

F. ALLNER & E. N. BOSWELL.  
 PLANER ATTACHMENT.  
 APPLICATION FILED JAN. 16, 1909.

960,480.

Patented June 7, 1910.

2 SHEETS—SHEET 1.

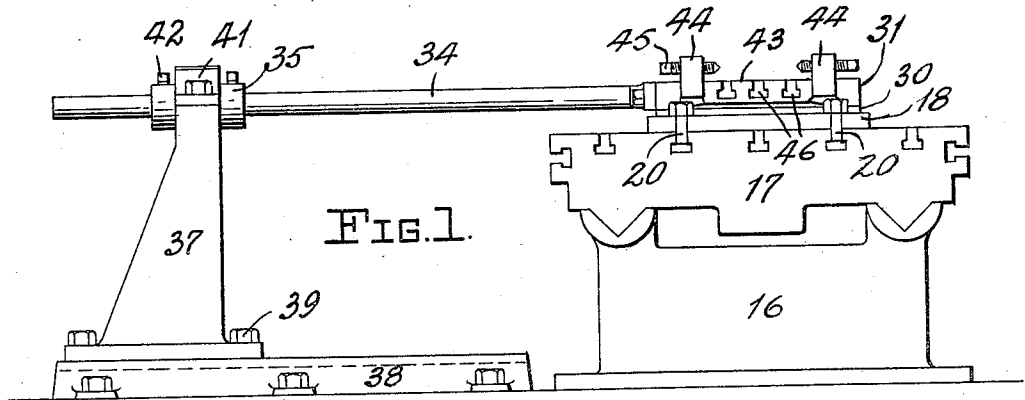


FIG. 2.

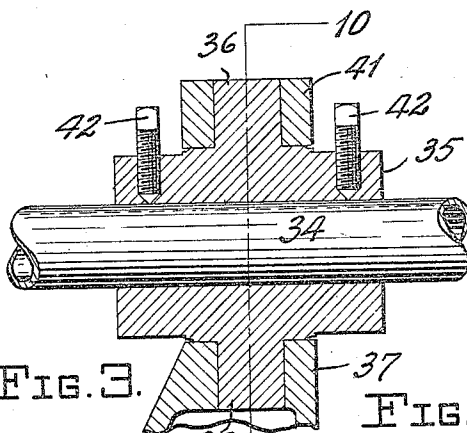
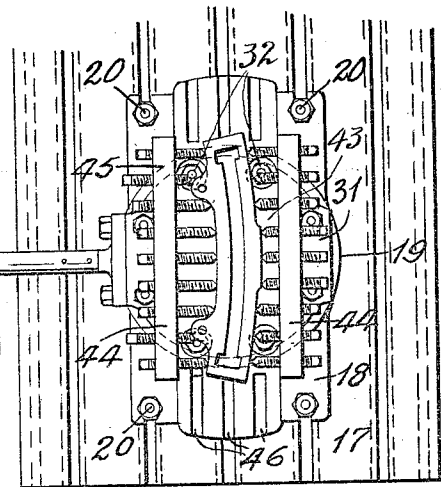
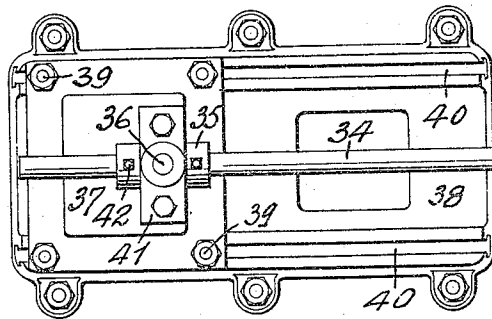
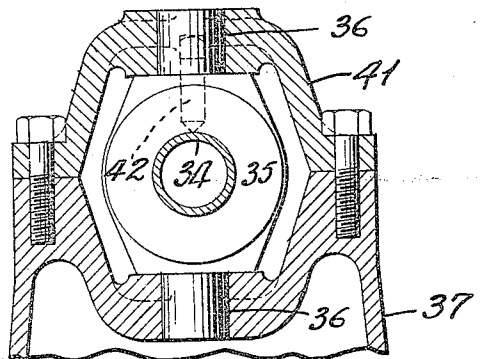


FIG. 3.

FIG. 4.



WITNESSES

*Stuart M. Allen*  
*C. A. McHenry*

INVENTORS

FREDERICK ALLNER.  
 EDMUND N. BOSWELL.

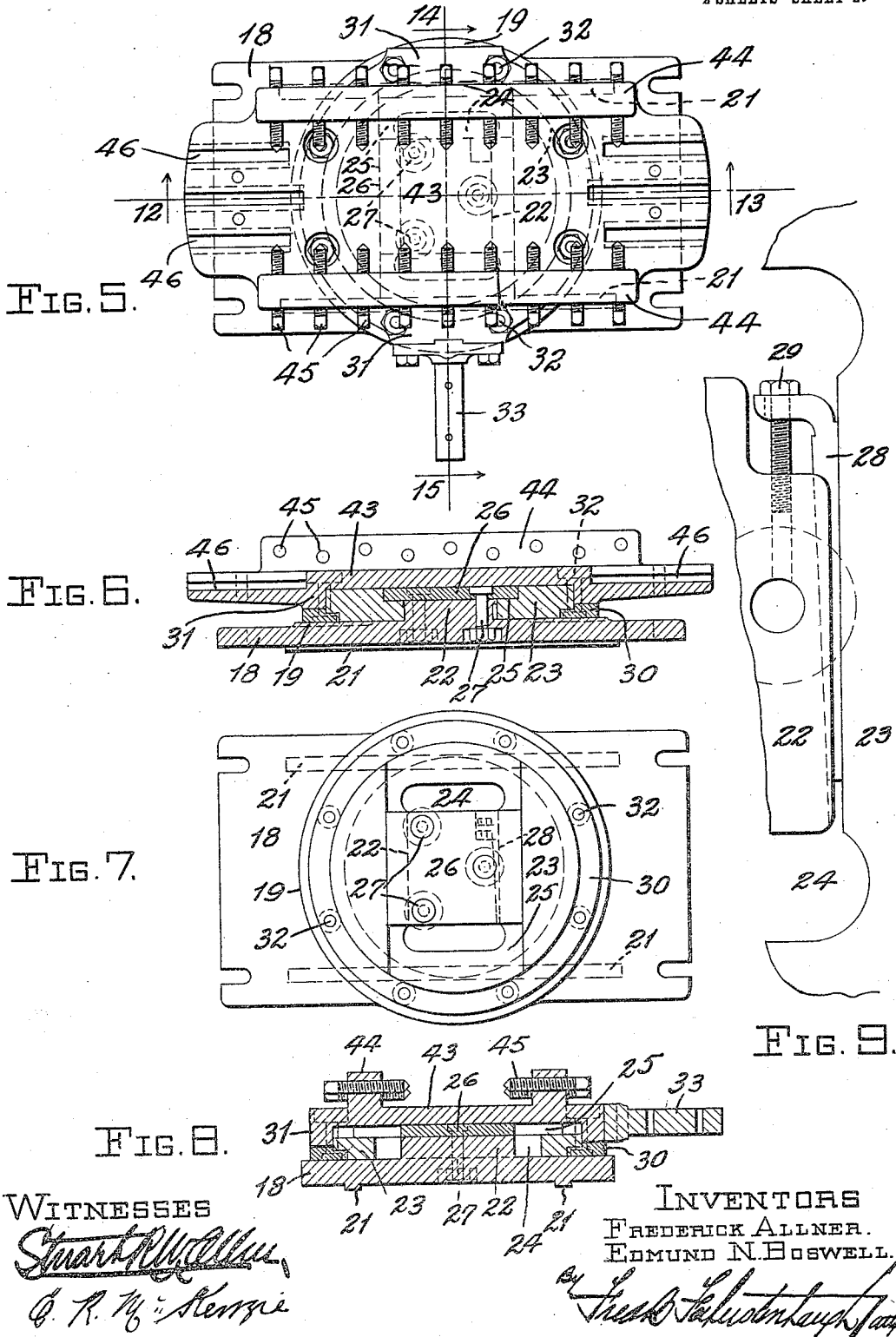
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2 SHEETS—SHEET 2.



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*Stuart M. Allen*  
*C. R. McHenry*

INVENTORS  
 FREDERICK ALLNER.  
 EDMUND N. BOSWELL.  
*By Frank L. Lupton, Atty.*

# UNITED STATES PATENT OFFICE.

FREDERICK ALLNER AND EDMUND N. BOSWELL, OF MONTREAL, QUEBEC, CANADA.

## PLANER ATTACHMENT.

960,480.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed January 16, 1909. Serial No. 472,759.

*To all whom it may concern:*

Be it known that we, FREDERICK ALLNER and EDMUND N. BOSWELL, both of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Planer Attachments, of which the following is a full, clear, and exact description.

Our invention relates to improvements in planer attachments, and the object is to provide means whereby curved surfaces may be planed on an ordinary planer.

To illustrate the application of the device, we will compare one of the present methods of cutting the slot in eccentric links with the method by which the same would be done using our invention. At present, after the sides of the links are faced, three holes are drilled, one at each end of the link and one at the center. The end holes are then slotted or broached to form the clearance at each end of the link slot. The link is now placed in a shaper and straight cuts made from the center hole to the clearance at each end. The curve of the slot is lastly put in by means of filing or by a slotter, and the links finally finished up true by hand. When using our device attached to a planer, the end holes are drilled in the link and the clearance slotted out as before. The link is now set up on the planer attachment and by the use of two tools in the planer head, both sides of the curved slot are cut simultaneously from clearance to clearance, the cut being curved as desired. All that is necessary to finish the link, is to scrape the faces smooth.

It will be obvious from the foregoing that a considerable saving of time will be effected by the use of our invention.

Our device consists briefly of a bottom plate adapted to be fixed to the planer table and having a central block integral therewith. A disk having a central slot therein for the reception of the block is superposed on the bottom plate and provided with a loose flange to which an eye surrounding the disk is fixed. A setting table for work is provided integral with the eye. A radius bar extends from the eye normally at right angles to the line of planer travel. This bar is supported by a pivoted guide which

may be adjusted toward or away from the planer.

In the drawings which illustrate our invention and in all the figures of which similar numerals designate corresponding parts:—Figure 1 is a side elevation of our device. Fig. 2 is a plan view thereof. Fig. 3 is a vertical longitudinal section of the radius bar guide. Fig. 4 is a partial vertical cross section of same on the line 10—11 of Fig. 3. Fig. 5 is an enlarged plan view of a part of the device. Fig. 6 is a longitudinal section on the line 12—13 of Fig. 5. Fig. 7 is a plan view of the device with the setting table removed. Fig. 8 is a cross section on the line 14—15 of Fig. 5. Fig. 9 is an enlarged detail view of the wedge for taking up slack motion between the block and disk.

In the above defined figures, 16 designates a planer having a table 17. A preferably rectangular bottom plate 18, having a raised circular bearing surface 19, is fixed to the planer table in the usual manner by bolts 20, alining ribs 21 being formed on the under surface. A rectangular block 22 is formed integral with the bottom plate at its center. A disk 23 is superposed on the bottom plate, said disk having a central rectangular slot 24 in which the block 22 engages. A broad shallow groove 25 is formed across the top of the disk to receive a plate 26 fixed to the block by bolts 27 so as to form a flange therefor to keep the disk and bottom plate from disengaging. A small groove is formed in one side of the block 22 in which a substantially L shaped wedge 28 is located, so as to lie between the block and one wall of the disk slot. This wedge is adjustable by means of a cap screw or bolt 29 to take up lost motion between the block and disk, as will be readily understood by reference to Fig. 9. A circumferential channel is formed in the lower edge of the disk 23 in which the inner portion of a ring or loose flange 30 engages. The outer portion of the ring 30 is fixed to an eye 31 surrounding the disk by means of bolts 32. A post 33 is formed integral with the eye and has fixed thereto one end of a preferably tubular radius bar 34. When the device is assembled, the radius bar is in line and parallel with the slot in

the disk and extends normally at an angle of 90° to the line of travel of the planer table. The radius bar is supported by a guide 35 pivotally mounted on vertical trunnions 36, located one above and one below the bar, in a column 37. The column is adjustable toward or away from the planer, on a bed 38, by means of bolts 39 engaging slots 40 in the bed in the usual manner. The guide 35 is maintained in the column by a cap 41 which engages the upper trunnion. Set screws 42 are provided in the guide bar securing the same to the radius bar. A setting table 43 is formed integral with the eye, said table being provided at each side with low walls 44 through which a plurality of set screws 45 operate, and at each end with a plurality of longitudinal grooves 46 for securing the work in the usual manner.

The operation of the device is simple. Assuming that the work to be done is forming the slot in an eccentric link. The link is first faced on the sides and the clearance slotted out at each end. The link is then secured in place on the setting table, care being taken that the center thereof is directly in line with the center of the radius bar, and the ends of the link equidistant from the wall 44, nearest the radius bar, the set screws 45 being adjusted to prevent the link from springing. The radius of the desired curve is measured from the link along the radius bar with trammels and the column 37 adjusted until one point of the trammels rests on the center of the upper trunnion 36. The set screws 42 are tightened to lock the radius bar and guide together and the column locked in place by the bolts 39. Two tools are used in the planer head, the distance between their cutting edges being the width of the desired slot, so that both sides thereof will be cut simultaneously. As the planer table reciprocates, it carries the device with it, the eye and setting table oscillating around the disk. The planer table travels in a straight line and the eye and setting table must travel in an arc because they are fixed to the radius bar. This difference of travel is allowed for by the disk sliding on the block so that the setting table travels in an arc, the curvature of which is adjustable by shifting the pivotal point of the radius bar. It will be seen that the curve of the setting table travel may be regulated as required and that the work secured thereto travels in a curve under the cutting tools so that the cut made is curved. The tools are fed in the usual manner. The two set screws and trunnions above and below the guide form a rigid pivot for the radius bar and prevent any give at this point from spoiling the exactitude of the curve de-

scribed by the setting table. The use of the eye surrounding a large disk gives a bearing surface of great area and solidity which will run without unnecessary friction and wear for an almost indefinite period. Wear between the slotted disk and the block where the bearing surface is much reduced is compensated for by the wedge 28. The whole device may be readily and quickly attached to or detached from an ordinary planer.

It will be obvious that this device for cutting curved slots will effect a great saving of time and will, furthermore, produce more accurate work than was possible by old methods of cutting.

Having thus described our invention, what we claim is:—

1. In a device of the class described, the combination with a planer table of a bottom plate fixed thereto, a reciprocating disk slidably mounted on said plate, and a setting table revolubly mounted on said disk.

2. In a device of the class described, the combination with a planer table of a bottom plate fixed thereto, a block integral therewith, an apertured disk slidably engaging the block and reciprocating thereon, an eye surrounding the disk, a setting table revoluble with respect to said disk and integral with said eye, a radius bar fixed to the eye, and an adjustable support for said bar.

3. In a device of the class described, the combination with a planer table of a bottom plate fixed thereto, a block integral therewith, an apertured disk slidably engaging the block, a flange plate fixed to said block to maintain the disk in engagement with the bottom plate, an eye surrounding the disk, a flange ring fixed to said eye and engaging the disk, a setting table integral with said eye, a radius bar fixed to the eye, and an adjustable support for said bar.

4. In a device of the class described, the combination with a planer table of a bottom plate fixed thereto, a block integral therewith, an apertured disk slidably engaging the block, a flange plate fixed to said block to maintain the disk in engagement with the bottom plate, an eye surrounding the disk, a flange ring fixed to said eye and engaging the disk, a setting table integral with said eye, a radius bar fixed to the eye, a bed plate, a column adjustable thereon, a cap for said column, and a bar guide having trunnions pivoted to the column and cap.

5. In a device of the class described, the combination with a planer table of a bottom plate fixed thereto, a block integral therewith, an apertured disk slidably engaging said block, means for taking up slack motion between the disk and block, a plate fixed to the block for maintaining said disk in place, an eye surrounding the disk, a ring fixed to said eye and circumferentially

engaging the disk, a setting table integral  
with the eye, a radius bar fixed to said eye,  
an adjustable column, a bar guide pivoted  
therein, and means for locking said bar  
5 guide to the bar at any point, whereby the  
setting table is forced to travel in a circular  
arc on the reciprocation of the planer table.

In witness whereof we have hereunto set  
our hands in the presence of two witnesses.

FREDERICK ALLNER.  
EDMUND N. BOSWELL.

Witnesses:

STUART R. W. ALLEN,  
E. R. MCKENZIE.