

(No Model.)

2 Sheets—Sheet 2.

J. R. SCOTT.
SKIVING MACHINE.

No. 494,898.

Patented Apr. 4, 1893.

Fig. 4.

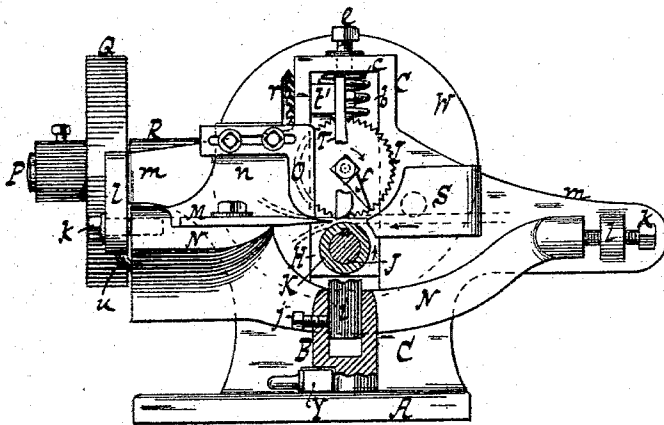


Fig. 5.

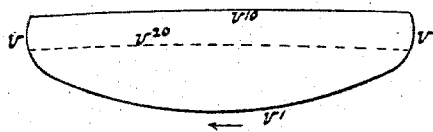


Fig. 8.

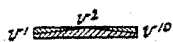


Fig. 6.

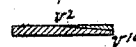
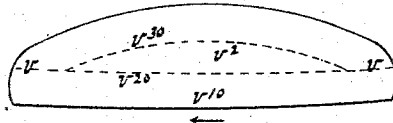


Fig. 7.



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UNITED STATES PATENT OFFICE.

JACOB R. SCOTT, OF NEW YORK, N. Y.

SKIVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 494,898, dated April 4, 1893.

Application filed December 15, 1892. Serial No. 455,265. (No model.)

To all whom it may concern:

Be it known that I, JACOB R. SCOTT, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Skiving-Machines, of which the following is a specification.

This invention relates to certain improvements in skiving machines as pointed out in the following specification and claims and illustrated in the accompanying drawings in which,

Figure 1, represents a plan or top view. Fig. 2, is a longitudinal vertical section in the plane $x x$ Fig. 1. Fig. 3, is a longitudinal vertical section in the plane $y y$ Fig. 1. Fig. 4, is a front elevation partly in section. Figs. 5, 6, 7 and 8, are different views to illustrate the manner in which a counter stiffener is produced on my machine.

In the drawings the letter A designates the base plate from which rise the standards B, C, D. The standard D is bifurcated and it serves to support a tubular box E which is supported by pivots $a a$ so that it can rock thereon and which forms the bearing for the rear portion of the main shaft F. The standard C is provided with a slot b into which is fitted a box G which forms the bearing for the front portion of the main shaft F and which is exposed to the action of a spring c by which it is depressed upon a box H which is also fitted into the slot b and which is subjected to the action of an adjusting screw d . The tension of the spring c can be adjusted by means of a screw e .

On the front end of the main shaft F is mounted the feed wheel I on the face of which is secured an index f the object of which will be presently explained. The box H forms the bearing for the rear portion of a shaft J which is geared with the main shaft by cog wheels $g h$ and on which is mounted the supporting roller K. The standard B carries a box L which forms the bearing for the front portion of the shaft J and the shank i of which can be adjusted by means of a set screw j .

M is the knife which is adjustably secured to a pivoted, rocking platform or knife support N which is supported on pivots $k k$ secured in lugs $l l$ formed on or secured to arms

$m m$ which extend from the standard C. From the platform or knife support N rises a standard n to which is adjustably secured the rand knife O and from said platform extends an arm o (Figs. 1 and 3) which carries a stud p engaging a cam groove q formed in a hub Q mounted on a shaft P which has its bearing in a standard R rising from the base plate A and which is geared with the main shaft F by bevel wheels $r s$. In the example shown in the drawings these bevel wheels are so proportioned, that the main shaft makes two revolutions for each revolution of the shaft P and hub Q, the object of which arrangement will be presently explained.

By the action of the cam groove q on the arm o a tilting or rocking motion is imparted to the platform or knife support N and to the knife M, but the knife is adjusted on the platform or knife support N in such a position that its inner edge is in the same plane with the pivots k and consequently the tilting or rocking motion of the knife takes place round a center which coincides with its inner edge. The innermost point of the cutting edge remains stationary while the outermost point of said cutting edge moves up and down in accordance with the formation of the cam groove q .

On the hub Q is secured a clapper t which strikes a gong u (Figs. 1 and 3) once for each revolution of said hub so that the attention of the operative is called to the fact that it is about time to feed in his blank. The exact moment when the blank is to be fed in however is indicated by the position of the index f on the feed wheel I and the stroke of the clapper takes place a little before said index has reached the feeding position so that the operative can place the blank in the proper position and feed it in at the exact moment. The edge of the blank to be skived is placed against the edge gage S which is adjustably fitted into the standard C.

By referring to Fig. 2 it will be seen that the supporting roller K extends beyond the feed wheel I and that portion of the blank which extends beyond the feed wheel is held down upon the supporting roller by a presser foot T which is secured to an arm t' extending from the journal box G so that the rand

knife O is enabled to act upon that portion of the blank which is split off by the knife M at a point close to the center of the feed wheel and at the same time the blank is held in the proper position for the tilting knife M.

On the shaft F is loosely mounted a belt pulley W which can be thrown in gear with the shaft by a clutch mechanism X actuated by a rod Y.

By imparting to the knife M a tilting motion I am enabled to skive blanks for different articles in a short time and with unerring accuracy. For instance a counter stiffener such as shown in Fig. 7 (plan view) and in Fig. 8 (cross section.) The ends $v v$ and also the side edges $v' v''$ are cut very thin or sharp while the middle portion v^3 must remain considerably thicker than the ends and sides and furthermore the thickness of this middle portion changes being greatest in the middle and smaller toward its sides and ends. This object is attained by the tilting motion of the knife and since the innermost point of the cutting edge remains stationary, the edges $v' v''$ have a uniform thickness throughout which thickness is determined by the distance of said point of the cutting edge from the supporting roller K but the required change in the thickness of the middle portion v^3 is produced by the tilting motion of the knife.

The blank is fed into the machine as indicated in dotted lines in Fig. 1, its edge v'' bearing against the edge gage S and while the knife M splits the blank, the rand knife O acts upon that portion of the blank which passes over the knife M and cuts through the same in the line v^{3c} (Fig. 5). The blank is then reversed, the edge v' is placed against the edge gage S and said blank is fed through the machine for the second time so as to finish the counter stiffener. During this second passage of the blank the rand knife O acts upon that portion of the blank which passes over the knife M and cuts through the same in the line v^{3c} , Fig. 7.

The hub Q can be readily removed from the shaft P and replaced by another hub with a different cam groove so that my machine can be used for forming other articles besides counter stiffeners.

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

1. In a skiving machine, the combination with a feed wheel, and a supporting roller, of a pivoted knife support carrying a knife and rocking or tilting in the arc of a circle, means for rotating the feed wheel and supporting roller, and mechanism for rocking or tilting the knife support in the arc of a circle, substantially as described.

2. In a skiving machine the combination of the following elements: a rotary shaft F, a feed wheel I mounted on this shaft, a shaft J geared with the shaft F, a roller K mounted

on the shaft J and extending beyond the outer face of the feed wheel I, a knife M supported by a platform N, a cam for imparting to this platform a tilting motion, a presser foot T situated near to the outer face of the feed wheel and extending down close to the supporting roller K and the rand knife O secured to a standard rising from the platform N, substantially as described.

3. In a skiving machine, the combination with a feed wheel, and a supporting roller, of a rocking knife support pivoted at one end, carrying a knife at its opposite end and provided with a projecting arm, means for rotating the feed wheel and supporting roller, and cam mechanism acting upon the projecting arm of the knife support to swing it in the arc of a circle on its pivot, substantially as described.

4. In a skiving machine, the combination with a knife M, of a rotary shaft F carrying a feed wheel I, a spring pressed box G for said shaft, a shaft J geared with and running parallel to the shaft F, a supporting roller K mounted on the shaft J, a vertically movable box H acted on by the spring-pressed box and arranged at the inner side of the feed wheel for supporting the shaft J, and a bearing L arranged at the outer side of the feed wheel for said shaft J, substantially as described.

5. In a skiving machine the combination with the rotary shaft F carrying the feed wheel I, the rotary shaft J geared with the shaft F and carrying the supporting roller K, and with the knife M of a platform N constructed to swing in pivots k , a cam Q for imparting to this platform a tilting motion and an alarm for indicating the time for introducing the blank, substantially as described.

6. In a skiving machine the combination with the rotary shaft F carrying the feed wheel I of a bearing E adapted to swing on pivots a , a bearing G adapted to slide up and down and exposed to the action of a spring b , a rotary shaft J geared with the shaft and carrying the supporting roller K, adjustable bearing H L for the shaft J and the knife M, substantially as described.

7. In a skiving machine the combination of the following elements: a rotary shaft F mounted in adjustable bearings G E, a feed wheel I mounted on this shaft, a shaft J geared with the shaft F and mounted in adjustable bearings H L, a supporting roller K mounted on the shaft J and extending beyond the outer face of the feed wheel I, a knife M supported by a platform N, a cam for imparting to this platform a tilting motion and a presser foot T secured to an arm which extends from the adjustable journal box G and holds that portion of the blank which extends beyond the feed roller down upon the supporting roller, substantially as described.

8. In a skiving machine the combination with the feed wheel, the supporting roller ex-

tending beyond the feed roller and the knife
of a presser foot extending over that portion
of the supporting roller which extends be-
yond the feed roller and mechanism for im-
parting to the feed wheel and to the support-
5 ing roller a revolving motion, substantially
as described.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing
witnesses.

JACOB R. SCOTT.

Witnesses:

WM. C. HAUFF,
E. F. KASTENHUBER.