Nov. 15, 1932. C. H. DRIVER 1,887,623

SURFACING ROLL

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FIG. 1.

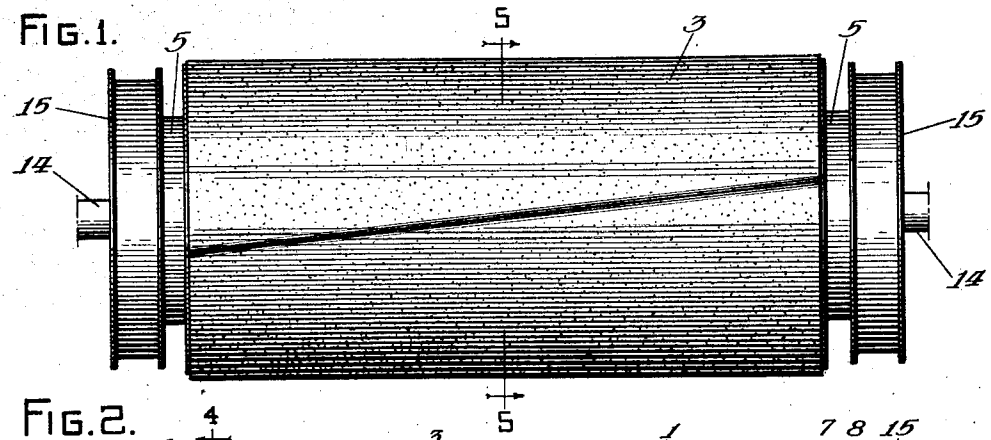


FIG. 2.

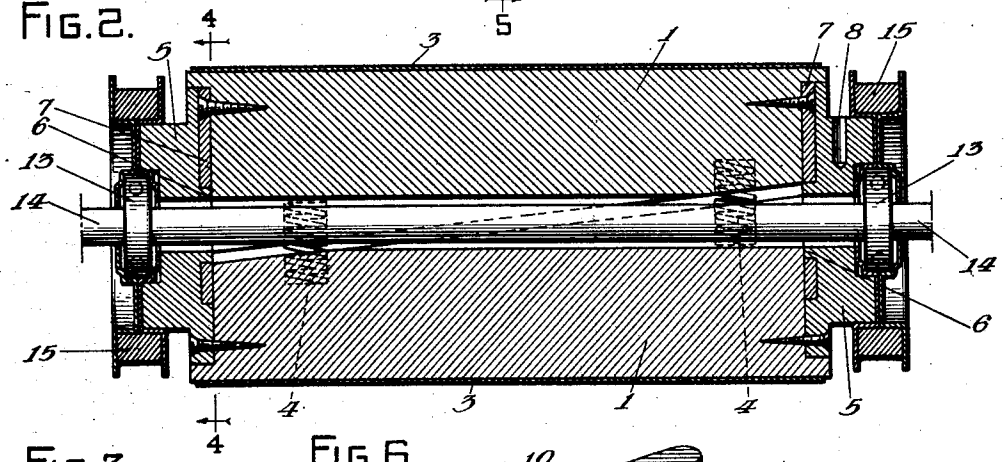


FIG. 3.

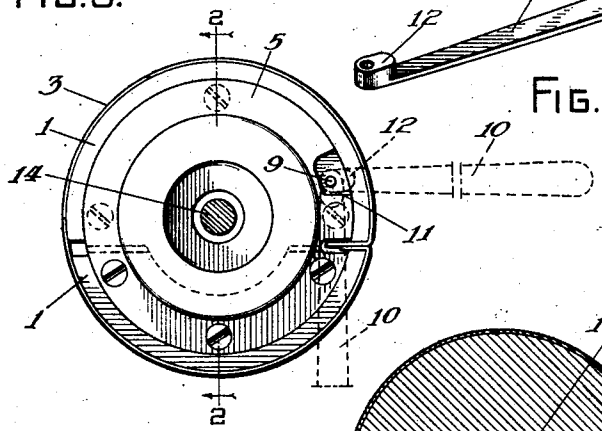


FIG. 6.

FIG. 4.

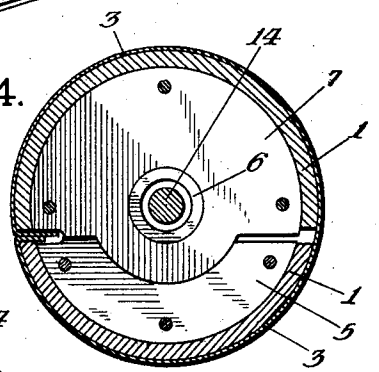
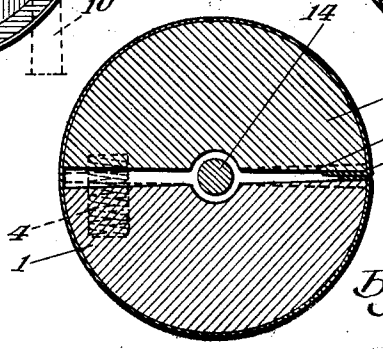


FIG. 5.



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FIG. 7.

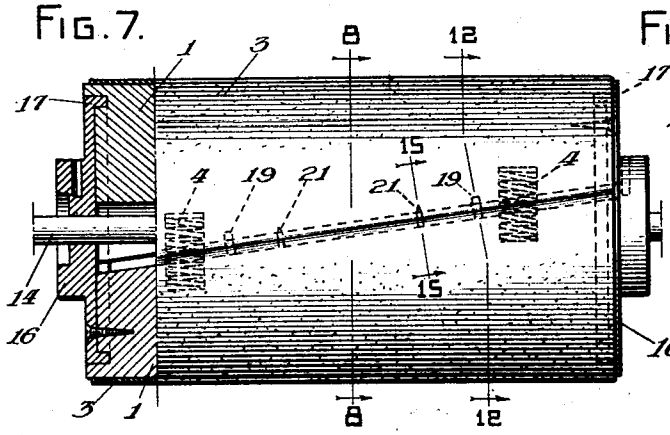


FIG. 8.

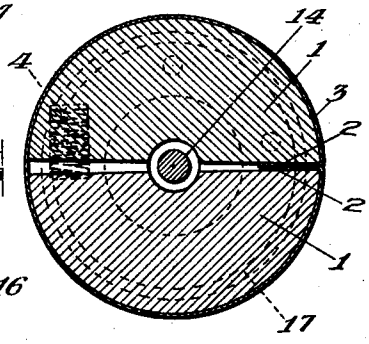


FIG. 9.

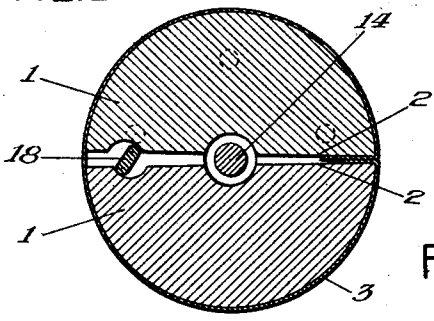


FIG. 10.

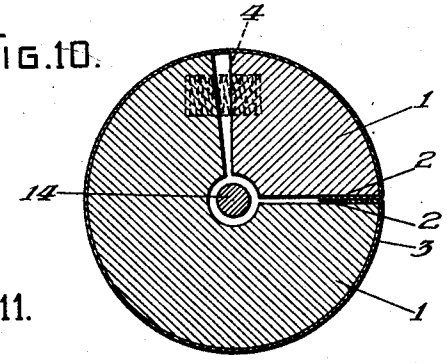


FIG. 11.

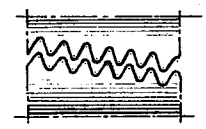


FIG. 12.

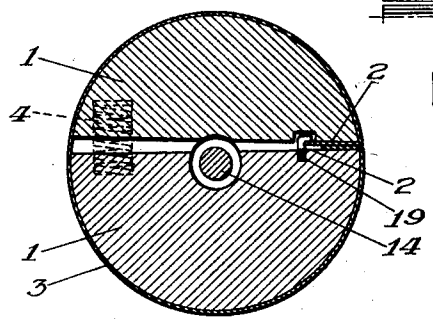


FIG. 13.

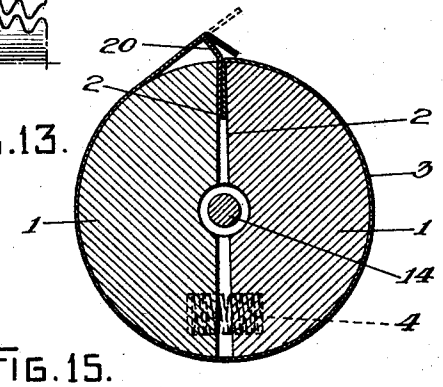


FIG. 14.

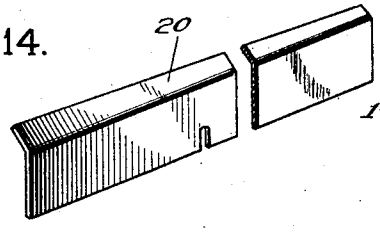
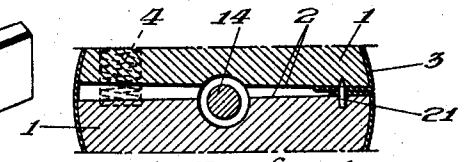


FIG. 15.



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Patented Nov. 15, 1932 1,887,623

UNITED STATES PATENT OFFICE

CHARLES H. DRIVER, OF RACINE, WISCONSIN

SURFACING ROLL

Application filed February 28, 1931. Serial No. 519,103.

The invention relates to a surfacing roll of the type in which an abrading or surfacing sheet is arranged around the roll and fastened thereto at its ends.

The surfacing roll to which the invention applies in particular is formed by segmental sections which are joined or connected together to turn or tilt relative to each other and which have the inside edges thereof form jaws to grip the surfacing sheet at its end and thereby fasten it thereto.

The invention has as its object to provide a surfacing roll which will retain the same shape upon its segmental sections being tilted to different positions relative to each other.

Another object is to provide a surfacing roll which will retain the same shape upon different thickness surfacing sheets being fastened thereon.

Another object is to provide a surfacing roll in which its segmental sections may be readily tilted or turned to actuate the jaws formed thereby.

Another object is to provide a surfacing roll which is simple and efficient.

Another object is to provide a surfacing roll which facilitates and expedites applying the surfacing sheet thereto or removing it therefrom.

Another object is to provide a surfacing roll which may be readily and economically manufactured.

According to the invention, the surfacing roll is formed by segmental sections which are joined or connected together to turn or tilt upon an axis coaxial or concentric therewith and which have the inside edges thereof form jaws to grip the surfacing sheet at its edges and thereby fasten it in place.

The accompanying drawings illustrate a surfacing roll embodying the invention and various modifications therein, and the views in these drawings are as follows:

Fig. 1 is a front view of the roll.

Fig. 2 is a longitudinal section on the line 2—2, Fig. 3.

Fig. 3 is an end view omitting the pulley.

Fig. 4 is a transverse section on the line 4—4, Fig. 2.

Fig. 5 is a section on the line 5—5, Fig. 1.

Fig. 6 is a perspective of a key to open the jaws.

Fig. 7 is a front view of the roll with various modifications therein.

Fig. 8 is a section on the line 8—8, Fig. 7.

Fig. 9 is a transverse section showing another way to open the jaws.

Fig. 10 is a transverse section showing modified segmental sections.

Fig. 11 is a front view of a modified inside edge on the segmental sections.

Fig. 12 is a transverse section on the line 12—12, Fig. 7.

Fig. 13 is a transverse section of the roll with a guide placed between the jaws to crease the surfacing sheet.

Fig. 14 is a perspective of the guide for creasing the surfacing sheet.

Fig. 15 is a transverse section on the line 15—15, Fig. 7.

Figs. 1 to 5

The surfacing roll is formed by two segmental sections 1 which are pivoted together to tilt relative to each other upon an axis coaxial or concentric with the roll and thereby form movable jaws 2 to fasten an abrading or other surfacing sheet 3 thereon.

The segmental sections are actuated by springs 4 to urge the jaws towards each other.

The surfacing sheet is arranged around the roll and its ends are gripped between the jaws.

The roll has its sections divided from each other in a line diagonal to its axis so that when it turns on a flat surface the gaps between its sections will not cause it to bump.

The lower segmental section has arranged and fastened upon each end thereof an outer bracket 5 having a pivot or hub 6.

The upper segmental section has arranged and fastened upon each end thereof an inner bracket 7 having the pivot or hub extending into the bearing therein.

The segmental sections are joined and pivoted together by these brackets to tilt relative to each other upon an axis concentric with the roll.

The outer bracket is provided with a hole 8

for receiving a pin to either hold or turn the roll in applying the surfacing sheet thereto.

The inner bracket is provided with a pin 9 for applying thereto a key 10 to turn the segmental sections to separate the jaws.

The outer bracket is provided with a lip 11 arranged to be engaged by a bit or cam 12 upon the key.

When the key is turned upon the pin, its bit or cam engages the lip and thereby the segmental sections are tilted to separate the jaws.

The key will retain itself in position to keep the jaws open after its cam passes over its center.

As the roll has its segmental sections pivoted concentric to its own axis it will not change its shape or be distorted upon its jaws being in different positions.

The roll rotates upon ball bearing 13 arranged upon a shaft 14 extending through its center and it has a driving pulley 15 arranged upon each end thereof and fastened to the outer bracket.

The surfacing roll which has been explained to exemplify the invention may be employed for various purposes and modified in different ways and it may assume various forms.

Figs. 7 and 8

The roll may have its segmental sections joined and pivoted together by a single bracket 16 arranged at each end thereof and having an arcuate flange 17 coaxial or concentric with the roll.

The left bracket is fastened to the lower segmental section and the upper segmental section turns upon its bearing flange.

The right bracket is fastened to the upper segmental section and the lower segmental section turns upon its bearing flange.

Fig. 9

The roll may have its segmental sections actuated by a bar 18 turning upon a longitudinal axis.

When the bar is turned from its initial position, it tilts the segmental sections to close the jaws and then holds the jaws together.

Fig. 10

The roll may be formed by segmental sections of different length arcs, and the roll shown in this view is formed by a quadrantal segmental section and a triquadrantal segmental section.

Fig. 11

The segmental sections may have the edges thereof serrated to lessen the width of the gap in the roll upon the jaws being closed.

Fig. 12

The roll may have either jaw provided with a stop 19 to limit the distance the end of the surfacing sheet may be inserted between the jaws.

Figs. 13 and 14

The roll may have set between its jaws a guide 20 for creasing the surfacing sheet.

Fig. 15

The roll may have arranged upon either jaw a pin 21 for penetrating the edge of the surfacing sheet to retain it between the jaws.

The invention set forth in the foregoing specification is hereby claimed as follows:

1. A surfacing roll, comprising a roll formed by segmental sections, jaws formed by said segmental sections to fasten a surfacing sheet to the roll, and an inner and an outer bracket pivoted to each other and arranged upon each end of the roll to connect said segmental sections together to tilt relative to each other upon the axis of the roll.

2. A surfacing roll, comprising a roll formed by segmental sections, jaws formed by said segmental sections to fasten a surfacing sheet to the roll, an inner and an outer bracket pivoted to each other and arranged upon each end of the roll to connect said segmental sections together to tilt relative to each other upon the axis of the roll, a spring to tilt said segmental sections to urge said jaws towards each other, and means upon said brackets to tilt said segmental sections by a key to move said jaws apart.

3. A surfacing roll comprising a roll formed by segmental sections, jaws formed by said segmental sections to fasten a surfacing sheet to the roll, an inner and an outer bracket relatively rotative about the roll axis and arranged upon each end of the roll to connect said segmental sections together to tilt relative to each other upon the axis of the roll, a spring to tilt said segmental sections to urge said jaws towards each other, and means upon said brackets to tilt said segmental sections by a key to move said jaws apart.

4. A surfacing roll comprising a roll formed by segmental sections, jaws formed by said segmental sections to fasten a surfacing sheet to the roll, an inner and an outer bracket relatively rotative about the roll axis and arranged upon each end of the roll to connect said segmental sections together to tilt relative to each other upon the axis of the roll, a shaft, and supporting bearings carried thereby upon which the outer roll brackets are mounted.

5. A surfacing roll comprising a roll formed by segmental sections, jaws formed by said segmental sections to fasten a surfacing sheet to the roll, an inner and an outer bracket relatively rotative about the roll axis and arranged upon each end of the roll to connect said segmental sections together to

tilt relative to each other upon the axis of the roll, a shaft and supporting bearings carried thereby upon which the outer roll brackets are mounted, and driving pulleys carried by the aforesaid outer brackets.

6. A surface roll comprising a roll formed by diagonally disposed segmental sections constituting jaws for fastening a surface sheet to the roll, an inner and outer bracket pivoted to each other and arranged at each end of the roll to connect said segmental sections together to tilt relatively to each other upon the axis of the roll, means upon said bracket to tilt the segmental sections by a key to move said jaws apart, a shaft carrying end bearings upon which the outer roll brackets are mounted, and driving pulleys fixedly secured to the aforesaid outer brackets.

7. A surface roll comprising a roll formed by diagonally disposed segmental sections constituting jaws to fasten a surface sheet to the roll, and an inner and an outer bracket relatively rotative about the roll axis and arranged upon each end of the roll to connect said segmental sections together to tilt relative to each other upon the axis of the roll.

In witness whereof I have hereunto subscribed my name.

CHARLES H. DRIVER.