No. 863,011. PATENTED AUG. 13, 1907.

F. ANDERSON.

SAWING MACHINE.

APPLICATION FILED JUNE 22, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

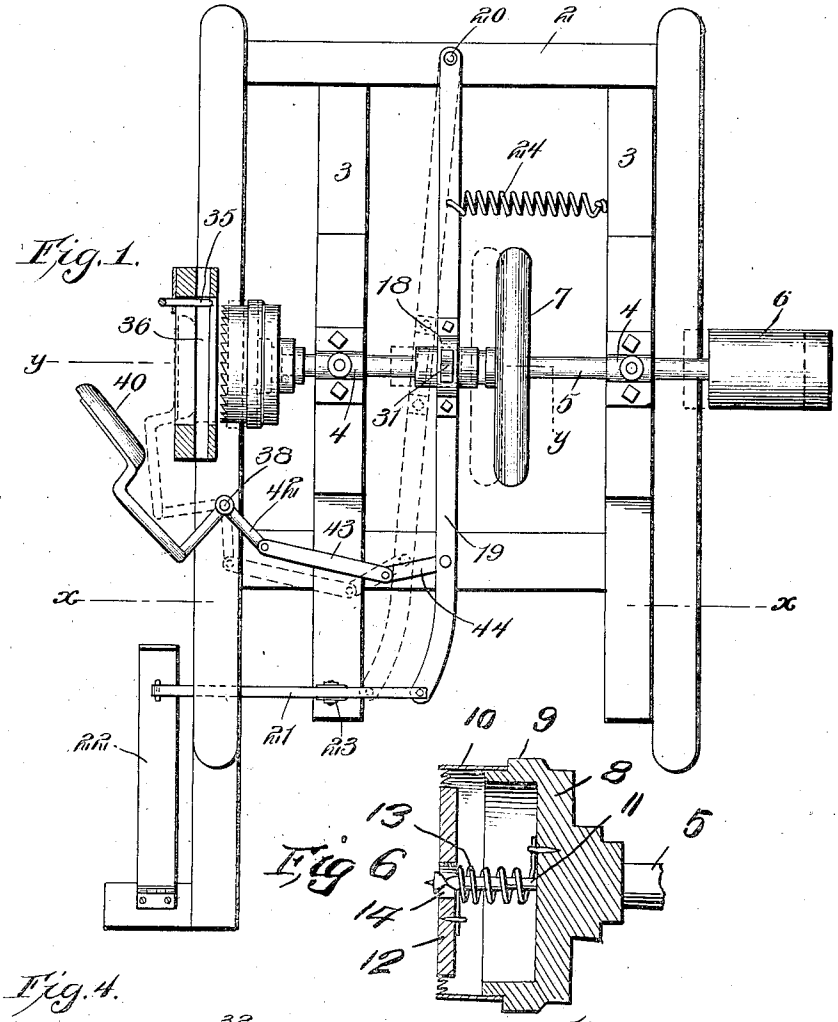


Fig. 6

Fig. 4.

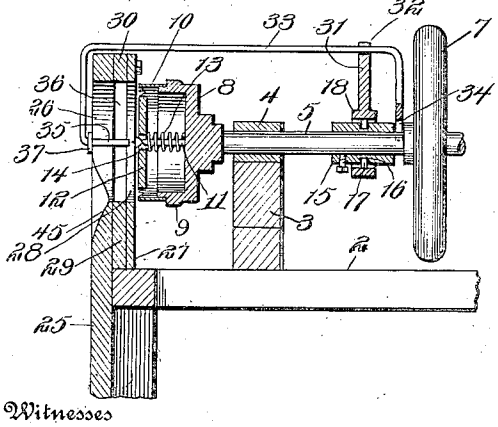
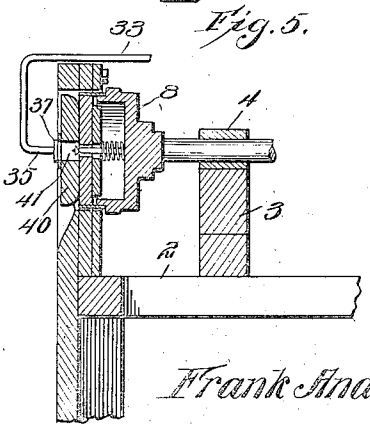


Fig. 5.



Witnesses

Louis R. Heinicke

Herbert D. Lawson

Edwin Arnold

Inventor

Frank Anderson

By W. J. FitzGerald & Co.

Attorneys

No. 863,011. PATENTED AUG. 13, 1907.

F. ANDERSON.

SAWING MACHINE.

APPLICATION FILED JUNE 22, 1906.

2 SHEETS—SHEET 2.

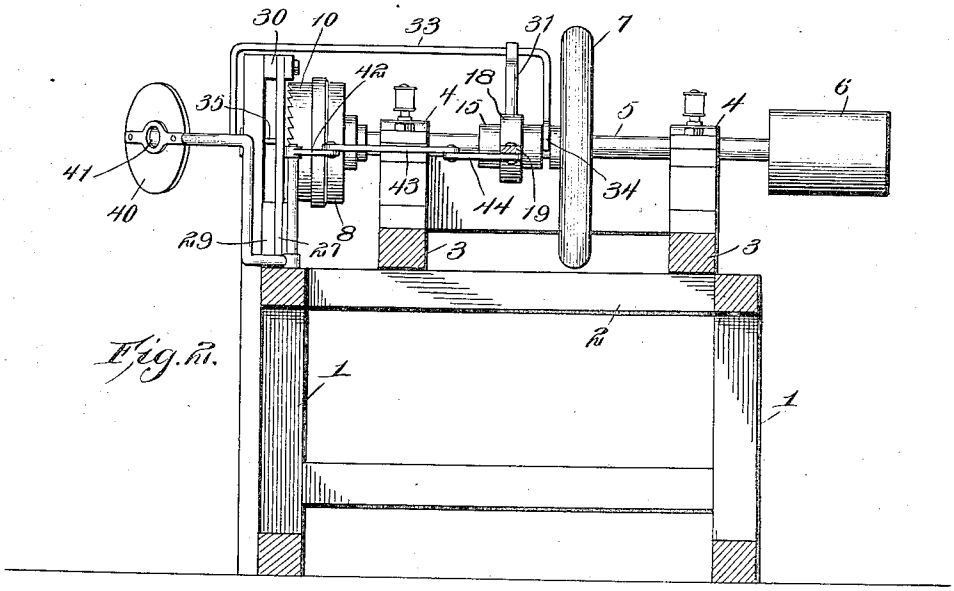


Fig. 1.

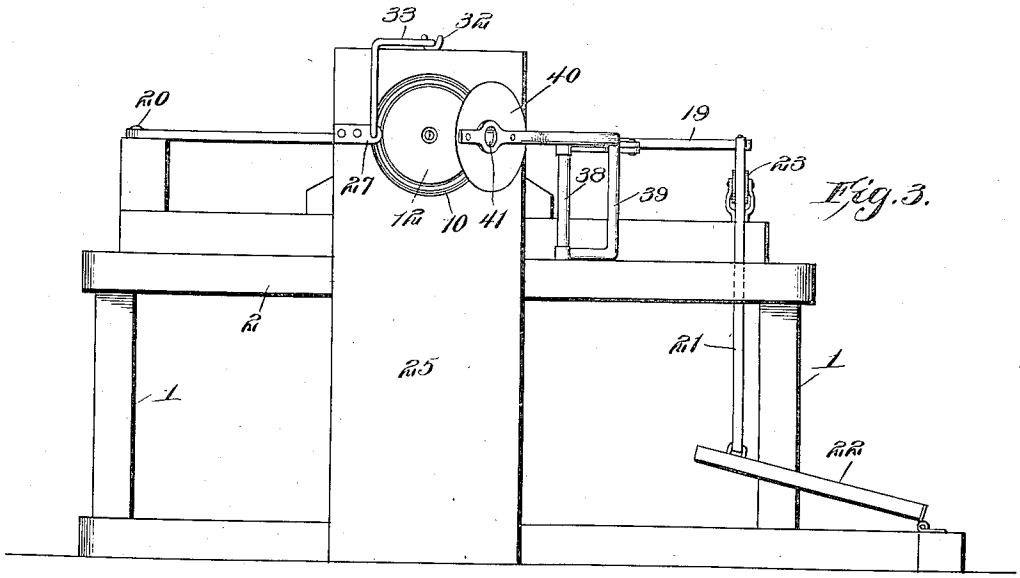


Fig. 3.

Witnesses

Louis R. Heinrichs

Herbert D. Lawson

Edna Bond

Inventor

Frank Anderson

By W. J. Fitzgerald & Co.,

Attorneys

UNITED STATES PATENT OFFICE.

FRANK ANDERSON, OF NORMANOCK, NEW JERSEY.

SAWING-MACHINE.

No. 863,011. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed June 22, 1906. Serial No. 322,927.

To all whom it may concern:

Be it known that I, FRANK ANDERSON, a citizen of the United States, residing at Normanock, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in Sawing-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.

My invention relates to machines for sawing circular disks such as ordinarily used for basket bottoms.

The object of the invention is to provide means whereby the disk may be firmly held automatically prior to and immediately subsequent to its formation and afterwards discharged automatically from engagement with the saw.

A still further object is to provide a gage of novel form whereby a board from which disks are to be made can be quickly moved into proper position so that there will be no waste of material in the formation of a plurality of disks from a single board.

A still further object is to provide a machine of this character having means for automatically ejecting the disks from engagement with the saw subsequent to their formation.

With the above and other objects in view, the invention consists of a rotatable shaft slidably mounted in suitable bearings and having a head at one end upon which is mounted a cylindrical saw for producing disks. Shaft actuating means are utilized for shifting the shaft longitudinally, said shaft adapted to be operated by depressing a pedal. A guide is disposed in the path of the saw and has an opening therein to receive it and this guide is adapted to receive and hold a board from which disks are to be cut. A holding device is mounted adjacent the saw and is adapted to be operated by the shaft shifting means to swing against that portion of the board in the path of the saw so as to hold the disk when severed until the same has been ejected from the saw. The means utilized for ejecting the disk consists of a spring pressed plate mounted within the head and adapted to be pressed against the disk and throw it outward when the holding means is withdrawn therefrom.

The invention also consists of the further novel features of construction and combination of parts, the preferred form whereof will be hereinafter more clearly set forth and pointed out in the claims.

In the accompanying drawings I have shown the preferred form of my invention.

In said drawings—Figure 1 is a plan view of my improved machine, the rack and gage being shown in section. Fig. 2 is a section on line *x*—*x* Fig. 1. Fig. 3 is a side elevation. Fig. 4 is a section on line *y*—*y* Fig. 1, and Fig. 5 is a section showing the relative positions of the head, holder, ejector and disk immediately subsequent to the formation of a disk and prior to its ejection. Fig. 6 is an enlarged detail sectional view showing the relative positions of the head 8, saw, bit, disk and spring.

Referring to the figures by numerals of reference, 1—1 are standards supporting a frame 2 having parallel beams 3 thereon between its sides on which are disposed bearings 4 having a shaft 5 rotatably mounted therein and adapted to be slid longitudinally. This shaft has an elongated pulley 6 at one end and a fly-wheel 7 adjacent its center, while at the other end of the shaft is disposed a substantially cylindrical head 8 having an annular shoulder 9 thereon against which abuts a cylindrical saw band 10 which surrounds one end of the head 8 and is secured thereto in any desired manner, the free edge of the band being toothed as shown. Head 8 is preferably hollow and has a bit 11 extending longitudinally of the center thereof and through a disk 12 which normally rests flush with the teeth of the saw band and has a coiled spring 13 interposed between it and the end of the head 8, said spring being secured at its ends to the head and disk respectively. A sleeve 15 is secured to the shaft 5 close to the fly wheel 7 and this sleeve has an annular groove 16 engaged by pins 17 which extend inward from a yoke 18 located adjacent the center of the lever 19. This lever is pivoted at one end to the rear portion of frame 2, as shown at 20, while its other end is connected by a band 21 with a treadle 22, said band extending downward over a pulley 23 mounted upon one of the beams 3. A coiled spring 24 connects the rear portion of lever 19 with one of the beams 3 and exerts a constant lateral pull upon said lever and the shaft 5.

Secured to one side of the frame 2 is a strip 25 having a circular opening 26 therein, said opening being disposed in the path of the saw 10 and of sufficient size to receive the same. A plate 27 is mounted on the frame in rear of the strip 25 and also has an opening 28 therein which registers with opening 26 and is of the same diameter and plate 27 and strip 25 are spaced apart by intermediate strips 29 and 30, the adjoining edges of which are parallel and disposed tangentially to the openings 26 and 28. The strip 25, plate 27 and the intermediate strips 29 and 30 form a guide having a passage therethrough which is adapted to receive a blank from which disks are to be cut.

An arm 31 extends upward from yoke 18 and is forked at its upper end as shown at 32 to receive and support a rod 33, one end of which is bent downward and forked as shown at 34, the forked portion straddling the shaft 5 between the fly-wheel 7 and sleeve 15 but being held out of contact with the shaft by arm 31. Rod 33 is disposed parallel with shaft 5 and its other end extends over the strip and down to one side of the opening 26 where it is provided with a right angled extension 35 which projects into the openings 26 and 28 and across

a passage 36 formed between the spacing strips 29 and 30, strip 25 and the plate 27. This extension 35 is slidably mounted in a guide plate 37, fastened to strip 25.

A vertical shaft 38 is rotatably mounted upon one side of the frame 2 and has an angular arm 39 extending therefrom and secured at its end to a holding disk 40, the diameter of which is approximately equal to the interior diameter of the saw band 10. This disk has an opening 41 at its center and the arm 39 is so shaped and of such length that when the shaft 38 is rotated, the disk 40 can be caused to swing into the opening 26. Another arm 42 extends from shaft 38 and is connected by a link 43 with an arm 44 projecting laterally from lever 19. These arms and link are so disposed that when the lever 19 is in its normal position, the holding disk 40 is disposed in the position shown in full lines in Fig. 1.

It will be understood that the normal positions of all the parts are such as shown in full lines in Fig. 1 of the drawings. The shaft 5 is caused to rotate continuously by a belt, not shown, extending over pulley 6. A board equal in width to the diameter of the openings 26 and 28 is first inserted, end first, into passage 36 until the same is brought into contact with the extension 35 of the gage. Treadle 22 is then pressed downward and band 21 will pull lever 19 laterally. This operation will tension spring 24 and shift the rotating shaft 5 longitudinally so as to bring the teeth of the saw into contact with the board, and cause the same to cut a disk therefrom. The same operation of the lever 19 will cause holding disk 40 to swing inward and just as the saw cuts through the board the holding disk will press against the severed disk and hold it. It will be understood that as the saw cuts into the board, the partly severed disk will enter the cylindrical saw and will press the ejecting disk 12 against the spring 13 and, at the same time, the bit will cut an aperture through the center of the formed disk. Of course, as the saw advances through the board, the gage 35 will recede therefrom because one end thereof is connected to the shaft. As soon as the disk has been formed, the treadle 22 is released and spring 24 will draw all of the parts back to their initial positions and as the holding device 40 swings out of the opening 26 the spring 13 of the ejector will expand and cause its disk to expel the formed disk from the saw and the same will therefore be ejected through the opening 26 into any suitable receptacle provided for it. To facilitate the ejection of the formed disks, I preferably cut away the bottom portion of the wall of the opening 26, as shown at 45, so that the dropping of the disk will not be hindered by any abrupt shoulder in the path thereof. As soon as one disk has been cut from a board in this manner the board is pushed longitudinally and all the waste portions thereof will be pushed through the passage 36 until the end of the board is again brought into contact with the gage 35 when the operation above described can be repeated.

By employing a machine such as herein described, a large number of disks can be formed within a short period and there is no danger of the machine becoming clogged as each disk is automatically ejected immediately subsequent to its formation and is firmly held during its formation so as to prevent splitting. At the same time it is possible to use a board which is exactly equal in width to the diameter of the disks to be formed therefrom and therefore the waste of the material is reduced to the minimum.

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

1. In a machine of the character described, the combination with a longitudinally movable, rotatable shaft; of a spring controlled lever engaging the shaft, means for manually operating the lever, a guide having an aperture therein and a blank receiving passage in said guide at right angles to said aperture a cylindrical saw upon the shaft adapted to project into the aperture, a gage movable longitudinally with the shaft and projecting into the aperture and across the passage, a holding disk, and means connecting said disk to the lever for swinging the disk during a longitudinal movement of the saw.

2. In a machine of the character described, the combination with a frame, a longitudinally movable, rotatable shaft on said frame, a spring controlled lever engaging the shaft, and means for manually operating said lever; of a guide on said frame, having an aperture therein and a blank receiving passage at right angles to said aperture, a cylindrical saw on said longitudinally movable shaft adapted to be moved into said aperture, a gage arm connected to said shaft and projecting into the aperture and normally across the blank receiving passage, a holding disk and means to connect the disk to said lever whereby when the saw is moved against a blank, the holding disk will be moved against the opposite face of said blank.

3. In a machine of the character described, the combination with a frame and a longitudinally movable rotatable shaft on said frame, a guide on said frame having an aperture therein and a blank receiving passage intersecting said aperture, a gage arm connected to said shaft and normally extending across the blank receiving passage, a cylindrical saw on one end of said shaft, a disk ejecting device in said cylindrical saw, a spring controlled lever connected to the shaft, a holding disk connected to said lever and means to manually operate the lever, whereby the saw and holding disk will be moved against opposite faces of a blank.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK ANDERSON.

Witnesses:
FRED. STEVENS,
H. S. HIGGINSON.