(No Model.)

J. CLASS.

GLASS CUTTING AND DRAWING FRAME.

No. 419,640. Patented Jan. 21, 1890.

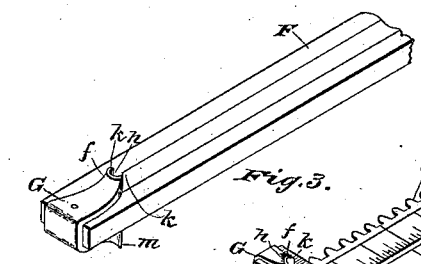

Fig. 3.

Fig. 1.

Fig. 2.

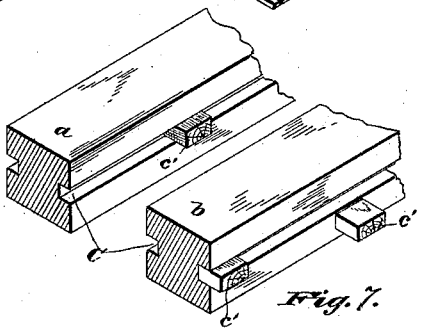

Fig. 7.

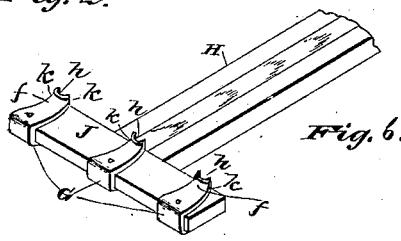

Fig. 6.

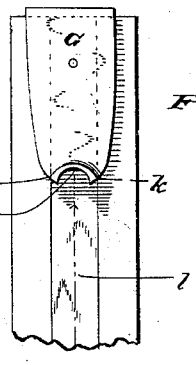

Fig. 4.

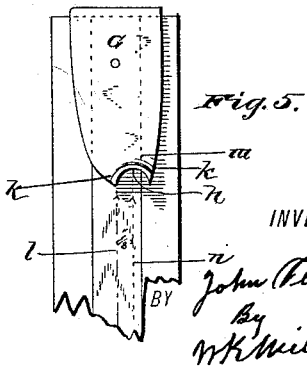

Fig. 5.

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GLASS CUTTING AND DRAWING FRAME.

SPECIFICATION forming part of Letters Patent No. 419,640, dated January 21, 1890.

Application filed June 24, 1889. Serial No. 315,294. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLASS, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Glass Cutting and Drawing Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in glass cutting or drawing frames; and it consists in certain features of construction and combination of parts, as will be hereinafter described, and set forth in the claims.

Figure 1 of the accompanying drawings is a view in perspective of a glass-cutting frame illustrating my invention. Fig. 2 is a similar view of a corner portion of the metal border. Fig. 3 is a similar view of the head and a fragment of the rule or gage to guide the diamond or other cutting or drawing instrument. Fig. 4 is a plan view of the head of the rule, showing the head set centrally on the rule. Fig. 5 is a similar view of the reverse side, showing the head set one-eighth inch to one side of the center of the rule. Fig. 6 is a perspective of a rule having a T-square portion, having metal heads, as shown on rule in Fig. 3. Fig. 7 is a perspective of a fragment of strips composing the frame, showing manner of construction.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

A represents the body of the frame, which is made of hard wood cut in strips *a b*, and may be of different-colored wood for the purpose of ornamentation, the strips having grooves C, as shown in Fig. 7, in which is placed a series of narrow tongues *c'*, the grain of which transverses the line of the groove. By this arrangement warping and splitting of the frame are prevented, which are liable to occur when the grain of the tongue portion of the table runs parallel with the groove.

The outer edge portions B and C' of the frame are raised a distance above the face of the frame A, as shown in Fig. 1, and graduated, showing inches and fractions thereof, the inch-divisions numbered from a zero-point at the upper left-hand corner and reading from said point to any desired number, limited only by the size of the frame.

For the purpose of this application I have shown lines, as *x* and *y*, crossing each other at right angles on the face of the frame, said lines corresponding with the designated inches on the raised portion of the face of the frame. These lines may be impressed or inlaid and in such colors as may be preferred.

About the outer edges B and C' of the frame is placed a metal border D, compressing a series of racks *z*, having outwardly-projected teeth *d* and alternating spaces *e*, the said teeth to be flush with the raised portion of the frame and slightly tapered or cut under from top to bottom, as shown by the drawings. Said border may be made of any suitable material, preferably of cast-iron, for the reason that the influence of temperature is slight on such metal; and to further prevent warping or twisting of the frame by the expansion or contraction of the border I have divided them into short sections, as *z*, which are secured to the frame by screws, allowing a small space between the ends of the racks to allow of a slight expansion without interfering with the alignment of the frame.

To preserve the integrity of the zero-point of the frame a corner-piece E is provided, forming a continuation of the toothed border about the corner of the frame. In this case the projected teeth *d* are set on a half-inch pitch; or, in other words, there are two teeth *d* and two spaces *e* to the inch, the lines *x* and *y* on the face of the frame corresponding with each alternate space.

It will be noticed that the raised portion B C' of the frame forms a square or right angle corresponding with the lines *x y*, and may be relied upon to hold the glass to be cut parallel therewith.

The rule or gage F is preferably made of strips of hard wood of two or more kinds, glued together in the usual way. On one end of said rule is secured a head G, in form substantially as shown, having an outwardly-projected tooth portion, as *f*, to engage the borders D on the frame, said tooth having its inner face cut under and concaved, as *h*, said concave adapted to the apex or convex portion of the tooth *d* on border of the frame, and the center of said concave to register

with the center line of the rule F, as shown by the arrow in Fig. 4, and the outside front portions *k* of the tooth *f* are sloped inwardly, so as to allow the said tooth *f* to pass into the space *e*, the portions *k* to rest against the sides of the rack-teeth *d*. Thus it will be in operation, to have the edge of rule F register with the inch-line, the concaved portion *h* of the tooth *f* will rest on the outer or convex portion of the tooth *d*, and for quarter-inches the tooth portion *f* will pass into the space *e*, the *k* portion or sides resting against the sides of the teeth *d*, and when so placed the edges of the rule will be central to the space between the lines that cross the frame, thus enabling the operator to quickly place the rule for cutting inches and quarter-inches; and to adapt the same rule to register one-eighth-inch divisions, the head G, on the opposite side of the rule, is provided with a tooth portion *m* similar to that described as *f*, except in position on the rule. In this case the center of the concave portion of the tooth *m* is set to register with line *n* on the rule, which is one-eighth of an inch to one side of the center line *l*, as shown by the arrow in Fig. 5. By so placing the tooth *m* the one-eighth-inch divisions may be cut on either edge of the rule, cutting even inches and quarter-inches by engaging the tooth *f* with the tooth *d* or the space *e*, or the fractions by turning the rule over and engaging the tooth *m* with the teeth *d* and spaces *e* in a similar manner to that in cutting inches, quarters, and half inches with the other side of the rule.

I would not be limited to the forms of tooth either on the rack *z* or the head G, as other forms may be used—such as V-shaped—with equally good results. There is also provided for use a T-square H, as shown in Fig. 6, the cross-pieces J having head G, hereinbefore described, secured thereto to engage the teeth of the border on the frame in a manner similar to that described in the use of the rule F.

Having thus fully described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

1. A glass cutting or drawing frame constructed of strips, as *a b*, having side grooves C, secured together by grooves and tongues *c'*, the grain of which runs transversely to said grooves and having raised graduated portions B C', and a border having outwardly-projected teeth *d*, substantially as described, and for the purpose set forth.

2. The combination, in a glass cutting or drawing frame, of a body portion A, raised graduated portions B and C', and a metal border D, composed of a series of sections *z*, and a corner-piece E, having outwardly-projected teeth *d*, substantially as described, and for the purpose set forth.

3. The combination, with a glass cutting or drawing frame having a body portion A, raised graduated portions B C', and a border having outwardly-projected teeth *d*, of a rule F, having a head, as G, secured thereto, said head having a tooth portion *f* to engage the front and side portions of the teeth *d*, substantially as described, and for the purpose set forth.

4. The combination, with a glass cutting or drawing frame having outwardly-projected teeth *d*, of a rule or gage having a head-piece, as G, secured thereto, said head-piece having on one side of the rule a tooth, as *f*, central thereto, said tooth having a concaved portion *h* and sloping sides *k*, and on the opposite side of the rule a similar head *m*, set to one side of the center of said rule, said teeth *f* and *m* to engage the teeth *d* of the frame.

5. The combination, with a glass cutting or drawing frame having outwardly-projected teeth *d*, of a T-square, as H, having heads G secured thereto, said heads having teeth *f* and *m*, adapted to engage the teeth *d* of the frame, whereby the rule will be held at desired angles across the frame, substantially as described and set forth.

6. The combination, with a glass cutting or drawing frame having a border of outwardly-projected teeth *d*, of a rule or gage having a tooth adapted to engage said tooth *d*, as hereinbefore described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 17th day of June, A. D. 1889.

JOHN CLASS.

Witnesses:
W. K. MILLER,
CHAS. R. MILLER.