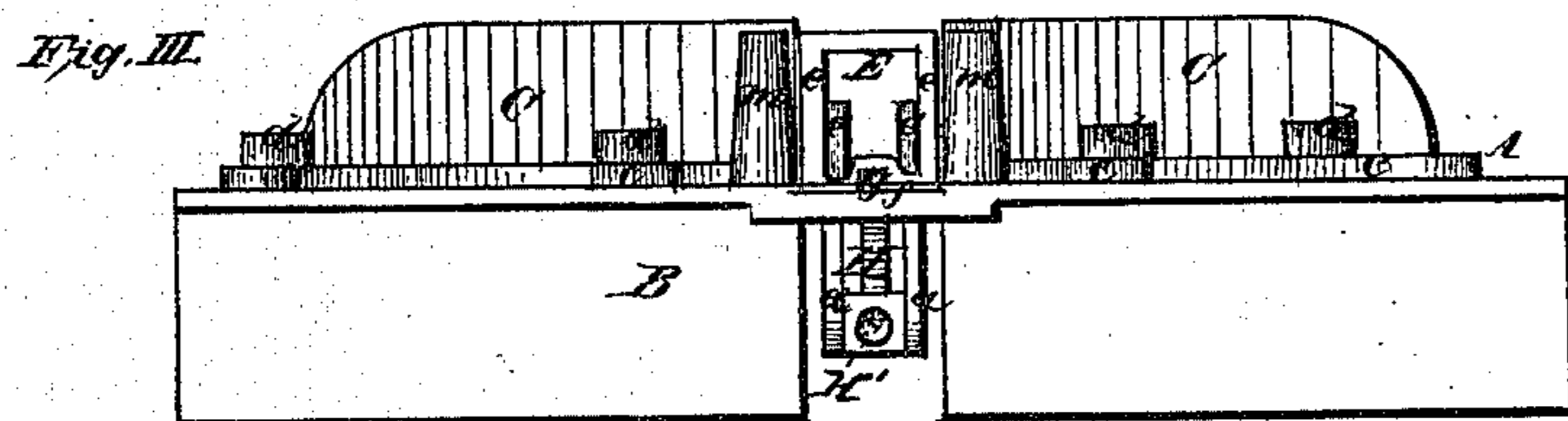
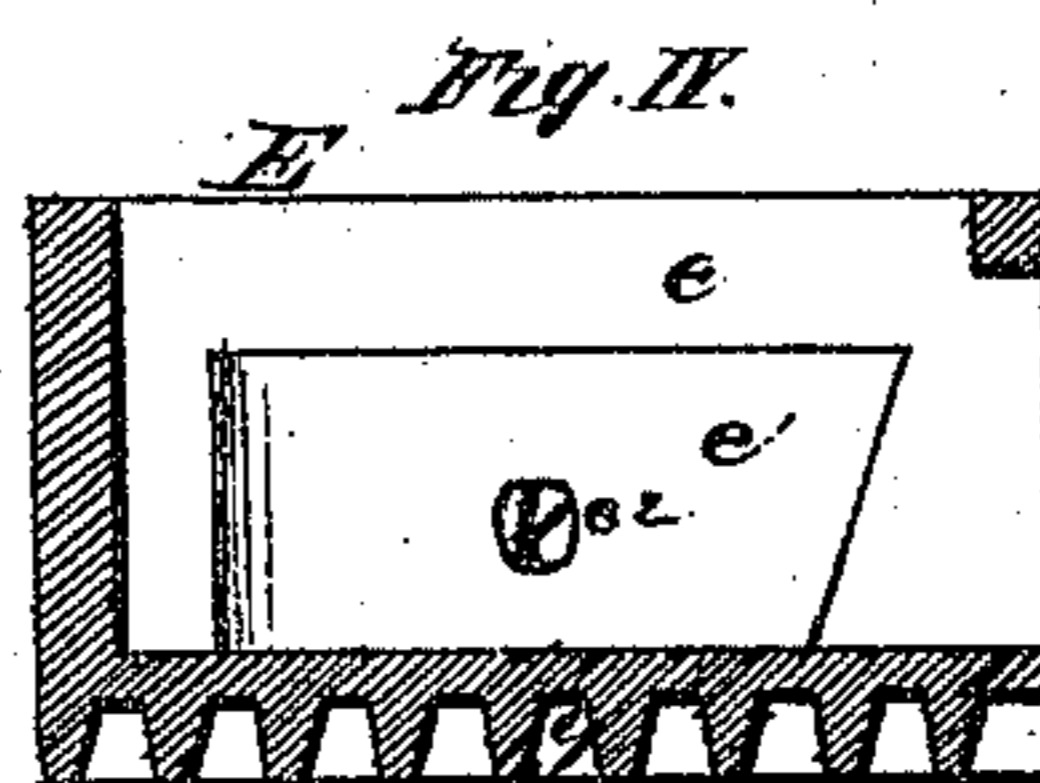
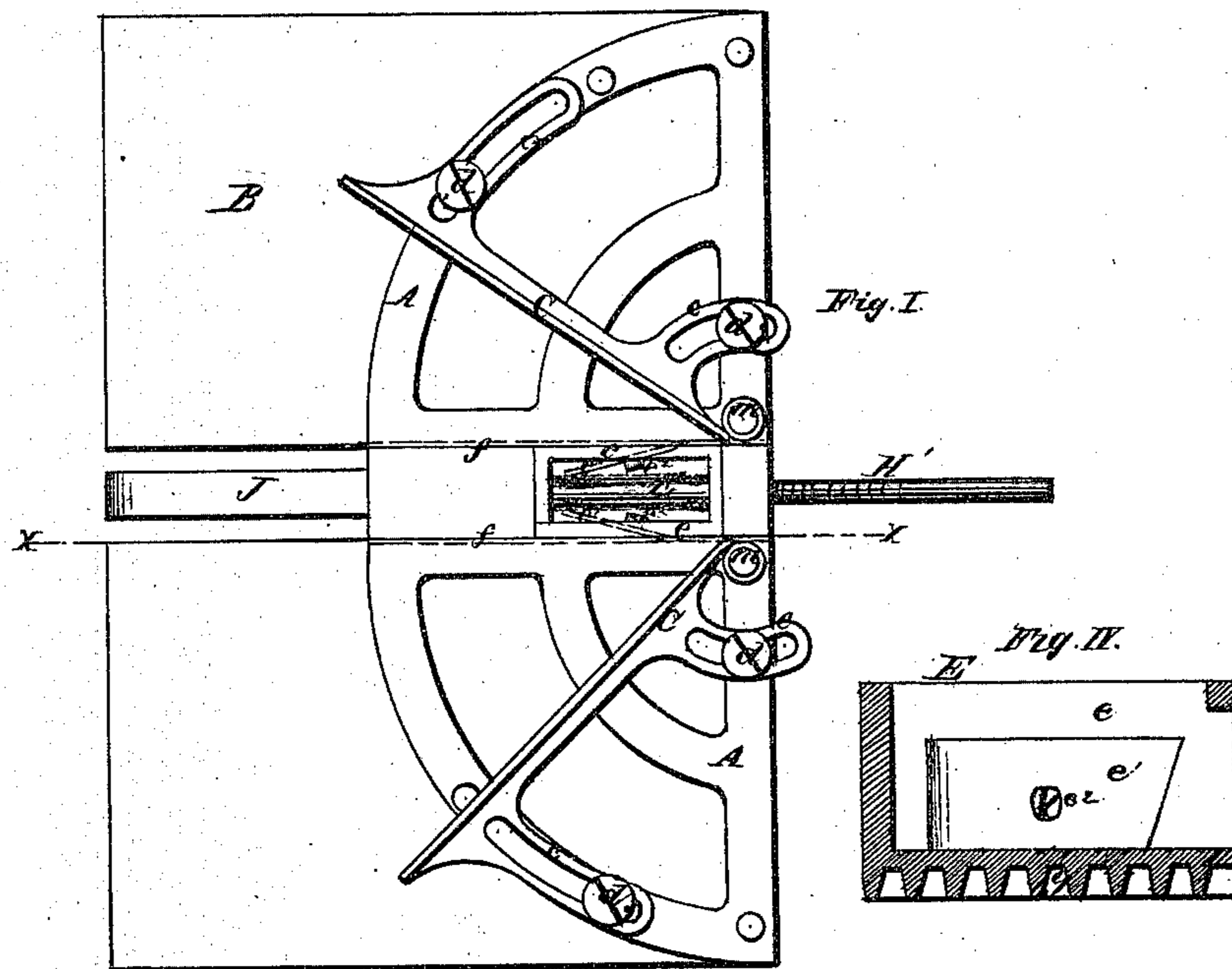


*J. R. Howell,*

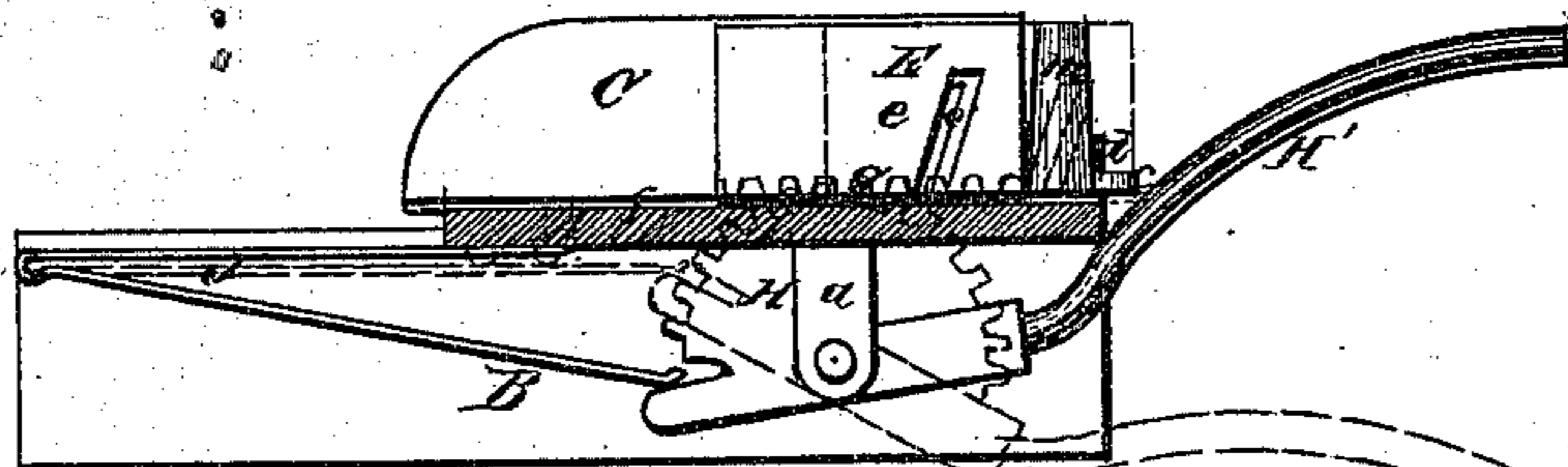
*Miter Box.*

*No. 104,458.*

*Patented June 21, 1870.*



*Fig. II.*



*Jno. J. Bonner*  
*Victor H. Becker* } *Witnesses.*

*J. R. Howell*  
*by Forbush & Heyall* } *Inventor.*

# United States Patent Office.

JAMES R. HOWELL, OF BUFFALO, NEW YORK.\*

Letters Patent No. 104,458, dated June 21, 1870.

## IMPROVEMENT IN MITER-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

I, JAMES R. HOWELL, of the city of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Hand Mitering-Machines, of which the following is a specification.

Mitering-machines, composed of a horizontal bed, with two adjustable rests or guides, and a reciprocating planing-head between, provided with a planing-face on the two sides contiguous to the rests, for chamfering two pieces at the same time, and actuated by a lever-rack and segment arranged above the bed-plate, have been known and used prior to the date of my invention. Such a machine is shown in the patent of Frank A. Howard, dated August 21, 1866.

My invention, which relates to the kind of machine above referred to, consists—

First, in arranging the operating lever and segment under the bed-plate with the lever-handle projecting in front thereof, in connection with a spring for producing the return movement of the lever and segment, whereby the planing-head can be operated with greater ease and facility, and the rack, both from its inverted position and arrangement under the planing-head, is protected from dirt, chips, &c.

Second, in the arrangement, with each of the guides or rests, of a stationary post, projecting upward from the bed, against which the inner end of the former, when adjusted, is rigidly supported.

In the accompanying drawing—

Figure I is a plan of my improved machine;

Figure II is a vertical section in line *z z*, fig. I;

Figure III is a front elevation; and

Figure IV is a central vertical section of the head detached.

Like letters of reference designate like parts in each of the figures.

A is a semicircular bed, preferably of cast-iron, secured to a table, B.

C C are the adjustable guides, secured to the bed by set-screws *d d* passing through the slotted arms *c* of the guides.

E is the planing-head, of the form of a hollow rectangular prism, open at the top and one end, and having its base dovetailed to fit in the way *f* of the bed, in which it reciprocates.

The two opposite faces *e e*, adjacent to the bed, are provided with planing-knives or chisels *e'*, secured in place by a set-screw, *e''*, as shown.

*g* represents the rack, cast or otherwise formed on

the under side of the head, with which engages the segment H, a suitable slot being formed in the bed A for the purpose.

This segment is pivoted between two bearings, *a a*, pendent from the bed A, and has extending therefrom the lever H', by which it is actuated.

J is a spring, attached to the under side of the bed, with its free end engaging in a notch in the end of the segment, as clearly shown in fig. II.

*m m* are the two posts or supports, projecting upward from the bed, and arranged at the converging ends of the guides C, so as to steady and more firmly support the same against the pressure of the wood which rests against them while being operated on by the planing-head.

Arranging the rack and segment under the bed enables the former to be cast on the under side of the head E, whereas, if arranged above the bed, it would require to be formed as an extension thereof, involving an unnecessary waste of metal.

My improved arrangement disposes the parts where they are out of the way, and also prevents the dirt and shavings from collecting thereon and obstructing the movement of the segment, as hereinbefore stated. It brings the lever in a position for being much more conveniently actuated, and enables a reacting spring to be employed, to still further economize in the application of the power required to operate the machine.

By properly adjusting the guides or rests, it is evident that pieces of wood can be mitered, so that the apex formed by the united ends will be of any angle required.

I am aware that the combination of a return-spring with a lever-segment is not new, being shown in the patent of A. Thompson, dated April 25, 1843. I, therefore, do not claim such combination; but

What I claim as my invention is—

1. The arrangement, as herein described and shown, of the bed A, planing-head E *g*, adjustable guides C C, lever-segment H H', and return-spring J.

2. The arrangement, with the reciprocating-head E and adjustable guides C, of the rigid posts *m m*, in the manner and for the purpose hereinbefore set forth.

J. R. HOWELL.

Witnesses:

JAY HYATT,

JNO. J. BONNER.

Assignor to Benjamin A. Stevens.