

933,343.

V. ROYLE.
BEVELING MACHINE.
APPLICATION FILED JAN. 21, 1905.

Patented Sept. 7, 1909.
3 SHEETS—SHEET 1.

Fig. 1.

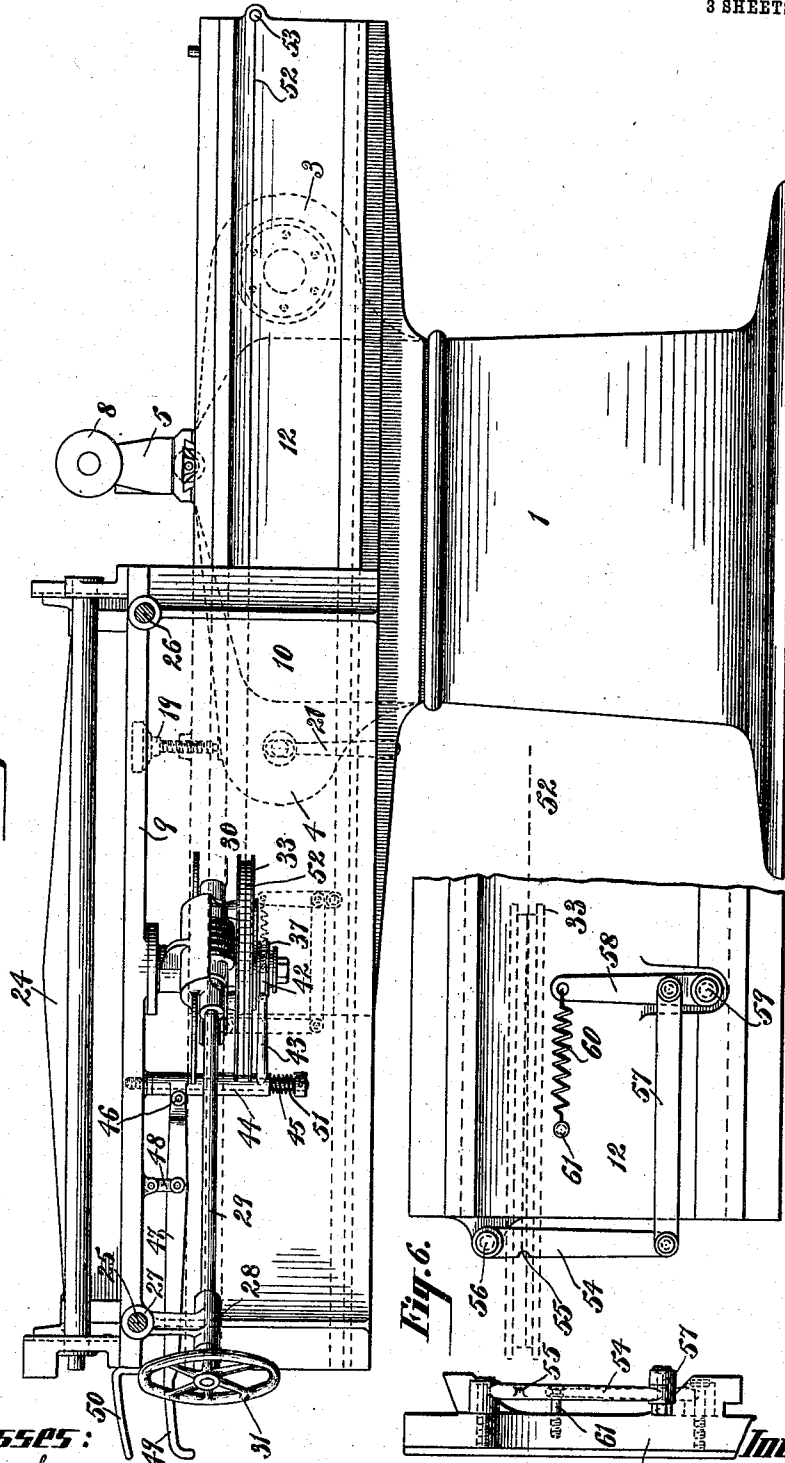


Fig. 6.

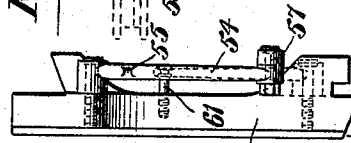
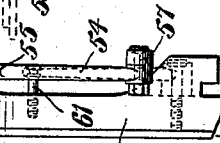


Fig. 7.



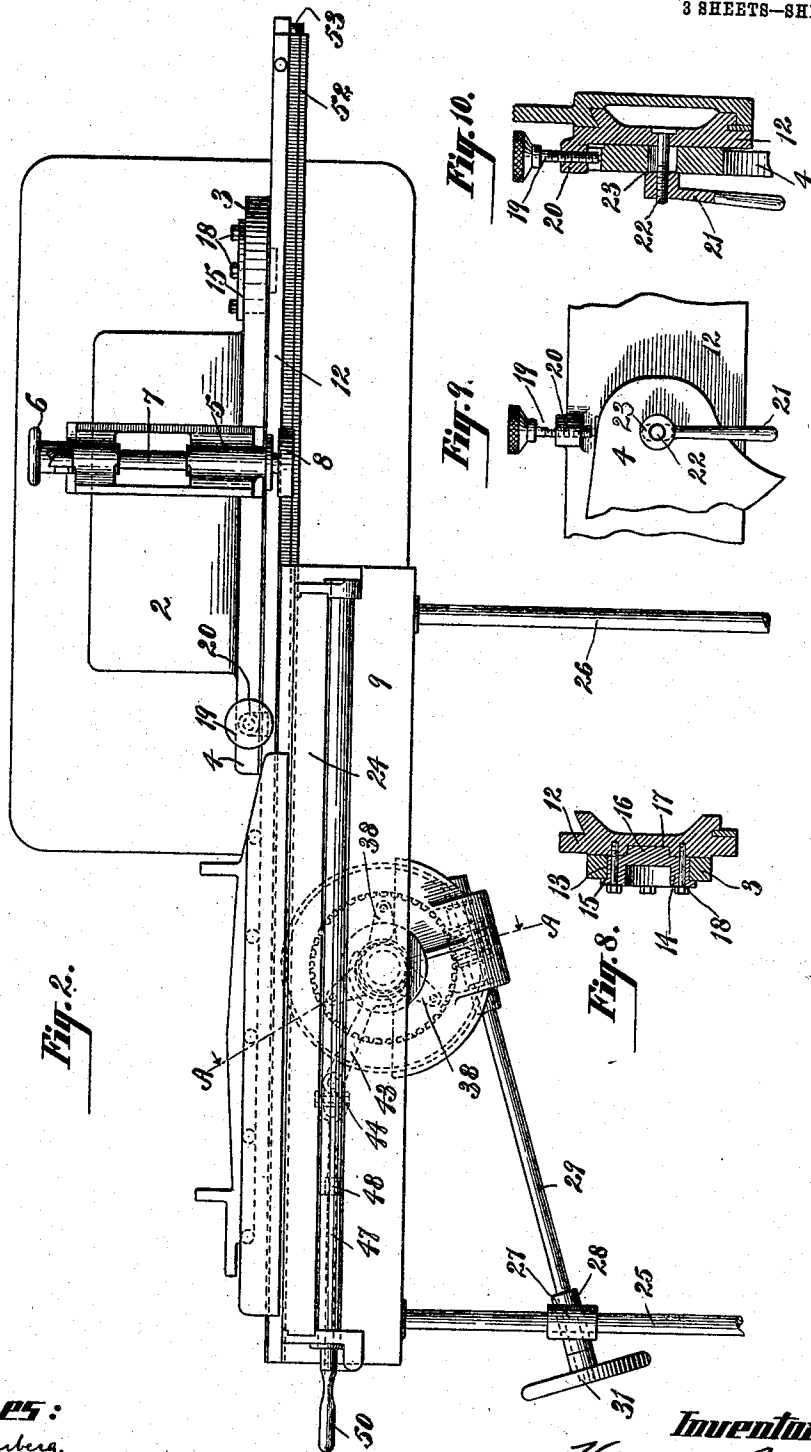
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3 SHEETS—SHEET 2.



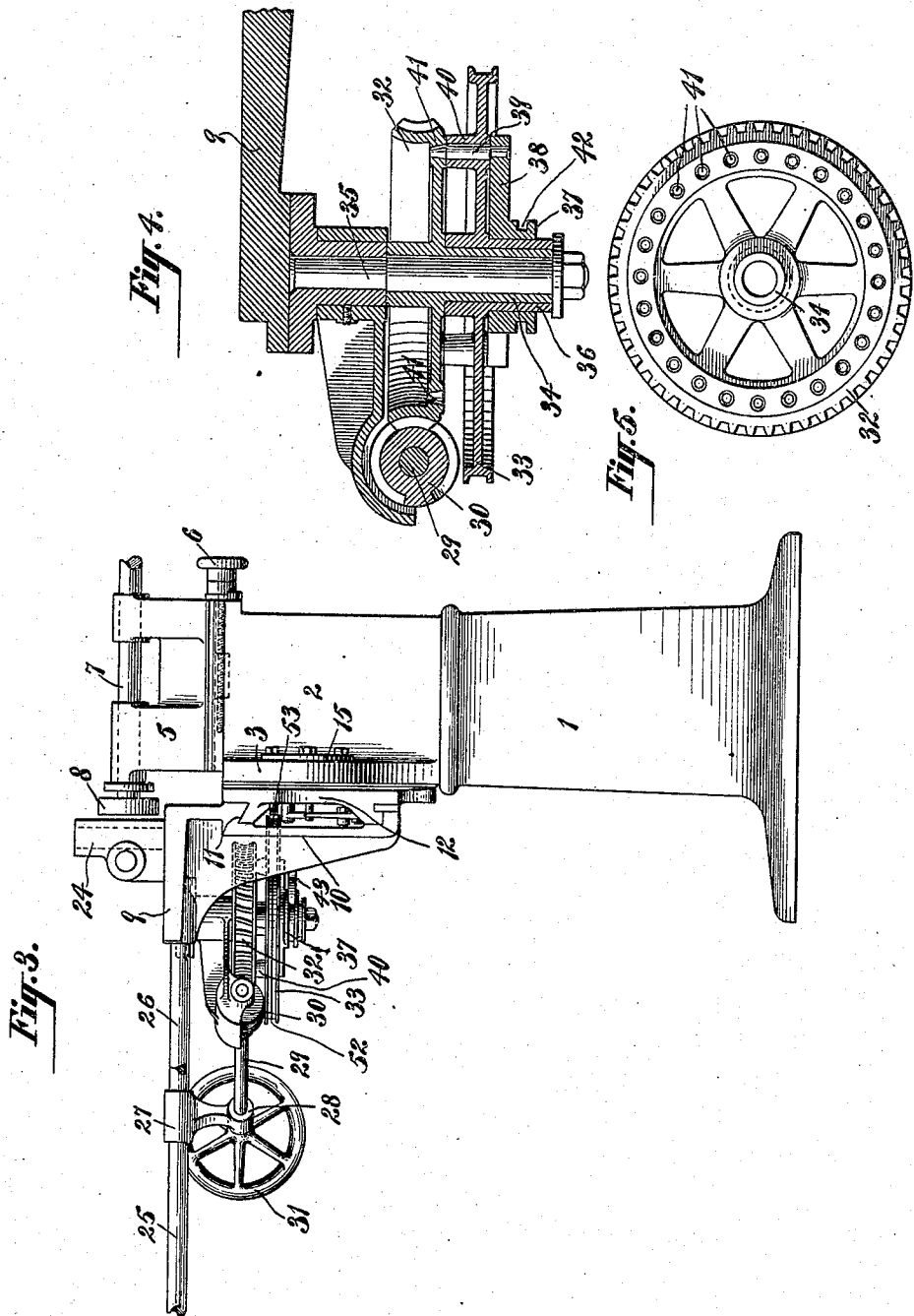
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

VERNON ROYLE, OF PATERSON, NEW JERSEY.

BEVELING-MACHINE.

933,343.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed January 21, 1905. Serial No. 242,190.

To all whom it may concern:

Be it known that I, VERNON ROYLE, a citizen of the United States, and resident of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Beveling-Machine, of which the following is a specification.

My invention relates to beveling machines, with the object in view of providing means for presenting the plate to be beveled to the cutter at different distances therefrom as may be desired without tilting the carriage on its track and to provide means within convenient reach of the operator for throwing a feeding mechanism into and out of operation.

In the accompanying drawings, Figure 1 is a view of the machine in side elevation, Fig. 2 is a top plan view, Fig. 3 is an end view, Fig. 4 is an enlarged transverse section in the plane of the line A—A of Fig. 2, Fig. 5 is a view of the worm wheel in side elevation, Fig. 6 is an enlarged view in detail showing a portion of the track in elevation with the tension or take-up device in position, Fig. 7 is an end view of the same, Fig. 8 is a section through the pivoted connection of the track with the support, Fig. 9 is a partial view of the back of the track at the point where the adjustment takes place, a portion of the support and adjusting device being shown in position, and Fig. 10 is a transverse section through the same.

The pedestal is denoted by 1 and this is surmounted by a bed piece 2 provided with oppositely extending flanges 3 and 4 at one side thereof. The cutter supporting frame 5 is mounted and is made adjustable laterally by means of a screw feed 6 of well known or approved form. In the frame 5 the cutter spindle 7 is mounted and carries a head 8 to which the beveling cutter may be secured. The cutter head and its operating spindle are adjusted laterally bodily together with the frame 5.

The plate supporting table is denoted by 9. This table is provided with a depending flange 10 on the face of which, toward the bed piece 2, there is a dove-tailed recess 11 for the reception of a dove-tailed track 12. The track 12 is pivoted to the flange 3 of the bed piece 2. This pivotal connection of the track is made by providing the flange 3 with a round hole 13 in which is seated a pivot piece 14, the said pivot piece being

provided at its outer end with a flange 15 which laps over the edge of the hole 13 in the flange 3 and at its inner end is provided with a boss 16 which projects into a socket 17 formed in the track, the pivot piece 14 being secured to the track 12 by means of screw bolts 18, passing through the pivot piece into the track. This structure is shown in detail in Fig. 8. The track 12 and the parts supported thereon are adjusted vertically by means of a hand screw 19 seated in a boss 20 on the upper edge of the track and overlapping the flange 4 of the bed piece 2, the said screw resting with its lower end on the top of the flange 4.

The parts are held in the desired adjustment by means of a tail nut 21 working on the threaded end of a bolt 22 seated in the track 12 and extending through a vertically elongated slot 23 in the flange 4. This structure admits of tilting the track and the table 9 which is, in effect, a carriage for moving the plate into engagement with the cutter, toward and away from the cutter to cause the latter to cut deeper or shallower as may be desired, and also for accommodating the plates of different thicknesses, while the adjustment of the cutter bodily toward and away from the table 9 provides for locating the cut at or such a distance away from the edge of the plate as may be desired.

The clamp for holding the plate on the table 9 is denoted by 24 and may be of any well known or approved form. The table line is provided with bars 25, and 26, extending laterally therefrom to any distance that may be desired for supporting plates of different widths. One of these bars, in the present instance the bar 25 also serves as a support for a hanger 27 which has at its lower end a bearing 28 for the support of the forward end of the feed operating shaft 29. The feed operating shaft 29 is provided on its rearward end with a worm 30 and on its forward end with a hand wheel 31. The worm 30 engages a worm wheel 32 which may be locked to and released from a drive wheel 33 as follows:—The drive wheel 33 is loosely mounted on the elongated hub 34 of the worm wheel 32, the latter being mounted on an axle 35 depending from the table 9. On the extended hub 36 of the drive wheel 33 the hub 37 of the clutch is loosely mounted.

The clutch 37 is provided with a plurality of arms radiating from its hub in the present instance three arms equidistant apart. These

arms are similar and similarly equipped; one of them, denoted by 38 being shown in section in Fig. 4, and provided with a pin 39 set therein and extending loosely through a boss 40 on the drive wheel 33, and of such length that when the clutch is thrown into position to lock the worm wheel to the drive wheel, as shown in Fig. 4, the pin 39 will enter one of a series of perforations 41 in the side face of the worm wheel 32 but when the clutch is thrown in the opposite direction it will withdraw the pin 39 from engagement with the worm wheel 32 leaving the wheel 33 free to revolve without affecting the worm wheel. It is understood that the pins on the other arms are similar to the pins 39 and pass through similar bosses on the drive wheel 33.

The hub 37 of the clutch is provided with a groove 42 which is engaged by a clutch operating arm 43 (see Fig. 1) attached to a vertically sliding sleeve 44 mounted on a rod 45 fixed to and depending from the table 9, the said sleeve being connected at 46 to the short arm of a clutch operating lever 47 fulcrumed in a link 48 depending from the table 9, the long arm of said lever extending forwardly to within convenient reach of the operator and there provided with a handle 49 which may be grasped by the fingers of the operator's hand when the hand of the operator rests on a support 50 fixed to and projecting forwardly from the end of the table 9. By grasping the handle 49 while the operator's hand rests on the support 50, the lever 47 will be rocked in a direction to throw the clutch in a direction to release the pins 39 from the worm wheel and, as long as this grasp is continued, the table or carriage with the plate thereon may be advanced and returned along the track 12 at pleasure. As soon as the grasp is released from the lever 49, the spring 51 on the rod 45 will lift the sleeve 44 and carry the clutch upwardly into position to throw the pins 39 into locking engagement with the worm wheel 32 and then, by turning the hand wheel 31, the operator may operate the worm wheel and together with it the drive wheel 33, and hence move the carriage and plate to the cutter because of the connection of the drive wheel with the track as follows:—A band 52, in the present instance a wire, is made fast at one end to a pin 53 on the track 12 and extends thence along the face of the track 12 to the periphery of the drive wheel 33 around which it passes and thence onto the depending arm 54 to which it is attached as at the point 55. The arm 54 is pivoted at its upper end at 56 to the forward end of the track and at its lower end the said arm is connected by a link 57 with an upwardly extending vibrating arm 58 pivoted at 59 to the track 12 and connected at its upper end by a spring 60 with a pin 61 on the face of the track 12.

The spring 60 exerts its tension in a direction to draw the arm 58 toward the pin 61 and hence to force the arm 54 through the link connection 57 away from the track 12 and thus exerts a pull on the band 52 sufficient to take up any slack that may tend to form when the movement of the table or carriage 9 is reversed. It also provides as a take-up or tension mechanism to provide for any contraction or expansion of the wire band 52 under different degrees of temperature.

When the worm wheel 32 is locked to the wheel 33 the turning of the hand wheel 31 in the one direction or the other will advance or return the carriage or table 9 and plate thereon but when the clutch is thrown out of locking position, the carriage may be freely moved by hand, the wheel 33 rotating idly by its engagement with the band 52 as the carriage is manipulated by the direct push or pull of the operator.

The structure has the advantage of being simple and providing for manipulation of the plate carrying table or carriage either by the direct thrust or pull of the operator or by the intervention of the gear for multiplying power at the expense of time while the plate carrying table or carriage itself is moved along the track to which it may be fitted with great accuracy and this engagement of the carriage with the track is not disturbed when the track is tilted to bring the surface of the table nearer to or farther away from the cutter. The cutter may also be mounted in a heavy frame which will prevent it from hurtful or annoying vibration and this frame itself being bodily movable along the bed frame will provide for the lateral adjustment of the cutter without changing the relation of the cutter spindle to its supporting frame.

What I claim is:—

1. The combination with a suitable support, a track pivoted to said support and arranged to tilt edgewise in a vertical plane, means for tilting the track and holding it in tilted adjustment and a plate supporting carriage mounted to slide along the side face of the track, of a cutter in position to engage the plate as the carriage moves past it.

2. The combination with a plate supporting carriage provided with a handle and a pivoted track along which it is arranged to slide, of gearing for forcing the carriage along the track, means under the control of the hand of the operator while grasping the said handle for throwing the gearing out of operation to permit the carriage to be slid directly under the thrust and pull of the operator and a cutter in position to engage the plate carried by the carriage.

3. The combination with a plate supporting carriage provided with a handle and a track along which it is arranged to slide, of

a drive wheel carried by the carriage, a band attached to the track and engaged with the said drive wheel a worm wheel carried by the carriage, a worm under the control of the operator for driving the worm wheel and a clutch under the control of the hand of the operator while grasping the said handle for locking the worm wheel to and releasing it from the drive wheel and a cutter for engaging the plate carried by the carriage.

4. The combination with a plate supporting carriage provided with a handle and a track along which it reciprocates, of a band attached to the track, a drive wheel carried by the carriage and engaged with the band, a worm wheel carried by the carriage, a worm under the control of the operator for operating the worm wheel, a multiple armed clutch provided with locking pins for locking the worm wheel to and releasing it from the drive wheel, a lever under the control of the hand of the operator while grasping the said handle for releasing the clutch, a spring for throwing the clutch into locking position and a cutter for engaging the plate on the carriage.

5. The combination with a plate support-

ing carriage, a pivoted track along which the carriage slides, a band secured to the track, a taking-up mechanism consisting of a system of spring actuated levers interposed between one end of the band and the track, a drive wheel carried by the carriage and engaged with the band, means under the control of the operator for actuating the drive wheel and a cutter in position to engage the plate on the carriage.

6. The combination with a plate supporting carriage, a track on which it slides and a track support, of a pivot piece extending through the track support into engagement with the track, means for locking the pivot piece to the track, means for locking the track in different tilted adjustments on its pivotal support and a cutter in position to engage the plate carried by the carriage.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 13th day of January 1905.

VERNON ROYLE.

Witnesses:

FREDK. HAYNES,
C. S. SUNDGREN.