

[54] BALL RETRIEVING APPARATUS

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[57] ABSTRACT

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214/83.28, 214/356, 56/128 R

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[58] Field of Search ..... 214/83.28, 356; 302/52,  
302/53; 56/128 R; 209/250, 420, 421, 370,  
371, 372, 373, 374

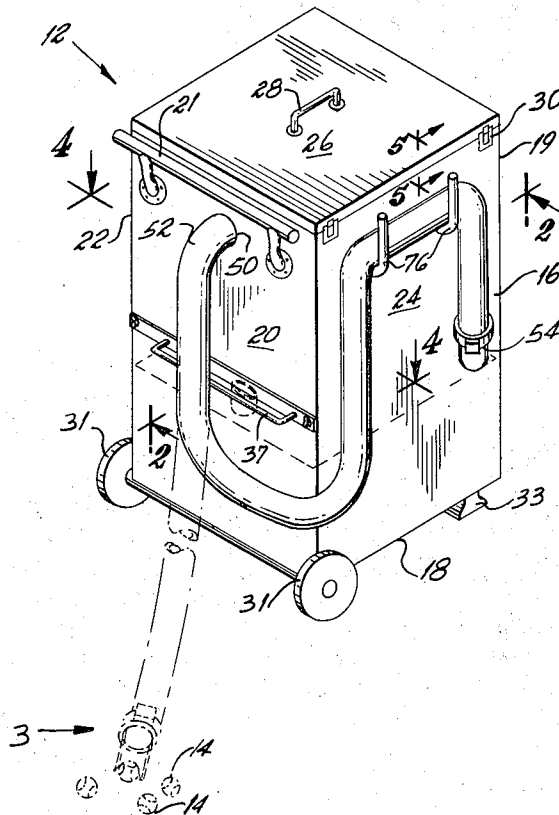
A ball or spherical object retrieving apparatus comprising a receptacle having a base provided with wheels, a storage chamber for balls to be picked up by suction through the mouth at the end of a hose connecting into the chamber, a screen floor for the chamber and a drawer below the chamber to collect debris from the collected balls and a suction or vacuum creating means in the receptacle, for use of the apparatus in picking up tennis balls, for example.

[56] References Cited

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8 Claims, 6 Drawing Figures



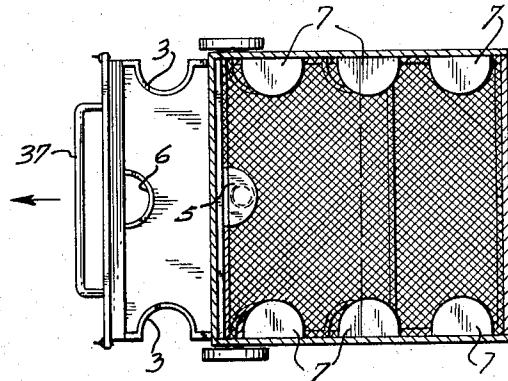
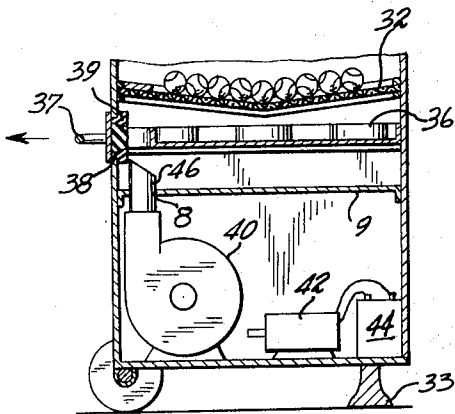
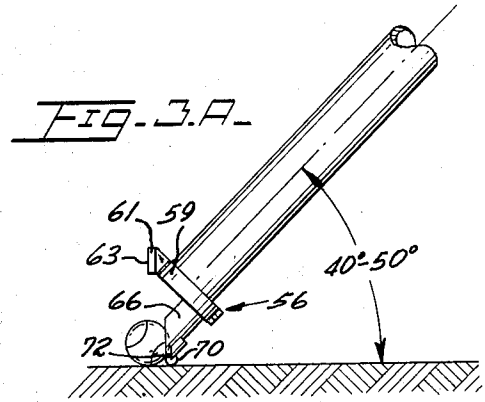
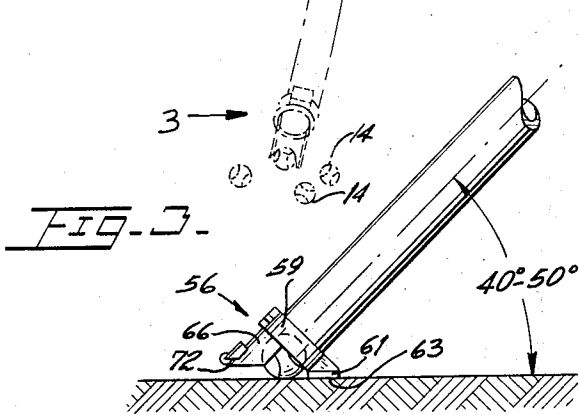
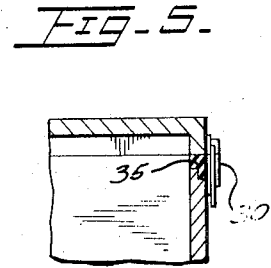
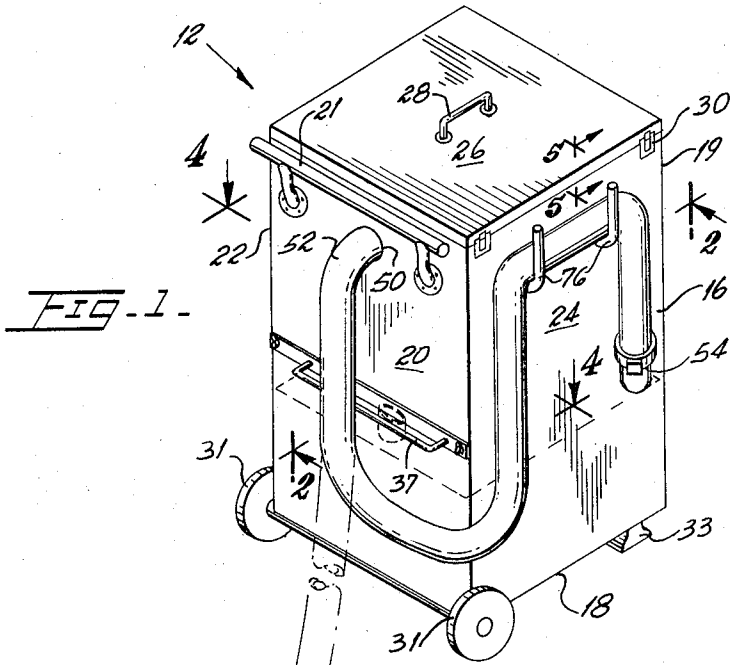


FIG. 2

FIG. 4.

## BALL RETRIEVING APPARATUS

### FIELD OF THE INVENTION

This invention relates to a device for picking up tennis balls on a tennis court by suction means and collecting them in a storage chamber.

### BACKGROUND OF THE INVENTION

As is perhaps well known, in training people to play tennis, for example, youngsters, many balls are often used so that the lessons are not continuously interrupted by picking up the balls, which are quite numerous and are troublesome to collect, interrupting the tennis lesson. This apparatus provides a device for more rapidly picking up such tennis balls and includes a receptacle which has a storage chamber and a hose extending from the chamber with a suction means for sucking the balls through the hose into the storage chamber when the end of the hose is placed adjacent a ball on a court.

### OBJECTS OF THE INVENTION

It is accordingly an object of this invention to provide an improved ball retrieving apparatus which is simple in construction, portable, relatively inexpensive to manufacture, and includes a storage chamber for the balls with a screen floor, and a removable drawer beneath the screen which acts as a debris collecting means into which debris will fall to be disposed of, the apparatus is provided with wheels to adapt it to be moved around on a court, and it also includes a length of hose communicating between the ball storage chamber the length of hose being sufficient so that the apparatus, when parked at a given location on the court, is sufficient to pick up the balls on a relatively large area of a playing court through an opening or mouth in the hose end by a suction creating means in the lower part of the apparatus.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings in which:

### DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the ball retrieving apparatus;

FIG. 2 is a partial view in cross section taken on the plane indicated by the line 2—2 and looking in the direction of the arrows;

FIGS. 3 and 3a are enlarged views of the terminal end of the hose designated by the arrowed line 3 in FIG. 1, as will be explained;

FIG. 4 is a view in cross section taken on the plane indicated by the line 4—4; and

FIG. 5 is a view in cross section taken on the plane indicated by the line 5—5 as seen in FIG. 1.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

As seen in FIG. 1, the apparatus 12 is adapted to be located at a convenient place on a playing court where there are balls, such as 14 to be picked up. The ball retrieving apparatus comprises a closed receptacle 16 with a floor 18, front 20, rear 19 and side walls 22 and 24 and a hinged top 26 having a handle 28 and means 30 to hold the top tightly closed, the top and margin of the opening in the receptacle top forming a substan-

tially hermetic seal, as shown in FIG. 5, when closed and locked there being a gasket 35 which is provided. The receptacle is further provided with a pair of wheels 31 having a common axle on the bottom front and a foot 33 on the bottom rear and, also, a handle 21 for tilting the receptacle, whereby it is rendered portable.

Within the interior of the receptacle, septum means are provided separating it into three chambers, an upper or ball storage chamber, a lower chamber or suction apparatus chamber, and an intermediate drawer chamber. One of the septum means serves as the floor of the upper chamber or ball storage chamber and comprises a screen 32 spanning the receptacle interior, which may have a lower central portion, as shown.

Beneath the screen septum, a drawer 36 is provided having an exterior handle 37 for withdrawing it and emptying dirt collected in it, which falls through from balls in the storage chamber. The mouth 38 or drawer opening is provided with gasket means 39 to hermetically seal it when in spanning relation of the receptacle, the drawer acting as a septum means above the pump chamber, which septum means is not blocking of air flow vertically through the receptacle between the upper and lower chambers. The material of the drawer floor may be such as to permit air flow through it and to collect dirt upon it or, alternatively, as shown, the sides of the drawer may have vertical passageways 3 formed in it, appearing as scallops as seen in plan in FIG. 4, with shield means 7 in registry on the screen floor, so dirt does not fall through into the lower chamber. Preferably, a septum 9 is provided beneath the drawer with a hole 8 through which the pump pipe 46 extends and a central opening 6 through the drawer above the pipe and with a shield 5 above it on the screen floor.

Beneath the drawer, in the lower chamber, there is provided a suction producing means 40 together with a drive means 42 and energy source 44, such as a battery. The suction pump means has an outlet, not shown, and an inlet 46 which lowers the pressure inside the receptacle when it is closed. There is a port 50 in the front wall of the upper chamber to which a hose 52 is connected in fluid tight relation. There is thus created a suction at the terminal end 54 or mouth of the hose when the pump is energized, which is adapted to suck a ball into the upper storage chamber when the hose end comes into position adjacent a ball and the ball is thus under the influence of the suction. The end 54 of the hose is preferably provided with a pick-up fitting 56, which is rotatably connected on the hose end in a swivel connecting means. Thus, the pick-up fitting can be rotated about the hose end through 180° of rotation between the positions shown in FIGS. 3 and 3a.

Referring to FIG. 3a, there is carried, exteriorly on the ring 59 of the swivel connection means, a pad 61 having an angularly arranged resting surface 63 which is adapted to rest flat on a court surface when the hose is at a tangent angle of about 40° and 50° with respect to the court surface. The pick-up fitting also includes a hood 66 which is opposite to the pad means which extends outwardly from the end of the hose and is adapted to be positioned over a ball to captivate it and subject it to the suction forces. When the ring is rotated through 180° relative to the center line of the hose at its end, to the position shown in FIG. 3a, an exteriorly carried wheel 70 on the lip 72 of the hood, which here acts as a scoop, is adapted to be rolled over

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a court surface to scoop up balls and urge them into suction force influence.

On the side wall 24 of the receptacle, a pair of hook means 76 are provided for storing the length of hose when it is not in use. Preferably the interior of the chamber is sized to hold at least 150 balls with the height of the receptacle being between 3 and 4 feet. A motor of about 1/2 horse power is preferably provided with the weight of the pump or suction creating means being distributed closely to the center line or axis of the wheels, whereby it can be tipped relatively easily for moving it across a court in a slightly tilted position. It is thus seen that this provides a valuable and convenient teaching aid to a tennis pro who can employ the ball retrieving apparatus to clear a court of many balls at one time, without needing to interfere with the lesing for repeated picking up of balls on a court.

What is claimed is:

1. For retrieving spherical objects, an apparatus comprising a closed receptacle having septum means in the receptacle defining three separate chambers, said receptacle having wheels and a handle for moving the receptacle about on a surface, said septum means separating the interior of said receptacle into an upper chamber having an opening and a cover for said opening, sealing means about the opening to hermetically seal the said opening when the cover is open, lock means to hold the cover in a closed position forming a hermetic seal against entry of atmospheric gases, said septum means comprising a floor for said upper chamber of screen means upon which spherical objects are supported and debris is adapted to fall through said screen means,

said septum means defining a lower chamber and a chamber intermediate the upper and lower chamber, and drawer means in the intermediate chamber below said screen means for collecting debris, said drawer means having a handle for removing the drawer from the receptacle to empty the debris, said lower chamber including vacuum producing

means and conduit means communicating between said lower chamber and said upper chamber, said upper chamber having a port and a length of hose of generally uniform cross section having a first end and a second end, said first end being connected to said port in a hermetic connection and said second end having an opening, whereby when the vacuum means is activated, suction is created on the second end of the hose, said second end being sized for passage therethrough and through the hose of a spherical body.

2. The device as set forth in claim 1 wherein a scoop is provided on said second end of the hose.

3. The improvement as set forth in claim 1 wherein said cover is hingedly connected to said receptacle and includes handle means for swinging said cover.

4. The device as set forth in claim 1 wherein said receptacle includes a pair of wheels journaled to the receptacle and a foot means opposite each of said wheels and in depending relation on said receptacle.

5. The device as set forth in claim 1 wherein said vacuum producing means comprises a pump and electric motor means connected to the pump for driving said pump.

6. The device as set forth in claim 1 wherein the scoop has an outer terminal end provided with a roller means connected exteriorly on the terminal end of the scoop for rolling it across a court surface.

7. The device as set forth in claim 2 wherein the scoop is rotatable through 180° relative to the center line of the hose at the end and to act as a hood to be placed over a ball on a court to captivate it.

8. The device as set forth in claim 7 wherein the scoop is provided with a pad oppositely arranged and at the hose end presenting a surface at an angle of between 40° and 50° with respect to the center line of the hose at the end and adapted to rest flat upon a court when the scoop is positioned over a ball.

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