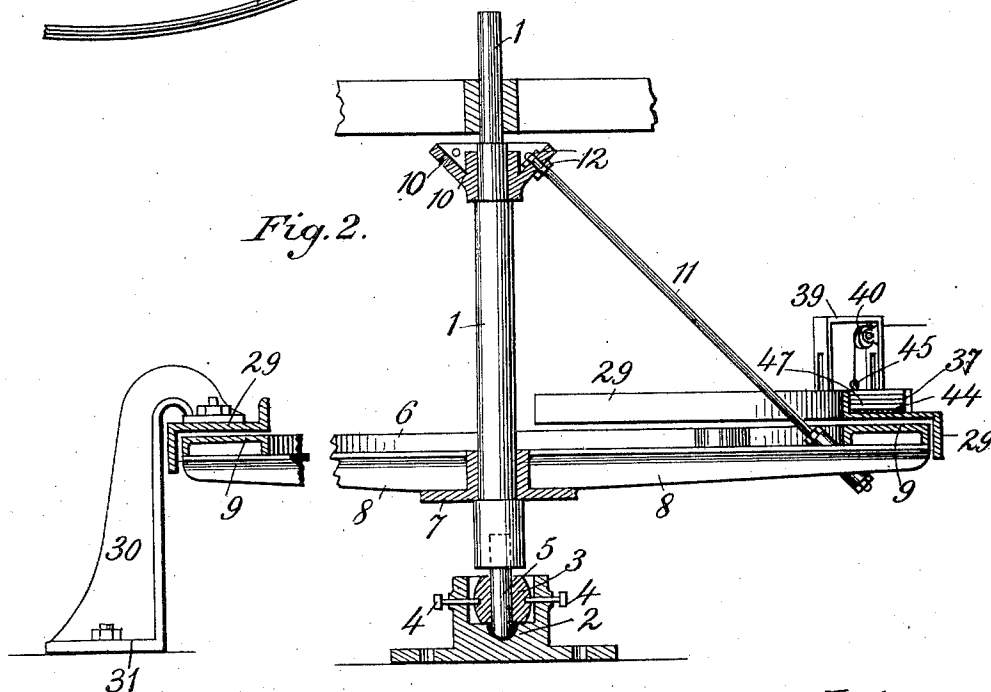
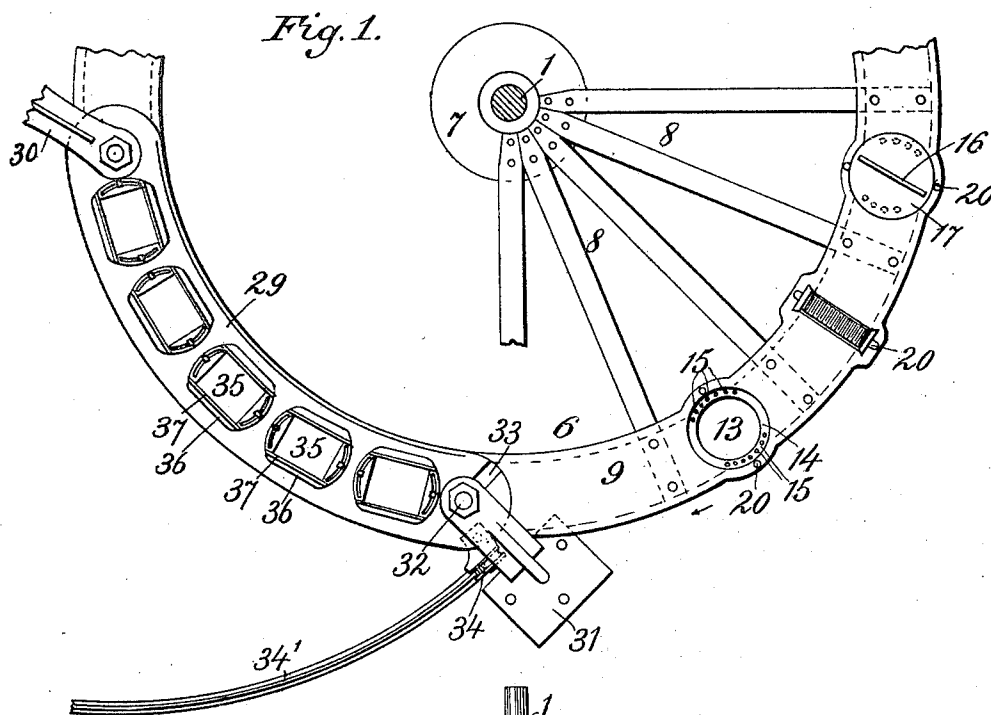


W. F. OTT.  
EXCELSIOR MACHINE.

No. 581,679.

Patented Apr. 27, 1897.



*Attest:*

*H. H. Schott*

*Kary D. Smith*

*Inventor:*

*William F. Ott.*

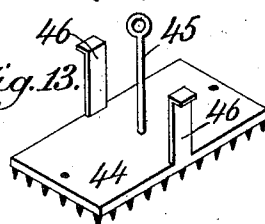
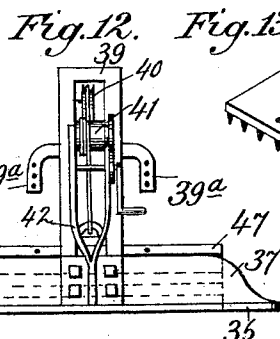
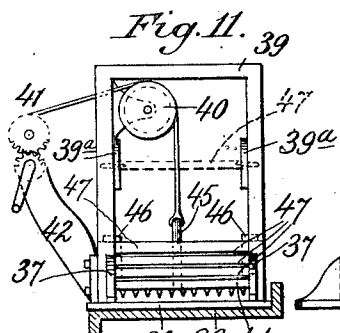
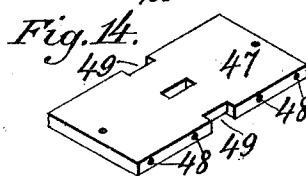
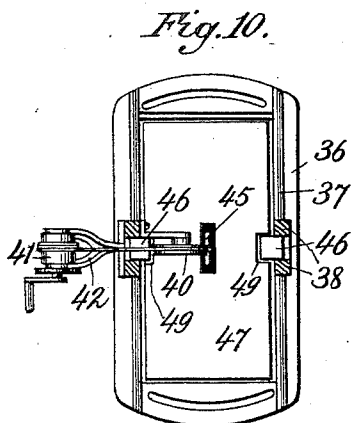
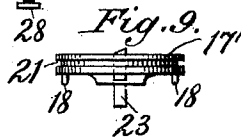
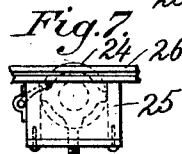
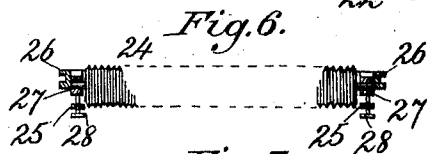
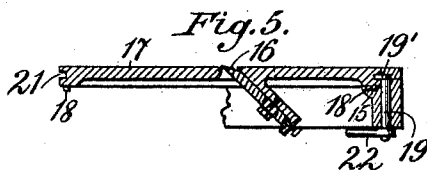
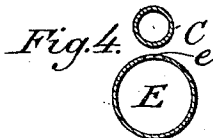
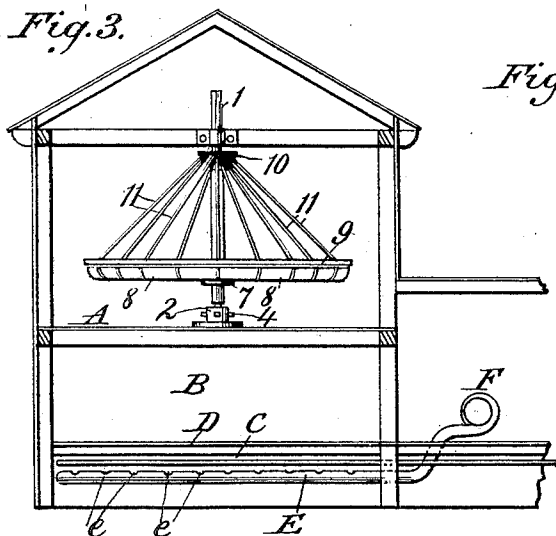
*by Grant Burroughs*  
*Att. Atty.*

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Fig. 3.



Attest: 36 29 44  
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Inventor:  
William F. Ott.  
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Att'y.

# UNITED STATES PATENT OFFICE.

WILLIAM F. OTT, OF ATLANTA, GEORGIA.

## EXCELSIOR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 581,679, dated April 27, 1897.

Application filed May 31, 1894. Serial No. 513,091. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. OTT, a citizen of the United States of America, and a resident of Atlanta, in the county of Fulton and State of Georgia, have made certain new and useful Improvements in Excelsior-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates, as above specified, to a machine for shaving wood into excelsior of the desired fineness, the invention consisting of several new and useful details and combinations thereof, the construction and operation of which will be hereinafter fully specified.

In the accompanying drawings, Figure 1 is a plan of a portion of the wheel, showing the scoring and shaving devices in place, one thereof being removed so as to show the seat therefor in the wheel, one of the timber-carriages, its mounting, and a supporting-track therefor during removal from over the wheel being also shown. Fig. 2 is a section thereof, the upper and lower bearings of the shaft being added and the track and all supporting-standards but one being removed. Fig. 3 is a side elevation of a building such as this device will be most desirably mounted in. Fig. 4 is a detail of the steam and air pipes for drying the excelsior. Fig. 5 is a detail of the plane-knife in cross-section. Fig. 6 is a detail of the fine scorers. Fig. 7 is an end view thereof somewhat enlarged from Fig. 6 the better to show the operative parts. Fig. 8 is a sectional detail of the setting of the coarse scorers, and Fig. 9 shows a head with the said coarse scorers in place. Fig. 10 is a plan of the stick-holding device; and Fig. 11 is a side elevation thereof, with the addition of a sectional view of the segmental plate. Fig. 12 is an elevation of the said device, further showing its form and construction. Fig. 13 is a detail in perspective of the dog which engages the stick, and Fig. 14 is a perspective detail of the weights which are placed on top thereof to give pressure thereto.

In the figures like reference-characters are uniformly employed in the designation of corresponding elements of construction in all the views.

1 is the shaft, which is set in an ink 2, provided with a sidewise-adjustable journal-bearing 3, adjustable by screws 4, impinging against same by passing through the ink 2. If desired, a hardened or tempered steel gudgeon 5 may be set in the lower end of the shaft 1 to lessen wear and consequent friction, as the wheel 6 will usually be of considerable weight. A flanged hub 7 is set on the shaft at the proper height, and radial spokes 8 are connected therewith and to the rim 9 in the most desirable manner. For sake of strength and comparative lightness it is preferable that the rim 9 be in the form of channel-iron, broad and inverted, flanges down, on the upper sides of the distal extremities of the arms 8 8.

The shaft 1 is shouldered near its top end and a flanged collar 10 is secured thereto resting on the said shoulder. Tie-rods 11 are passed through holes in the said flange, nuts 12 preventing the withdrawal, and pass outwardly and downwardly at an angle, one passing through each of the spokes 8 as near as practicable to the inner side of the rim 9, by means of which the depression or springing of said rim is effectually prevented. Holes 13 are cast in the rim, said rim being thicker edgewise to compensate in strength for the metal removed. These holes 13 have countersunk portions 14, and at that point the metal is perforated with a series of holes 15. An oblong hole is provided for the fine scorer, as will be hereinafter specified.

The shaving-plane is composed of a knife 16, set so as to be adjustable as to its projection in a circular plate 17, which plate fits the counterbored portion of the hole 13, in which it is held rigid in the desired position by pins or lugs 18 on the under side of the disk, projecting into the desired holes 15 and is secured to the wheel by some suitable clamp. A good form of clamp is such as shown in Fig. 5, in which a shaft 19 is mounted revolutely in the rim of the wheel by being set in one of the holes 20 and carries a button 19' on its upper end adapted to enter the annular groove 21 in the plate 17, a lever 22 serving as a handhold in turning same firmly

into place. The angle of this plane-knife to the line of movement of the wheel is adjustable by turning the disk, a sufficient number of holes 15 being provided for the lugs to allow of such movement and securing.

The scorers required are of two kinds—that is, one for coarse scoring in making the coarse grade of excelsior and one for making the finer grade. The former is shown in Figs. 8 and 9, and consists of a row of fleam-shaped blades 23, set in a circular plate 17', which is set in the wheel and operates substantially the same as the plate 17 in which the plane-knife is set. No novelty is claimed for these knives 23, as they are common in the art. The finer scorers 24 are composed of a series of knife-edged disks assembled on a shaft or of a circumferentially-ridged roller on trunnions or a shaft. This shaft is mounted in journal-bearings 27, sliding in a frame 25, secured to the under side of the rectangular plate 26, which fits the oblong hole in the rim of the wheel shown in Fig. 1, being secured therein in the same manner as is described in connection with the plate 17. The bearings 27 are movable upwardly, to cause the disks to protrude the desired distance above the plate 26, by means of a set-screw 28, passing through a cross-bar of the frame 25 at each end thereof. This adjustment will govern the thickness of the excelsior, or, more properly, the depth of the creases made by the scorers.

A plate 29, flanged upwardly on its inner edge and downwardly on its outer edge and being segmental in form, is suspended over a portion of the rim of the wheel, as shown in Figs. 1 and 2, by means of a post 30, to which one end is pivoted directly over the rim of the wheel, and a post 31, which is provided with a bolt 32, which will engage the slot 33 in the plate 29 as soon as it is turned on its pivotal connection with the post 30 over the rim of the wheel and, being tightened, will hold the plate 29 firmly in place. The free end of the said plate is provided with a grooved wheel 34, and a track 34', curved to the arc of the movement of said grooved wheel as the plate 29 is turned to and from over the rim of the wheel, is suitably supported under said wheel. Holes 35 are cut in the plate 29, and over these holes are placed the stick holding and feeding devices shown in Figs. 2, 10, 11, 12, 13, and 14, which consist of a base-piece 36, having upright sides 37, the base-piece 36 being slotted transversely of its ends to allow for bolting adjustably on the top side of the segmental plate 29 over the openings 35 therein. A frame comprising uprights 38 and a cross-piece 39 is secured to the outer sides of the side pieces 37, being slotted for the proper vertical distance, for a purpose hereinafter specified. Near the top of said framework and on each one of the uprights thereof are cross-bars 39<sup>a</sup>, the outer ends of which are turned down and perforated, as best shown in Figs. 11 and 12. A wheel 40 is mounted in the upper part of the frame, and

a rope passes over said wheel and is connected to and adapted to be wound on a windlass 41, mounted on a bracket 42, secured to one of the uprights of the frame and being turned by suitable means when desired. A plate 44, spiked on its under side, as shown in Figs. 11 and 13, is secured by a bar 45 to the said rope and is in this manner suspended between the uprights and the side pieces 37, so as to come over the openings 35 in the plate 39. Secured to the edges of the said plate 44 are standards 46, which have their upper ends turned outwardly to engage the grooves or slots in the uprights 38 of the frame and be thus guided in their upward movements as the plate 44 is elevated by winding the rope on the windlass just mentioned. The engagement of these standards with the slots in the uprights also prevents end movement of the plate 44 as the stick is shaved, as will be understood on the description of the operation of the invention. Plates 47, as shown in Fig. 14, fitting on the top side of the plate 44 and weighing, say, twenty-five pounds each, increase the pressure on the stick while the knives properly shave same. In the edges of these plates 47 are holes 48, which are equidistant with the holes in the cross-bars 39, so that the said plates may be suspended and held from bearing on the plate 44 by raising them and placing pins through said bars 39<sup>a</sup> into the holes 48, as many plates being raised and thus held as desired. The notches 49 in the edges of said plates 47 engage the standards 46 and guide the plates in their movements.

The billets are placed in the carrier 29 while the latter is fixed in position over the head. When it is desired to make an inspection of the knives or the scorers, the carrier, by means of its pivotal connection, can be swung free from the head. While the carrier is off the head, the billets are held in the same by the spikes of the plates 44, which have been forced into the billets. It is to be understood that only one billet is mounted in each box of the carrier.

As shown in Fig. 3, this device is mounted on a floor A, a compartment B under said floor being provided for the excelsior produced, which falls from the machine through slots in the said floor. A steam-pipe C is laid along the floor D of the compartment B, and below this steam-pipe is a pipe E, provided with perforations *e*, as shown in Fig. 4, air being forced through the pipe E by a fan F and passing out of the openings *e* around the steam-pipe C, by means of which construction it is heated and caused to dry and temper the excelsior, the heat being regulated so as to produce the proper results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an excelsior-machine, a rotatable head, a cutting mechanism carried thereby, a billet-carrier pivoted at one end above said head and adapted to be moved to present the

billets carried thereby to the action of the said cutting mechanism, or swung clear of the latter to allow an inspection of said cutting mechanism, and a means for supporting the free end of said carrier when moved.

2. In an excelsior-machine carrying scorers and a shaving-knife, an open-bottomed box set thereover having uprights on two opposite sides, a plate, guides therefor, weights sliding on said guides on top of said plate and provided with holes in two opposite edges, arms 39, secured to the aforesaid uprights and provided with holes in their ends and pins adapted to be inserted in said holes and engage said weights when the latter are elevated, substantially as and for the purpose specified.

3. In an excelsior-machine a circular rim mounted revolubly on a shaft, removable cutter-plates set in said rim, a segmental arm having holes through it and being pivoted over said rim, a roller on the end of said arm and a track concentric with the pivotal point

of said arm and adapted to be traversed by the said roller, substantially as and for the purpose specified.

4. In an excelsior-machine, the combination of a cutter-carrying head having a circular recess formed therein, an annular flange projecting into said recess and provided with a series of holes, a plate having an annular groove in its edge mounted in said recess and upon said flange, a pin projecting from the under side of said plate and adapted to register with one of said holes, a shaft journaled in said head, a button mounted on the upper end of said shaft and adapted to engage with the annular groove in the edge of said plate, and a means for turning said shaft, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM F. OTT.

Witnesses:

A. P. WOOD,  
W. B. ADAMS.