

No. 675,022.

Patented May 28, 1901.

J. R. SMITH.  
MITER BOX.

(Application filed Aug. 27, 1900.)

(No Model.)

2 Sheets—Sheet 1.

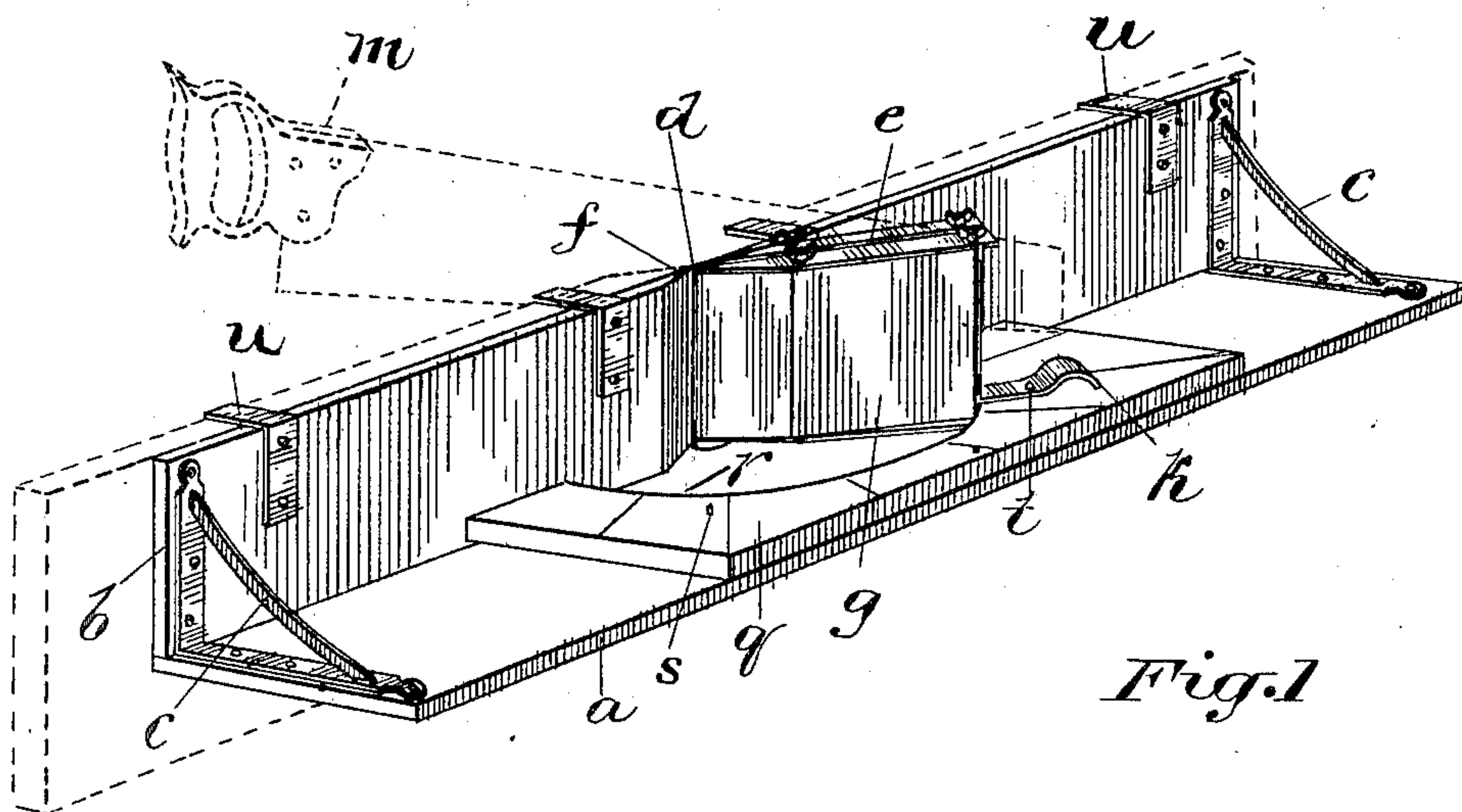


Fig. 1

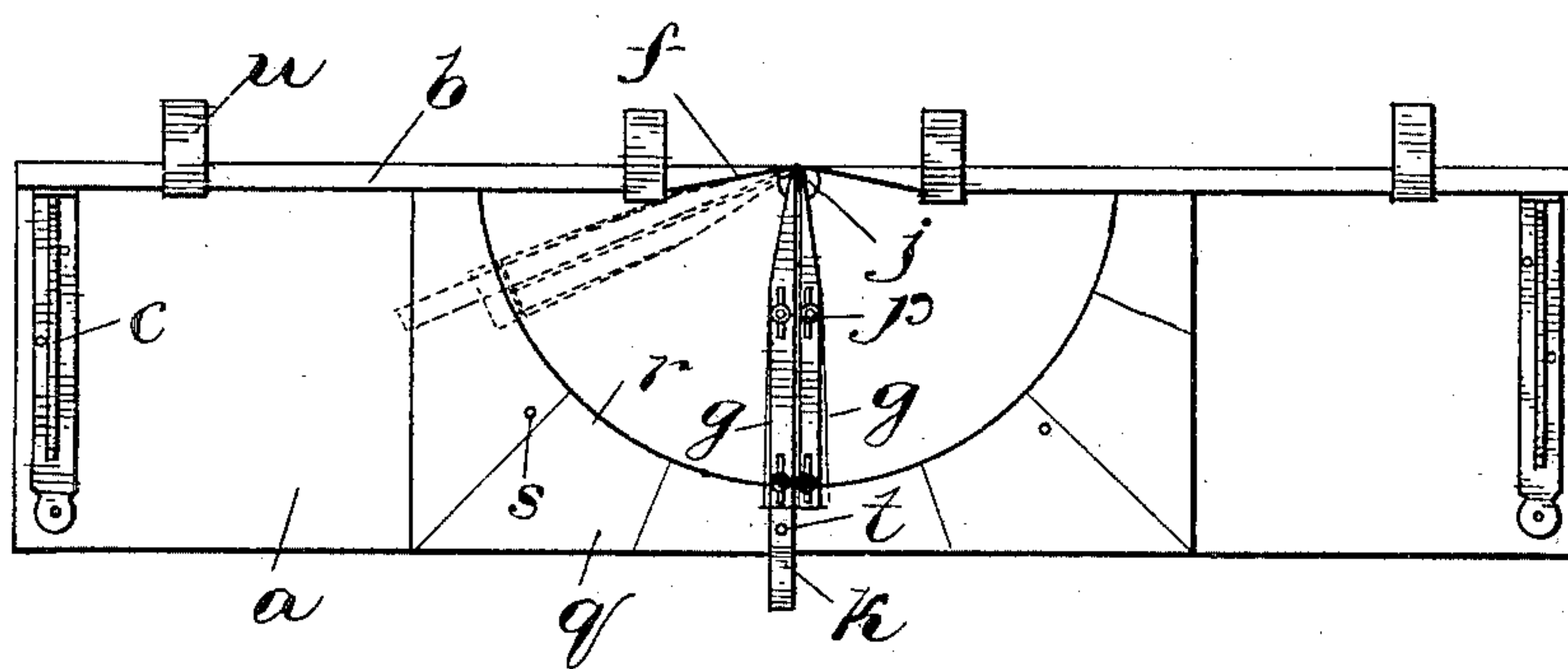


Fig. 3

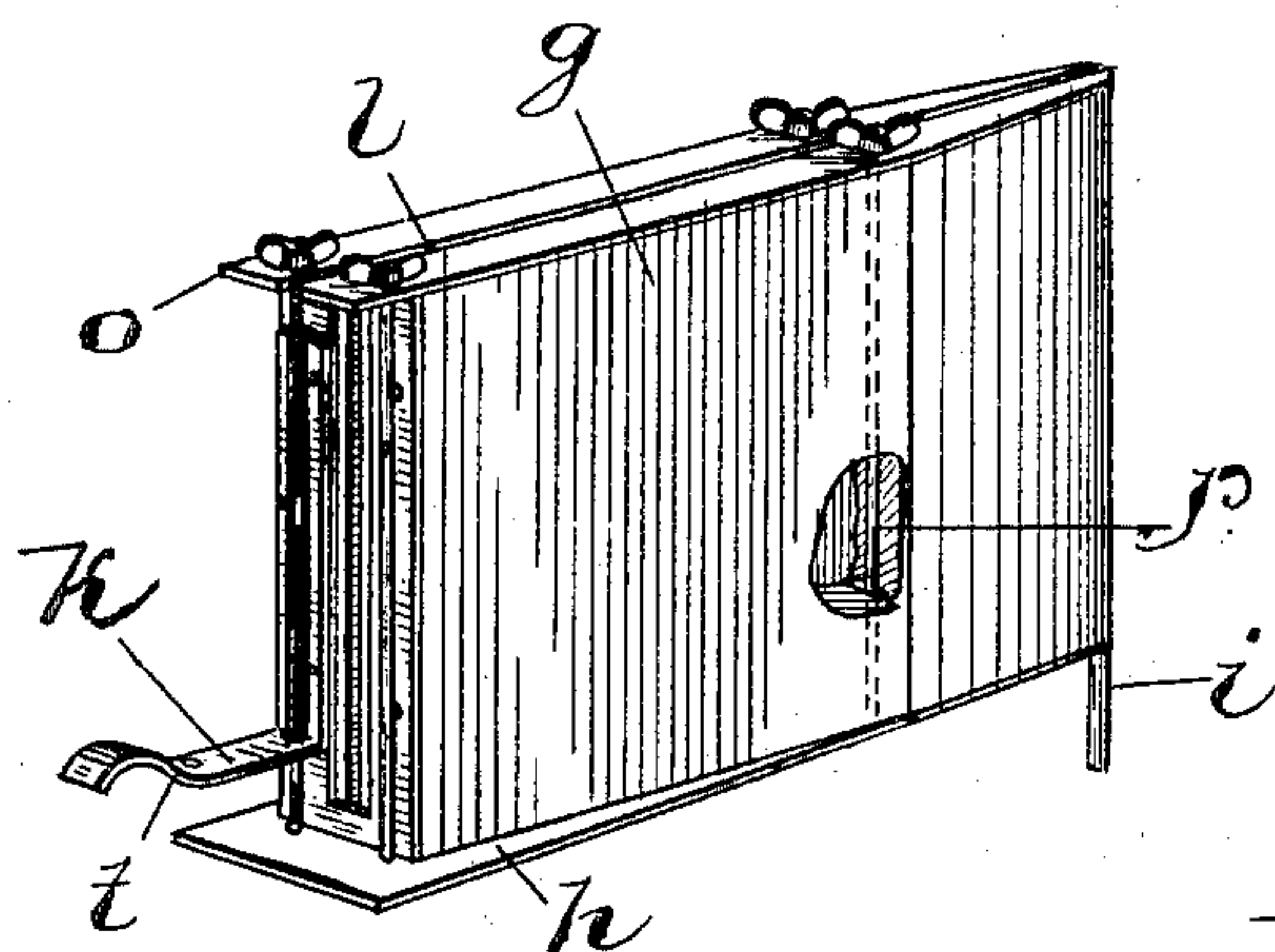


Fig. 4

Witnesses

F. Brack

J. E. Danning

Inventor

J. R. Smith  
by C. A. Smith  
his attorney

No. 675,022.

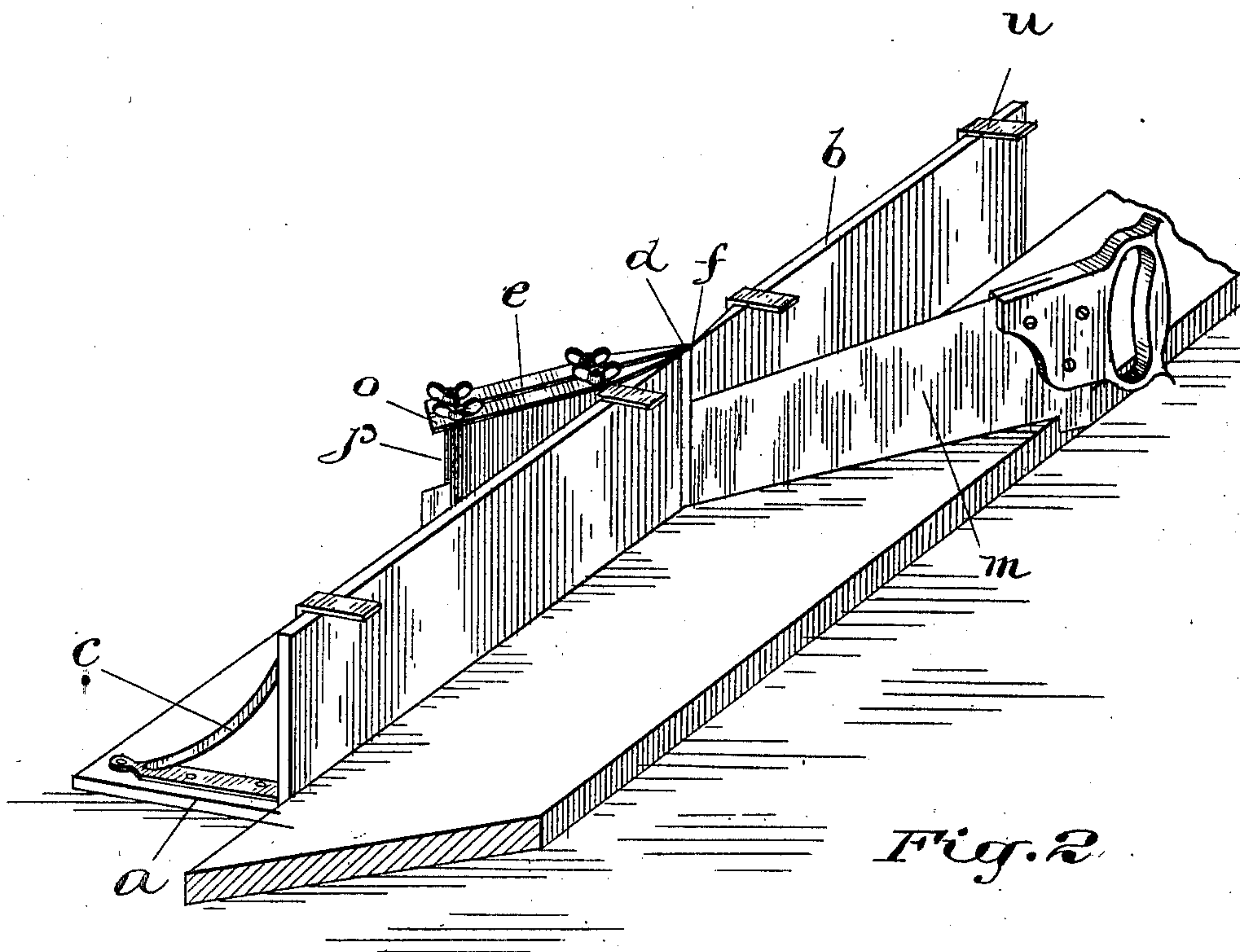
Patented May 28, 1901.

J. R. SMITH.  
MITER BOX.

(Application filed Aug. 27, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

F. Brock

J. E. Brown

Inventor

J. R. Smith  
by C. H. Smith  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN ROBERT SMITH, OF TORONTO, CANADA.

## MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 675,022, dated May 28, 1901.

Application filed August 27, 1900. Serial No. 28,230. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ROBERT SMITH, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Carpenters' Miter-Boxes; and I hereby declare that the following is a full, clear, and exact description of the same.

In mitering a board or molding for the purpose of making a joint it is necessary to evenly cut the end to the desired angle in order that when the ends of two pieces are matched or united the joint will be perfectly flush.

This invention relates to a miter-box by means of which the ends of a board or molding of any width or thickness and in any position—that is, either vertical, horizontal, or oblique—can be cut to any predetermined angle in a simple and convenient manner; and the invention consists, essentially, of a miter-box embracing in its construction a base, a side at a right angle to the base, a vertical slot formed in the middle of the side, a saw-guide pivoted to the base, a longitudinal slot formed in the saw-guide, opposed to the vertical slot in the side, a pointer for the saw-guide, a gage connected to the base contiguous to the saw-guide, provided with a series of stops to be engaged by the pointer, braces connected to the base and side to hold them relatively at a right angle to each other, and hangers connected to the side, as hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the apparatus, showing the mode of using it. Fig. 2 is a perspective view looking at it from the obverse side, showing the relative position, construction, and arrangement of the various parts. Fig. 3 is a plan view of the apparatus. Fig. 4 is a perspective view of the saw-guide.

Like letters of reference refer to like parts throughout the specification and drawings.

The miter-box consists of a base *a*, of any suitable length, width, or thickness, and a side *b*, corresponding to the base *a* and arranged at a right angle thereto. Connected to the ends of the base *a* and side *b* are braces or end plates *c* of sufficient strength and rigidity to hold the base and side relatively

at a right angle to each other. The brace *c* may consist of a solid plate of metal, or it may consist of an open-work bracket of sufficient strength and rigidity to hold the base and side firmly at a right angle to each other.

Formed in the middle of the side *b* is a vertical slot *d*, and pivoted to the base *a*, opposite the slot *d*, is a saw-guide *e*. The inner face of the side *b* is provided with a beveled vertical recess *f* to permit of the oscillation of the tapered end of the saw-guide *e*. The saw-guide *e* consists of two vertical plates *g*, of wood or other suitable material, mounted on a metal strap *h*, provided with a downwardly-directed pivot-pin *i* at its inner end, which pivot-pin *i* is adapted to enter a socket *j*, formed in the base *a* opposite the middle of the lower end of the vertical slot *d*. The strap *h* projects beyond the plates *g* and terminates in a handle *k*, which serves as a pointer for the saw-guide *e*. Between the plates *g* is a space *l*, which serves as a slot for the movement of the saw *m*. The plates *g* are loosely mounted on the top of the strap *h* to permit of their lateral and longitudinal adjustment, and extending along the top of each of the plates *g* is a strap *o*. Connecting the straps *o* with the strap *h* are bolts *p*, there being two bolts for each plate *g*, one bolt being located at the outer end of the plate and the other contained in a vertical recess in the outer side of the plate contiguous to the inner end. By means of the straps and bolts it is possible to adjust the plates to true the slot for the handsaw, which slot is practically opposed to the middle of the slot *d*.

Connected to the top of the base *a* is a gage *q*, having in its inner face a circular recess *r*, the center of which is the pivot-pin *i* and the radius of which is the saw-guide *e*. The top of the gage *q* is provided with a series of upwardly-directed stops *s* to engage the hole *t* in the pointer *k* in order that the saw-guide can be locked in any adjusted position. The stops *s* are concentric with the recess *r* and indicate the various angles for the saw-guide. By means of the gage *q* and stops *s* the saw-guide *e* can be set at any predetermined angle to the side *b* in order that a miter corresponding to the angle of the set of the saw-guide can be cut in the board or molding. To protect the saw-teeth from contact with the



strap *h*, the gage *g* is elevated above the top of the base *a* and is made of such material as will not injure the teeth of the saw in the event of their coming in contact with it.

5 In using the miter-box the material operated upon can be laid flat, as shown in Fig. 2 of the drawings, or it can be placed vertically against the side *b*, as shown in Fig. 1. In the use of the apparatus the saw-guide is set at  
10 the required angle and the handsaw is placed in the slot of the saw-guide, so that when moved it will cut a miter at a corresponding angle in the board or molding. When it is intended to use the miter-box for cutting base-  
15 boards and other material of a considerable depth, it is found advisable to provide it with hangers *u*, which are connected to the inner face of the side *b* and engage the top of the material to be operated upon. In this case  
20 the hangers support the miter-box and hold it firmly against the material while it is being cut.

A miter-box constructed on this principle can be manufactured at a comparatively  
25 small cost, besides being easily portable and occupying but a small space in a tool-bag or tool-chest. In addition to these advantages it is possible to use any carpenter's handsaw for the purpose of cutting a miter, which ob-  
30 viates the necessity of the mechanic purchasing any particular style of saw to use with it. In conclusion it might be said that it is possible to cut a miter at any desired angle in the deepest board or smallest molding.

35 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A carpenter's miter-box embracing in its construction a base, a side rigidly held at a  
40 right angle to the base, a vertical slot in the side, a beveled recess in the inner face of the side, contiguous to the slot, in combination with a saw-guide embracing in its construction an oscillating strap provided at its inner  
45 end with a pivot-pin to enter a socket in the base opposed to the middle of the vertical slot, two vertical plates mounted on the oscillating strap, having a saw-slot between them, straps located along the top of the plates,  
50 bolts passing through the upper and lower straps adjustably and rigidly holding the ver-

tical plates in position, a pointer for the saw-guide, a gage mounted on the base provided with a series of upwardly-directed stops to engage the pointer, substantially as specified. 55

2. A carpenter's miter-box embracing in its construction a base, a side held rigidly at a right angle to the base, a vertical slot in the side, a vertical recess in the inner face of the side contiguous to the slot, in combination  
60 with a saw-guide embracing in its construction an oscillating strap provided at its inner end with a pivot-pin to enter a socket in the base opposed to the middle of the vertical slot, two vertical plates mounted on the oscillating strap, having a saw-slot between them,  
65 straps located along the top of the plates, bolts passing through the upper and lower straps adjustably and rigidly holding the vertical plates in position, the oscillating strap  
70 projecting beyond the vertical plates and serving as a pointer, and a gage mounted on the base provided with a series of upwardly-directed stops to engage the pointer, substantially as specified. 75

3. A carpenter's miter-box embracing in its construction a base, a side held rigidly at a right angle to the base, a vertical slot in the side, a vertical recess in the inner face of the side contiguous to the slot, in combination  
80 with a saw-guide embracing in its construction an oscillating strap provided at its inner end with a pivot-pin to enter a socket in the base opposed to the middle of the vertical slot, two vertical plates mounted on the oscillating strap having a saw-slot between them,  
85 straps located along the top of the plates, bolts passing through the upper and lower straps adjustably and rigidly holding the vertical plates in position, the oscillating strap  
90 projecting beyond the vertical plates and serving as a pointer, and a gage mounted on the base provided with a series of upwardly-directed stops to engage the pointer, and hangers connected to the side to engage the mate-  
95 rial, substantially as specified.

Toronto, July 10, 1900.

JOHN ROBERT SMITH.

In presence of—

C. H. RICHES,  
F. BROCK.