

(No Model.)

B. KANE.
EXCELSIOR MACHINE.

No. 499,168.

Patented June 6, 1893.

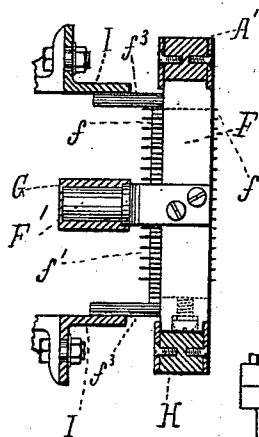


Fig. 4.

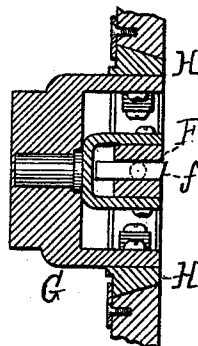


Fig. 5.

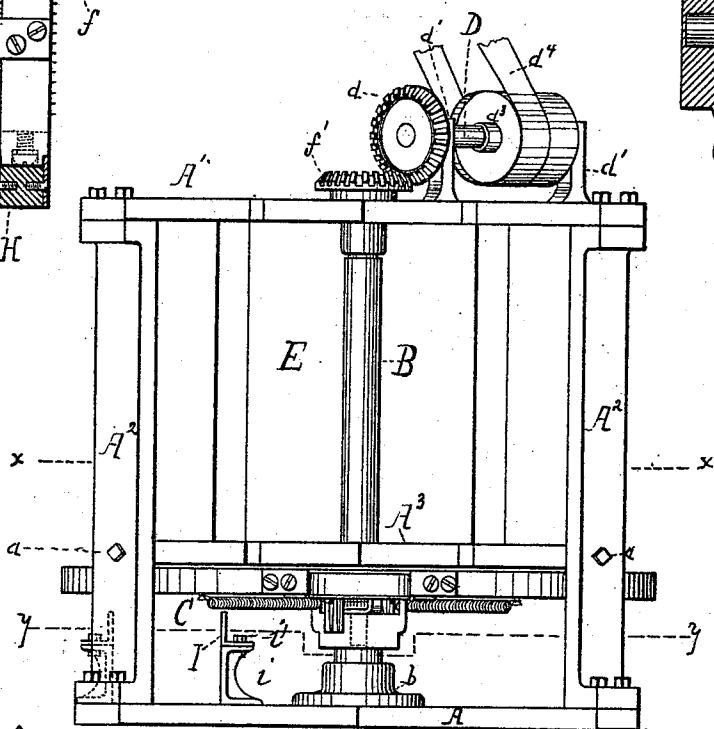


Fig. 1.

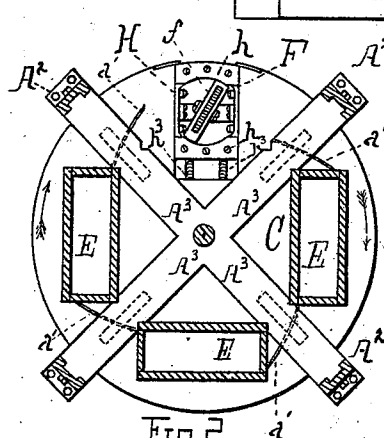


Fig. 2.

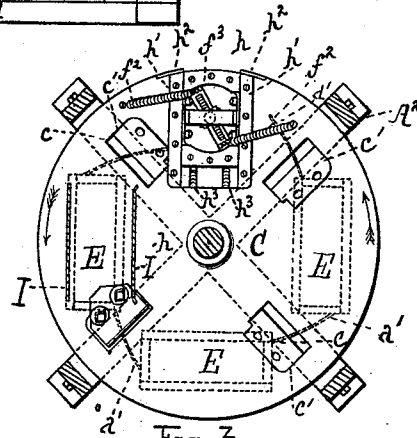


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

BART KANE, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES W. EARNIST.

EXCELSIOR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 499,168, dated June 6, 1893.

Application filed July 5, 1892. Serial No. 438,854. (No model.)

To all whom it may concern:

Be it known that I, BART KANE, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Making Excelsior, of which the following is a specification.

My invention relates to improvements in machines for making excelsior. Its objects are to provide a machine which may be kept continually in operation at a high speed, produce the least possible waste of material, have few parts to get out of order or require attention, does not require skilled labor to operate, and is not dangerous to the attendant.

The invention will be first fully described in connection with the accompanying drawings, in which like parts are indicated by similar reference letters wherever they occur throughout the various views, and afterward its novel features will be particularly referred to and pointed out in the claims.

Figure 1 is a side elevation of my improved machine with one of the feed chutes removed to expose the parts back of it. Fig. 2 is a transverse sectional view of the same taken through line *x. x.* of Fig. 1. Fig. 3 is a similar section through line *y. y.* showing an inverted plan view of the cutter wheel and its attachments. Fig. 4 is a detail view upon an enlarged scale partly in side elevation and partly in central longitudinal section of the attachments for scoring the face of the block in advance of the cutting blades, the frame holding the scoring blades being in its central position. Fig. 5 is a central transverse sectional view of the device shown in Fig. 4 upon the same scale.

The frame of the machine within and upon which the operative parts are mounted is preferably formed of the upper and lower cross framed pieces *A. A'* braced firmly by the uprights *A²* and a similar cross frame *A³* the ends of which are tenoned to enter vertical grooves in the inner sides of the uprights *A²* to which it is secured in its lower position by bolts *a*. The shaft *B* which carries the cutter wheel *C*, has its lower bearing in a step *b* centrally secured upon the frame *A*. It passes through the frame *A³* and has its up-

per bearing on the frame *A'*. Upon the upper extended end of the shaft is secured a bevel gear wheel *f'*, which meshes with a similar wheel *d* secured upon the end of the shaft *D* which shaft is journaled in standards *d'* which project up from one of the cross pieces *A'* and is fitted with a tight pulley *d³* to receive a driving belt *d⁴*.

The cutter wheel is radially slotted at *c* and provided at one side of the slots, upon the under side, with the customary seats for the planer knives *c'* which are adjustably secured upon the seats in the usual manner so that their edges may be projected above the cutter wheel to take the requisite bite on the blocks fed down upon them through the chutes *E* of which there are four. These chutes are secured in a vertical position between the arms of the cross-frames, *A' A³*, and extend as shown to the top of the frame, but it is the intention to carry them up to the floor or room above that in which the machine is operated in which the blocks are prepared and fed into the chutes. The chutes thus being always kept full of the blocks the lower ones will be held against the action of the cutters by the weight of those above them, and the necessity of weights, springs, or other inconvenient contrivances, to hold the block while acted upon is dispensed with.

The scoring blades *f* are clamped in a rectangular open box or frame *F*, between flat steel bars *f'*, which space the scoring blades the proper distance apart to make strands of the required size, by a set screw (shown in dotted line) which is tapped through the end of the frame.

The frame *F*, is held between the forked ends of a pivot pin *F'* which pin is pivoted in a hanger *G*, depending from an open box or frame *H*. The ends of the frame *F*, are overlapped by plates *h* secured across the ends of the frame *H*. These plates steady the frame *F*, as it vibrates upon its pivot in either direction within the frame *H*.

The sides of the frame *H* are beveled to fit within a radial slot in the edge of the cutter wheel. The walls of the slot are inclined counter to the edges of the box *H*, which is adapted to slide within the slot in the cutter wheel and is confined in place by plates *h'*,

secured to the underside of the wheel to overlap the edges of the sliding box. The box is held within the slot by clips h^2 which are secured in the edge of the cutter wheel and overlap the edges of the radial slot. The box H is normally held against these clips and in its outer position by coiled springs h^3 , which are seated in holes in the inner wall of the slot, and press against the inner end of the box H.

The frame F, is normally held at an angle to the radii of the cutter by coiled pulling springs f^2 , which are connected to its opposite ends and to studs secured in the under face of the wheel C, for the purpose of presenting the scoring knives in the proper position to the end of the block, and gradually introducing the guide pins f^3 , which depend from each end of the frame F, between the guide plates I, which compel the frame F, to travel parallel to the sides of the feed boxes while acting upon the blocks fed to the cutters. The guides I are preferably made of L shaped angle bars set upon angle feet i , which are secured upon the cross frame A. The horizontal webs of the guides I are slotted to pass the shanks of bolts i' , which are tapped into the feet i . By this means the guide plates are made adjustable to compensate for wear, and for convenience in properly adjusting parts when the machine is set up. There are of course guides opposite the discharge of each chute but only one set is shown.

To the under side of the cross arms of frame A^3 , are secured ribs a' which project down below the lower edge of the feed chute, and are arranged at a tangent to the path of travel of the knives c , for the purpose of discharging the slabs or slivers left from the top of the blocks above the wheel. So soon as a block is so nearly used up that its top comes below the edge of the feed chute, one of the cutting knives striking it will drive it from under the chute and the rib will guide its course to the outside of the machine.

The machine when set up for use is mounted upon standards or an open frame work some distance above the floor and the bottom part

from near the upper face of the cutter wheel to base incased by a sheet metal cover so that the excelsior is discharged below in a convenient position to be removed while the slabs or slivers are discharged by centrifugal force at some distance from the finished stock.

It will be obvious to those skilled in the art after an examination of my improved machine that many mechanical changes and substitutions may be made in some of the parts without varying the principle or mode of operation of the machine and I would hence have it understood that I should consider such mere mechanical deviations as within the spirit and scope of my invention.

What I claim is—

1. The combination substantially as specified in an excelsior machine of the cutter wheel C, radially slotted to receive the frame carrying the scoring blades, and the cutting knives c , secured in said wheel, the vertically arranged feed boxes, the radially sliding frame H, carrying the frame holding the scoring blades, the hanger G, depending from the frame H, the frame F, pivoted in said hanger, the scoring blades carried in frame F, the springs to hold the scoring blades normally at right angle to the ends of the feed boxes, and the guides I to carry the scorer parallel to the sides of the feed boxes for the purpose set forth.

2. The combination of the frame, the vertical shaft and cutter wheel mounted to revolve therein, the cutting knives secured in said wheel, the feed boxes to feed the blocks to the cutters, the frame H, fitted to slide radially in the cutter wheel, the frame F carrying the scoring blades pivoted to vibrate within the frame H, the guides to carry the scoring devices parallel with the sides of the feed boxes, and the ribs a' , arranged above the cutters to discharge the slivers outside of the frame and away from the finished stock substantially as shown and described.

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Witnesses:

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