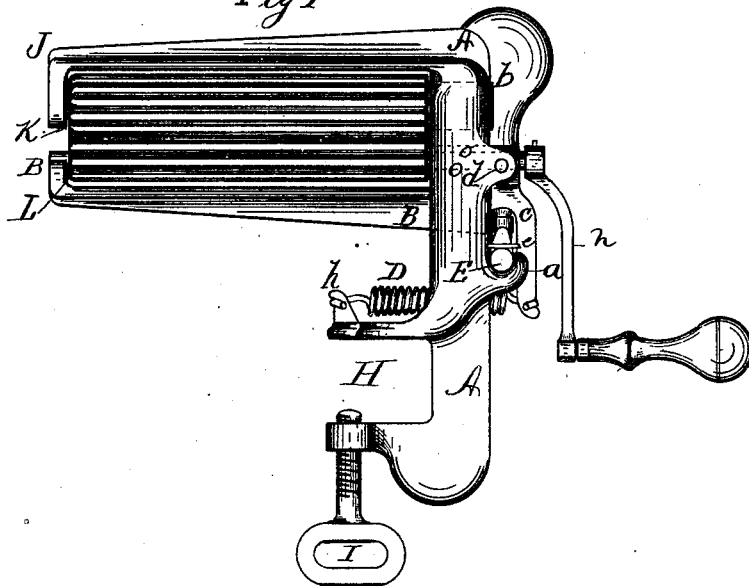


J. E. WILSON.  
Fluting-Machine.

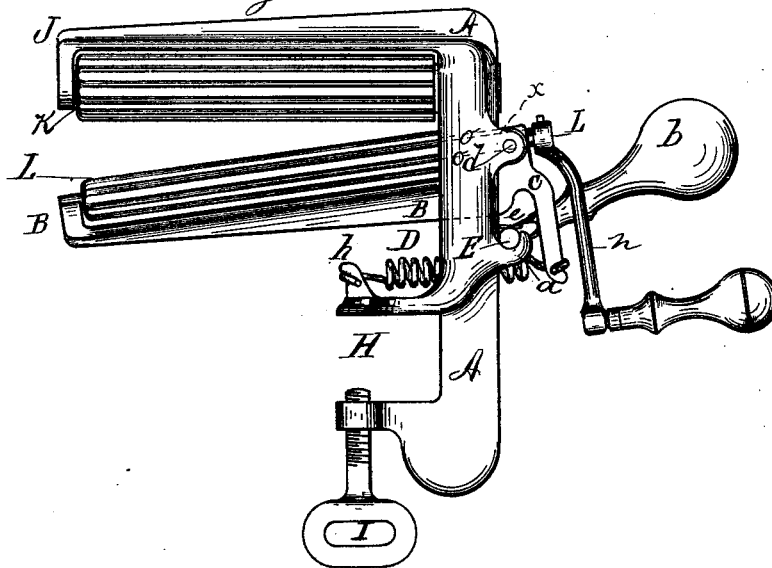
No. 213,724.

Patented Mar. 25, 1879.

*Fig 1*



*Fig 2*



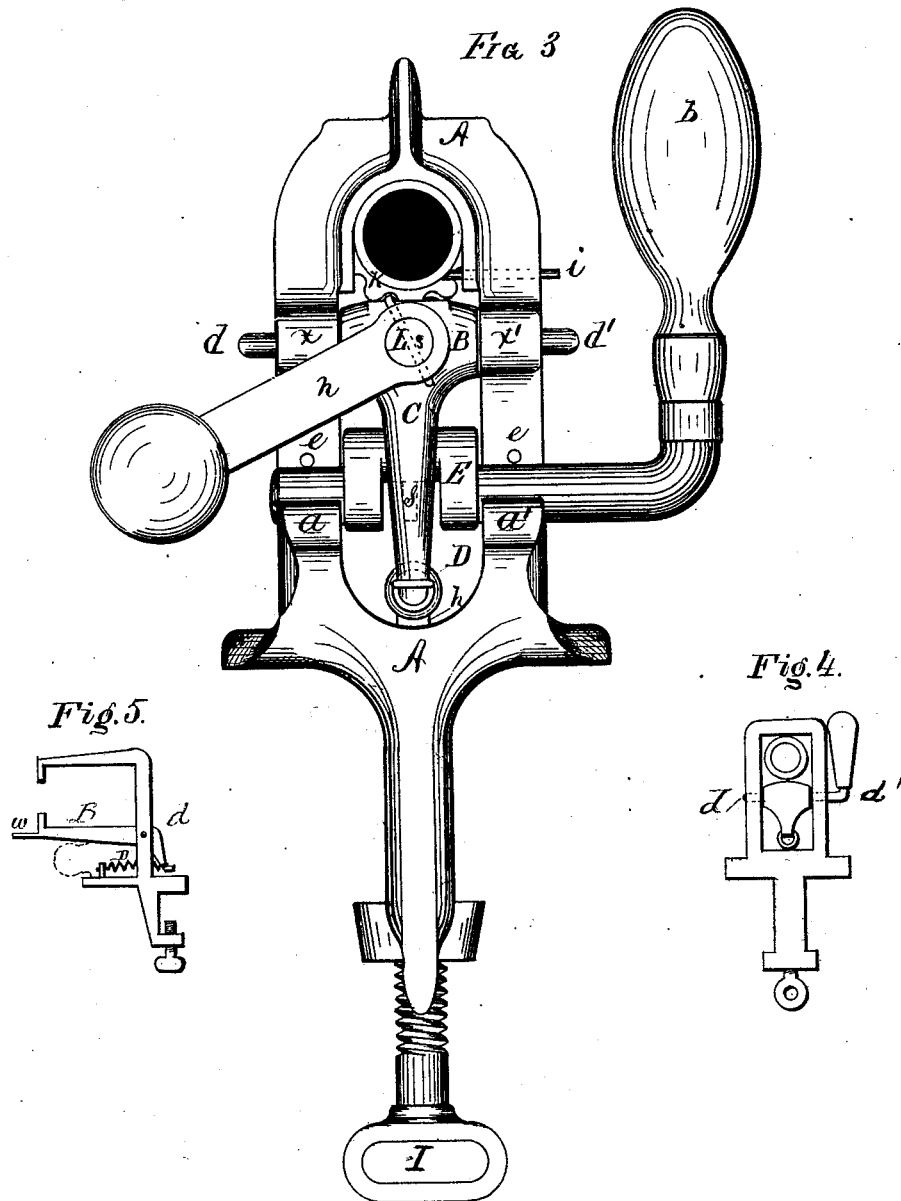
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN FLUTING-MACHINES.

Specification forming part of Letters Patent No. **213,724**, dated March 25, 1879; application filed September 11, 1878.

*To all whom it may concern:*

Be it known that I, JAMES E. WILSON, of Bridgeport, county of Fairfield, and State of Connecticut, have invented new and useful Improvements in Fluting-Machines, which improvements are fully set forth in the annexed specification and accompanying drawings.

My invention belongs to that class of fluting-machines whereby the fluting is produced by rolling the material to be fluted between heated fluted rollers.

The object of my invention is to so simplify the construction of such machines as to materially reduce their cost and make them more compact and easier to manipulate.

Referring to the drawings, which consist of two sheets and three figures, Figure 1 is a side elevation of my fluting-machine with the rollers closed together. Fig. 2 is likewise a side elevation with the rollers set apart. Fig. 3, Sheet 2, is an end elevation of the machine; and Figs. 4 and 5, modifications.

Like letters refer to like parts in the different figures.

A is the frame of the machine. B is the lower roller-support. C is a spring-arm on support B. D is a spiral spring. *h* is a stud for the spring on frame A. *d d'* are trunnion-pins on which roller-support B swings. E is a cam-shaft, operated by a handle, *b*. *a a'* are bearings on frame A for cam-shaft E. *x x'* are trunnion-pin bearings on frame A. H is a clamp-jaw in frame A. I is a clamp-screw. K is the upper hollow roller. L is the lower roller. *e e* are pins holding cam-shaft E down in its bearings. *i* is a pin steadying roller K in its bearings. *n* is a crank, pinned or otherwise attached to the end of roller L. J is a roller-arm, supporting the outward end of roller K.

Fluting-machines, as heretofore generally constructed, have been made with both rollers hollow for the reception of heating-irons, and the movable roller placed on the top; but I find that one heated roller serves the purpose quite as effectually as two, and so made they cost less.

By my arrangement of hanging the lower roller-support by one end in frame A, and operating it by cam-lever E and spring D to open and shut the rollers, I obviate the ex-

pense of a large flat-based frame, such as is usually made, and the employment of a pivoted top-roller holder and compressing-spring and thumb-screw.

Fluted rollers with a greater or less number of flutes can be used interchangeably in my machine as in others.

The operation of my machine is as follows: Having been properly fastened to a table or bench, as above mentioned, and a heating-iron inserted in hollow roller K, handle *b* is swung over, as shown in Fig. 2. This operates to crowd the cam-shaft E against the inner side of spring-arm C on lower roller-support, B, and, swinging on trunnion-pins *b b'* in bearings *x x'*, said roller-support and roller L are thrown thereby into the position shown in said Fig. 2. As cam-shaft E swings over, pin *s* (shown in dotted lines on arm C, Fig. 3) comes up against the lower side of roller-support B, and prevents the shaft from being turned far enough to derange spring D.

With roller L in the position just described the material to be fluted may be easily inserted between the rollers, and by bringing handle *b* back to a vertical position the rollers are brought closely in contact against it, and held so by the tension of spring D upon arm C.

Crank *n* may now be turned, and, both rollers moving together with the material between them, the latter is thereby properly fluted, and may be run entirely through and beyond the rollers; or they may be again opened by touching handle *b*, and the material be removed from between them.

The operation of opening and closing the rollers by operating them with a cam and spring and the handle *b* is found to be very much more conveniently and rapidly accomplished than by any means heretofore adopted.

This mode of so operating those parts is made practical and easy by having the movable roller L operate in a roller-support, B, which support is pivoted on trunnion-pins *d d'* at one end of the second roller, K.

There might be a modified construction of said roller-support and cam-shaft, as in Fig. 4, whereby the lower or movable roller could be operated to open from and close against the other roller in the frame, as and for the purpose before described, by prolonging the

trunnion  $d'$ , and providing it with a handle whereby the trunnion and frame could be adjusted. Thus modified, the cam-shaft might be dispensed with.

The said second modification, Fig. 5, may be as follows, viz: The cam-shaft and handle may be omitted entirely, and the lower roller-support, B, made and hung to the pin  $d$ , as shown, with the addition or not of a convenient finger-rest,  $w$ , on the outer end of said support, whereby that end may be pressed down against the resistance of spring D, for the purpose specified.

Instead of obtaining the continuous forcible contact of the two rollers by the employment of spring-arm C and spring D, any other suitable spring may be applied to bear up directly against the under side of roller-support B, as in dotted lines Fig. 5, the support being pivoted at  $d$ .

If constructed substantially according to either of the modifications I have described, my machines would not be so convenient to manipulate, as the operator would have to hold the rollers apart while inserting the work between them, while the cam-shaft once turned

against spring-arm C keeps the rollers apart at the pleasure of the operator.

Of course some operative device for keeping the rollers open might be added if the cam-shaft were left off; but I prefer to construct the machine as shown, as it thus combines the most convenient and practically-operating devices for the purpose set forth.

What I claim as my invention is—

1. In a fluting-machine, the frame A, having an arm, J, carrying the roller K and provided with the clamp H, and the arm B, pivoted at one end to the frame A, carrying the roller L, and the spring D, arranged to elevate the pivoted frame of the roller L, substantially as set forth.

2. Frame A and roller K, in combination with roller-support B, pivoted near one end and lower roller, L, spring-arm C, spring D, and cam-shaft E, arranged to operate on the arm C, substantially as and for the purpose set forth.

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