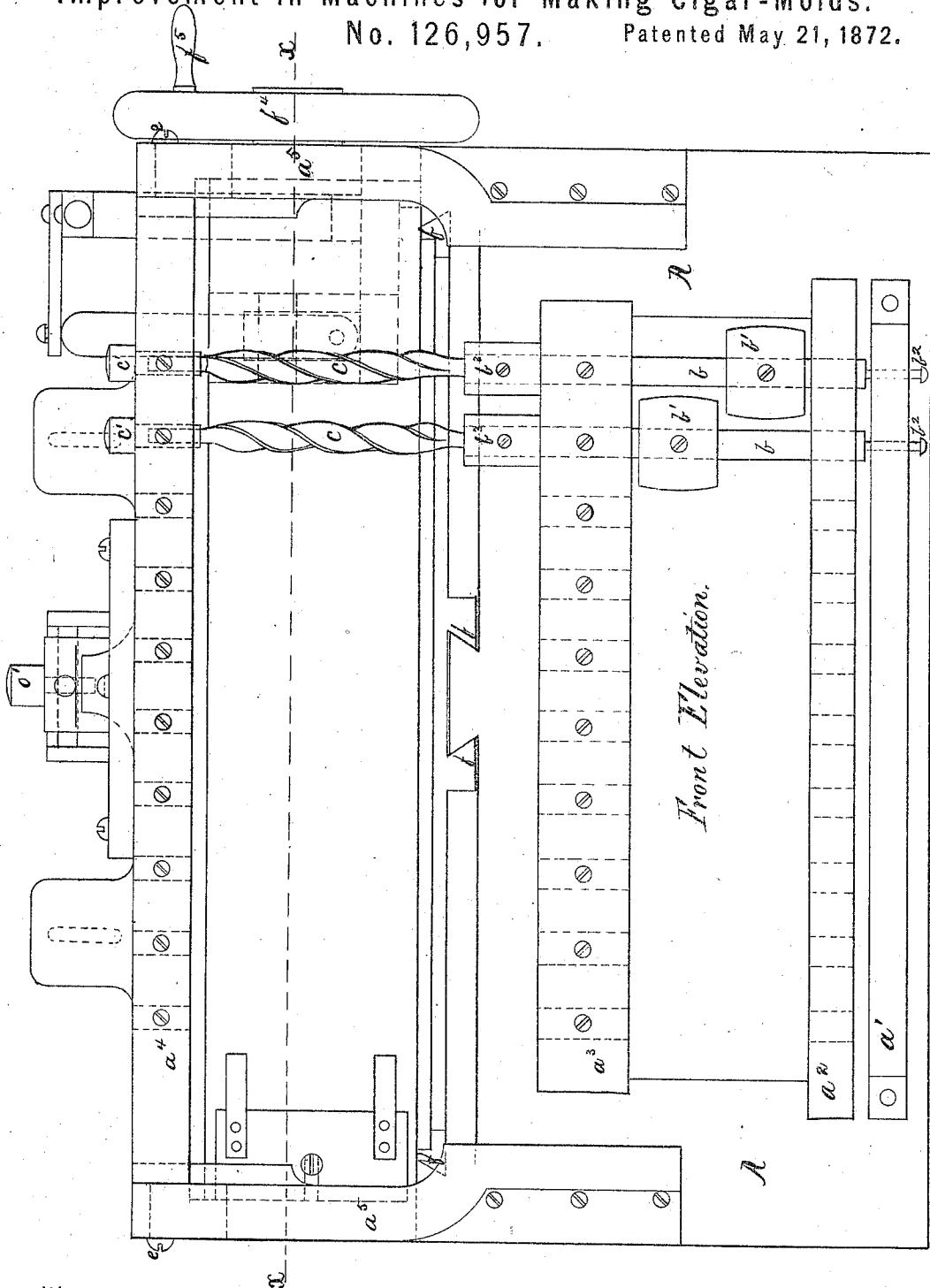


M. H. HEIMERDINGER.

Improvement in Machines for Making Cigar-Molds.

No. 126,957.

Patented May 21, 1872.



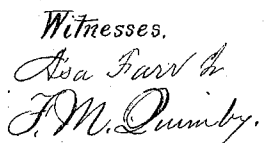
Witnesses.

Asa Farn B.
J. M. Dumby.

Inventor.

Moritz H. Heimerdinger

Patented May 21, 1872.



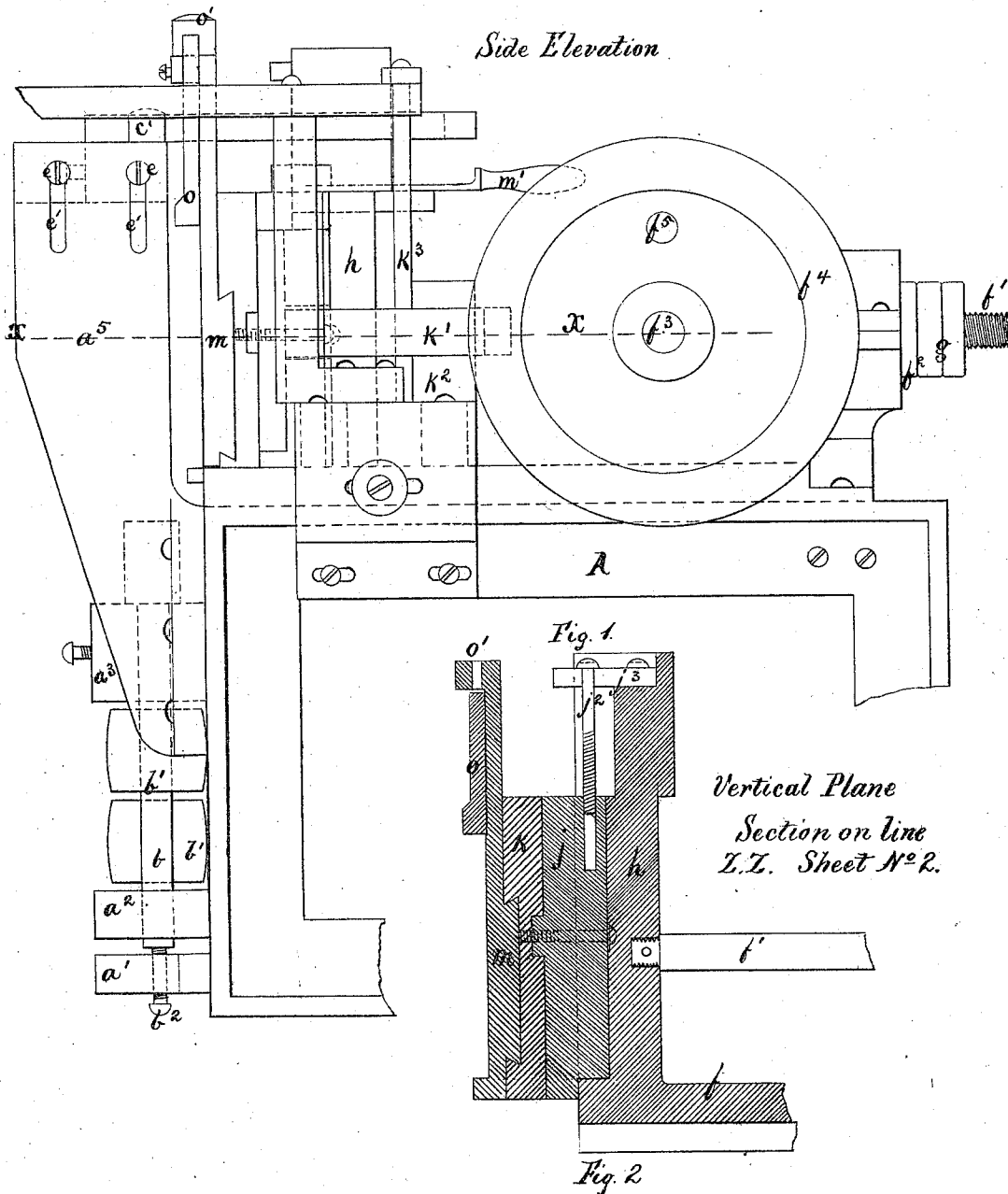
Moritz H. Linderding

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Witnesses.
Asa Parv
F. M. Quincy.

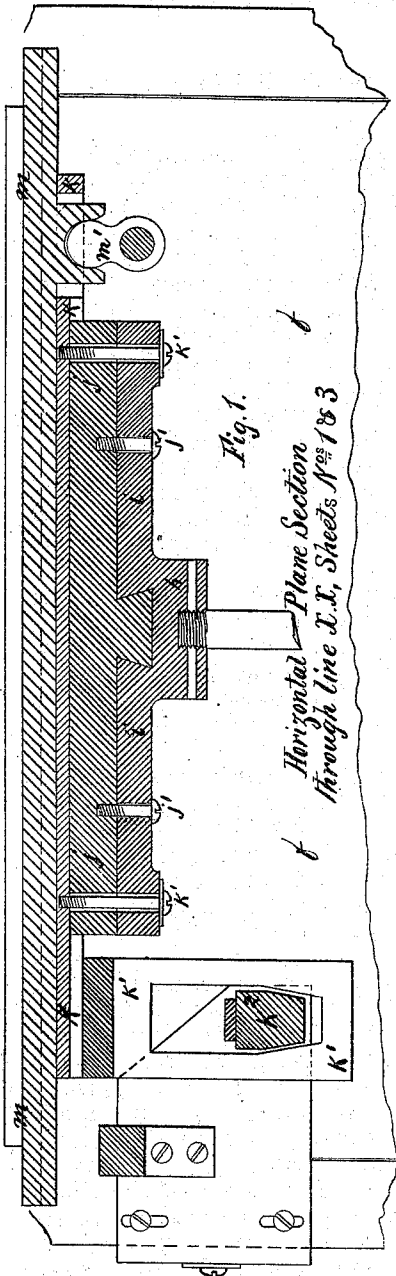
Inventor.
Moritz H. Heimerdinger

M. H. HEIMERDINGER.

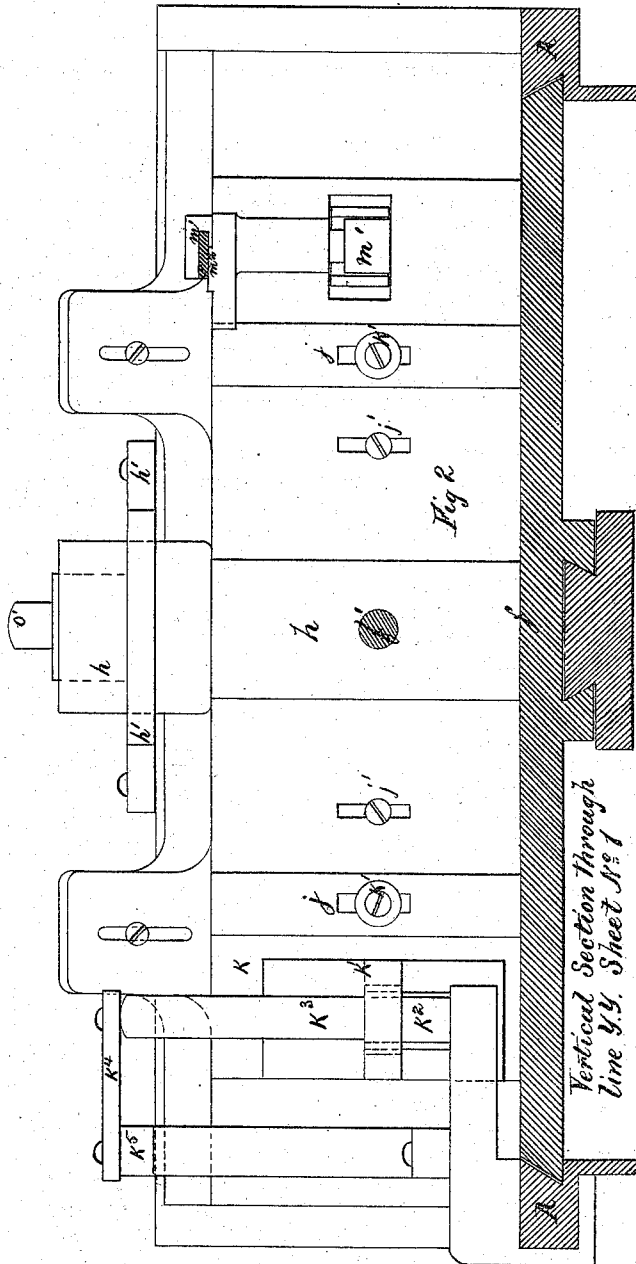
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Witnesses
Asa Farn B
J. M. Quincy.



Inventor

Moritz H. Heimerdinga,

UNITED STATES PATENT OFFICE.

MORITZ H. HEIMERDINGER, OF NEW YORK, N. Y., ASSIGNOR TO CALVIN GODDARD, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR MAKING CIGAR-MOLDS.

Specification forming part of Letters Patent No. 126,957, dated May 21, 1872.

I, MORITZ H. HEIMERDINGER, of the city and State of New York, have invented an Improvement in Machines for Making Cigar-Molds, of which the following is a specification:

Cigar-molds are made in two parts, and are grooved transversely, so that they come together like the teeth or cogs of two racks, the face of each tooth in the upper part, and the spaces between the teeth in the lower part, being grooved to correspond to the shape of a cigar.

My machine is composed, first, of the cutting mechanism, which consists of a row of cutters mounted in a substantial frame; and, secondly, of the feeding mechanism, by means of which a wooden blank is firmly held and fed up to the revolving cutters by a compound motion, under the operation of devices which control the direction and shape of the grooves or cavities as they are being cut, both as to their depth and as to their width.

The feeding mechanism includes an especial feature of adjustability, by means of which the carriage which holds the blank can be shifted longitudinally, so that after one set of grooves have been cut in the blank, another set can be cut in the intermediate spaces between the grooves of the first set.

Both the cutting mechanism and the feeding mechanism contain a variety of features of adjustability, which are important and essential to the practical usefulness of the machine, and which I shall presently describe in detail.

In the drawing, where the same parts appear in different figures, they are indicated by similar letters of reference.

Sheet No. 1 represents the front elevation of the machine; Sheet No. 2, a top view or plan; Sheet No. 3, Figure 1, a side elevation, and Fig. 2, a vertical section through line 22, Sheet No. 2; Sheet No. 4, Fig. 1, horizontal section through lines *x x*, Figs. 1 and 3; and Fig. 2, vertical section through line *y y*, Sheet No. 1.

A is the frame of the machine, and *a*¹, *a*², *a*³, and *a*⁴ are horizontal cross-pieces, supporting the cutters and the revolving mandrels, to which the cutters are attached.

Only two cutters, &c., are shown in the

model and drawing, the others being duplicates of them in all respects.

The mandrels *b* have their journals in the cross-pieces *a*² and *a*³, and are each driven by belts on the pulleys *b*¹, and are stayed up by the set-screws *b*² in the cross-piece *a*¹. Each mandrel has, at its upper end, a collar, *b*³, which is bored out to receive the stem of the cutter *c*. The upper end of the cutter-stem is received in the hollow plug *c*¹ in the upper cross-piece *a*⁴. The upper cross-piece *a*¹ is secured to the uprights *a*⁵ by the screws *e*, and the holes *e*¹, through which the screws *e* pass, are slotted, so that the cross-piece *a*¹ can be adjusted to different levels, according to the length of the cutters which may be used in the machine.

As cigars vary in size and shape, different sets of cutters are required for the different styles of cigars. These cutters have the tapering shape of a cigar, and their peripheries are each grooved lengthwise, so as to make several cutting-edges extending spirally from end to end.

The feeding mechanism, &c., consists of the sliding bed *f*, which is controlled by the action upon the fixed screw-bolt *f*¹ of the revolving nut *f*², to which motion is imparted by means of the bevel-gear from the counter-shaft *f*³, on the outer end of which is a balance-wheel, *f*⁴, to which the handle *f*⁵ is attached. The screw-bolt *f*¹ is provided with two pairs of jam-nuts, *g g*, for the purpose of limiting and controlling the extent of its movement in either direction. To the center of the front edge of the sliding bed *f* is affixed a substantial vertical pillar, *h*, to which the screw-bolt *f*¹ is secured. In front of the pillar *h* is a vertical face-plate, *i*, extending along the greater portion of the front edge of the sliding bed *f*, and permanently secured thereto. The upper end of the pillar *h* fits in a slot in the steadying piece *h*¹, which is bolted to the cross-piece *a*⁴. In front of the face-plate *i* is another, *j*, of the same size, which is secured to the face-plate *i* by the screws *j*¹ *j*¹. The holes for these screws in the face-plate *i* are slotted vertically, as shown in Fig. 2, Sheet No. 4, so that the plate *j* may be adjusted to different elevations, which is effected by means of the screw *j*² in the projecting cap *j*³, on the top of the pillar *h*. The

plate *j* has a tongue extending horizontally along the middle, and which fits in a corresponding groove in the sliding plate *k*, which is secured in position by the screws *k¹ k¹*. The holes for these screws in the plates *i* and *j* are made large to allow of slight longitudinal movement of the sliding plate *k*, and the holes for these screws in the fixed plate *i* are also slotted vertically for adjustment of the plate *j*, &c. The sliding plate *k* has a dovetailed groove, which receives a corresponding tongue on the slide-carriage *m*. This carriage has a projecting flange on its lower edge, and a corresponding clamp, *o*, above, which is secured to the carriage *m* by screws in vertically-slotted holes, and is adjusted by means of the screw *o¹*. The wooden blanks which are to be operated upon rest upon the lower flange of the carriage *m*, and are held firmly by the clamp *o*. The sliding plate *k* has affixed to it at one end a slotted former, *k¹*, embracing the adjustable guide-piece, *k²*. The former *k¹* is held at pleasure against either side of the guide *k²*, by means of the upright lever *k³*, operated through the link *k⁴* by the hand-lever *k⁵*.

The object of the former and guide-piece is to regulate the direction of the blank in approaching and receding from the cutters, so that the cavities in the blank may be cut tapering in depth, and at the same time to fix both the depth and the position of the cavities in the blank, the device being so arranged that when the proper depth is reached the stationary guide *k²* exactly fills the end of the tapering slot in the former *k¹*. The carriage *m* is shifted longitudinally by means of the sway-bar *m¹*, and the proper positions for the sway-bar are determined by the stop *m²*. While the sway-bar *m¹* stands on one side of the stop *m²*, one series of cavities are cut in the blank, and when the sway-bar is moved to the opposite side of the stop *m²* the carriage is shifted so as to present to the tools the intermediate spaces between these cavities, so that another set of cavities can be cut. The cavities or grooves in the mold-boards are too near together to be conveniently cut all at once by one series of cutters; and I am enabled to avoid crowding the cutters together by my device for shifting the blank so as to cut the grooves alternately, as described.

The operation of my machine is as follows: The guide-piece *k²* is adjusted to the proper point, according to the depth required for the grooves about to be cut, and the jam-nuts *g* are correspondingly fixed on the bolt *f¹*—that is, so that when the full depth of cut is reached the guide-pieces will exactly fill the taper end of the slot in the former *k¹*, and the pair of jam-nuts on the outer end of the bolt *f¹* will bear against the outer end of the revolving nut *f²* so as to stop the further inward movement of the bolt, and therefore of the bed, carriage, &c. Having clamped a wooden blank in the carriage, motion is imparted to

the counter-shaft *f³* so as to feed the blank up to the rotating cutters, and at the same time pressure is exerted upon the lever *k⁵* so as to hold the former against the side of the guide-piece *k²*. When the grooves have been cut to the full depth, the motion of the counter-shaft *f³* is reversed, and the lever *k⁵* pressed in the contrary direction, so as to hold the former-slot against the opposite side of the guide *k²*. By this means grooves are cut upon the surface of the blank, but gradually narrowing as they deepen, and at the bottom conforming exactly to the size and shape of the cutters.

The width of the grooves is determined by the former and guide, and, of course, may be varied at pleasure by changes in the shape of the former-slot and guide.

In the manufacture of cigar-molds it is desirable, both for economy and as a matter of convenience in their use, that the grooves should be as near together as the strength of the wood will allow; and it is important that the grooves should have inclined sides, so that the mold-boards when in use may be readily detached from each other. I therefore determine the shape of the former, &c., with reference to these considerations.

I am aware that rotating cylindrical cutters for shaping the grooves in cigar-molds have been used; but the machines for this purpose, as heretofore constructed, have only one cutter, and are not provided with the compound feeding mechanism and the adjusting devices, which I have described, by the aid of which I am enabled to multiply the number of cutters and operate them simultaneously, so as to greatly increase the rapidity with which a series of grooves can be cut, and correspondingly reduce the cost of the molds.

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

1. The combination of a series of rotating cutters, *c*, the sliding bed *f*, and carriage *m*, having the compound motion described, with the adjustable devices *g g*, and former *k²* to arrest the movement of the carriage toward the cutters for the purpose of governing the depth of the grooves made by the cutters, substantially as described.

2. The combination of the feeding mechanism, consisting of the sliding bed *f* and the device for moving it to and from the cutters, the face-plate *i*, the vertically-adjustable plate *j*, the sliding plate *k*, former *k¹*, guide *k²*, and mechanism for operating the carriage *m*, provided with the clamping device *o*, the sway-bar *m¹* and stop *m²*, with a series of duplicate rotating cutters, all substantially as shown and described.

MORITZ H. HEIMERDINGER.

Witnesses:

F. M. QUIMBY,
E. D. GILBERT.