

[54] **MAINTENANCE MEANS FOR TAPE
PLAYER CABINETS**

[76] Inventor: **Isadore E. Van Huffel**, 400
Overlook Dr., N.E., Warren, Ohio

[22] Filed: **Sept. 8, 1972**

[21] Appl. No.: **287,536**

[52] U.S. Cl. **15/421, 15/304**

[51] Int. Cl. **A47I 9/02**

[58] Field of Search 15/304, 395, 406,
15/414, 415, 421; 274/47

[56] **References Cited**

UNITED STATES PATENTS

986,245 3/1911 Thurman 15/415
2,696,666 12/1954 Snead 15/415 X

FOREIGN PATENTS OR APPLICATIONS

642,989 6/1962 Canada 15/414

Primary Examiner—Robert W. Jenkins

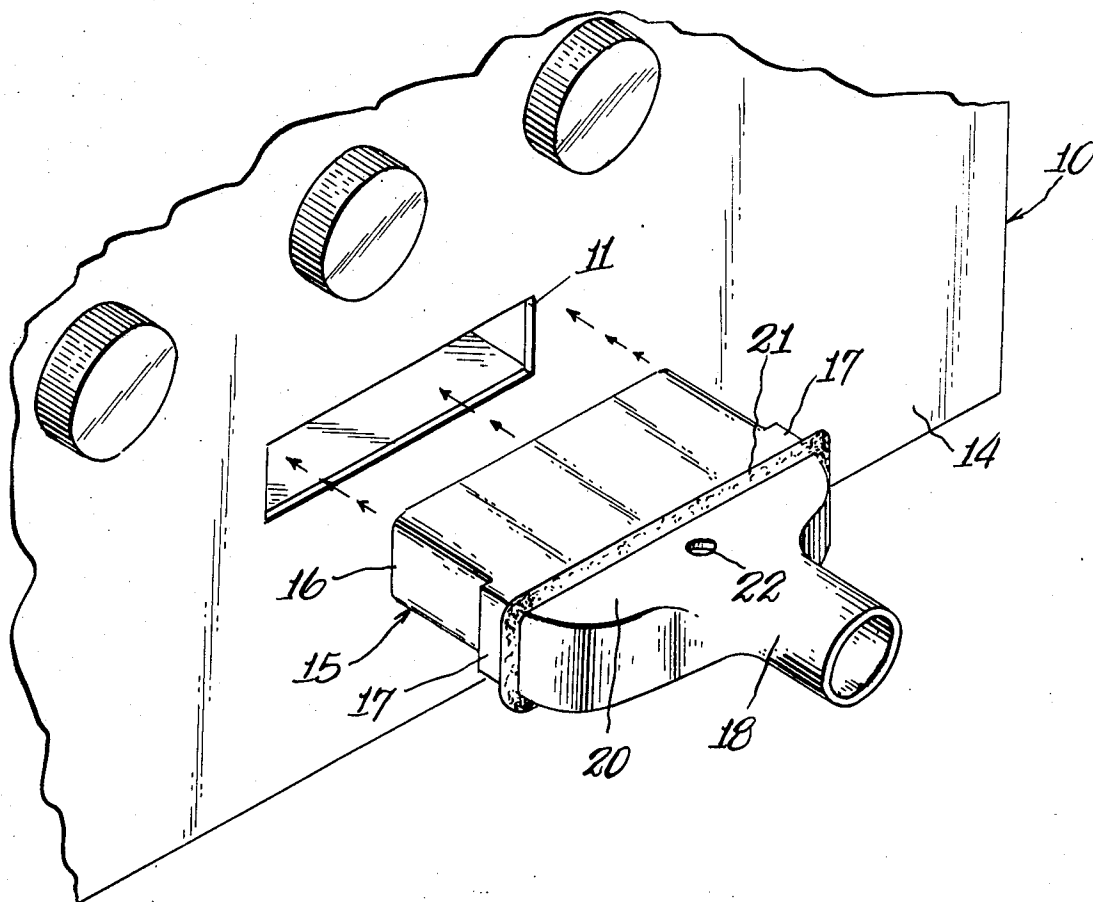
Assistant Examiner—C. K. Moore

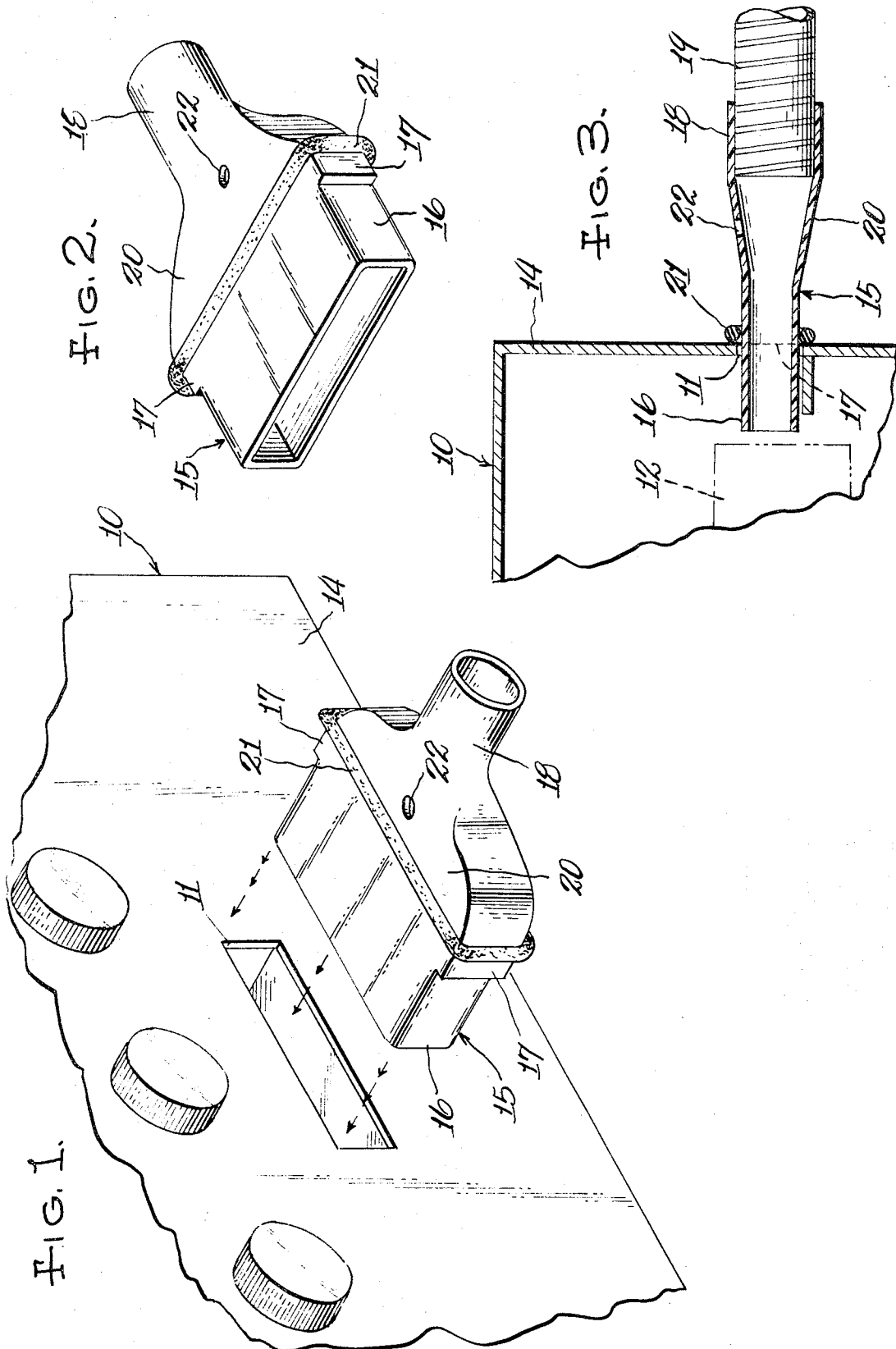
Attorney—Michael Williams

[57] **ABSTRACT**

My invention relates to means for maintaining the interior of a tape player cabinet free of dust and other like deleterious material, and comprises a hollow suction nozzle having a forward end with an outside rectangular contour to closely conform to, and fit within, the rectangular opening in the tape player cabinet. The nozzle has an exterior shoulder for abutment with the exterior face of the cabinet margining the rectangular opening to limit insertion of the nozzle forward end an amount short of interference with the operating mechanism within the cabinet. A rubber ring stretched around the nozzle may be moved to seal the rectangular opening. A small transverse hole is formed in the nozzle and is used to control the amount of suction produced within the nozzle by a conventional suction cleaner.

6 Claims, 3 Drawing Figures





MAINTENANCE MEANS FOR TAPE PLAYER CABINETS

BACKGROUND AND SUMMARY

Magnetic tape players, such as the four and eight track tape decks now on the market, are increasing in popularity, largely because of the high fidelity in sound reproduction. These tape decks are used in homes and automobiles, and some are carried from place to place because of their portability, especially if they are battery-operated. It will be appreciated that these tape decks are exposed to various environment where dusty and polluted air is present. Eventually, these tape decks lose their fidelity because of an accumulation of dust and other like detrimental material on the interior of the cabinet and the operating mechanism therein, especially the transducer head, and sometimes costly repairs are necessary to place the deck in good operating condition.

Insofar as I am aware, the prior art has tackled the problem after a build-up of dust and other matter has occurred, and has attempted to solve the problem by use of knives, abrasives and the like to remove the deleterious build-up. Removal of the matter in this manner only causes further accumulation within the tape deck cabinet, and debris traps or suction means heretofore employed have been costly in the first instance, and mostly ineffective to maintain the deck cabinet free of objectionable particle matter.

My invention provides a low-cost suction nozzle which closely but freely fits within the rectangular opening in the tape deck cabinet and is easily attached to the suction hose of a house-hold vacuum cleaner. I have found that periodic cleaning of the cabinet interior will maintain the operating mechanism in like-new condition, thus eliminating the costly cleaning after dust and the like has built up.

My improved nozzle is provided with an exterior shoulder which precisely limits insertion of the nozzle into the rectangular deck opening an amount short of interference with the operating mechanism within the cabinet. Thus, the nozzle may be inserted into the opening a maximum amount needed to bring it close to the mechanism, without in any way causing harm to the latter.

DESCRIPTION OF THE DRAWING

In the drawing accompanying this specification and forming a part of this application, there is shown, for purpose of illustration, an embodiment which my invention may assume, and in this drawing:

FIG. 1 is a perspective view of a preferred form of my improved nozzle, showing it in position to be inserted into the cartridge-receiving opening of a tape player cabinet, the cabinet being fragmentarily shown,

FIG. 2 is a perspective view of the nozzle from another angle, and

FIG. 3 is a longitudinal sectional view showing the nozzle inserted within the cabinet.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The tape deck 10 fragmentarily shown in FIG. 1 may be of any commercially available type and therefore may assume various configurations. Common to all tape decks, whether they are of the four or eight track variety, is the size of the opening 11 through which the

conventional tape cartridge may be inserted for cooperation with a transducer head 12 shown schematically by the dot-dash lines in FIG. 3. In practically all cases, this transducer head is located slightly over one and one-half inches from the interior surface of the wall 14 of the cabinet.

My improved nozzle 15 is hollow and formed of any suitable material, such as used in the manufacture of conventional vacuum cleaner nozzles. The forward end 16 of the nozzle has an outside rectangular contour which conforms to the opening 11 and is of a dimension to closely but freely fit within the opening. A contour corresponding to the transverse size of a conventional type cartridge has been found satisfactory.

An exterior shoulder is formed on the nozzle, adapted for abutment with the exterior surface of the wall 14 to precisely limit insertion of the nozzle forward end an amount short of interference with the transducer head or other operating mechanism within the cabinet. The shoulder may be formed by transversely enlarging the nozzle to provide opposite side-offsets 17. It has been determined that the length of the nozzle, forward of the shoulder, should be about 1½ inches for most cartridge decks.

The rear 18 of the nozzle is cylindrical so that the hose 19 of a conventional household vacuum cleaner may fit therewithin or thereabout. In the event the diameter of the hose 19 and the diameter of the nozzle rear end 18 are not compatible, an adapter (not shown) may be used. An intermediate portion 20 of the nozzle tapers from the smaller size of the forward end to the larger size of the rear end 18, as best seen in FIG. 3.

A resilient member, such as a soft rubber ring 21, is stretched over the nozzle and its resiliency normally holds the ring in any desired position. However, the ring 21 may be moved longitudinally of the nozzle, as by a rolling or sliding action, so that it may be positioned against the exterior surface of the cabinet wall 14 to seal the opening 11 when the nozzle forward end has been inserted into the opening. The tapering of the nozzle intermediate portion 20 tends to restrict the ring 21 from being moved over the rear end 18 of the nozzle.

Various household vacuum cleaners have different suction powers and to compensate for this the nozzle is formed with a small hole 22, preferably within the intermediate portion 20. If the suction of one type of vacuum cleaner is too great, the hole 22 may be left uncovered. On the other hand, if the suction is weaker, the hole 22 may be completely or partially covered, such as by the finger of a user.

I claim:

1. Means for maintaining the interior of a tape player cabinet free of dust and other like deleterious material, said cabinet having a rectangular opening of definite dimensions through with a conventional tape cartridge is inserted, comprising:

a hollow suction nozzle having a forward end with an outside rectangular contour conforming to said rectangular opening and dimensioned to closely but freely fit within said rectangular opening, said nozzle having a rear end adapted to be connected to a suction hose of a vacuum cleaner, and

an exterior shoulder on said nozzle spaced rearward of its forward end a predetermined amount so that abutment of said shoulder with the exterior face of said cabinet margins said rectangular opening

3

limits insertion of said forward end into said cabinet an amount short of interference with operating mechanism within said cabinet.

2. The construction according to claim 1 and further including an endless resilient member disposed transversely of said nozzle and resiliently engaging the same, said member being free to move longitudinally of said nozzle and being adapted for movement to abutment with said cabinet face and seal around said rectangular opening when said nozzle is inserted within the latter.

3. The construction according to claim 2 wherein said nozzle has an intermediate portion tapering from a smaller size at said shoulder to a larger size at said

4

rear end, said tapering intermediate portion restricting movement of said resilient member over said rear end.

4. The construction according to claim 3 wherein said nozzle is formed with a small opening in said intermediate portion to communicate the interior of said nozzle with the atmosphere.

5. The construction according to claim 3 wherein said shoulder is formed by a transverse widening of said tapered intermediate portion.

6. The construction according to claim 2 wherein said resilient member is a rubber ring.

* * * * *

15

20

25

30

35

40

45

50

55

60

65