

[72] Inventor **Werner A. Paterson**
 3222 North Main, Racine, Wis. 53402
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FOREIGN PATENTS

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Primary Examiner—Harold D. Whitehead
 Attorney—Arthur J. Hansmann

[54] **DENTAL MODEL TRIMMER WITH A COMBINED MOUNTING SUPPORT AND SEDIMENT TRAY**
 5 Claims, 4 Drawing Figs.

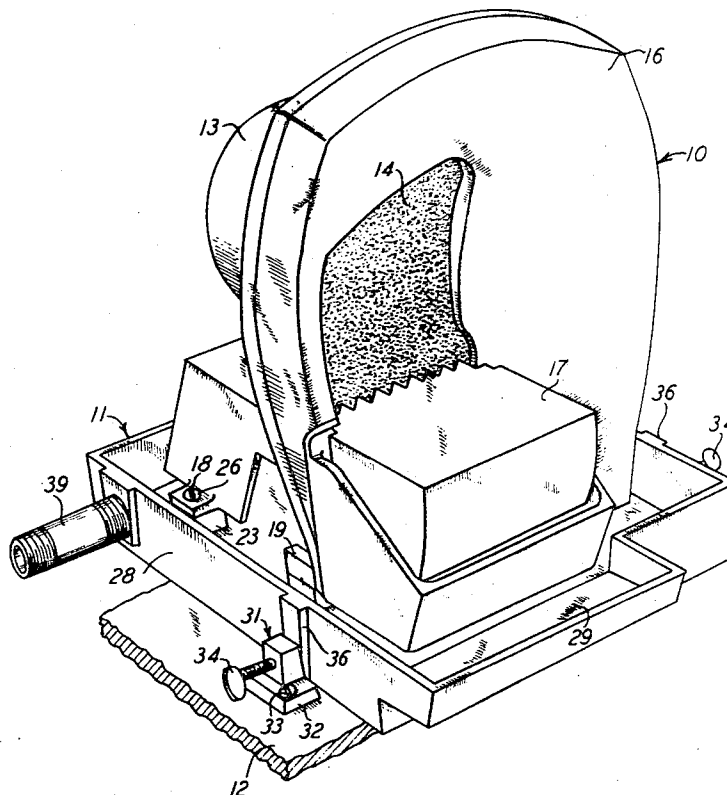
[52] U.S. Cl..... 51/125,
 51/267
 [51] Int. Cl..... B24b 55/02
 [50] Field of Search..... 51/125,
 128, 267

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ABSTRACT: A dental model trimmer with a combined mounting support and sediment tray. A hollow trimmer housing encloses a grinding wheel, and water is directed into the housing and a drain extends from the housing to have the water flow into the tray below the housing. A drain hole is spaced above the level of the tray floor, and the water can drain out the hole while the sediment remains on the tray floor, and the drain hole will therefore not be clogged. Mounting means and fasteners are provided for securing the trimmer to the combined mounting support and sediment tray, such that the trimmer is removable from the combined mounting support and sediment tray, and the tray is releasably attachable to the bench or the like.



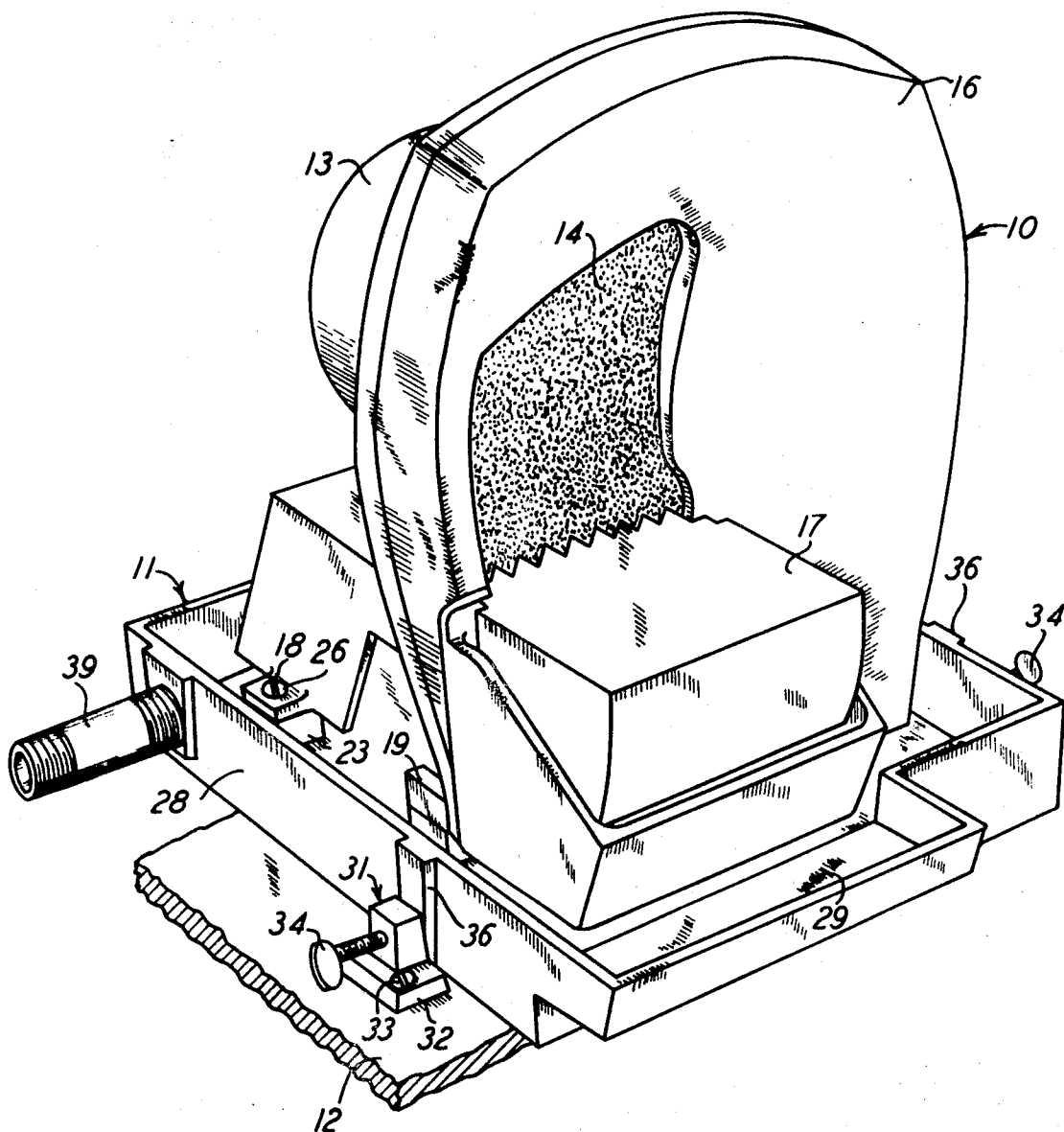


FIG. 1

INVENTOR:
WERNER A. PATERSON

Arthur J. Zimmerman
ATTORNEY

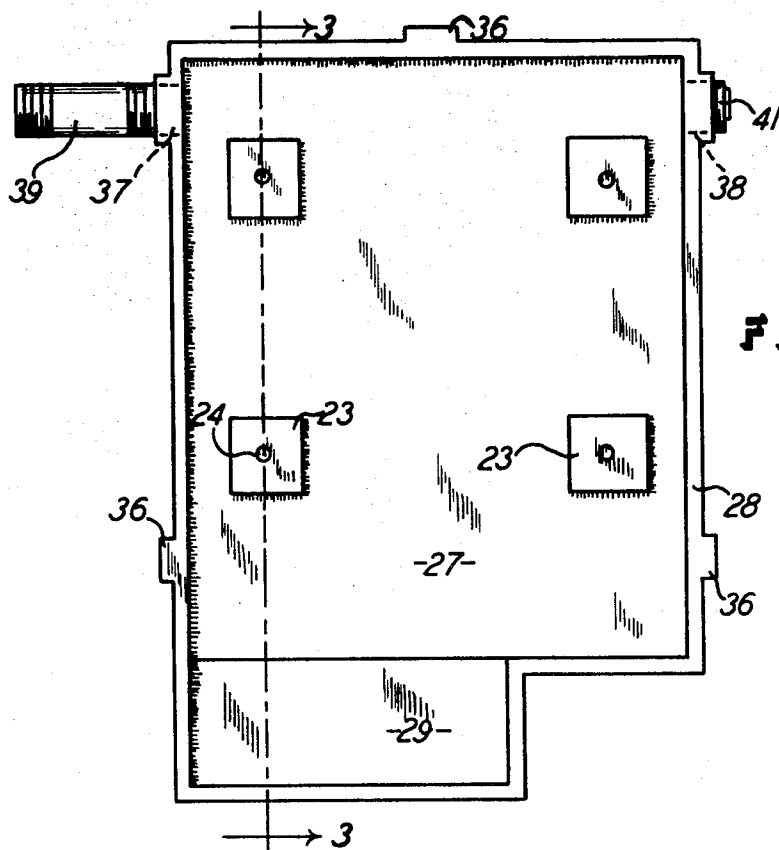


FIG. 2

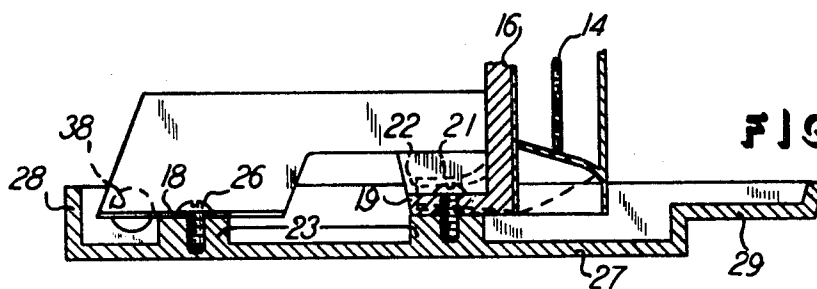


FIG. 3

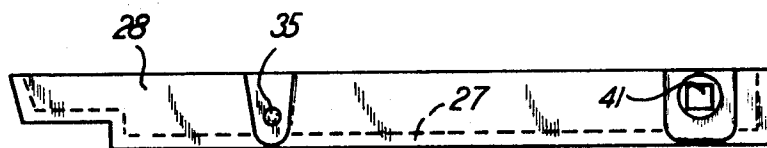


FIG. 4

INVENTOR:
WERNER A. PATERSON

Arthur J. [Signature]
ATTORNEY

DENTAL MODEL TRIMMER WITH A COMBINED MOUNTING SUPPORT AND SEDIMENT TRAY

This invention relates to a dental model trimmer with a combined mounting support and sediment tray.

BACKGROUND OF THE INVENTION

Dental model trimmers are in common use for grinding dental models. The trimmer includes a rotatable grinding wheel, and water is directed against the wheel for flushing the grindings from the wheel and out of the trimmer. A common problem is in connection with eliminating the flushing water, and also there is a problem in preventing the water from dripping onto the workbench or floor. Still further, model trimmers which use cooling and flushing water commonly clog the water drain when the grindings or sediment accumulates in the drain. Such sediment is of a nature that it becomes very compact in a water drain, and it readily clogs the drain. Also, the model trimmer tends to throw the water during the grinding process, and the water commonly drains onto the bench or floor, and such undesirable condition may even lead to a tendency to avoid using adequate supply of water. Still further, the mounting of the model trimmer on a workbench is a concern, especially where the water is splashing and uncontrollably being drained from the trimmer.

The present invention generally recognizes the aforementioned problems and provides adequate solutions. That is, a combined mounting support and sediment tray is provided to be disposed beneath the model trimmer for containing all of the water draining from the trimmer, and do so in a manner which will avoid clogging of the drain. Specifically, this is accomplished by providing a sediment tray into which the grindings can flow and settle out so that the clear water can be drained off at a level above that of the sediment.

Further, the present invention provides a mounting support for the model trimmer, and the support is arranged so that it permits removal of either the trimmer from the support or removal of the support and trimmer from the workbench or the like.

Still further, the present invention provides a sediment tray which makes the slurry type of sediment available to the user who desires to use the slurry in the nature of a coating to be placed on the model for the trimming process. That is, the user can pick up the slurry from the drain train and can keep it available for putting it onto the model for use in grinding the model.

Still another object is to provide a combined mounting support and sediment tray which can be readily and easily separated from the model trimmer for cleaning and for other purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front perspective view of one embodiment of this invention.

FIG. 2 is a top plan view of the mounting support and sediment tray shown in FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 2, and with fragment of the model trimmer added thereto.

FIG. 4 is a right side elevational view of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows a model trimmer 10 securely mounted on a combined mounting support and sediment tray 11 which is shown bolted to a table top or workbench 12. The model trimmer 10 is of the type which may be powered by an electric motor 13 for rotating the usual grinding wheel 14 which is rotatably mounted in the hollow trimmer housing 16. A model support block 17 is included in the trimmer 10, and it will be understood that a dental model is placed on the block 17 and is moved into grinding position against the rotating wheel 14

for the desired trimming purpose. The trimmer 10 has a pedestal type of base or lower portion which includes the mounting means and feet 18 and 19. It will of course be understood that there are two feet 18 and two feet 19 for a total of four feet on the model trimmer 10. The feet 18 and 19 therefore present the mounting means, and the feet attach to the element 11, in a manner described later.

It should be understood that the model trimmer 10 uses water for cooling and flushing the grinding wheel 14, in the conventional manner. The problem is the elimination of the used water which carries the grindings away from the trimmer 10. Thus a water inlet connection is not shown but would be commonly connected to the trimmer 10 for bringing the water onto the wheel 14, and FIG. 3 shows that the hollow housing 16 has a drain boss 21 which permits the used water to flow out of the housing 16. The boss 21 simply opens at its outlet 22 and permits the water and conveyed grindings to flow into the sediment tray 11. Thus the model trimmer 10 can be of the type shown in U.S. Pat. application Ser. No. 698,219, filed Jan. 16, 1968, and now U.S. Pat. No. 3,481,086.

The combined mounting support and sediment tray 11 is provided with four upstanding pedestals 23, one for each of the four feet 18 and 19. The pedestals 23 have threaded openings 24, and the feet 18 and 19 have aligned openings which receive screws 26 for securing the trimmer 10 to the tray element 11. In this arrangement, the trimmer 10 is in an elevated position on the tray element 11 in that the trimmer feet 18 and 19 are at the lowest elevation on the trimmer 10, and thus water in the tray element 11 will not readily reach up to the trimmer 10.

The combined mounting support and sediment tray 11 includes the floor 27 and the endless upstanding wall 28 extending completely around the floor 27 on all sides thereof, as shown. Thus the wall 28 contains the water on the floor 27, and such water is of course that which is coming from the trimmer drain 21 and flowing openly into the tray element 11. Further, it will be seen that the length and width of the floor 27, and therefore the girth of the wall 28, are all greater than the horizontal limits of the trimmer 10 so that any water dripping off the trimmer 10 will fall directly into the tray element 11. Also, the floor 27 has an elevated portion 29 which extends under the model support block 17 on the trimmer 10, and the floor 29 is available for the operator to place the sediment slurry thereon so that this slurry can be put on the model during the trimming process, as desired by one skilled in the art. Thus the level of the water in the sediment tray element 11 normally does not rise up to the higher elevated floor 29, so the slurry can be placed on the floor 29 without having the water dilute it or wash it away.

The combined mounting support and sediment tray 11 is mounted on the bench 12 by means of readily releasable fasteners generally designated 31. These releasable fasteners generally designated 31. These releasable fasteners 31 include the block 32 which is secured to the bench 12 by screws, such as the screw 33. A wingnut screw 34 extends through the block 32 and into abutment with the tray element 11 at the point of the pocket or recess 35 which is in the nature of a dimple on the tray element 11. Thus the tray element 11 can be readily released from the bench 12, for washing the tray element 11 or for any such purpose. The tray element 11 has three projections or bosses 36, each of which receives one of the anchoring screws 34, so there are three such releasable mounting means 31, one on each side of the tray and one at the rear of the tray.

The combined mounting support and sediment tray 11 is provided with two water drain holes 37 and 38 at opposite sides of the element 11. FIG. 2, and also FIG. 1, show the hole 37 provided with a drain nipple 39 which is threaded into the hole 37, and the water would flow out the nipple 39 and into a hose connected therewith and into a sink or the like, as desired. The hole 38 is shown stopped by a drain plug 41, however the hole 37 could be plugged and the nipple 39 could be placed into the hole 38 for draining into the opposite side of

the tray element 11, if desired. The holes 37 and 38 are located spaced above the top surface of the floor 27 so that the grindings flowing into the tray element 11 will settle onto the floor 27 and will not go out the drain holes 37 or 38, which ever one is used. This avoids clogging of the drain pipe or nipple 39, and the tray element 11 can be separately cleaned of sediment by scooping it off the floor 27 or by other methods. That is, the drain holes 37 and 38 have their lowermost extent spaced above the surface of the floor 27, as clearly seen with hole 38 in FIG. 3.

What is claimed is:

1. A dental model trimmer mountable on a bench and having a housing with a hollow interior, a grinding wheel rotatably disposed in said housing for grinding a dental model, said housing having a drain outlet opening in flow communication with said hollow interior, pedestal-type mounting means on said housing, a combined mounting support and sediment tray disposed beneath said trimmer and being releasably attached to said trimmer and including a liquidtight floor and an upstanding endless wall extending completely around said floor for containing water on said floor, said floor having a length and a width in excess of the maximum horizontal dimensions of said model trimmer corresponding to said length and said width such that said floor extends beyond said model trimmer in all horizontal directions, first releasable fastening means on said model trimmer and on said combined mounting support and sediment tray to dispose the latter directly beneath said model trimmer in a position to catch all water falling from said model trimmer and for securing said mounting means onto said combined mounting support and sediment tray, a water drain hole in said wall at a location spaced above said floor

which is immediately adjacent said drain hole for draining water from said tray at a level spaced above said floor while leaving on said floor the grindings from said dental model, and second releasable fastening means for securing said combined mounting support and sediment tray to said bench.

2. The subject matter of claim 1, including support blocks integral with and extending upwardly on said floor for abutting said mounting means and supporting said model trimmer spaced above said floor, and said first fastening means engaging said blocks along with engaging said mounting means for releasably securing said model trimmer to said tray.

3. The subject matter of claim 1, wherein said second fastening means includes two oppositely faced screws in opposed abutment with said wall on the exterior of said wall relative to said floor, said wall having a pocket for receiving each of said screws in holding said combined mounting support and sediment tray onto said bench.

4. The subject matter of claim 1, wherein said floor extends along two elevations with the upper one of said elevations presenting said floor for holding slurry placed thereon, said drain hole being located in that portion of said wall which is contiguous to said floor on the lower one of said elevations.

5. The subject matter of claim 1, wherein said combined mounting support and sediment tray wall has a said water drain hole located in each of the two opposite sides of said wall which extend transverse to the plane in which said grinding wheel rotates, so that water can be drained from said tray through either of the said two holes and to either side of said model trimmer.

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