

No. 847,459.

PATENTED MAR. 19, 1907.

P. J. BEHRINGER.
PLATE GLASS CUTTER'S TABLE.

APPLICATION FILED MAR. 30, 1906.

2 SHEETS—SHEET 1.

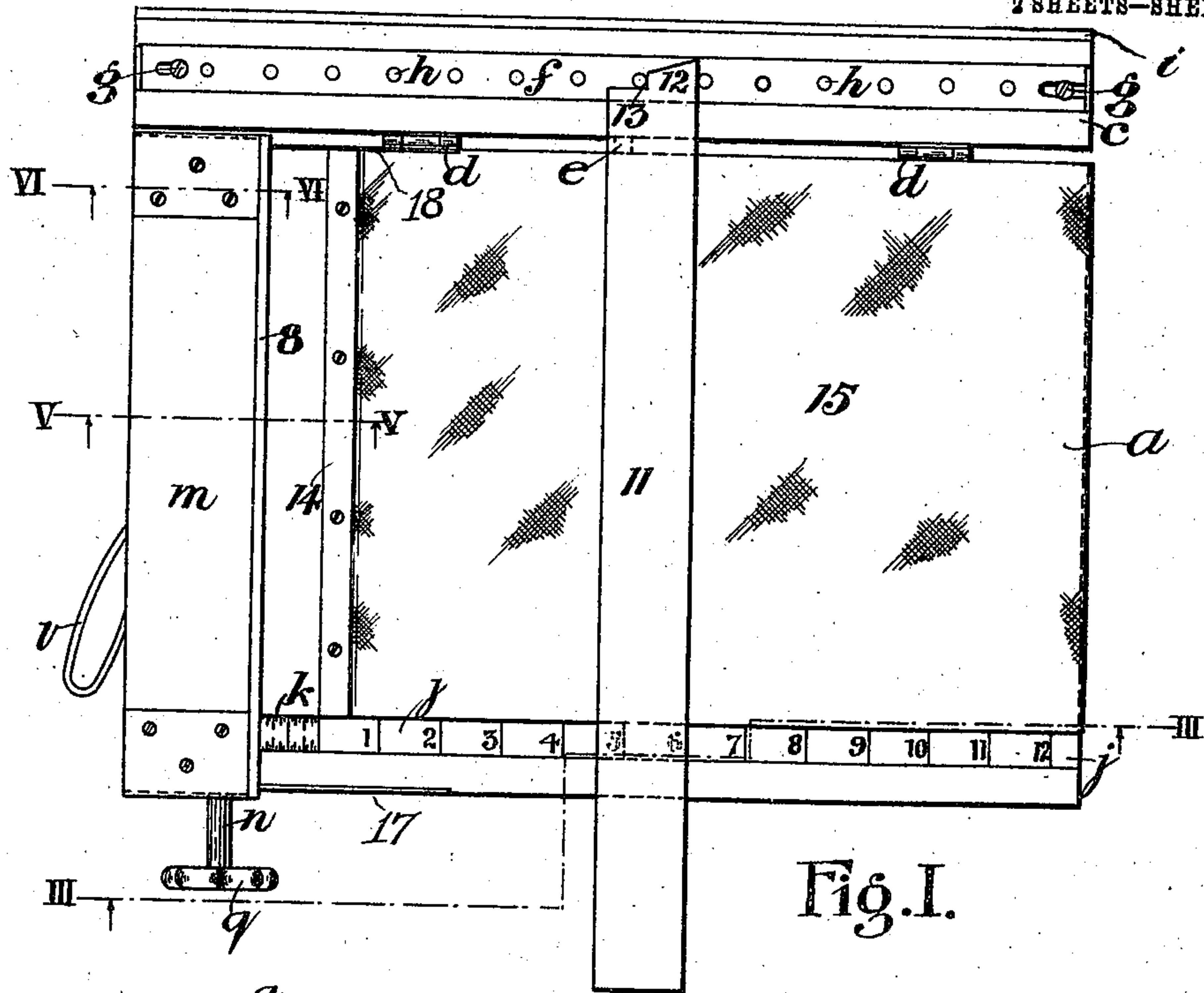


Fig. I.

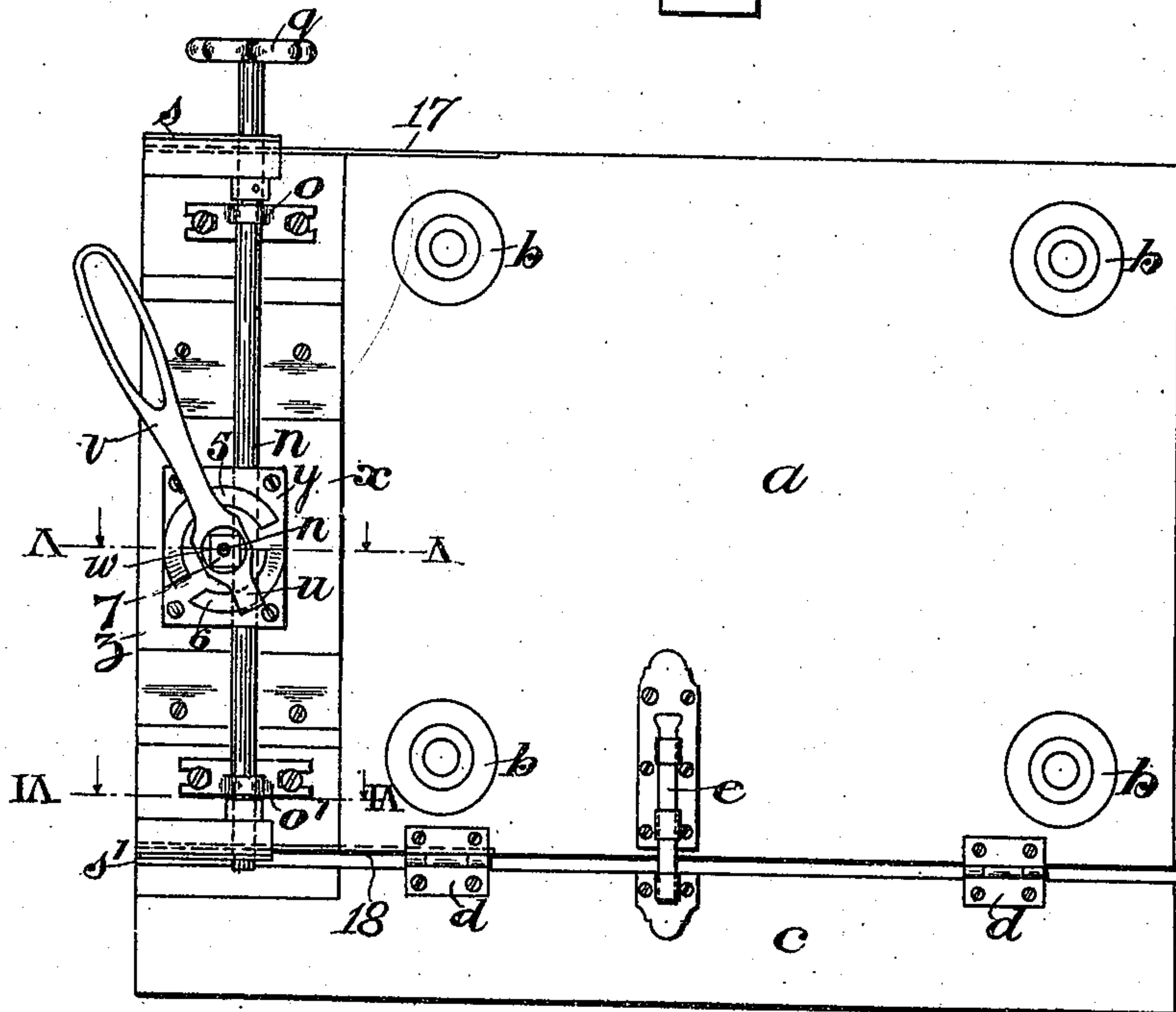


Fig. II.

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2 SHEETS—SHEET 2.

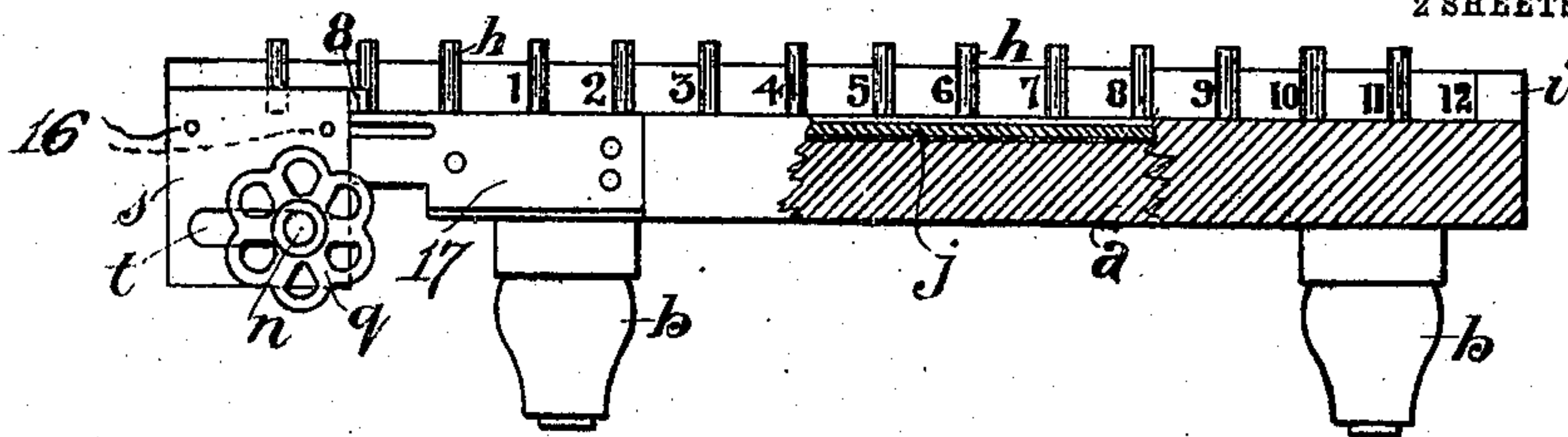


Fig. III

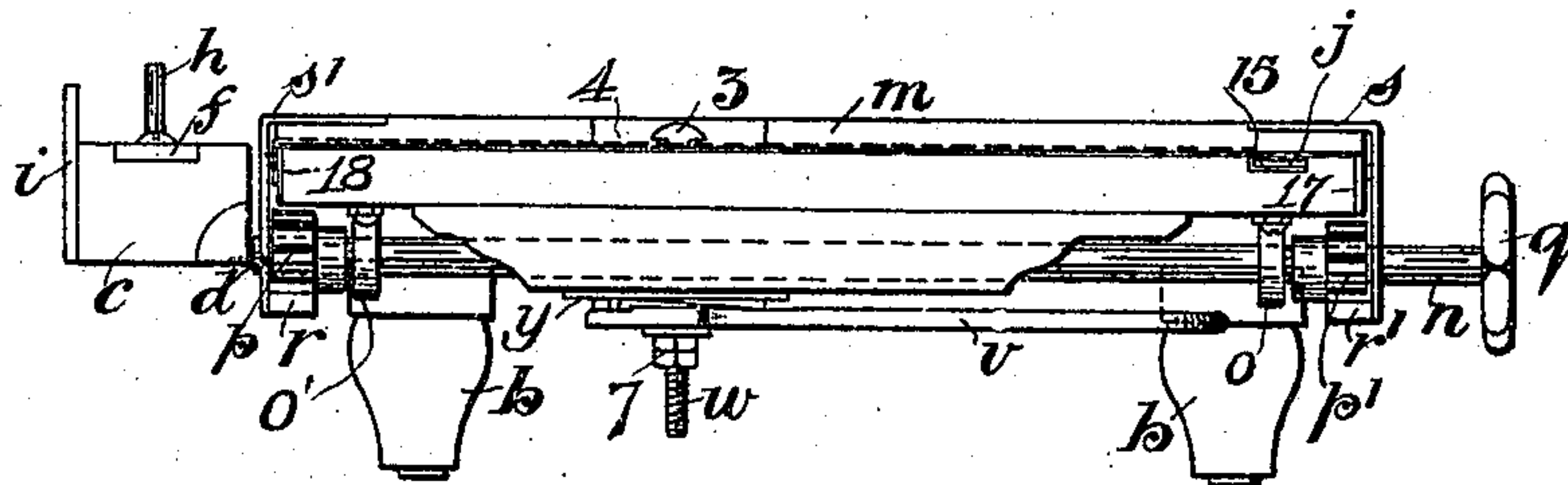


Fig. IV

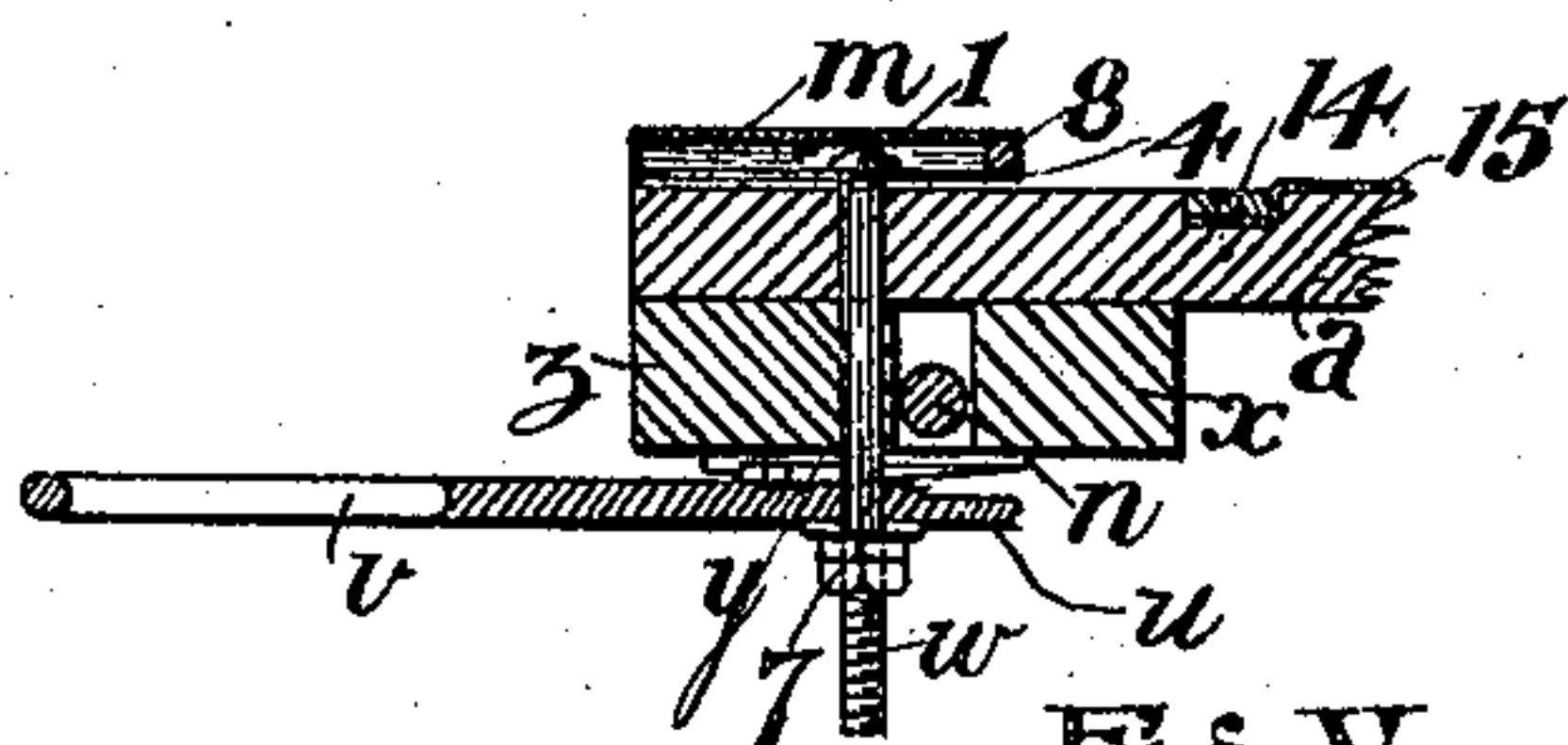


Fig. V

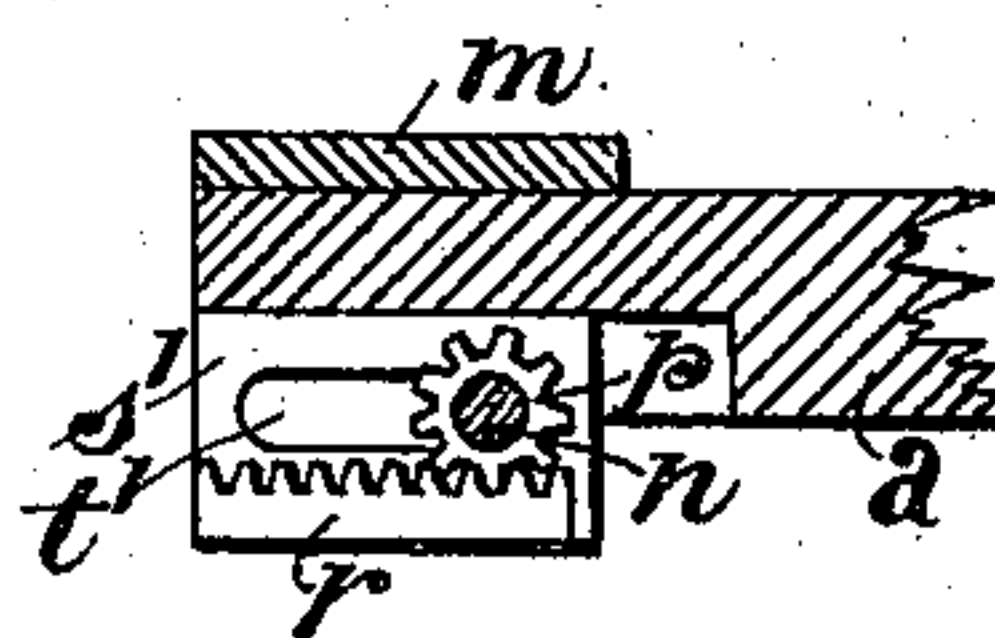


Fig. VI

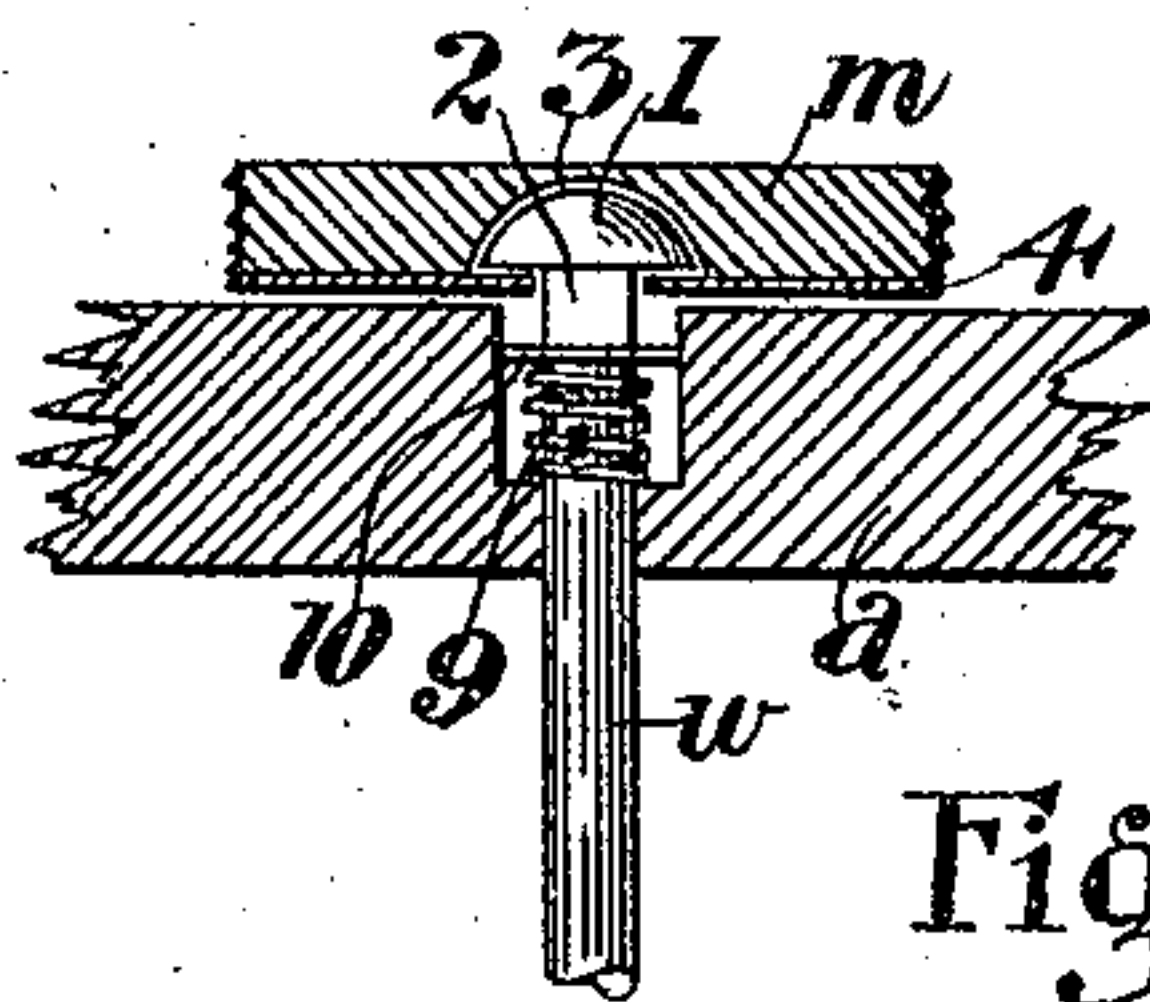


Fig. VII.

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UNITED STATES PATENT OFFICE.

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PLATE-GLASS-CUTTER'S TABLE.

No. 847,459.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed March 30, 1906. Serial No. 308,874.

To all whom it may concern:

Be it known that I, PETER J. BEHRINGER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Sheet-Glass-Cutters' Tables, of which the following is a specification.

This invention relates to tables and other appliances used for squaring, measuring, and cutting plates or sheets of glass. Its object is to provide an apparatus of simple construction in the most convenient form which may be readily adjusted and clamped for cutting glass in lengths measuring even units or fractions thereof.

To these ends my invention consists in the improved means for adjusting and setting the apparatus whereby the least possible obstruction is presented to the handling of the glass and in other novel features and combinations hereinafter described and claimed, an embodiment thereof being illustrated in the accompanying drawings, in which—

Figure I is a plan view, and Fig. II is a bottom view, of the apparatus. Fig. III is a front elevation, partly in section, on line III-III of Fig. I. Fig. IV is an end elevation. Fig. V is a section taken on line V-V, and Fig. VI is a section taken on line VI-VI, of Fig. I. Fig. VII is a detail view showing the clamping-bolt and its setting.

The reference-letter *a* indicates a board, preferably of wood, having a smooth plane upper surface and a substantially rectangular outline. The board *a* should be suitably supported so that the movable parts are free to be operated, which may be accomplished by providing short legs, as shown at *b*, when the board is designed to be placed upon a bench or table; but it is obvious that longer legs or supports may be provided when it is desired to dispense with a supplemental bench. An extension *c* is attached to the rearward side of the board *a*, preferably by suitable hinges *d*, so that the piece *c* may be swung downward to facilitate covering the board *a*, as will be hereinafter described. A small space is left between the extension *c* and the board *a*, and one or more sliding bolts *e* or other suitable locking means are provided for holding the said extension with its upper surface normally alined with the surface of the board *a*, as shown. A strip or bar *f*, preferably of metal, is closely fitted into a longitudinal groove in the extension *c* and secured thereto by screws or bolts

g, passing through slotted holes in the strip *f*, so that the latter may be longitudinally adjusted. The strip *f* has projecting vertically therefrom a row of guide-pins *h*, spaced in a known or designated manner, preferably equidistantly, as shown, the distance from one pin to the next corresponding to a unit of linear measurement—such, for example, as one inch. The pins *h* should be designated by numerical figures, and a thin strip *i*, projecting above the surface of the extension *c* and having numerical characters upon its inner face, as shown in Figs. I, III, and IV, forms a convenient means for designating them.

Extending longitudinally near the forward edge of the board *a* is a scale *j*, graduated to indicate units of linear measurement, the intervals of said graduated scale being set opposite to and numbered the same as the corresponding guide-pins *h*. At the left of the first interval, Fig. I, is a unit of measurement subdivided into fractional parts, as at *k*. The scale *j* is preferably a graduated rule fitted into a groove in the board *a* and secured thereto in any suitable way.

A sliding gage *m* is movably mounted upon and adapted to be clamped to the board *a*, said gage having its right-hand edge, made straight and set at right angles to the line of the pins *h* and to the scale *j* and its said straight edge adapted to traverse the fractionally-graduated part *k* of the scale. A thin strip *8* of hard wood or metal may be attached to the working edge of the gage *m*, which may be replaced when worn.

To provide convenient means for moving the slidable gage *m* and for maintaining its proper alinement, a small transverse shaft is rotatably mounted in bearings *o* and *o'*, secured to the bottom of the board *a*. Said shaft projects beyond the forward edge of the board *a* to conveniently present its hand-wheel *q* and has secured upon it two toothed pinions *p* and *p'*, both being of the same size. Thin plate-hangers *s* and *s'* are secured to the respective ends of the gage *m*, depending therefrom at right angles thereto, and carry, respectively, upon the lower portions of their inner faces the toothed racks *r* and *r'*, which latter are adapted to mesh, respectively, with the pinions *p* and *p'*. The plate *s* is provided with a horizontal slot at *t* for the shaft *n* to pass through, and a corresponding slot *t'* may be made in the plate *s'*, if required. A pair of guide or steadying pins, as shown

at 16, is also carried by each of the plates s and s' and adapted to slide, respectively, in horizontal slots in the plates 17 and 18, secured to the board a . Thus it will readily be
 5 seen that the gage m is movable through the distance represented by the interval k by rotating the hand-wheel q .

A clamping-lever v , having an extension u beyond its fulcrum, is loosely mounted upon
 10 the lower portion of a bolt w . The bolt w is preferably a carriage-bolt of the ordinary type having a rounded head 1 and its shank squared at 2 for a short distance below its head, as plainly shown in Fig. VII, and
 15 passes loosely through the board a , cleat z , and clamping-plate y . A transverse groove 3 is formed in the under side of the slidable gage m , so that the latter may travel over the
 20 bolt-head, and a thin metallic plate 4 is secured to the lower face of the gage m , having a slot therein fitted to slide loosely over the squared shank 2 of the bolt. The clamping-plate y is secured to the bottom of the cleat z or to the two parallel cleats x and z , as
 25 shown, and is provided with a pair of circular projections 5 and 6 concentric with the bolt-aperture, their lower faces presenting corresponding inclined planes adapted to engage, respectively, the lever v and its extension u . A pair of lock-nuts and a common
 30 washer are fitted to the bolt w , as shown at 7. Thus it is evident that the clamping device being properly adjusted the slidable gage m is clamped by the bolt w and held firmly
 35 against the board a when the hand-lever v is in the position shown in Figs. I and II of the drawings, and when the lever v is swung outward to a position approximately at right angles to the board a the gage m is released.
 40 In order that in the latter position of the lever v the gage m may be free from frictional contact caused by the bolt, I prefer to make a countersink in the board a , surrounding the bolt w , and place therein a spiral spring 9, encircling the bolt, said spring being in compression and bearing against a washer 10,
 45 abutting against the shoulder formed by the square portion 2 of the bolt, as shown in Fig. VII. The spring 9, having sufficient lifting
 50 power to raise the bolt, will greatly assist in permitting the gage m to be moved freely.

As shown in Fig. I, a flat straight-edge 11 is provided, being somewhat wider than the
 55 space between the guide-pins h , save at its rearward end, where it is provided with a projection 12, fitted to slide snugly between two of the said pins, and the right-hand edge of said projection being a continuation of the right-hand or working edge of the straight-
 60 edge. Thus a shoulder 13 is formed and adapted to abut against one of the pins h , which, together with the projection 12, fitting between the two pins, serves to keep the rearward end of the straight-edge in proper
 65 position. The end of the projection 12 may

also be beveled, as shown, to facilitate the insertion of the straight-edge between two of the pins h .

A transverse groove may be formed in the board a and a strip fitted therein, as shown at
 70 14. This, together with the sunken scale-rule j and the hinged extension c , permits of the upper surface of the board a being readily covered with a sheet of felt or other soft material 15, two edges of the same being held by
 75 the strip 14 and scale-rule j and the other two edges being tacked or glued to the edges of the board a . Such a covering is required for cutting silvered or mirror plates and other glass plates having coatings which are easily
 80 injured by abrasion.

In the operation of the apparatus the sliding gage m is moved by the hand-wheel q over the interval k of the scale, so as to cover said
 85 interval if the length of the glass to be cut is an even unit of measurement, or in case the length to be cut is a fractional measurement the gage m is moved to the left until its edge registers the required fraction on the interval
 90 k . The lever v is then swung to clamp the gage m in place. A sheet of glass is placed upon the board a , with its edge abutting against the gage m . The straight-edge 11 is inserted between two of the pins h , with its right-hand or working edge against the pin
 95 designated according to the units of measurement in the length to be cut and its forward end held down by the operator's hand, with its working edge registering with the corresponding unit of measurement as indicated upon the scale j . A glass-cutter of any
 100 suitable type may then be drawn across the sheet of glass by the free hand of the operator and guided by the working edge of the straight-edge 11. The upper face of the gage
 105 m being low and flat presents no obstruction to the passing of the glass sheet thereover and forms a convenient support upon which to complete the severing of the glass after being scribed by the cutter.
 110

Having now so fully described my invention that those skilled in the art to which it appertains can make and use it, either in the form shown herein or under some modification thereof, what I claim as new, and desire
 115 to secure by Letters Patent, is—

1. The combination with a suitable board, of a scale longitudinally disposed at or near the forward edge of said board graduated for units of measurement and having fractional
 120 graduations in its left-hand interval, a transverse slidable gage upon said board, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, and an extension hinged to the rearward side of said
 125 board provided with upright guides disposed in correspondence with the said graduated scale, substantially as set forth.

2. The combination with a suitable board, 130

of a scale longitudinally disposed thereon at or near the forward edge thereof and graduated for units of measurement, fractional graduations in the left-hand interval of said scale, a transverse slidable gage upon said board, a removable strip upon the working edge of said gage, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, and an extension suitably attached to the rearward side of said board provided with upright guides corresponding with the said graduated scale, substantially as set forth.

3. The combination with a suitable board, of a scale longitudinally disposed upon the forward portion of said board graduated to indicate units of measurement and having fractional graduations in its left-hand interval, a transverse slidable gage upon said board, means for shifting said gage along the fractionally-graduated interval of said scale, means for clamping said gage to said board, an extension hinged to the rearward side of said board provided with a plurality of upright guides ranged longitudinally thereof and disposed in correspondence with the said graduated scale, and a straight-edge having a projecting end adapted to fit between any contiguous pair of said guides, substantially as set forth.

4. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board having hangers depending therefrom, toothed racks secured respectively to said hangers, a transverse shaft mounted to be rotated in bearings upon the under side of said board, toothed pinions upon said shaft in mesh respectively with said racks, and means for clamping said gage to said board at any point of its travel, substantially as set forth.

5. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, hangers depending from the ends of said gage overlapping the edges of said board, plates upon the edges of said board each having a horizontal slot therein, projections from said hangers adapted to engage the respective slots in the said edge plates, a toothed rack upon each of the said hangers, a transverse shaft rotatably mounted upon and beneath said board, and toothed pinions upon said shaft in mesh respectively with said racks, substantially as set forth.

6. The combination with an approximately rectangular board having a gradu-

ated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, and means operatively connected with the lower part of said bolt for tightening and releasing the same, substantially as set forth.

7. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board having a groove in its under side, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board having its head in the groove in said gage, a plate secured to the bottom side of said gage having a slot therein fitted loosely to the shank of said bolt, means operatively connected with said bolt for tightening its head against said plate, and means for releasing said bolt, substantially as set forth.

8. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, a spring set and adjusted to exert an upward pressure upon said bolt, and means operatively connected with said bolt for tightening its head against said gage, substantially as set forth.

9. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting said gage lengthwise of said board, an upright bolt loosely fitted in said board with its head adapted to engage the said gage, a hand-lever loosely fulcrumed upon the lower part of said bolt, and a plate secured underneath said board provided with surfaces adapted to be engaged by said hand-lever to tighten said bolt, substantially as set forth.

10. The combination with an approximately rectangular board having a graduated scale longitudinally disposed upon its forward portion and upright guides corresponding to said scale upon its rearward portion, of a slidable gage extending transversely across said board, means for shifting

said gage lengthwise of said board, an up-
right bolt loosely fitted in said board with its
head adapted to engage the said gage, a hand-
lever loosely fulcrumed upon the lower part
5 of said bolt, an extension of said lever beyond
said bolt, and inclined surfaces secured un-
derneath said board upon opposite sides of
said bolt adapted respectively to be engaged
by said lever and its extension to tighten
10 said bolt, substantially as set forth.

11. The combination with a plane-sur-
faced and approximately rectangular board,
a slidable gage thereon, and a longitudinally-
disposed graduated scale upon the forward
15 portion of said board, of an extension hinged
to the rearward side of said board, means for
normally supporting said extension level
with said board, and a longitudinal row of
guides projecting above the surface of said
20 extension, said guides being in correspond-
ence with the graduations of said scale, sub-
stantially as set forth.

12. The combination with a plane-sur-
faced and approximately rectangular board,
a slidable gage thereon, and a graduated 25
scale-rule fitted in a longitudinal groove in
the forward portion of said board, of an ex-
tension hinged to the rearward side of said
board, means for normally supporting said
extension level with said board, a longitu- 30
dinal row of guides projecting above the sur-
face of said extension and being in corre-
spondence with the graduations of said scale,
and a strip sunk in a groove extending trans-
versely of said board, substantially as set 35
forth.

In testimony whereof I affix my signature,
in the presence of two subscribing witnesses,
at Cleveland, Ohio, this 21st day of March,
1906.

PETER J. BEHRINGER.

Witnesses:

GEO. G. LANGIN,
F. W. LANGIN.