



TITLE OF INVENTION

A COIN STACKING AND WRAPPING APPARATUS

BACKGROUND OF THE INVENTION

1. Technical Field of the Invention

The present invention relates to a coin stacking and wrapping apparatus, and more specifically to an apparatus which receives coins of the same denomination and the same are wrapped to form a roll of coins with a specified number.

2. Description of the Prior Art

Conventional coin stacking and wrapping apparatus has been disclosed and known. For example, United States Patent No. 4,897,984 discloses a coin receiving and wrapping apparatus comprises an upper hopper means to collecting coins, a sorting means for sorting coins, a coin stacking means for receiving coins for wrapping, and a transfer means for transferring coins stored in a safe means to the upper hopper. Other conventional coin wrapping means includes a coin supply unit having a coin feeder, a coin counter and other devices necessary for coin supply, a coin piling unit for piling coins fed from the coin supply unit in a specified number, whereby the coins are automatically piled and wrapped. The coin piling unit in the coin wrapping apparatus is designed just to collect coins in a cylinder having a diameter corresponding to that of the coin. It will be apparent that the structure disclosed in these prior art requires numbers of delicated and expensive components in order to attain the object of stacking and wrapping and therefor the entire apparatus has become very complicated. As a result, the new problems arise where constructability and construction cost are taken into consideration.

United States Patent No. 4,951,448 issued to Schmechel discloses a device for the production of rolls of coins with a feeding track for horizontal coins and a tilting



station being provided to put the coin into an upright position, and a wrapping station being provided to form rolls of coins out of the stacks of vertical coins. In this prior art, the coins to be stacked have to be first tilted to become horizontal position and therefore the device may have a problem with the upright coins.

Other prior art coin stacking device may use two parallel tracks to produce stacks of coins which will then be moved by gripper. In this prior art, the coins are transported individually and in a position vertical to the stacking tracks. However, this device only works in a relatively low speed.

It is therefore an object of the present invention to provide a coin stacking and wrapping apparatus which eliminates the abovementioned shortcomings.

SUMMARY OF THE INVENTION

Therefore, an object of the present invention is to provide a coin stacking and wrapping apparatus which has a function of stacking a specific coin denomination in a roll and wrapping the same.

Another object of the present invention is to provide a coin stacking and wrapping apparatus which is able to collect or receive a plurality of coins of the same size and stacked to form a roll for wrapping.

It is yet another object of the present invention to provide a coin stacking and wrapping apparatus, wherein the rolled and stacked coin can be taken out smoothly from the apparatus.

In one aspect of the present invention, there is provided a coin stacking and wrapping apparatus comprising (a) a semi-spherical disc having an inner surface and an outer surface, said inner surface being an up-facing opening for receiving a plurality of coins; and (b) a cylindrical tube having an opened upper end and an opened lower end, said tube being perpendicularly disposed to the centre of the

outer surface of the semi-spherical disc at the upper end of the tube to allow the coins collected within the disc to stack therein, characterised in that a slot is provided to the cylindrical tube at an appropriate distance from the lower end of the cylindrical tube and a mountable cap is detachably mounted to the lower end of the cylindrical tube to facilitate withdrawing stack of the collected coins of same diameters and thickness.

In another aspect of the present invention, there is provided a coin stacking and wrapping apparatus comprising a semi-spherical disc having an inner surface and an outer surface; and a cylindrical tube having an opened upper end and an opened lower end, characterised in that a slot is provided to the cylindrical tube at an appropriate distance from the lower end of the cylindrical tube and a mountable cap is detachably mounted to the lower end of the cylindrical tube to facilitate withdrawing stack of the collected coins of same diameters and thickness, wherein the mountable cap is provided internally with screw threads so that the cap can be screwed to the end of the cylindrical tube at the lower end.

In another aspect of the present invention is to provide a coin stacking and wrapping apparatus, wherein a stacked coin is withdrawn from the lower end of the cylindrical tube when the mountable cap is detached therefrom.

These and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a coin stacking and wrapping apparatus in accordance with the present invention;

Fig. 2 is a sectional view of the coin stacking and wrapping apparatus in accordance with the present invention;

Fig. 3 is a perspective view of another preferred embodiment of a coin stacking and wrapping apparatus in accordance with the present invention, wherein the bottom end of the cylindrical tube is provided with a mountable cap; and

Fig. 4 is a perspective view of another preferred embodiment of a coin stacking and wrapping apparatus in accordance with the present invention, wherein a square frame is mounted onto the circumference of the semi-spherical disc of the apparatus.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings wherein the showings are for purposes of illustrating the preferred embodiments of the invention only and not for purposes of limiting same, Fig. 1 provides a perspective view of a stacking and wrapping apparatus 100 in accordance with the present invention. As shown in Fig. 1, the apparatus 100 comprises a semi-spherical disc 10 or a bowl like structure, having an inner surface 12 and an outer surface 14, and said inner surface 12 being an up-facing opening for receiving a plurality of coins (not shown) of identical diameters and thickness; and a cylindrical tube 20 having an opened upper end 24 and a sealed lower end 26, said tube 20 being perpendicularly disposed to the centre of the outer surface 14 of the semi-spherical disc 10 at the upper end 24 of the tube 20 to allow the coins collected within the disc 10 to stack therein with any of the surface of the coin facing horizontally. In the present invention, the semi-spherical disc 10 is in communication with the cylindrical tube 20 via the opened upper end 24. The coins collected in the disc 10 will go down through the opened upper end 24 with the surface of the coin lies in horizontal. The coins stack on each other until a roll of stacked coins are formed within the tube 20.

As shown in Fig. 1, a slot 22 is formed at the surface the cylindrical tube 20 and is located adjacent to the opened upper end 24 of the tube 20. The width of the slot 22 is identical to the thickness of the coin. The first coin (not shown) to be stacked shall be located at the sealed lower end 26 of the tube 20 and the rest of the coins shall stack one after the other until the last coin reaches the slot 22. In the

present preferred embodiment, when the last stacked coin reaches the slot 22, it is indicated that the stack of coins has amounted to a certain fixed sum. A sheet of paper (not shown) is first rolled so that it can be inserted into the cylindrical tube 20 via the opened upper end 24 of the tube 20 such that the sheet of paper encloses the stacked coins. In accordance with the present invention, the wrapped coins can be taken out from the tube 20 via the opened upper end 24 and further rolled to tightly wrap the coins into a compact roll. Both ends of the wrapped roll of coins are then sealed.

Fig. 2 shows a sectional view of the coin stacking and wrapping apparatus 100 in accordance with the present invention. As shown in the figure, the slot 22 is at a position substantially adjacent to the opened end 24 of the tube 20, and the height from the lower end 26 to the slot 22 denotes a specific sum for that stack of coins.

In accordance with the present invention, the diameter of the tube 20 is substantially the same diameter of the coin having the same denomination.

Fig. 3 is another preferred embodiment of the present invention. The apparatus 100 further comprises a mountable cap 30 which is detachably disposed to the lower end 26 of the cylindrical tube 20. Accordingly, the coin stacking and wrapping apparatus 100 can be modified in such a way that the lower end 26 of the tube 20 is not sealed, and the mountable cap 30 is mounted to enclose or to seal the opened lower end 26 of the tube 20. The mounting cap 30 facilitates withdrawing of a stack of the collected coins from the tube 20 by removing the cap 30 after stack of coins has been wrapped with paper.

In the present preferred embodiment, the diameter of the cylindrical tube 20 and the height from the lower end 26 to the position of the slot 22 are adapted to a specific coin denomination for a specific numbers of coins. That is, the diameter and the position of the slot 22 can be modified so as to stack and wrap coins of certain denomination.

Fig. 4 is another preferred embodiment of the present invention, illustrating a square frame 44 mounted onto the circumferential edge of the semi-spherical disc 10. As shown in the Figure, the semi-spherical disc 10 has been modified to include a square shape opening 40 for receiving coins. The square shape opening 40 facilitates collection of coins which clustered on table or platform with straight edges.

The above description merely provides a disclosure of particular embodiments of the invention and is not intended for the purpose of limiting the same thereto. As such, the invention is not limited to only the above described embodiments. Rather, it is recognized that one skilled in the art could conceive alternative embodiments that fall within the scope the invention.

CLAIMS

1. A coin stacking and wrapping apparatus comprising (a) a semi-spherical disc having an inner surface being an up-facing opening for receiving a plurality of coins; and (b) a cylindrical tube having an opened upper end and an opened lower end, said tube being perpendicularly disposed to the centre of the outer surface of the semi-spherical disc at the upper end of the tube to allow the coins collected within the disc to stack therein, characterised in that a slot is provided to the cylindrical tube at an appropriate distance from the lower end of the cylindrical tube and a mountable cap is detachably mounted to the lower end of the cylindrical tube to facilitate withdrawing stack of the collected coins of same diameters and thickness.
2. A coin stacking and wrapping apparatus as set forth in Claim 1, wherein the mountable cap is provided internally with screw threads so that the cap can be screwed to the end of the cylindrical tube at the lower end.
3. A coin stacking and wrapping apparatus as set forth in Claim 1, wherein the width of the slot is substantially the thickness of the coin.
4. A coin stacking and wrapping apparatus as set forth in Claim 1 or Claim 2, wherein a stacked coin is withdrawn from the lower end of the cylindrical tube when the mountable cap is detached therefrom.