March 31, 1931. F. L. HITCHCOCK 1,798,421

BEVELING MACHINE

Filed June 28, 1929

FIG. 1

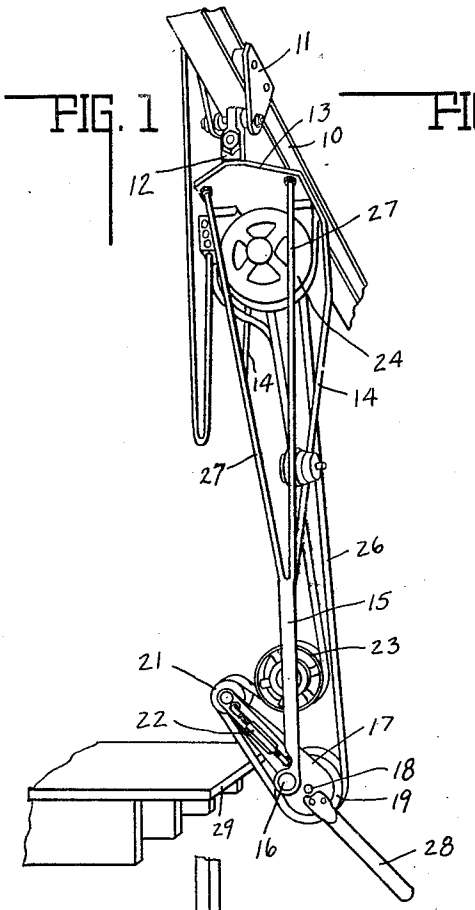


FIG. 2

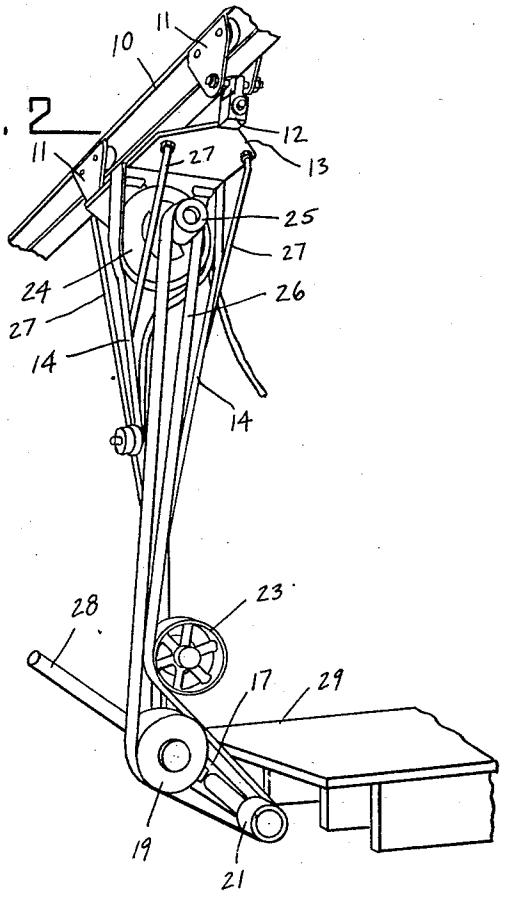
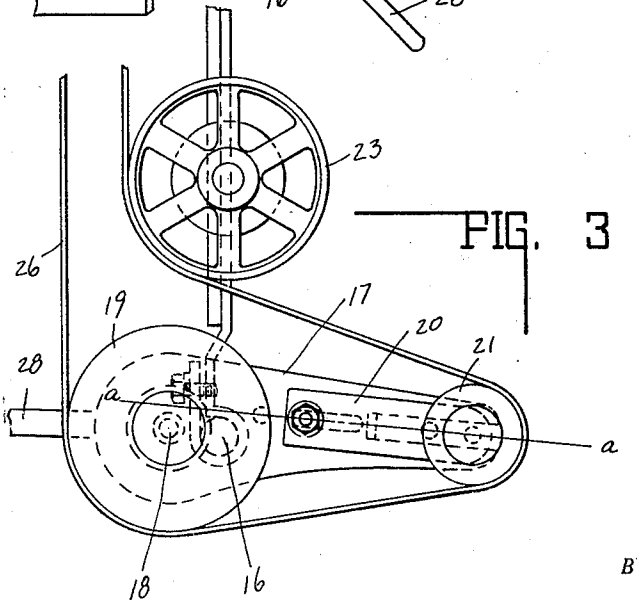


FIG. 3



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Patented Mar. 31, 1931 1,798,421

UNITED STATES PATENT OFFICE

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BEVELING MACHINE

Application filed June 28, 1929. Serial No. 374,480.

This invention relates to a machine adapted to bevel or round the edges of a sheet of glass or other material.

The principal object of the invention is to provide such a machine of the lightest possible construction and of the greatest convenience and ease of operation adapted to bevel both upper and lower edges of a sheet of material without the necessity of time consuming adjustments.

The principal feature of the invention resides in the provision of an abrasive belt driven directly by a motor and operating over suitable pulleys to effect the placing of the belt in a number of positions relative to the sheet of material upon which it is desired to operate.

Another feature of the invention resides in the reduction of the number of pulleys ordinarily used for such apparatus and the positioning of the said pulleys so that the belt is neither loosened nor tightened in the manipulation thereof.

The full nature of the invention will be understood from the accompanying drawings and the following specifications and claims.

Fig. 1 is a perspective view of the invention with the abrasive belt positioned to bevel the upper corner of a sheet of material. Fig. 2 is a similar perspective view of the invention taken from the opposite side and showing the abrasive belt positioned to bevel the under corner of a piece of material. Fig. 3 is an enlarged view showing the positioning of the pulleys and the abrasive belt.

In the drawings an overhead I-beam 10 supports a pair of I-beam trolleys 11 in turn supporting metallic blocks 12. Pivotally mounted on the metallic blocks 12 is a platform 13 free to swing about an axis parallel with the said I-beam. A pair of support members 14 depend from opposite sides of the platform and are united at 15 therebeneath. The united support members pivotally carry a pin 16 at their lower ends. The pin 16 carries an arm 17 in turn supporting a pin 18 upon which is mounted a pulley 19. The arm 17 also carries a slidably mounted member 20 rotatably carrying a pulley 21 at its outer end. The member 20 is adjustably attached to the arm 17 by means of a right and left hand threaded turn buckle 22. A pulley 23 is rotatably mounted upon the united support members 14. A motor 24 is carried on the underside of the platform 13 and in turn carries a pulley 25 upon its shaft. An abrasive belt 26 is threaded about the pulley 25 and the pulleys 23, 21 and 19 in the manner shown in the drawings. Bracing rods 27 extend from the platform to the supporting members 14 and form therewith a rigid framework. A handle 28 is attached to the arm 17.

In the operation of the device the operator, by grasping the handle 28, may rotate the arm 17 about its pivot pin 16 to bring the abrasive belt into contact with either the upper or lower corner of the sheet of material 29 at any desired angle. By the swinging of the platform 13 upon its supporting members 12 and the travel of the device along the I-beam the machine may be selectively brought into contact with any desired part of the edge without moving the sheet of material. Thus an extremely light, flexible and easily manipulated construction is obtained.

It will be noticed that the axis of rotation of pulley 19 is not concentric with the supporting pin 16. The distance between the center of rotation of the pulley 19 and the pivot pin 16 is made such that the shortening of the run of belt between pulleys 21 and 23 by the lowering of handle 28 will be exactly compensated for by the increase in the run of belt between pulley 25 and pulley 19 plus the increase in wrap about pulleys 21, 23 and 19. Thus the belt will be neither tightened nor loosened by manipulation of the handle 28.

In applying a new belt or in taking up the stretch in an old one the turn buckle 22 is adjusted to tighten the belt. The prolongation of the path of travel of the pulley 21 during this tightening operation passes slightly above the pivot pin 16, as illustrated by line *a*—*a* in Fig. 3. This path is so calculated that the mathematical relations necessary for the maintenance of a tight belt during the manipulation of the handle 28 are maintained

for any position of the pulley 21 along its path of travel.

If the belt is run slightly loose the corners of the material may be rounded rather than beveled. The same result may be obtained by manipulation of the handle 28 when the belt is in contact with the material.

The invention claimed is:

1. A beveling machine including a support, a trolley movable thereon, a framework supported by said trolley and adapted to swing about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a pair of pulleys carried upon said arm, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support.

2. A beveling machine including a support, an arm pivotally mounted thereon, a motor carried by said support, a pair of pulleys carried on said arm, a pulley carried on said support, a pulley carried on the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal mounting, said pulleys being so positioned and dimensioned that the movement of the arm neither materially tightens nor loosens the belt.

3. A beveling machine including a support, a framework supported thereby and adapted to swing thereon about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a pair of pulleys carried upon said arm, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support, said pulleys being so positioned and dimensioned that the movement of the arm neither materially tightens nor loosens the belt.

4. A beveling machine including a support, a trolley movable thereon, a framework supported by said trolley and adapted to swing about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a pair of pulleys carried upon said arm, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support, said pulleys being so positioned and dimensioned that the movement of the arm neither materially tightens nor loosens the belt.

5. A beveling machine including a support, a trolley movable thereon, a framework supported by said trolley and adapted to swing about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a pulley carried on the outer end of said arm, a pulley carried on said arm adjacent to the pivotal mounting of said arm and on the opposite side of said mounting to said first-mentioned pulley, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support.

6. A beveling machine including a support, an arm pivotally mounted thereon, a motor carried by said support, a member slidably carried on said arm, a pulley mounted on said member, the prolongation of the path of travel of the center of said pulley in the sliding movement of said member passing to one side of the pivotal mounting of said arm, means for sliding said member, a pulley carried on said arm, a pulley carried on said support, a pulley carried on the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal mounting.

7. A beveling machine including a support, a framework supported thereby and adapted to swing thereon about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a member slidably carried on said arm, a pulley mounted on said member, the prolongation of the path of travel of the center of said pulley in the sliding movement of said member passing to one side of the pivotal mounting of said arm, means for sliding said member, a pulley carried on said arm, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support.

8. A beveling machine including a support, a trolley movable thereon, a framework supported by said trolley and adapted to swing about a substantially horizontal axis, an arm pivotally mounted upon said frame, a motor carried upon said frame, a member slidably carried on said arm, a pulley mounted on said member, the prolongation of the path of travel of the center of said pulley in the sliding movement of said member passing to one side of the pivotal mounting of said arm, means for sliding said member, a pulley carried on said arm, a pulley carried upon said frame, a pulley carried upon the shaft of said motor, an abrasive belt trained about said pulleys substantially as described, and means for moving said arm about its pivotal support.

In witness whereof, I have hereunto affixed my signature.

FORREST L. HITCHCOCK.