

A. Schollars.

Stair Rail Appar.

N^o 97,707.

Patented Dec. 7, 1869.

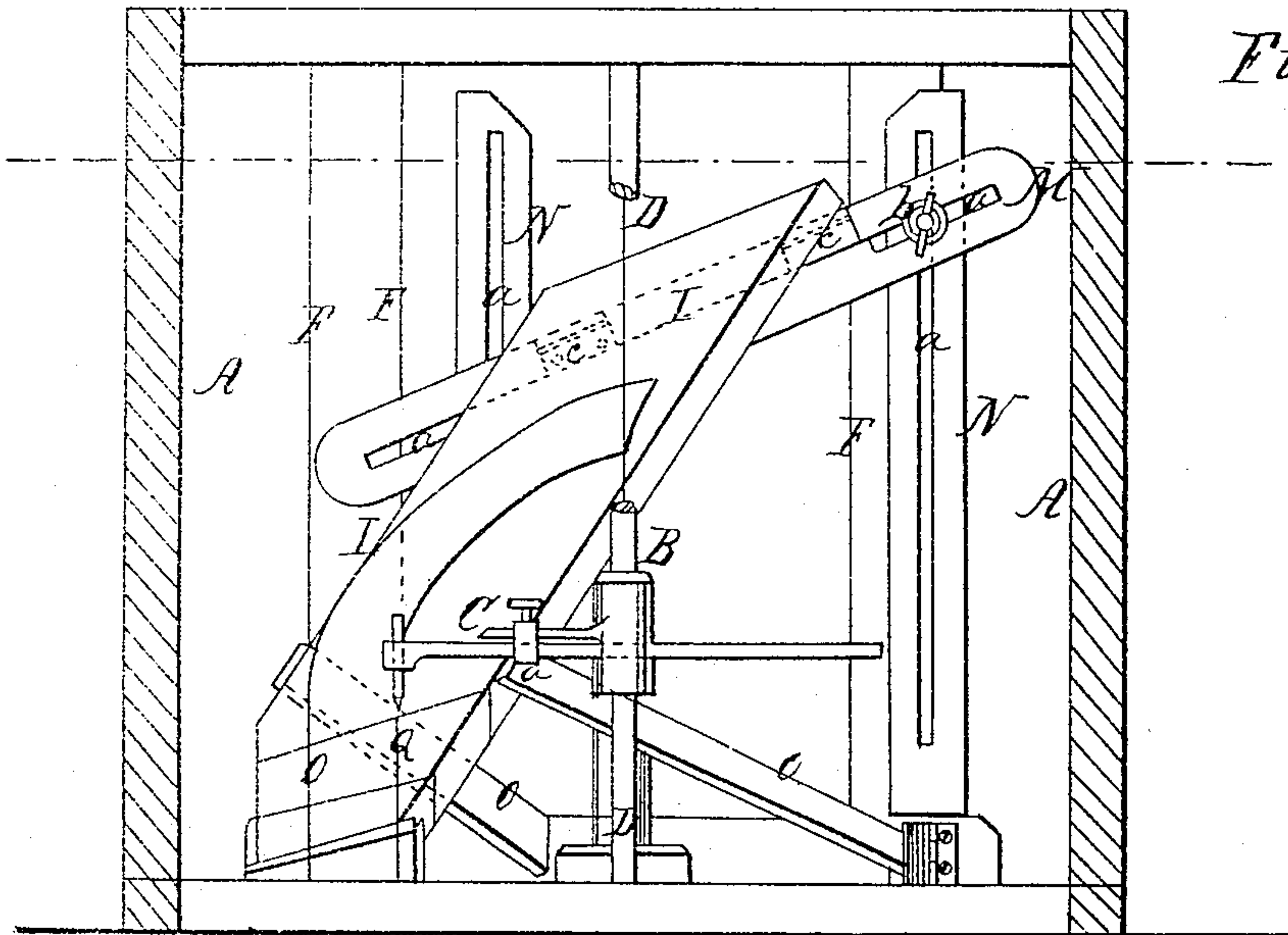


Fig. 1

Fig. 2

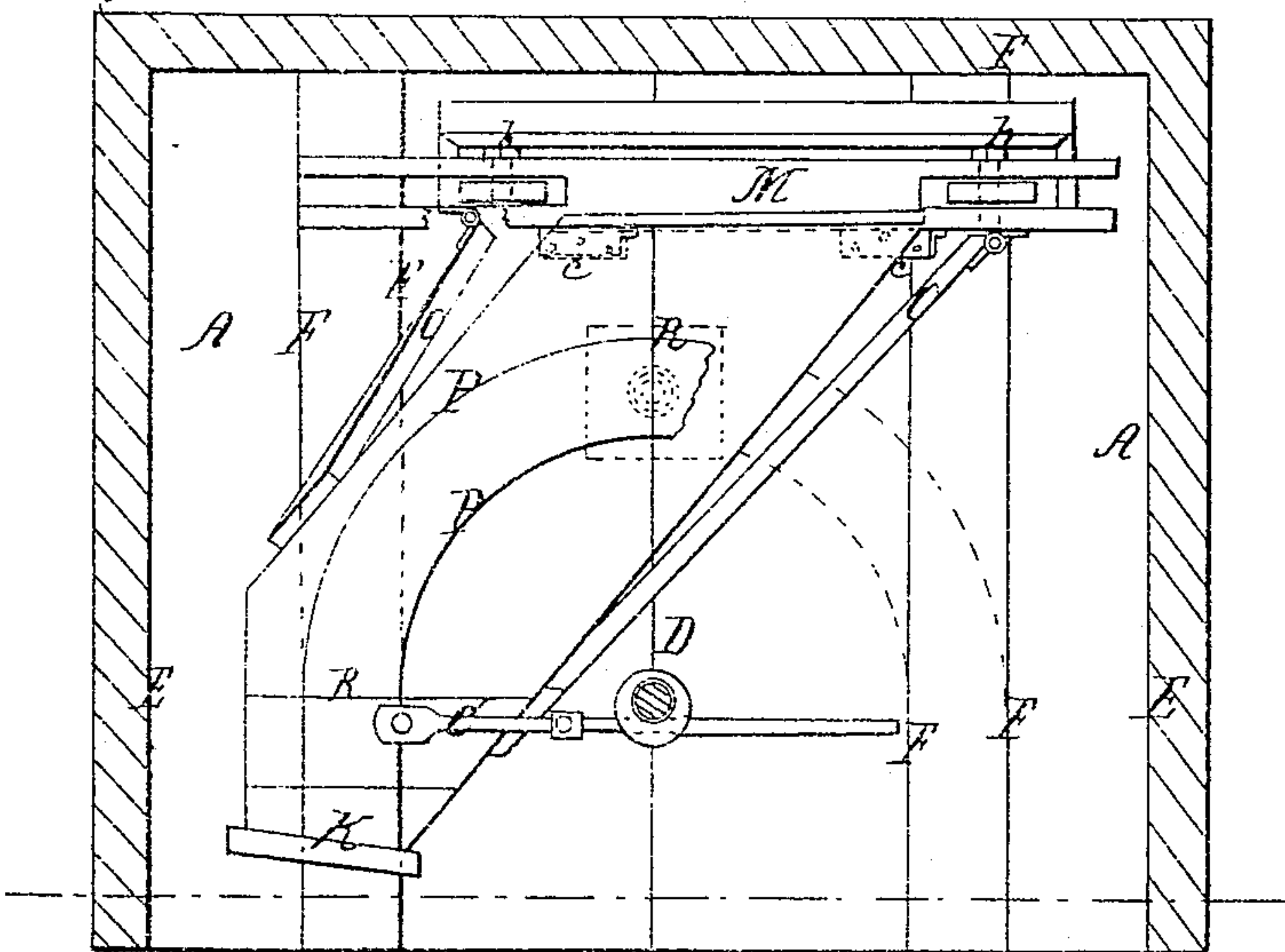
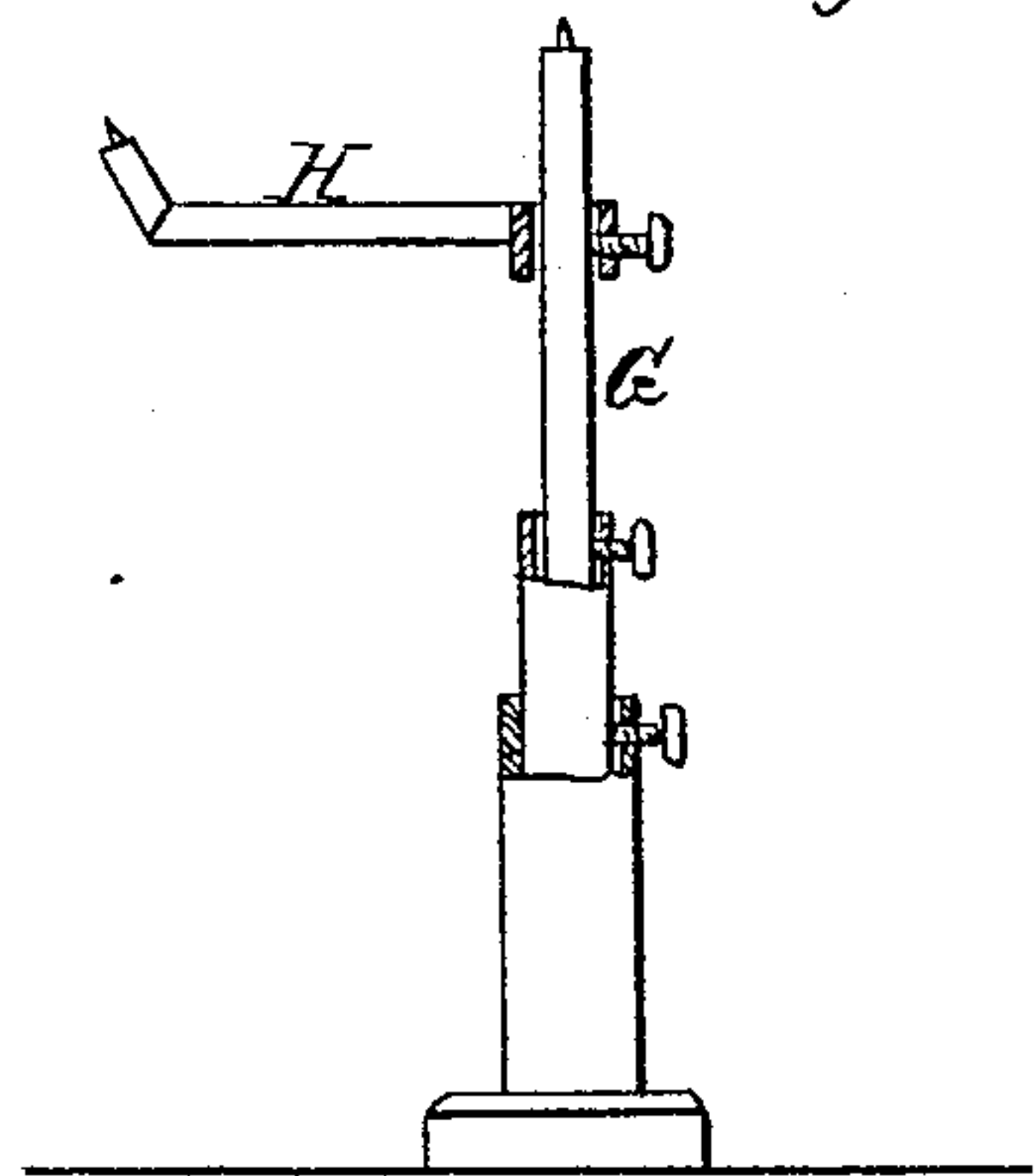


Fig. 3



Witnesses

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ANDREW SCHOLLARS, OF LEAVENWORTH, KANSAS.

Letters Patent No. 97,707, dated December 7, 1869.

IMPROVEMENT IN APPARATUS FOR LAYING OUT STAIR-RAILS.

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

To all whom it may concern :

Be it known that I, ANDREW SCHOLLARS, of the city of Leavenworth, in the county of Leavenworth, and State of Kansas, have invented a new and improved Apparatus for Laying Out Stair-Rails; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is an elevation;

Figure 2, a plan or top view of my invention; and

Figure 3, a part in detail, to be more particularly referred to hereafter.

The nature of my invention consists in the construction and use of an apparatus for describing, upon a plank or board, the lines necessary to guide the artisan in cutting out a hand-rail for stairways, and similar curved bodies, without first having to geometrically project such lines; and for holding the board or plank securely while the operation of cutting is performed.

By my invention, any mechanic of ordinary intelligence, but without any knowledge of drawing or projection, will be enabled to do what otherwise would require deep study, and the skill acquired by long experience or practice.

In the drawing—

A A are the sides or walls of a box or room.

On the floor, side-walls, and ceiling, if necessary, lines shown in red are drawn to represent the planes within which the object to be produced will exist after being developed.

On the floor, at the intersection of the lines representing the planes which cross each other at right angles, say at the centre of a newel-space, a vertical cylindrical post or shaft, D, is erected, which does not revolve, and is also marked from top to bottom with lines indicating the same planes.

Loose, on the shaft D, is a sleeve, B, free to revolve and slide vertically.

The sleeve B carries a sweeping arm, C, having one end fitted with a pencil, or other marking-device, and made to be adjusted and set at any distance from the axis of the post D.

G, fig. 3, is a staff or post, standing with its base firm on the floor at a convenient distance from the post D on one of the central lines of the newel-space, as shown by dotted lines in fig. 2.

The head of this post has a sharp point, and it is adjustable vertically by slides and set-screws.

An arm, H, having a pointed extremity, is also made adjustable on the post G, so that the line between the two points of G and H may be inclined at

any angle from the horizon, and be at any angle with the plane passing through the posts D and G.

N N are two vertical bars or posts, across which extends the cross-bar M, which is secured by the slots and set-screws *a b* to the posts N, at any required height, and at any required deviation from a horizontal position.

O O are braces, each hinged by one end to the foot of the post N, and free at the other end to be attached to, and securely hold the plank to be operated upon.

K is a stop attached to the floor in such a manner and position as to hold the end of the board or plank to be cut from slipping on the floor.

On the cross-bar M are fixed two hinged plates, *c c*, shown in plan, fig. 2, by dotted lines.

The office of these plates is to hold the head of the plank down to the bar M, by being screwed to it, and thus prevent it from flying up, or being pulled up by the action of the tool in cutting.

The plates being hinged, allow the plank and bar M to lie in any two different planes, while the plates themselves will lie fair against both, and when screwed fast, perform their office effectually.

The operation of my invention is as follows:

The plank is set with its foot against the stop K, and raised at the other end until it is at the same angle with the floor that the stairs will form.

The post G, and arm H, are now adjusted against the under side, in such a manner as to cant the plank, and give it as much inclination, in a transverse direction, as is necessary to give the "spring" of the hand-rail, and to enable the workman to make the most of his material.

The bar M is now brought up to the head of the plank, and is secured to the uprights N N, in a position which will bring its upper edge in contact with the lower side of the plank for its whole width, when the loose halves of the hinged plates *c c* will be screwed to the plank, and hold it securely.

The free ends of the braces O O are next attached to the plank, near its lower end, and the plank is ready for scribing.

Lines are drawn on the lower end of the plank, in prolongation of those on the walls and floor, as hereinbefore mentioned, which lines, as shown in the drawing, are the limits of the rail to be cut.

The sweep C is adjusted to these lines, and is applied to the surface of the board or plank, on which it rises, as it swings in a circle around the shaft D, leaving, on the surface of the board, curved lines, of the form requisite to guide the workman in cutting out the rail.

This is done while the plank is still rigidly held by the braces and cross-bar, in order that the workman

may be assisted, by the lines on the wall and floor, to keep his saw in a perpendicular plane, and be otherwise enabled to perform his work with accuracy and dispatch.

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

1. The supplementary post G, and arm H, with their points made adjustable in any vertical and horizontal, or inclined plane, substantially as described, for the purpose of supporting the board, (or plank to be cut,) in an inclined position, as specified.

2. The uprights N, and their braces O, and the cross-bar M, with its hinged plates *c c*, arranged substantially as described, for the purpose of securely holding the head of the plank while describing and cutting the required curved piece.

ANDREW SCHOLLARS.

Witnesses:

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