

W. H. MAYO.

Improvement in Machines for Making Excelsior.

No. 128,970.

Patented July 16, 1872.

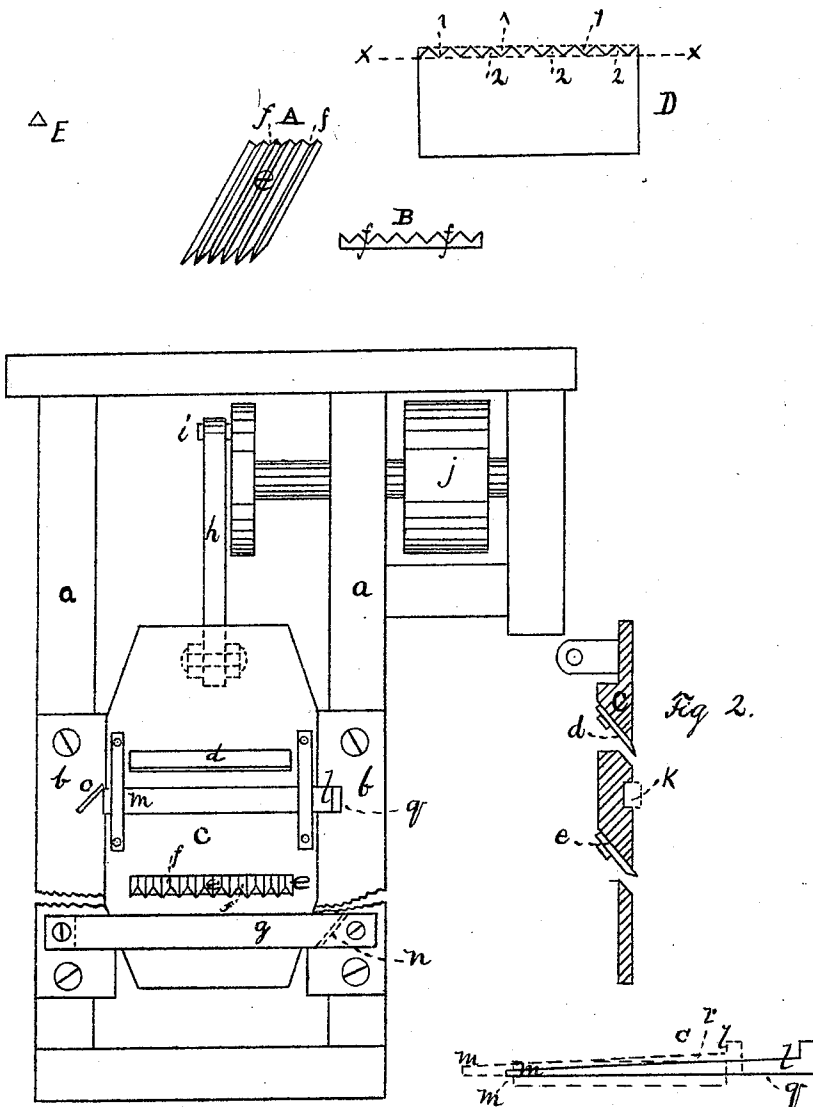


Fig. 1.

Fig. 2.

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IMPROVEMENT IN MACHINES FOR MAKING EXCELSIOR.

Specification forming part of Letters Patent No. 128,970, dated July 16, 1872.

To all whom it may concern:

Be it known that I, WILLIAM H. MAYO, of Orono, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Machines for Making "Excelsior;" and I hereby declare the following to be a full, clear, and exact description of the same, which will enable others to make and use my invention, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 shows a front elevation; Fig. 2, section of the knife-plate; A, B, C, D, and E, details of various parts.

Same letters show like parts.

The object of my invention is the production of an "excelsior" machine which shall be simple in construction and operation.

Reference to the drawing will explain my invention. At *a* is the frame of the machine. *b b* show slides upon which moves a knife-plate, *c*, in which are secured knives *d e*. The upper knife *d* is flat, and of ordinary construction. The lower knife *e* is triangularly serrated upon its upper surface by triangular grooves, *f f*, forming in fact a series of triangular cutters. (For perspective and cross-section of this knife *e*, see details A and B, respectively.) *g* is the bar upon which the bolt rests, secured by any of the usual devices. The knife-plate *c* receives a reciprocating motion through a connecting-rod *h*, crank *i*, and pulley *j*, or similar devices.

The operation of the machine is as follows: Suppose the bolt to be in place on the bar *g*, and the knives raised, as shown, preparatory to making a cut. The lower triangularly-serrated knife *e* first strikes the bolt and removes from it triangular shavings, 1 1 1, (see detail D of bolt,) making "excelsior," which is triangular in transverse section, (see detail E,) and leaving the bolt scored out, as shown at D. The upper knife *d* following it and making a straight cut, (see dotted line *x x*,) removes triangular shavings 2 2, thus, also, producing triangular-shaped excelsior, and leaving the face of the bolt smooth for the next cut.

It will be seen that no "slitters" are used in my machine, both knives working without them.

The knife-plate *c* has within its face a groove, *K*, in which is a slide, *l m*, which keeps the knives from contact with the bolt on the return stroke, thus keeping them sharp and preventing dust.

Its operation is as follows: It is made thicker at the end *l* than at the end *m*, and when in the position shown at *r* in detail C this thickness projects beyond the surface of the knife-plate, and beyond the edges of the knives. It assumes this position at the end of the down-stroke, actuated by an inclined plane, *n*, in the bar *g*, against which it strikes, so that on the up-stroke the bolt rubs against this slide without striking the knife-edges. At the end of the up-stroke it strikes against a second inclined plane, *o*, and is by it forced into the position *q*, in which its surface is flush with that of the knife-plate, allowing the knife-edges to act upon the bolt.

The peculiar product of my machine—*i. e.*, an excelsior, triangular in transverse section—possesses certain advantages over the flat excelsior now used. Its peculiar shape gives it more elasticity and an increased tendency to curl, while by doing away with the slitters commonly used, the product is more free from dust.

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

1. The combination, in an excelsior-machine, of the straight knife *d* and triangularly-serrated knife, operating substantially as herein set forth and specified.

2. In combination with the reciprocating knife-plate *c*, the slide *l m*, and inclined planes, *n o*, arranged substantially as described, and operating alternately on said slide, as specified.

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Witnesses:

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