few thousandths of an inch, just sufficient, in other words, to leave a mark on the surface without sufficiently cutting the same so as to cause cracking or breaking thereof. It will be understood, however, that the rapid rotation caused by my motor will cause the point 6 to continue downward into the lens or other member 20 being marked and that if the point projects sufficiently from the gage sleeve and is held stationary it will serve to drill a hole through the member 20 or for other similar purposes.

From the foregoing description taken in connection with the accompanying drawing, the construction and operation of my improved marking device should be readily understood, and it will be seen that I have provided a simple, inexpensive and durable construction for the desired purpose.

I claim:

1. In a device of the character described, the combination with a bearing and a rotor having a marking portion projecting from the bearing, of a fluid supply in communication with the bearing, whereby said fluid will flow into the bearing and along the rotor and marking point to the work.

2. A device of the character described, including a casing member having an adjustable gage sleeve at the lower end thereof, a spindle having a point projecting beyond the gage sleeve, a floating journal for the upper portion of the spindle, a bearing having sliding engagement with the top of the spindle, means engaging the floating journal for resiliently holding the spindle against said bearing, and means for securing the bearing in desired adjusted position to regulate the projection of the point from the gage sleeve.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED H. EMERSON.

Witnesses:

FLORENCE E. CODERRE,

H. K. PARSONS.