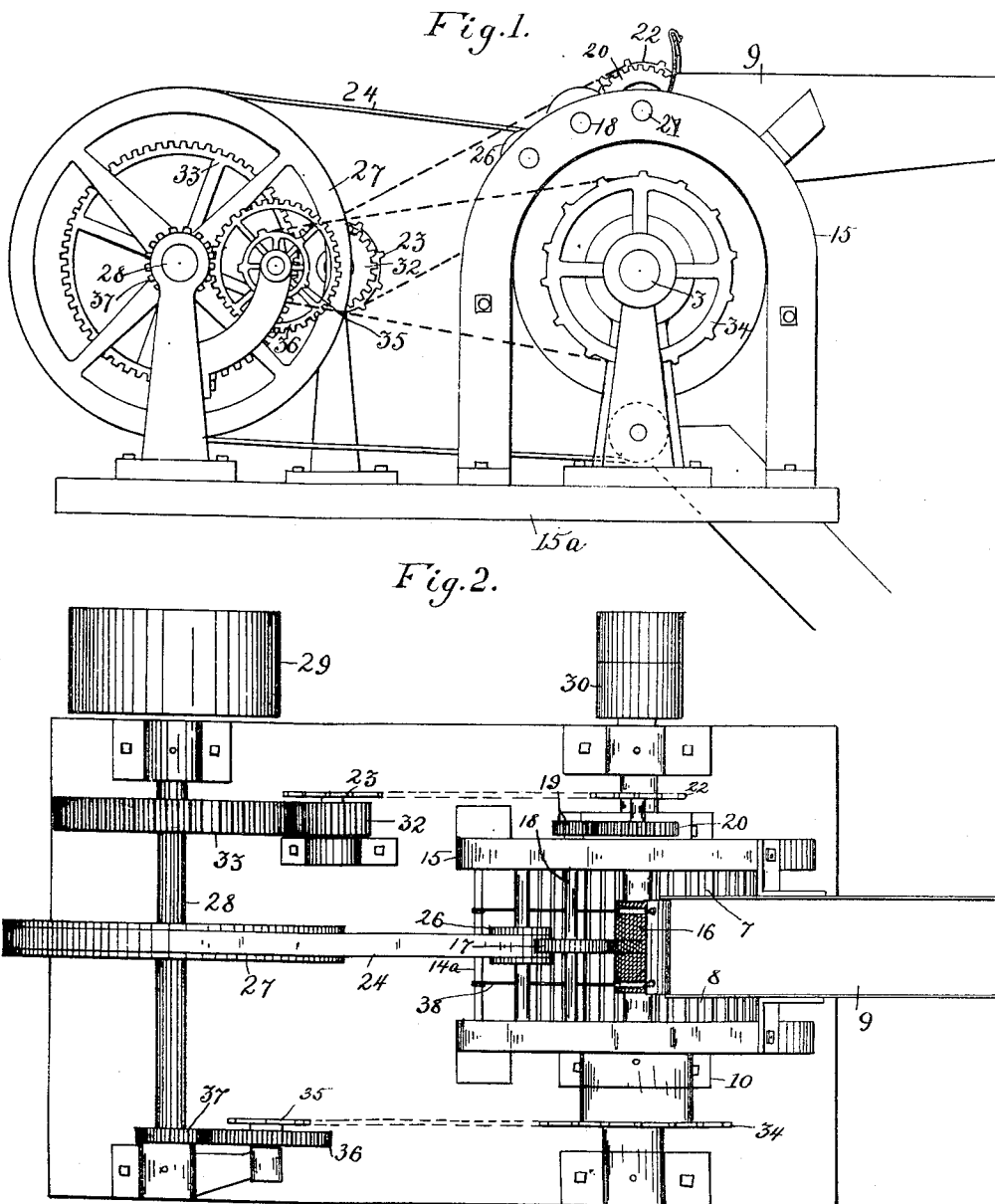


C. C. FREEMAN & W. W. TAINTER.
MACHINE FOR ROUNDING TOOTHPICKS AND OTHER SPLINTS.
APPLICATION FILED SEPT. 11, 1912.

1,061,063.

Patented May 6, 1913.

2 SHEETS—SHEET 1.



Witnesses:
A. H. Scott
C. B. Creighton

Inventors
Charles C. Freeman
Willis W. Tainter
by S. W. Bate
Attorney

C. C. FREEMAN & W. W. TAITER.
MACHINE FOR ROUNDING TOOTHPICKS AND OTHER SPLINTS.
APPLICATION FILED SEPT. 11, 1912.

1,061,063.

Patented May 6, 1913.

2 SHEETS—SHEET 2.

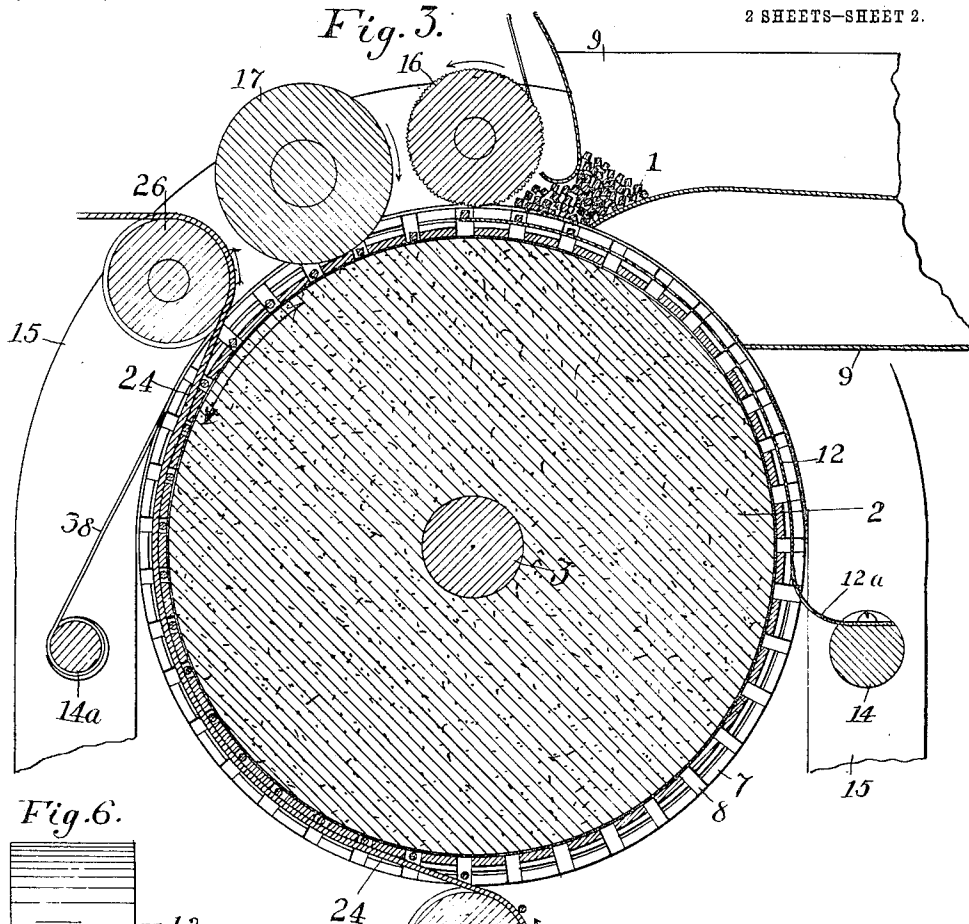


Fig. 6.

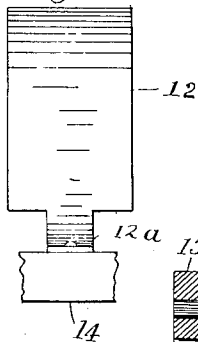


Fig. 4.

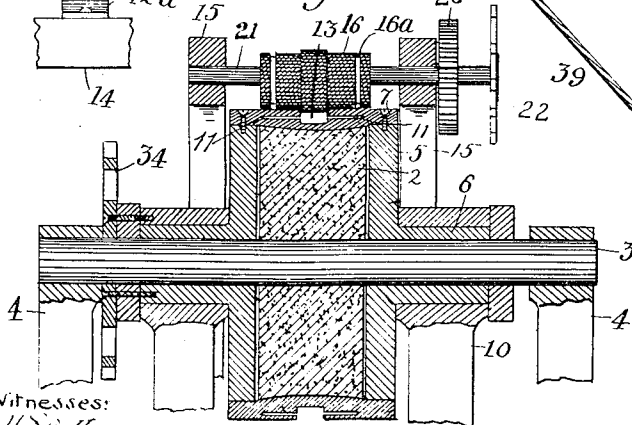


Fig. 5.

Witnesses:
H. H. Scott
C. B. Coughton.

Inventors
Charles C. Freeman
Willis W. Taiter
by J. W. Bate, atty.

UNITED STATES PATENT OFFICE.

CHARLES C. FREEMAN AND WILLIS W. TAINTER, OF DIXFIELD, MAINE.

MACHINE FOR ROUNDING TOOTHPICKS AND OTHER SPLINTS.

1,061,063.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed September 11, 1912. Serial No. 719,768.

To all whom it may concern:

Be it known that we, CHARLES C. FREEMAN and WILLIS W. TAINTER, citizens of the United States, and residents of Dixfield, in the county of Oxford and State of Maine, have invented certain new and useful Improvements in Machines for Rounding Toothpicks and other Splints, of which the following is a specification.

Our invention relates to a machine for rounding and polishing square splints and it is particularly designed for rounding double pointed tooth-picks. These tooth-picks are cut from strips of veneer which have previously been chamfered off on each side so that when the picks are cut off, they are square in cross section and tapering to a point at each end.

The object of our invention is to produce a machine which will polish off the corners of these square splints giving them a smooth finish from end to end. We accomplish this object by means of the mechanism herein-after described and claimed.

Our invention may best be understood by reference to the accompanying drawings, in which is shown a machine constructed according to our invention, although it is to be understood that numerous changes and modifications may be made in the construction without departing from the invention as defined in the claims.

Referring to the drawings, Figure 1 is a side elevation of the machine, Fig. 2 is a plan of the same, Fig. 3 is a central vertical section, Fig. 4 is a transverse vertical section taken at right angles to Fig. 3, Fig. 5 is a view of the tooth-pick, and Fig. 6 is a detail of the splint retaining apron.

The splints 1 shown in Fig. 5 are polished and rounded by means of a grinding wheel made with an abrading edge. We preferably use an emery wheel 2 secured to an arbor 3, the edge of the wheel being hollowed out to conform to the shape of the tooth-pick (Fig. 4). The arbor 3 is journaled in suitable bearings 4, which is supported on a suitable base 15^a which also supports the other parts of the machine. The tooth-picks are fed to the periphery of the grinding wheel by means of a rotatable cylindrical shell which incloses the wheel and is provided with a series of pockets into which the tooth-picks drop and in which they are held and rotated during the process of grinding. As here shown, the shell is

composed of two heads 5 connected with hubs 6 through which the arbor 3 passes and within which it is free to rotate. The heads are united by a cylindrical shell made up of lags 7 which are spaced apart to form a series of transverse pockets 8 in which the picks fall from a feeding hopper or spout 9 where they are stacked in piles before passing through the machine. The hubs 6 are journaled in suitable bearings 10 within which the shell has a rotation independent of the grinding wheel. The shell with its lags forms the bottom of the feed hopper for a considerable distance and the tooth-picks drop one at a time into the pockets 8 as the shell revolves beneath the hopper.

It is desirable to prevent the tooth-picks from falling into the pockets and directly onto the moving surface of the grinding wheel, since they are liable to jump out again after entering the pockets if they are not held positively in place. For this reason, we provide a temporary bottom for the pockets where they pass beneath the hopper so that the tooth-picks will remain above the surface of the wheel and out of contact with it until they pass from the hopper and reach the means provided to rotate them. To provide for this temporary bottom as here shown, we divide the lags into two parts, an upper and a lower portion by means of a horizontal slot 11 within which fits a fixed apron 12 which extends under the hopper and forms a temporary bottom to the pockets as they reach this point. The apron has a contracted shank 12^a which is secured to a cross bar 14 connecting the two side frames 15 which support certain portions of the machine. In order to give means for fastening the apron so that the lags will clear the shank 12^a and for other reasons, we form a central recess in each lag, the combined recesses constituting a central annular groove 13 extending around the entire shell. The slots 11 open at their inner ends into the recess 13. The groove 13 extends as here shown, somewhat below the slots 11 and to a point which is substantially the thickness of the tooth-pick above the grinding wheel.

For the purpose of preventing more than one pick entering each of the pockets 8, we provide a clearing wheel 16 at the point where the shell leaves the hopper. The function of this wheel which is corrugated is to brush back any surplus tooth-picks

which tend to crowd past this point. After the tooth-picks have lodged one at a time in the pockets in which the apron is located, they pass along on top of the apron until they reach its end when they drop from the end of the apron and fall directly onto the surface of the rotating grinding wheel.

When square tooth-picks confined in pockets are dropped into contact with a grinding wheel, they are apt to remain in one position and refuse to revolve. To overcome this tendency and to start them revolving, we make use of a starting roll provided with a yielding surface which readily seizes the tooth-pick and starts it revolving so that the sharp corners are rounded off. As here shown, we make use of a soft rubber roll 17 on an arbor 18 and connected by a pinion 19 with a gear 20 on the arbor 21 of the clearing roll. The arbor 21 is rotated by a sprocket wheel 22 connected to a driving sprocket 23. After the tooth-picks have been given their initial rotation by the roll 17, they are carried along and acted upon by a flexible band which lies within the groove 13 and bearing on the tooth-picks revolves them in contact with the grinding wheel until they are sufficiently polished and discharged. As here shown, we make use of an endless band 24 running over guide rolls 25 and 26 and traveling in the groove 13 over a considerable portion of the circumference of the shell. The effect of this band is to rotate the tooth-picks in contact with the grinding wheel and to give them a smooth and even finish. During the passage of the picks from the roll 16 to the band, it is necessary to provide means for holding them in place in the pockets and to prevent them from jumping out. For this purpose we show a pair of fixed parallel wires 38 secured by one end to the cross rod 14^a and extending upward over the outside of the shell and on each side of the groove 13, thence passing through grooves 16^a in the clearing roll 16. The upper ends are secured to the hopper 9. These wires hold the picks in their pockets until they reach the band 24 which serves to confine them in place as well as to turn them.

The endless band 24 passes over a driving wheel 27 on the main driving shaft 28 from which as shown, the motion for the several parts is derived. The arbor 3 is driven by the pulley 30 which takes its power from the pulley 29 on the main shaft. The clearing wheel is driven as stated by the sprocket wheel 23 which is on a counter-shaft containing a gear 32 engaging a gear 33 on the shaft 28. The shell is rotated by a sprocket wheel 34 connecting with a sprocket wheel 35, this sprocket wheel being on a counter-shaft with a gear 36 which engages a pinion 37 on the main driving shaft. The direction of motion of the various revolving

parts is as indicated by arrows in Fig. 3. The band 24 moves contrary to the motion of the grinding wheel and so tends to rotate the tooth-picks in their pockets and to reduce them to an exact diameter equal to the depth of the pockets. The starting roll moves in the same direction as the grinding wheel as to adjacent surfaces but it runs at a different rate of speed and so tends to disturb the tooth-picks and start the initial rotation.

The tooth-picks are discharged into a suitable chute or spout 39 when they reach the end of the guide pulley 25.

By the use of our machine we are able to produce tooth-picks which are smooth and round from end to end with each end evenly pointed.

The machine while designed specially for rounding tooth-picks may be used for rounding splints of any kind.

We claim:

1. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of transverse splint holding pockets having open bottoms to allow the splints to rest directly on the grinding wheel and means for pressing the splints while in said pockets against the grinding wheel and rotating them at the same time.

2. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of transverse splint holding pockets, and an endless band conforming to the shell for pressing the splints while in the pockets against the periphery of the grinding wheel and rotating them at the same time.

3. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of transverse lags spaced apart to form a series of transverse splint holding pockets, a central recess being formed in each of said lags forming an annular groove in the periphery of said shell and means positioned within said groove for bearing on and rotating the splints.

4. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of transverse lags spaced apart to form a series of transverse splint holding pockets, a central recess being formed in each of said lags forming an annular groove in the periphery of said shell and an endless band within said groove for bearing on and rotating the splints.

5. In a machine for rounding square

splints, the combination of a grinding wheel, a feeding hopper, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of lags spaced apart to form a series of transverse splint holding pockets, a central recess being formed in each of said lags forming an open annular groove around the periphery of the shell, each of said lags having a horizontal recess extending from said groove outward dividing the lags and pockets into upper and lower portions, a fixed apron fitting in said horizontal grooves and extending beneath the feeding hopper, whereby the splint holding pockets beneath the hopper are provided with a fixed bottom and means positioned within said open groove for bearing on and rotating the splints.

6. In a machine for rounding square splints, the combination of a grinding wheel, a feeding hopper, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of lags spaced apart to form a series of transverse splint holding pockets open to the wheel, a fixed guide extending beneath said feeding hopper and forming temporary supports for the splints within the pockets and means for bearing on and rotating the splints while they are in contact with the grinding wheel.

7. In a machine for rounding square splints, the combination of a grinding wheel, a feeding hopper, a rotatable cylindrical shell inclosing said grinding wheel and provided at its periphery with a series of lags spaced apart to form a series of transverse splint holding pockets open to the wheel, a fixed guide extending beneath said feeding hopper and forming temporary supports for the splints within the pockets, a clearing roll adjacent to the hopper for brushing back

the surplus splints and a wheel in rear of said clearing roll having a yielding periphery for starting the rotation of the splints.

8. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing the grinding wheel and provided at its periphery with a series of lags spaced apart to form splint holding pockets each of said lags having a recess forming an annular groove around the periphery of the shell, means for feeding the splints into the pockets, a roll having a yielding periphery rotating within said groove for starting the rotation of the splints with respect to the grinding wheel and an endless band beyond said roll and running within said groove for continuing the rotation of the splints.

9. In a machine for rounding square splints, the combination of a grinding wheel, a rotatable cylindrical shell inclosing the grinding wheel and provided at its periphery with a series of lags spaced apart to form splint holding pockets each of said lags having a recess forming an annular groove around the periphery of the shell, means for feeding the splints into the pockets, a roll having a yielding periphery rotating within said groove for starting the rotation of the splints with respect to the grinding wheel, and a fixed guide extending from the feeding means to the endless band for holding the splints in the pockets.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

CHARLES C. FREEMAN.
WILLIS W. TAINTER.

Witnesses:

S. W. BATES,
C. B. CREIGHTON.