H. A. PERKINS.

CUTTER HEAD GRINDER.

APPLICATION FILED APR. 20, 1916.

1,193,295.

Patented Aug. 1, 1916.

2 SHEETS—SHEET 1.

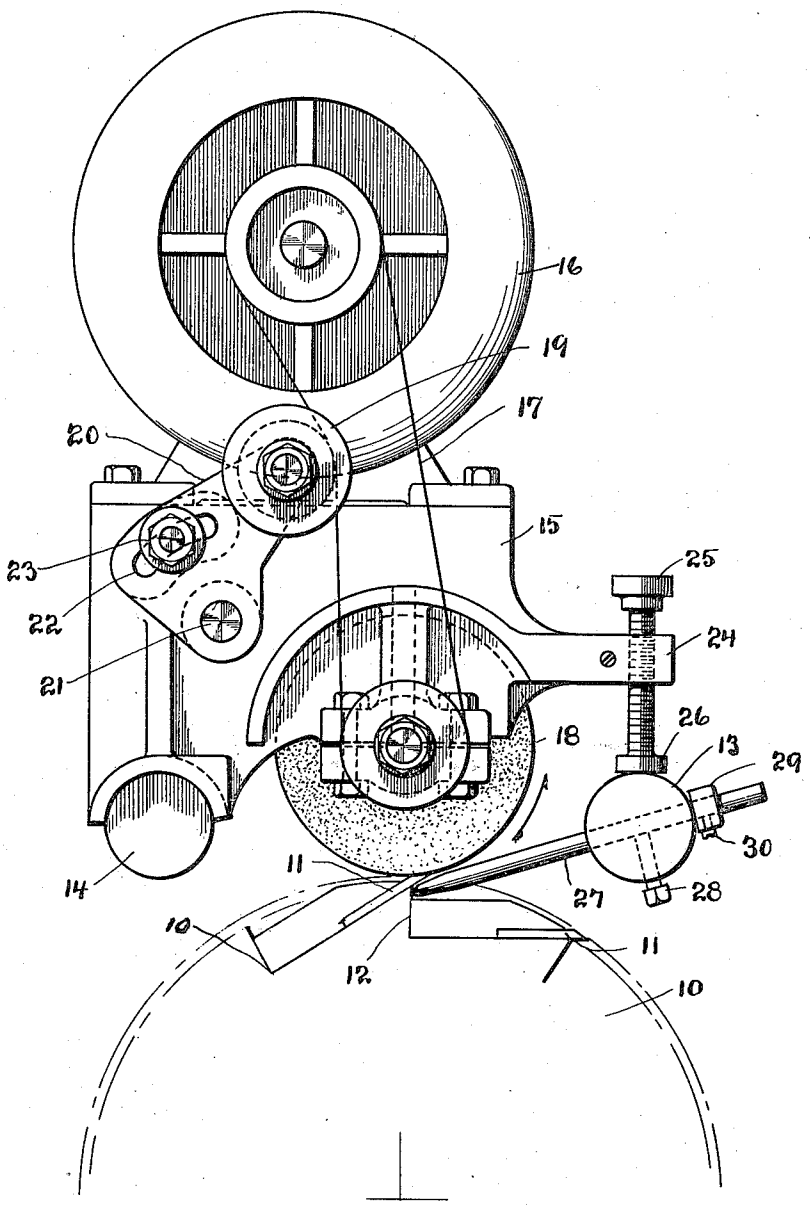


Fig. 1.

Hiram A. Perkins, Inventor,

By his Attorney,

W. D. Hutchinson.

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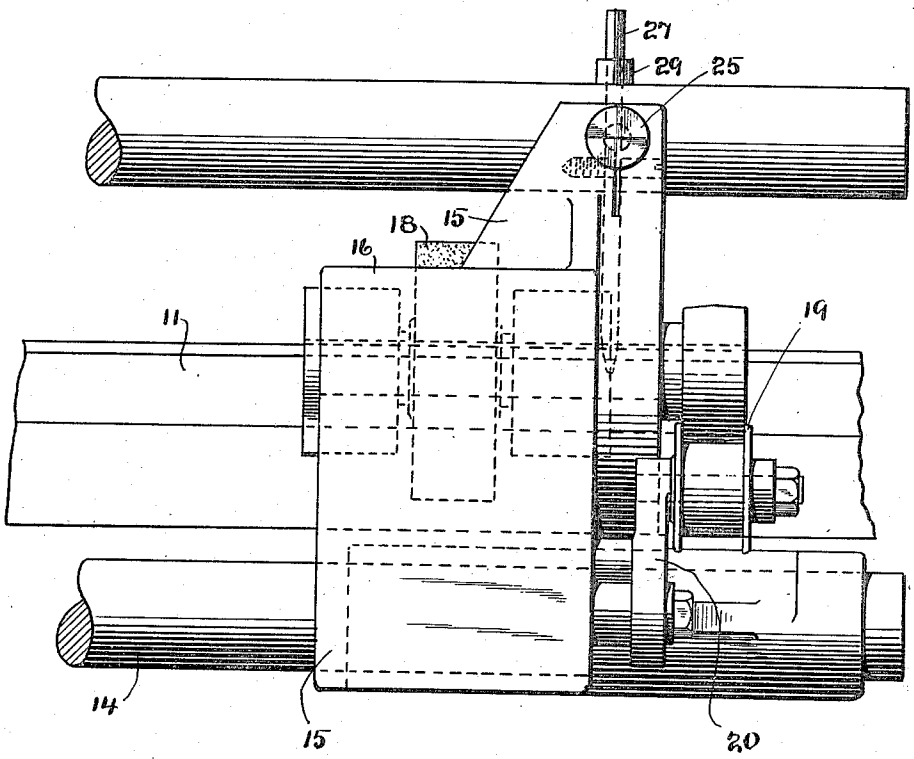


Fig: 2,

Hiram A. Perkins, Inventor,

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UNITED STATES PATENT OFFICE.

HIRAM A. PERKINS, OF ROCHESTER, NEW YORK, ASSIGNOR TO AMERICAN SPLINT CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CUTTER-HEAD GRINDER.

1,193,295. Specification of Letters Patent. Patented Aug. 1, 1916.

Application filed April 20, 1916. Serial No. 92,437.

To all whom it may concern:

Be it known that I, HIRAM A. PERKINS, a citizen of the United States, and a resident of Rochester, Monroe county, New York, have invented a new and useful Improvement in Cutter-Head Grinders, of which the following is a full, clear, and exact description.

My invention relates to improvements in grinders for rotary cutter heads, and especially to grinders for grinding the knives of rotary cutter heads such as are adapted for use in cutting match sticks or other things from sheet veneer or the like. In machines of this class the knives in order to work successfully are held tangentially on the cutter head to shear by an anvil, and it is absolutely necessary to have each individual knife ground to the same bevel as the others, and to have the knives project exactly the same distance from the cutter head so that they shall all bear the same relation to the anvil over which the stock passes.

The object of my invention is to produce a simple apparatus for securing this result, also to provide means by which the bevel of all the knives of the cutter head may be similarly changed if desired, and further to produce an apparatus which can be applied to the machine of which the cutter head forms a part without removing the cutter head or the knives. Further to produce a machine of this character which will do the work with accuracy and despatch.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a side elevation of the apparatus embodying my invention, the same being shown as applied to a cutter head, the latter appearing in diagram only, and Fig. 2 is a broken plan view of the apparatus shown in Fig. 1.

The cutter head 10 has tangential knives 11 and essentially radial shoulders 12 which afford backings for the knife supports. The knives project slightly from the face of the cutter head and operate as already stated. The machine of which the cutter head is a part has also parallel shafts 13 and 14 just above and adjacent to the center head. These serve as supports for the carriage 15 which can be moved back and forth opposite the cutter head sliding on the shafts 13 and 14. The carriage carries a motor 16 which by means of a belt 17 drives the grinder 18 adapted to grind and sharpen the knives 11. I do not refer to the driving means of the grinder in detail because any suitable scheme can be used for driving the grinder, although a belt is preferable because it is more flexible and better adapted to permit of variations in the position of the grinder, as will presently appear.

The belt 17 is provided with a tightener having a pulley 19 which presses on one member of the belt, and the pulley is supported on a tilting bracket 20 which is pivoted to the carriage as shown at 21, provided with a slot 22, and with a bolt 23 which projects through the slot and into the carriage so that the position of the tightener bracket 20 can be fixed. On one side the carriage has a projecting arm 24 through which extends a vertically arranged gage screw 25 having preferably a milled head and a foot 26 which rides on the shaft 13. The position of the screw fixes the height of the grinder with relation to the knives 11.

Extending through the shaft 13 in a line oblique to the horizontal, is an index finger 27 which at its inner end is adapted to abut with the several shoulders 12 of the cutter head, and the position of the index finger is fixed by means of a set screw 28. A collar 29 is placed on the outer end portion of the finger and fastened by a set screw 30, this collar being set up against the shaft 13 so that the operation of the grinder wheel 18 on one knife can be duplicated on the several knives, as will presently appear.

It will be seen that when the grinder wheel is rotated in the direction of the arrow in Fig. 1, it will have a tendency to press the shoulder 12 against the index finger 27, and this will fix the bevel of the knife 11 which is being ground. This bevel will be determined as is apparent by the length of the index finger from the shaft 13 to the shoulder 12. After one knife is ground the set screw 28 can be loosened and the index finger withdrawn or partly withdrawn, and then pushed back to position with the collar 29 abutting with the shaft 13, and with the point of the finger against

the next shoulder 12 of the cutter head, and obviously the bevel of the next knife will be exactly the same as that of the first.

It will be further understood that the grinder wheel 18 is constantly rotating, and that by pushing the carriage 15 along the shafts 13 and 14, the knives 11 will be accurately ground. It will be further understood that any suitable grinding wheel can be used, and that any preferred form of driving mechanism can be employed in connection with the grinder.

I claim:—

1. A grinder of the kind described comprising a sliding and tilting carriage adapted to be positioned above the cutter head, a rotary grinding wheel on the carriage, a shaft adjacent one side of the carriage and parallel with the axis of the cutter head to be operated on, means connecting the carriage and shaft for fixing the pitch of the carriage, and an index finger extending through the shaft and adapted to engage the cutter head being operated on.

2. A grinder for rotary cutter heads comprising a sliding and tilting carriage adapted to be positioned above a cutter head, a shaft parallel with the axis of the cutter head to be ground, a screw connected with the carriage and riding on the shaft, an index finger extending through the shaft to engage the work being operated on, and a grinding wheel on the carriage.

3. A grinder for rotary cutter heads comprising a pair of parallel shafts positioned above the cutter head to be ground, a carriage having a seat on one shaft which permits it to slide and tilt on said shaft, a screw connected with the carriage and riding on the second shaft, an index finger extending through the second shaft at an angle to the screw, and a grinding wheel on the carriage.

4. A grinder for cutter heads comprising a sliding and tilting carriage adapted to be positioned above a cutter head to be ground, a motor on said carriage, a grinding wheel driven by the motor, a shaft parallel with the travel of the carriage, means riding on the shaft and connected with the carriage for adjusting the pitch of the latter, and an index finger extending through the shaft and adapted to abut with the work to be operated on.

HIRAM A. PERKINS.

Witnesses:
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