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FILING APPARATUS

Raymond B. Holt, Alhambra, Calif.

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6 Claims. (Cl. 129-16)

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The present invention relates to filing apparatus of the type in which removable cards are mounted for convenient access upon a rotatable structure.

The present invention contemplates the provision of an improved filing apparatus of the above mentioned character which incorporates a one-way clutch to allow rotation of the cards in only one direction, and to provide means whereby the stack of cards may be supported for convenient reference in any one of a plurality of adjustable positions. Also, an important feature of this invention is that the structure for accomplishing these purposes is relatively simple and inexpensive. Such simplicity and inexpensiveness results in a large part from providing a standard with resiliently supported upwardly extending legs, such legs serving as part of the one-way clutch assembly, i. e., a spring whereby the cooperating parts of the one-way clutch are at all times biased in engaging relationship.

It is therefore an object of the present invention to provide an improved, simplified and inexpensive construction for achieving the aforementioned results.

A specific object of the present invention is to provide an improved structure of this character which is easily manufactured and assembled without the requirement of precision made parts.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with the accompanying drawing in which:

Figure 1 is a perspective view showing filing apparatus embodying the present invention;

Figure 2 is a sectional view taken substantially on the line 2-2 of Figure 1;

Figure 3 is a sectional view taken substantially on the line 3-3 of Figure 2;

Figures 4 and 5 are sectional views taken substantially on the lines 4-4 and 5-5, respectively, of Figure 3;

Figure 6 is a perspective view showing in disassembled form the cooperating parts of the one-way clutch and associated knob incorporated in the apparatus shown in Figure 1.

The filing apparatus includes a standard or bracket 10 adapted for support on a table top or for mounting on a wall. This standard 10 is formed by bending a metal rod to provide a transversely extending base portion 10A contiguous with the side portions 10B, 10C and up-

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wardly extending inclined legs 10D, 10E. The standard 10, if desired, may be provided with tubular members 11 of elastic material to provide an antifriction means to prevent sliding of the standard on its supporting surface.

The upward ends of the legs 10D, 10E are each bent to provide a pair of spaced bearing members 10F, 10G, respectively (Figures 2 and 4), wherein a crank member 12 has its opposite ends 12A, 12B journaled for rotation.

The crank end 12A has affixed thereto the knob 14, and the other crank end 12B has the knob 15 affixed thereto, so that the crank 12 may be rotated in the spaced bearings 10F, 10G.

The crank member 12 has welded thereto a pair of spaced card supporting rings 17, 18 with such rings 17, 18 encircling the card engaging portion 12E of the crank end with the axes of the rings 17, 18 axially aligned with the axis of rotation of the crank, i. e., axially aligned with the crank ends 12A, 12B.

The rings 17, 18 are adapted to engage the spaced apertured portions 20, 21 in each of the cards 22 to support them. Such cards are of conventional construction and have a slitted portion 23, 24 extending from an edge thereof to such apertured portions 20, 21, to allow the cards to be placed on and removed from the supporting ring 17, 18 without tearing the cards.

It should be clearly noted that the portion 12E (Figure 2) of the rotatable crank, which is adapted to engage the cards to move the same, is disposed within the confines of the rings 17, 18, so that the crank member applies a force to such cards generally along a line extending generally parallel to their lower edges and below the apertured portions 20, 21.

An important feature of the present invention is the provision of a one-way clutch assembly 30, which allows rotation of the crank 12 in only one direction, i. e., the counterclockwise direction in Figure 1, while yet allowing the cards on the rings 17, 18 to be maintained in a position of stable equilibrium, as shown in Figure 1, wherein a portion of the card stack is in an elevated position resting against the crank portion 12E, while the other portion of the stack is suspended on the rings 17, 18.

This clutch assembly 30 depends for its operation on the resilient nature of the standard 10, i. e., the upper ends of the standard legs 10D, 10E (Figure 1) are movable due to the inherent resiliency of the metal rod forming the standard 10. The inherent resiliency of the standard 10 is used to bias the cooperating clutch disks 31, 32 in engagement at all times.

The inner clutch disk 31 has a series of circum-

ferentially disposed integrally formed locking tongues 31A adapted to cooperate with a corresponding series of integrally formed locking tongues 32A extending inwardly of the outer clutch disk 32. These tongues 31A, 32A are struck from the clutch disks 31, 32 such that they cooperate to allow relative movement of the outer clutch disk 32 with respect to the inner clutch disk 31 in the counterclockwise direction in Figure 1 but prevent clockwise rotation.

Inner clutch disk 31 has a pair of inwardly extending spaced lugs 31B either struck from the disk or welded thereto, arranged to partially encircle the upwardly extending standard leg 10E, to thereby maintain the inner clutch disk 31 stationary with respect to the standard 10 and to prevent rotation of the clutch disk 31.

On the other hand, the outer clutch disk 32 is provided with a similar pair of lugs 32B adapted to partially encircle a web member 15A (Figure 6) of the knob 15, whereby the clutch disk 32 is effectively locked to the knob 15 and turns therewith.

The knob 15 is secured by means of set screw 15B to the crank shaft 12, and thus provides an abutment against which the clutch disks 31, 32, as a unit, are pressed with the locking tongues 31A, 32A in cooperative relationship for producing the aforementioned results.

In operation of the filing apparatus, the individual cards are placed on the rings 17, 18 by temporarily deforming the cards at their slitted portions 23, 24. Once the cards are thus on the rings 17, 18, they may be rotated in the counterclockwise direction only in Figure 1 upon grasping and rotating the knobs 14, 15 in that direction. The cards are thus rotated generally from a lowermost position to an uppermost position, and when the desired card or group of cards reaches substantially its uppermost point of travel, the knobs 14, 15 are released and the cards are maintained by the one-way clutch 30 in a position of stable equilibrium, as shown in Figure 1, where they may be conveniently inspected.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

I claim:

1. Apparatus of the character described, comprising, a standard having a pair of resiliently supported legs, bent at their extreme ends to form spaced bearings, a crank having aligned opposite ends rotatably mounted in said spaced bearings, a one-way clutch assembly mounted on one of said crank ends, said one-way clutch comprising two disks centrally mounted on said one end with cooperating locking means on adjacent abutting faces thereof, one of said disks having a pair of spaced lugs on opposite sides of said one leg and cooperating therewith to prevent said one disk from turning, a knob on said one crank end, said knob having an internal web, the other one of said disks having a pair of spaced lugs cooperating with said web whereby said other disk rotates with said knob, and said one leg resiliently pressing said abutting faces together.

2. Apparatus of the character described, com-

prising, a standard having a pair of resiliently supported legs, a crank rotatably mounted on said standard, a one-way clutch assembly mounted on said crank, said one-way clutch comprising two disks with cooperating locking means on adjacent abutting faces thereof, one of said disks having a pair of spaced lugs cooperating with one of said legs to prevent said one disk from turning, a knob on said crank, said knob having an internal web, the other one of said disks having a pair of spaced lugs cooperating with said web whereby said other disk rotates with said knob, and said one leg resiliently pressing said abutting faces together.

3. Apparatus of the character described, comprising, a standard having a pair of resiliently supported legs, a crank rotatably mounted on said standard, a one-way clutch assembly mounted on said crank, said one-way clutch comprising two clutch members with cooperating locking means thereon, one of said clutch members having means cooperating with one of said legs to prevent said one clutch member from turning, a knob on said crank, and means cooperating between the other one of said clutch members and said knob whereby said other clutch member rotates with said knob, and said one leg resiliently pressing said locking means together.

4. Apparatus of the character described, comprising, a standard having a resiliently supported bearing member, a crank member rotatably supported on said standard and in said bearing member, a one-way clutch mounted on said crank member, means mounting one element of said clutch stationary with respect to said standard, an abutment mounted on said crank, and said resilient bearing member pressing the clutch elements into cooperating engagement and against said abutment, and means for rotating the other one of said clutch elements.

5. Filing apparatus of the character described, comprising, a standard having a resiliently supported bearing member, a crank member rotatably supported on said standard and in said bearing member, a one-way clutch mounted on said crank member, means mounting one element of said clutch stationary with respect to said standard, an abutment mounted on said crank, and said resilient bearing member pressing the clutch elements into cooperating engagement and against said abutment, and means for rotating the other one of said clutch elements, said crank member having a plurality of spaced card supporting rings coaxially mounted with respect to the axis of rotation of said crank with said crank being arranged to contact a card along a line extending generally parallel with the axis of rotation.

6. Filing apparatus of the character described, comprising, a standard, a crank member rotatably supported on said standard, a one-way clutch, means mounting one element of said clutch stationary with respect to said standard, means mounting the other one of the clutch elements for rotation with said crank, said crank member having a plurality of spaced rings coaxially mounted with respect to the axis of rotation of said crank with said crank being arranged to contact a card along a line extending generally parallel with the axis of rotation.

RAYMOND B. HOLT.

No references cited.