

[54] COIN FEED MECHANISM

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[57] **ABSTRACT**

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A coin feed mechanism designed to receive a large number of coins and to deliver them one after another comprises a hopper and an inclined rotatable disk arranged in the hopper. Behind the disk there is arranged a rotatable member having a rotational axis which is inclined in relation to the rotational axis of the disk, and this member supports a number of pins. The disk and the member are rotatable together, and during such rotation the member forms a wobble plate for moving the pins between a first position in which the pins project from the disk and a second position in which the pins are withdrawn.

[30] **Foreign Application Priority Data**

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[51] Int. Cl. **G07d 3/06**

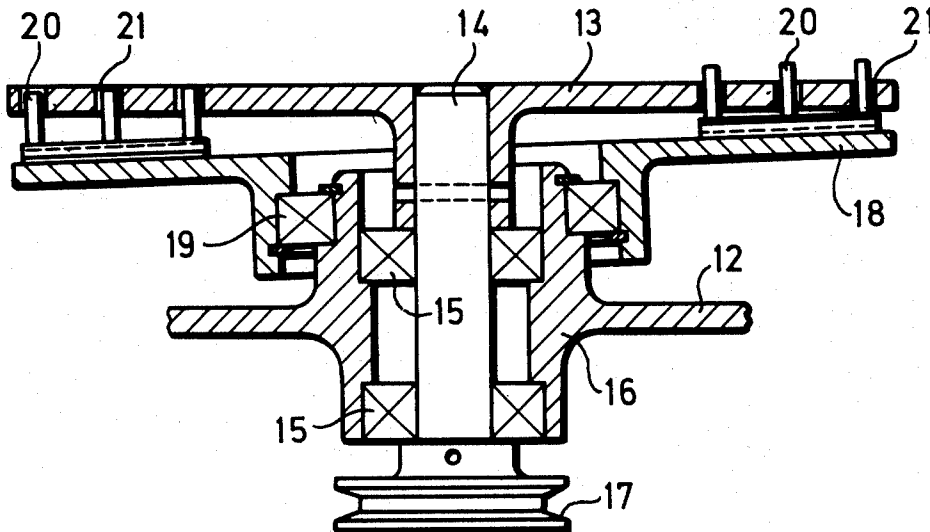
[58] Field of Search **133/5, 8, 3; 198/212; 222/237**

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4 Claims, 3 Drawing Figures



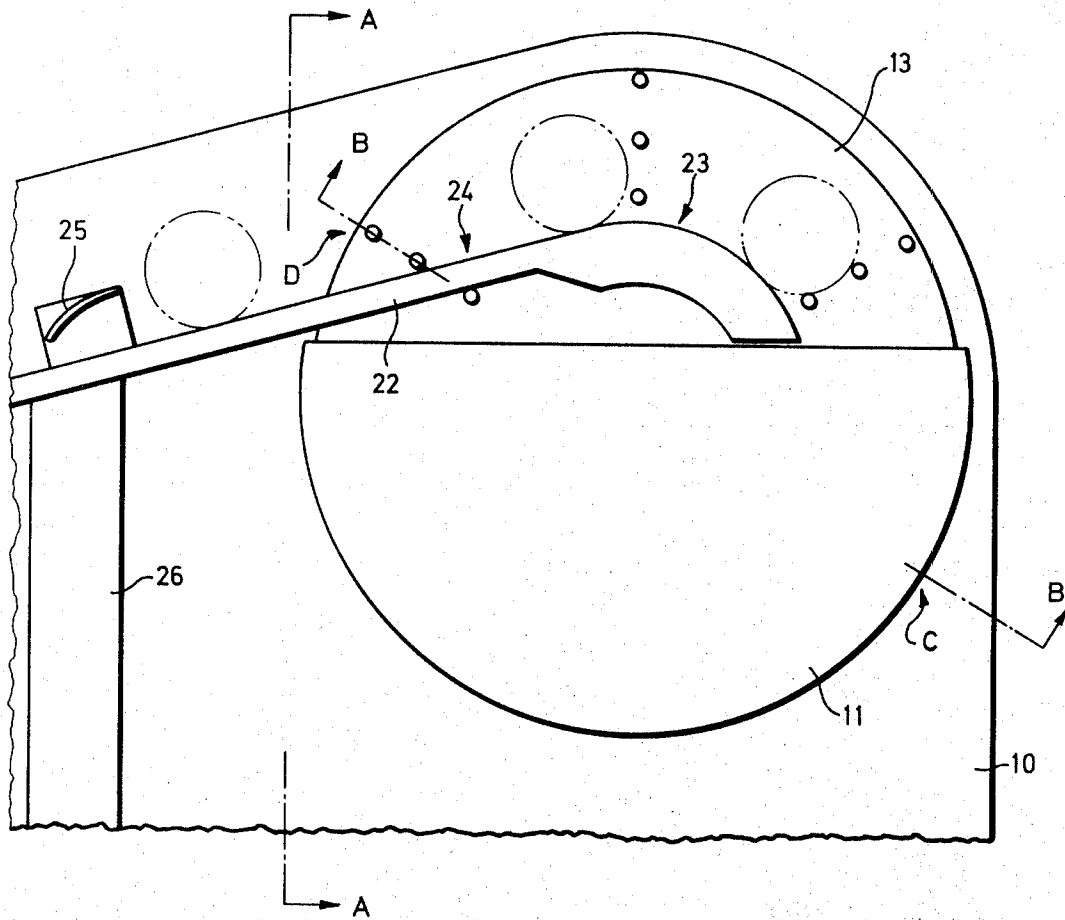
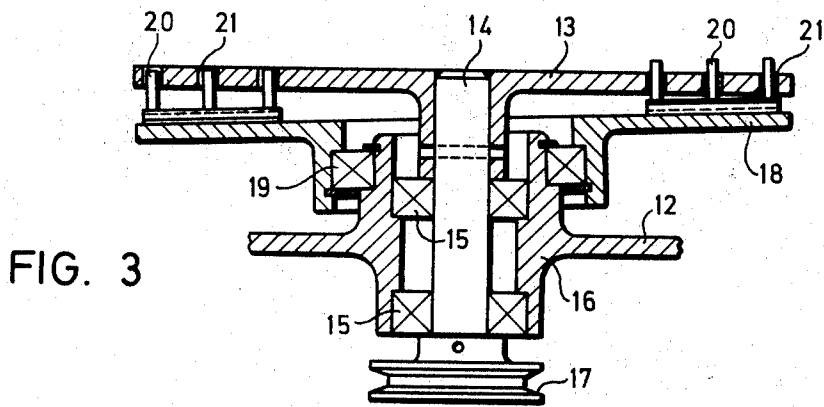
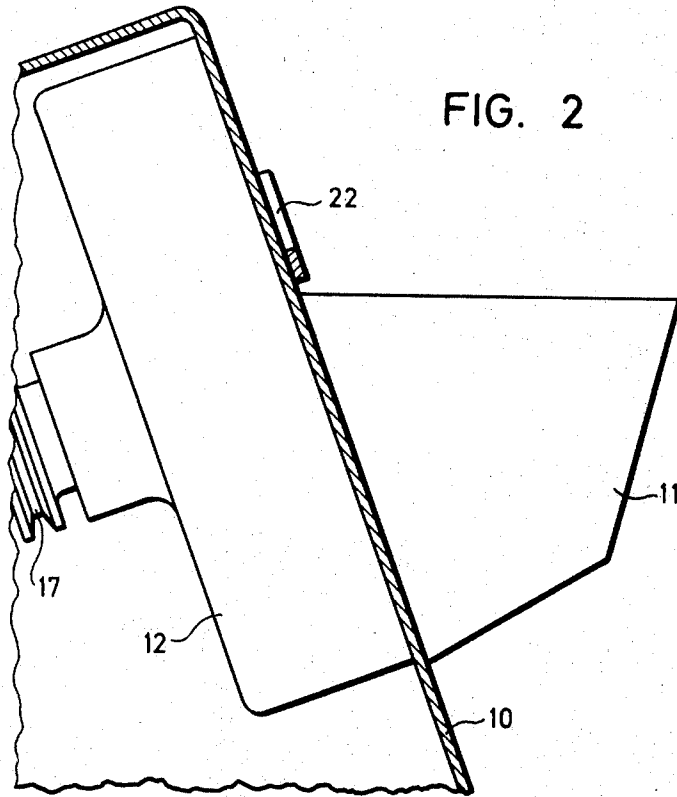


FIG. 1



COIN FEED MECHANISM

The invention relates to a coin feed mechanism designed to receive a large number of coins and to deliver them one after another and including a coin hopper in which there is provided an inclined rotatable disk having at least one pin forming coin driving means said pin being movable, by the rotation of the disk, between a first position in which the pin projects from the disk, and a second position in which the pin is withdrawn.

Coin feed mechanisms of this type are used in coin sorting and counting machines to carry the coins of an unsorted coin quantity one after another to a coin sorting or counting mechanism. In one illustrative embodiment thereof a number of pins are controlled by cam tracks to be projected and withdrawn in accordance with a predetermined program during the rotation of the disk. However, this prior art coin feed mechanism is of a rather complicated and expensive construction and, furthermore, it is subject to substantial wear and is extremely sensible to dust and dirt.

In order to overcome these drawbacks there is provided according to the invention a coin feed mechanism which is designed to receive a large number of coins and to deliver them one after another, said coin feed mechanism comprising: a hopper, for receiving the coins; an inclined rotatable disk in said hopper; a member arranged behind the disk and rotatable therewith, the rotational axis of said member being inclined in relation to the rotational axis of the disk; and coin driving means comprising at least one pin supported by said member and movable, by the rotation of the disk and the member, between a first position in which the pin projects from the disk, and a second position in which the pin is withdrawn.

The invention is described more in detail in the following, referring to the accompanying drawings which, by way of example, show a preferred embodiment of the coin feed mechanism according to the invention, and in which

FIG. 1 shows a front view of a part of a coin sorting and counting machine provided with the coin feed mechanism according to the invention,

FIG. 2 shows a section along the line A—A in FIG. 1, and

FIG. 3 shows a section along the line B—B in FIG. 1.

On the front wall 10 of the coin sorting and counting machine said wall being inclined, as known per se, as may be seen from FIG. 2, there is provided a coin hopper 11 adapted to receive the coin quantity to be sorted and counted. The back wall of the coin hopper is formed by wall 10 which provides a cylindrical depression 12, and in this depression there is rotatably journaled a first circular disk 13 by means of a shaft 14 rotating in anti-friction bearings 15 in a bearing housing 16 formed by the bottom of depression 12. The shaft is substantially perpendicular to wall 10. On the shaft there is mounted a scored pulley 17 for a belt transmission to a motor for driving disk 13.

A member formed as a second circular disk 18 is rotatably mounted by means of an anti-friction bearing 19 on the outside of bearing housing 16 in depression 12 behind disk 13. On this second disk there are fixedly mounted a number of pins 20 which are arranged in six groups each including three pins, the groups being equally spaced angularly. Pins 20 are axially movable

in bores 21 in the disk 13 and form driving means for rotating disk 18 together with disk 13 so that said disks are rotatable synchronously from the scored pulley 17. However, according to the invention the rotational axis of disk 18 is inclined in relation to the rotational axis of disk 17 such that disk 18 forms a wobble plate in relation to disk 13 for reciprocating pins 20 axially in relation to disk 13 in bores 21 between a first position shown to the right in FIG. 3, in which the pins project from disk 13, and a second position shown to the left in FIG. 3, in which the pins are withdrawn. The inclination of the rotational axes of the disks is arranged in such a manner that the pins are in their projecting position substantially at C in the rotational path of the disks, and in their withdrawn position substantially at D in the rotational path of the disks. A guide rail 22 joins the front surface of disk 13 in the upper part of the disk and forms there a substantially circularly curved edge portion 23 providing deflecting means for removing coins from disk 13. Then, the rail merges into a straight edge portion 24 sloping downwardly. Over the straight edge portion 23 of guide rail 22 there are provided a number of deflecting knives 25 opposite coin collecting tubes 26 for coins of different sizes.

When disks 13 and 18 are rotating and a coin quantity is received in the coin hopper 11, pins 20 projecting into the coin hopper engage the coins and elevate them onto edge portion 23 of guide rail 22 where the pins when successively being withdrawn disengage the coins which are deflected from the disk by portion 23 and roll along edge portion 24 of guide rail 22 to be wiped off from the guide rail by the deflecting knives 25 corresponding to the coin size. Then, the coin will be received by the associated coin collecting tube 26.

It will be seen that the coin feed mechanism shown and described is of a sturdy and reliable construction which is very little sensible for collection of dirt and dust such as may accompany the coin quantity into the coin hopper 11. However, the embodiment shown and described may be modified within the scope of the invention as defined in the claims for example as far as the drive mechanism of the disks is concerned. Each disk may be individually connected with a drive mechanism or there may be provided a special drive pin as a drive connection between the disks such that pins 20 are relieved from this function. Each individual group of pins 20 may be replaced by an elongated ridge-like cam which is movable out of and into a slot formed in disk 13.

What we claim is:

1. A coin feed mechanism which is designed to receive a large number of coins and to deliver them one after another, said coin feed mechanism comprising: a hopper, for receiving the coins; an inclined rotatable disk in said hopper; a member arranged behind said disk and rotatable therewith, the rotational axis of said member being differently inclined in relation to the rotational axis of said disk, and coin driving means comprising at least one pin supported by said member and movably retractable with respect to a surface of said disk by the rotation of said disk and said member, whereby upon rotation of said disk and said member said pin is moved between a first position in which said pin projects beyond said disk surface, and a second retracted position in which said pin is at or below said surface.

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2. A coin feed mechanism as claimed in claim 1, wherein said pin is displaceable in a bore in said disk.

3. A coin feed mechanism as claimed in claim 2, wherein said pin forms engagement means between said disk and said rotatable member for driving said

member by the rotation of said disk.

4. A coin feed mechanism as claimed in claim 1, wherein said disk is rotatably journaled on the outside of said bearing housing.

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