May 2, 1933. E. A. BEDELL 1,906,358

APPARATUS FOR SKIVING

Filed April 4, 1930 2 Sheets-Sheet 1

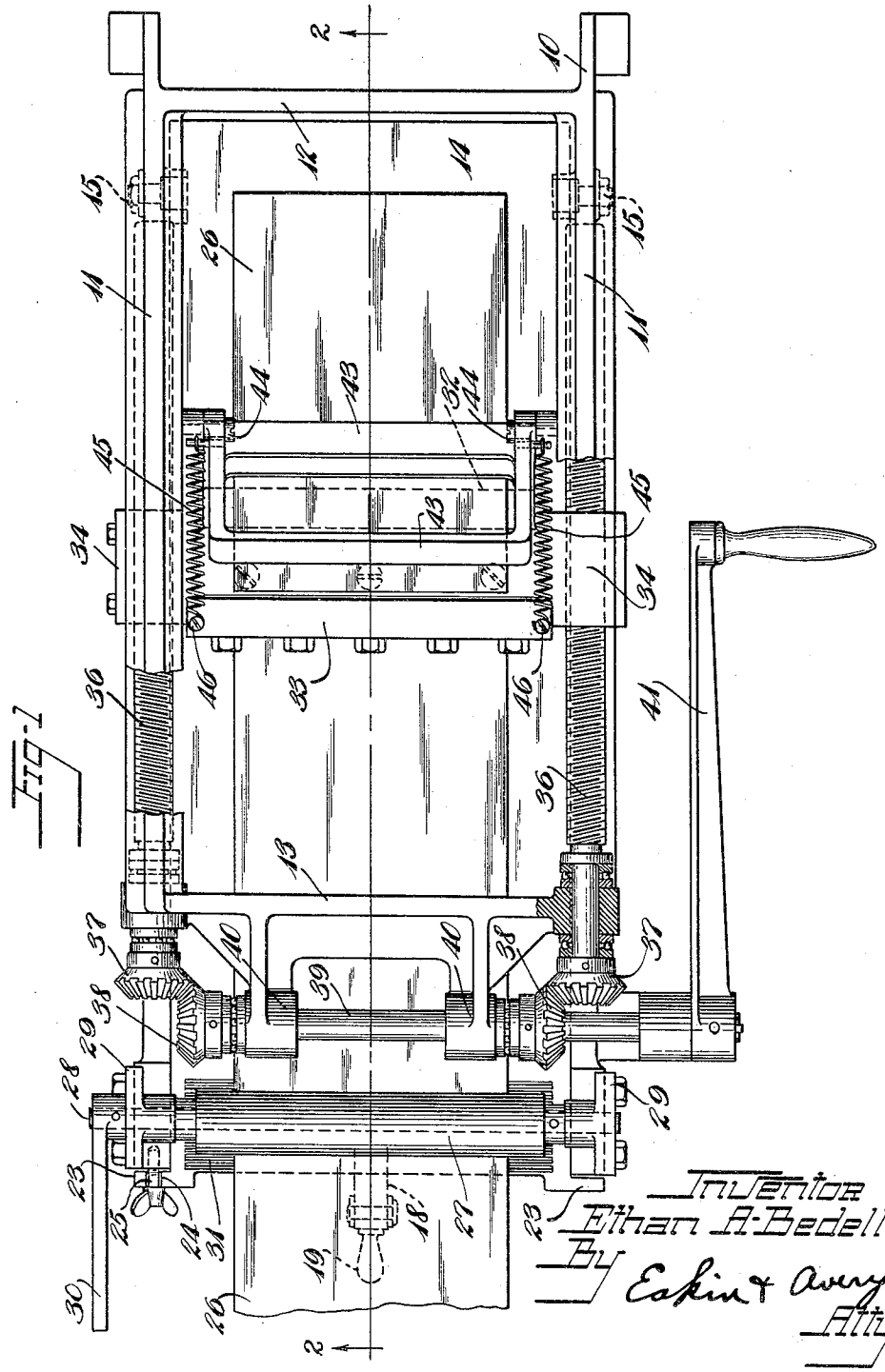


Fig. 1

Inventor
Ethan A. Bedell
By Eaton & Avery
Attys.

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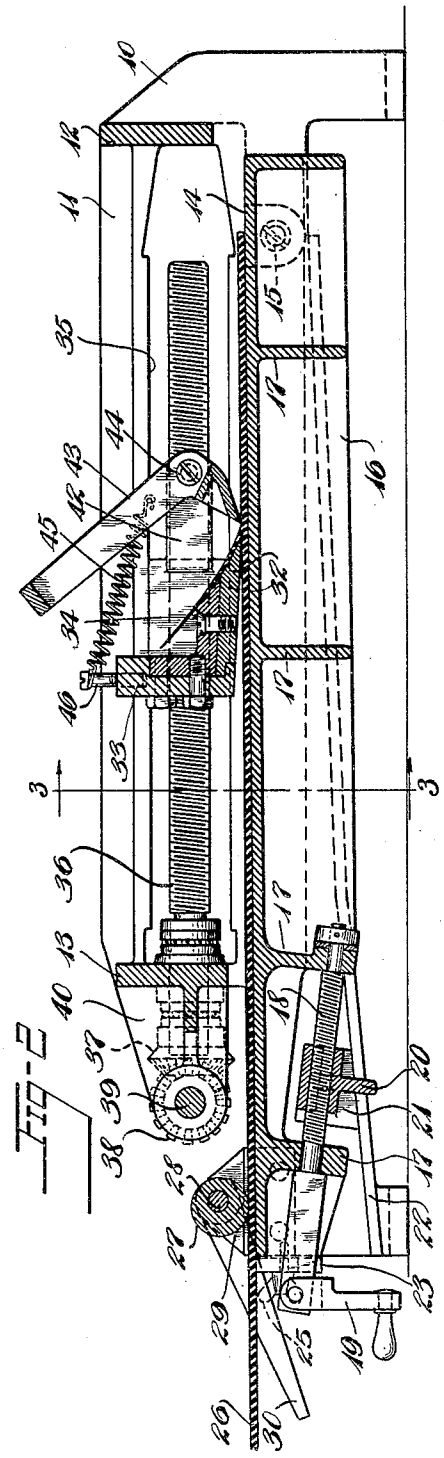


Fig-2

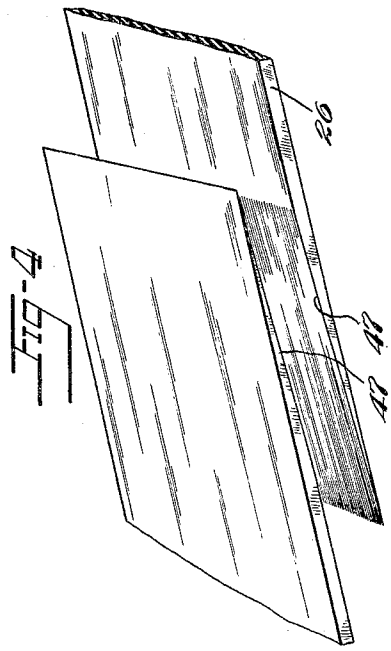


Fig-4

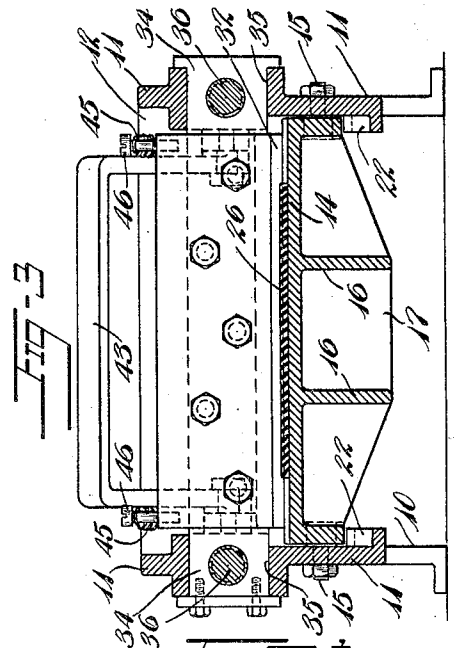


Fig-3

Inventor
Ethan A. Bedell
By Eaton & Avery
Attys.

Patented May 2, 1933 1,906,358

UNITED STATES PATENT OFFICE

ETHAN A. BEDELL, OF EVANSTON, ILLINOIS, ASSIGNOR TO THE B. F. GOODRICH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

APPARATUS FOR SKIVING

Application filed April 4, 1930. Serial No. 441,594.

This invention relates to apparatus for skiving, and more especially to apparatus for skiving or beveling the ends of flat sheet or strip material.

The invention is especially useful for skiving the respective ends of belting preparatory to splicing said ends to produce an endless belt, uniformity of the respective skives being essential for producing a finished belt of uniform thickness and flexibility.

The chief objects of the invention are to effect uniformity of respective skives; to provide a simple and compact skiving apparatus; to provide for readily altering the angle of skive; and to provide apparatus for the purpose mentioned which will accommodate work of a substantial range of thicknesses.

Of the accompanying drawings:

Fig. 1 is a plan view of my improved apparatus in its preferred form, and the work therein, parts being broken away and sectioned.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig 4 is a perspective view of the end portions of a belt skived in my improved apparatus, as they appear preparatory to splicing.

Referring to the drawings, 10 is a relatively low open framework having respective side walls 11, 11, and end walls 12, 13, the end wall 13 being at the front of the apparatus (the left as viewed in Figs. 1 and 2) and disposed somewhat inward from the end thereof. A flat-top table or platen 14 is mounted within the framework 10 and is hinged at 15, 15 to the respective side walls 11 thereof adjacent their rear ends. The bottom of the table 14 is formed with longitudinal and transverse stiffening webs 16, 17 respectively, and the two transverse webs 17 at the front end of the table are centrally formed with bearings for a threaded shaft or screw 18 disposed longitudinally of the table. The shaft 18 is extended beyond the front end of the table and provided thereat with a crank 19. A cross-head 20 in threaded engagement with the shaft 18 has its respective end portions formed with shoes, such as the shoe 21, Fig. 2, and said shoes rest slidably upon respective ways 22, 22 formed as inwardly directed flanges upon the lower margins of the side walls 11 of the framework 10. The ways 22 are obliquely disposed with relation to the horizontal, the shaft 18 is obliquely disposed with relation to the plane of the table 14, and the shoes 21 have their sliding faces tapered so as to rest flat upon the ways. The arrangement is such that angular movement of the shaft 18 advances or retracts the shoes 21 upon the ways 22 with the result that the front end of the table is raised or lowered and the top of the table thereby disposed at different angular positions with relation to the horizontal. The front end of the table is formed with flanges 23, 23 which extend laterally from its opposite sides past the ends of the side walls 11, and at least one of said flanges is formed with an open end slot 24 (Fig. 1) which embraces a bolt 25 threaded into the end of the side wall 11. The bolt 25 may be set up against the flange 23 to secure the table after it has been positioned by rotation of the shaft 18.

The table 14 is adapted to support the work, herein shown as one end portion of a length of belting 26, upon its upper surface, and the work is held in fixed position thereon by a roller cam 27 which spans the table top adjacent the front end thereof. The cam 27 is secured upon a shaft 28 which is journaled at its respective ends in bearing brackets 29, 29 mounted upon the side walls 11 of the framework 10, one end of said shaft 28 being provided with a lever 30 by which the shaft is angularly turned. The operative range or throw of the cam 27 is such that it will engage work of any thickness desired, at all angular positions of the table 14. The top of the table 14 beneath the cam is roughened or scored as at 31 to assist the cam in holding the work against movement lengthwise of the table.

The end of the belt 26 is skived by moving a knife or blade in a horizontal course through the belt, while the latter is obliquely positioned in the path of the blade. The blade 32 is mounted upon the bottom of a movable carriage 33, its cutting edge being directed toward the rear of the apparatus,

and the blade is inclined somewhat downwardly so as to stand oblique to its path of travel and thereby to obviate some friction with the work during the skiving operation.

The carriage 33 is supported, above the table 14, by slide-blocks 34, 34 to which its respective ends are secured, said slide-blocks being mounted in respective horizontal slideways 35, 35 formed in opposite side walls 11 of the framework 10. For concurrently moving the slide-blocks 34 longitudinally of the apparatus, screws 36, 36 are threaded through the respective slide-blocks and are journaled in suitable bearings formed in the end wall 13 of the framework. The end portions of the screws extend beyond said bearings and are provided thereat with respective bevel gears 37, 37 meshed with bevel gears 38, 38 mounted upon a shaft 39, the latter being journaled transversely of the apparatus in bearing brackets 40, 40 formed on the end wall 13. One end of the shaft 39 is provided with a crank 41 by which the shaft is rotated to turn the screws 36 in unison.

Extending rearwardly from each slide-block 34 is an arm 42 and pivotally supported from said arms is a hold-down structure adapted yieldingly to bear upon the work immediately in advance of the blade 32 to hold the work flat upon the table. The hold-down structure consists of an open rectangular frame 43 journaled upon pivots 44, 44, at two of its corners, to the arms 42. That side of the frame 43 which spans the table 14 adjacent the work is offset from the plane of the frame and is obliquely disposed with relation to the table 14 so as to move over the work thereon with a wiping action. Tension springs 45, 45 connect the end members of the frame 43 to respective studs 46, 46 on the carriage 33, with the result that the side member which engages the work is yieldingly urged thereagainst. The side of the frame opposite the work-engaging side serves to equalize the effect of the springs 45 and also serves as a convenient place for grasping the frame to tilt it, against the tension of the springs 45, to raise its work-engaging side from the work.

In the operation of the apparatus, the carriage 33 initially is in inoperative position, at the left as viewed in Figs. 1 and 2, and the cam 27 is in raised position. The end portion of the belt 26 is passed under the cam 27 and laid flat upon the table, substantially to the rear end thereof, and then the angle of the table is adjusted, by turning the crank 19, to determine the length and angle of the skive. The bolt 25 is then tightened to hold the table securely in adjusted position and the lever 30 is manipulated to cause the cam 27 to wedge the work against the table 14. The crank 41 is then turned to cause the screws 36 to feed the carriage 33 toward the rear of the apparatus, whereby the blade 32 is forced through the belting 26 which is obliquely disposed in the blade's path of travel. The finished work is illustrated in Fig. 4, the skives being designated 47.

The machine is small, compact, and efficient. It is readily portable, and in use may be mounted upon a bench or table. When adjusted for a particular belt it will effect skives of uniform length and angle so that the belt-ends may be spliced to produce an endless structure of uniform thickness and flexibility.

The invention is susceptible of modification within the scope of the appended claims.

I claim:

1. A skiving machine comprising, in combination, a base, a work supporting table pivoted to said base, means for supporting the table at a determinately variable angle relative to said base, a cutter carriage reciprocable in a fixed course relative to said base, and a work pressing structure pivoted to said carriage and having a work contacting foot extending downwardly from the pivot and a manipulating arm extending upwardly therefrom.

2. A skiving apparatus comprising, in combination, a base, a cutter reciprocable in a fixed course relative to said base, a work supporting table pivoted to said base and means comprising a wedge member movable relative to the base and table along a cam surface therebetween for adjusting the relative angularity thereof.

3. A skiving apparatus comprising, in combination, a base having a cam surface, a cutter reciprocable in a fixed course relative to said base, a work supporting table pivoted to said base, a wedge member reciprocable along said cam surface between said base and table for varying the relative angularity of the base and table, and means comprising a screw rotatably mounted in said table and engaging said wedge member for adjusting the position of the latter along said cam surface.

In witness whereof I have hereunto set my hand this 2nd day of April, 1930.

ETHAN A. BEDELL.