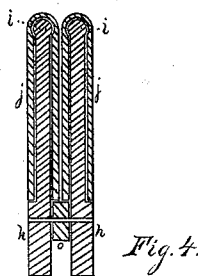
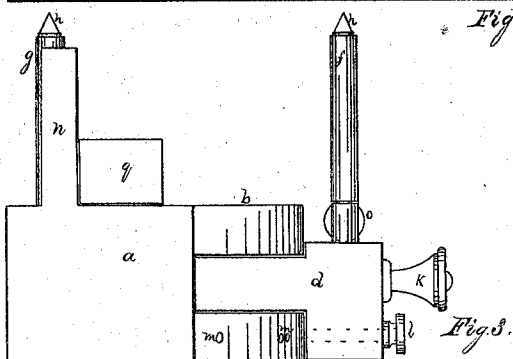
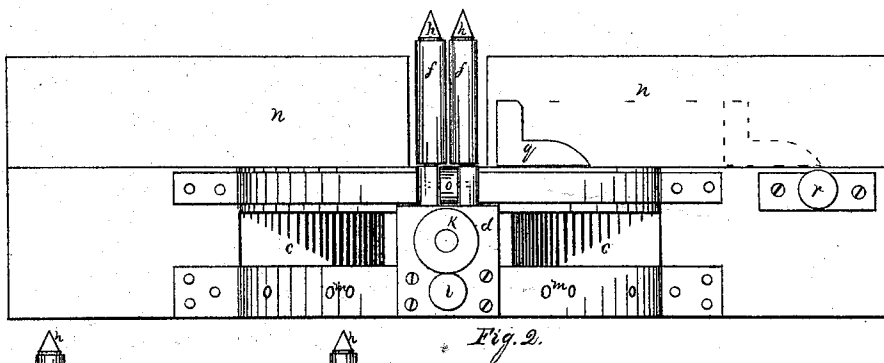
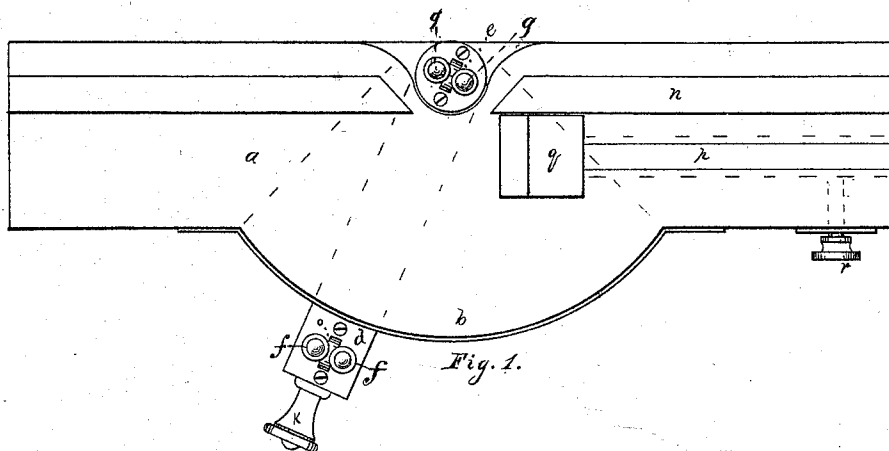


G. M. STEVENS.
Miter-Boxes.

No. 140,853.

Patented July 15, 1873.



Witnesses:
Nathan Wood
H. C. Robinson

Inventor:
Grenville M. Stevens.
by Scribner & Jordan.
Atty's.

UNITED STATES PATENT OFFICE.

GRENVILLE M. STEVENS, OF PORTLAND, MAINE.

IMPROVEMENT IN MITER-BOXES.

Specification forming part of Letters Patent No. **140,853**, dated July 15, 1873; application filed March 5, 1873.

To all whom it may concern:

Be it known that I, GRENVILLE M. STEVENS, of Portland, in the county of Cumberland and State of Maine, have invented a new and useful Improvement in Miter-Boxes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, which is hereby made a part of this specification, in which—

Figure 1 is a top-plan view of my device. Fig. 2 is a front vertical elevation of the same. Fig. 3 is an end view. Fig. 4 is a view in detail of the saw-guides.

Same letters show like parts.

The object of my invention is to improve upon the devices now used for mitering or cutting lumber and other similar materials at any desired angle.

The ordinary miter-box, constructed of strips of board or plank nailed together in the form of a box without ends, is not only very clumsy and inaccurate, but, as it requires to be renewed frequently, is quite expensive. I am aware that different devices have been patented intended for this purpose; but so far as I am informed, none of them have been free from objection, from various causes, and these objections my invention is designed to obviate.

My invention consists of guides for a saw, or a similar cutting instrument, used in connection with certain devices hereinafter described for indicating the position of the material to be cut, and for indicating its length and the angle at which it is to be divided.

At *a*, Fig. 1, is shown the frame or stock of my device. The ends are made rectangular, as shown, and the semicircular part *b*, Fig. 1, contains the slot *c*, through which passes the lever *d*. This lever *d* is pivoted at *e*, and has rigidly affixed to its upper side the parallel guides *f f* and *g g*. The standards *h* of the guides *f* and *g* are made of metal, covered with freely-rotating sleeves of caoutchouc or its equivalent, these sleeves being held in place by a screw-cap upon an extension of the standard, as described in the specification attached to Letters Patent issued to me for an improvement in mitering-machines dated May 7, 1872, No. 126,588; or the standard *h* may have the ball *i* made upon its upper end, and

the rubber sleeves *j* being cast upon this standard and around the ball *i*, so that no part of the metal composing the standard *h* is exposed to be struck by the saw, in removing or replacing the same. The lever *d* extends through the slot *c* and beyond it to the front side of the device, and has the knob *k* for moving the lever, and immediately below the knob *k* the spring-catch *l*, the detent of which fits into any of the perforations *m* in the stock *a* or frame of the device. These perforations should have figures or other suitable indications to show at what angle the saw will run with the guide *n* when the lever is moved, so that the detent of the spring-catch is forced into any of the perforations. At the lower end of, and between the guides *f f* and *g g*, are placed the rotating rubber disks *o o*, and these disks *o o* are so arranged as to their height that the teeth of the saw strike upon the disks as soon as it has passed through the material which is mitered or divided, and before the saw can reach the stock *a* of the device. They are made rotary, so that the teeth of the saw do not act upon them to their injury, and are consequently very durable. The sliding guide *p* with its stop *q* serves as a guide for the material operated upon, and, by proper marking into feet and inches, is very convenient for measuring its length. The set-screw *r* rigidly fixes it at any desired point.

The operation of my invention is as follows: The lumber or other material to be divided is placed against the front side of the perpendicular part *n* of the stock *a*. If any particular length is desired, that length is ascertained by the sliding guide *p* and stop *q*. The spring-catch *l* then fixes the lever *d* at the point indicated on the arc for the desired angle, and the saw being then placed between the guides *f f* and *g g* the material is cut as desired. When the saw has passed down through and made the desired division or cut, the teeth of the saw strike upon the disks, and are thus prevented from doing any injury to the machine.

For doing this work, any ordinary saw suitable for mitering may be used, the smoothness of the joint, of course, being dependent upon the fineness of the saw.

The form of the spring-catch and detent

used for fixing the position of the lever is not confined to the special form shown, but any most convenient device for this purpose may be used, as circumstances may indicate, as, for instance, when any change of form is made in the lever, or for any other reason.

I do not claim these devices herein described, except the disks *o o*, as being new, except in the combination as herein set forth; and I do not claim as new the standards *h h* and their elastic rotary sleeves *j*, they being described in the former patent to me, which is referred to herein. I claim only the spherical head, said head having a greater diameter than the standard, and covered by the end of the sleeve, which is made hollow, to receive

the head of the standard, and thus retain the sleeve in place and prevent the saw from striking the metal standard.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the stock *a*, lever *d*, slot *c*, saw-guides *f f* and *g g*, spring-catch *l*, perforations *m m*, perpendicular guide *n*, disks *o o*, guide *p*, and stop *q*, in the manner and for the purposes as set forth.

2. The elastic rotary disks *o o*, when used in the manner and for the purposes as set forth.

GRENVILLE M. STEVENS.

Witnesses:

D. W. SCRIBNER,

F. E. JORDAN.