June 16, 1942. C. W. HAYES 2,286,911

FILING APPARATUS

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Fig. 1.

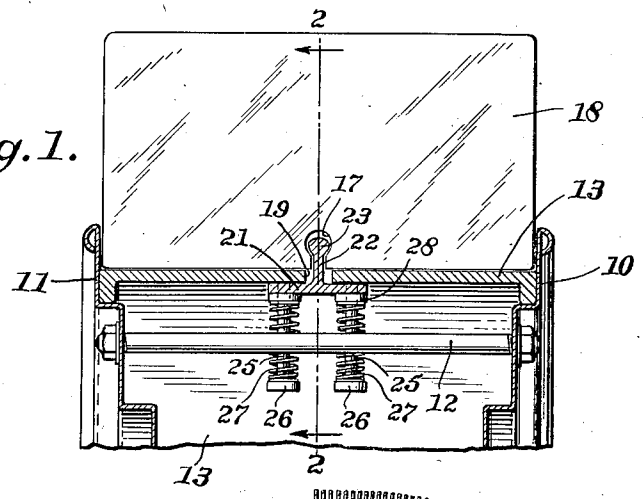


Fig. 2.

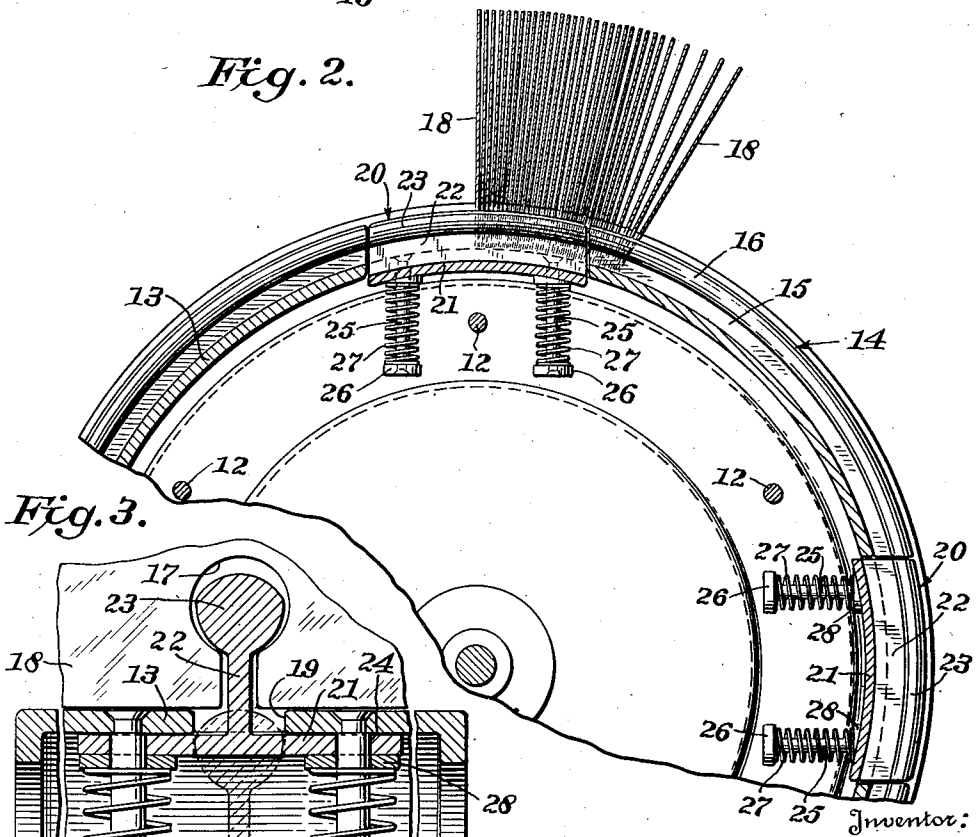


Fig. 3.

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Fig. 4.

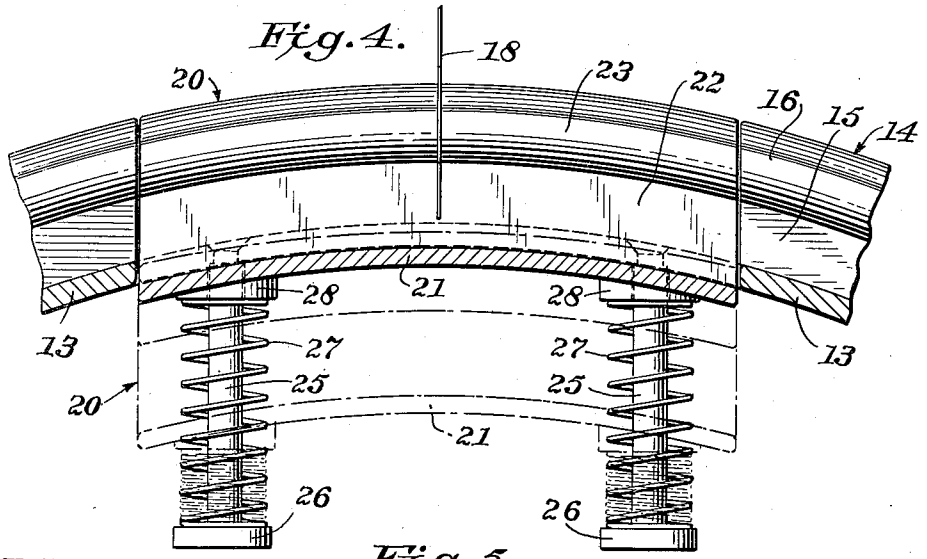


Fig. 7.

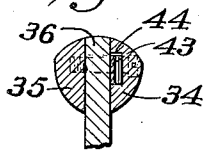


Fig. 5.

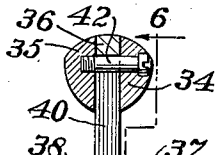
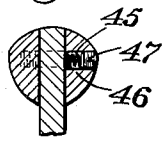


Fig. 8.



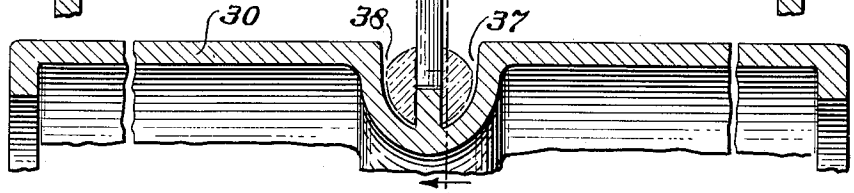
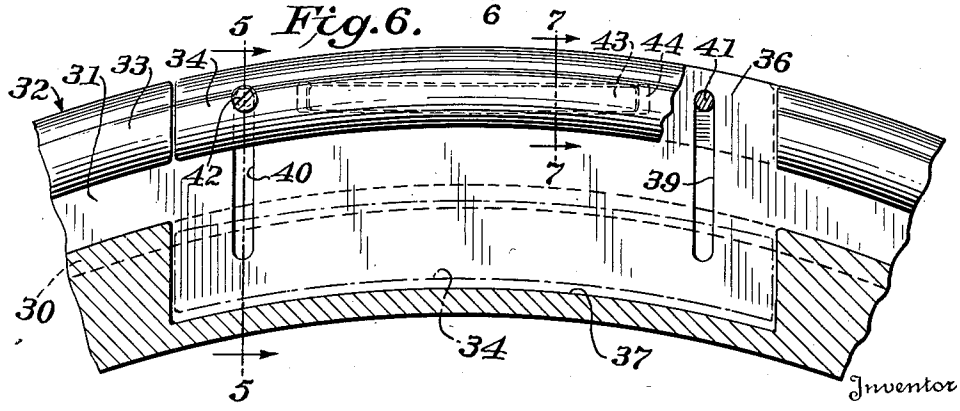


Fig. 6.



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UNITED STATES PATENT OFFICE

2,286,911

FILING APPARATUS

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Application March 19, 1941, Serial No. 384,201

19 Claims. (Cl. 129—16)

The present invention relates to improvements in rotary filing drums of the type wherein a plurality of cards having slots therein are mounted upon the periphery of a drum. Filing apparatus of the type with which the present invention is concerned are shown in the patents to Scholfield, Nos. 2,046,655 dated July 7, 1936 and 2,231,029 dated Feb. 11, 1941.

With filing drums of the type referred to, the cards are normally placed upon and removed from a card retaining rail by flexing the individual cards, to open the slots therein sufficiently to permit them to be placed around the rail. The primary object of the invention is to provide new and improved means whereby a plurality of cards may be placed simultaneously upon and removed simultaneously from the card retaining means without the necessity for flexing or bending the cards.

A further object of the invention is to provide a novel card retaining rail structure having portions so formed that the card retaining means may be moved to an inoperative position, to permit the cards to be removed from the drum en bloc, when adjacent the inoperative retaining means.

A further object of the invention is to provide, in association with such a rail, a card retaining head that may be moved to an inoperative position, by radial, inward movement, to a position below the inner edges of the cards.

A further object of the invention is to provide means for normally holding the movable rail section or head in outwardly projected, operative position where it constitutes a continuation of the fixed rail section or head, said means, however, permitting inward movement at the will of the operator.

An important advantage of the present invention is that, when the card retaining means is shifted to the inoperative position, it is still physically attached to and associated with the drum, so that it is always readily accessible, will not become lost, and can easily and quickly be restored to the operative position.

Other and further objects and advantages of the invention will become apparent from a consideration of the following description of two specific embodiments shown in the accompanying drawings, in which:

Figure 1 is a fragmentary sectional view of a filing drum, taken substantially on a radial plane thereof.

Figure 2 is a fragmentary section and elevation taken on line 2—2 of Figure 1.

Figure 3 is an enlarged transverse sectional view of one form of movable card retaining rail.

Figure 4 is a side view of the same.

Figure 5 is a transverse sectional view of a second form of the invention taken on line 5—5 of Fig. 6.

Figure 6 is a partial section and elevation, taken on line 6—6 of Figure 5.

Figure 7 is a sectional detail, taken on line 7—7 of Figure 6.

Figure 8 is a similar section, showing a slight modification.

The filing drum to which the present invention is applied, is similar to the prior inventions of Scholfield, identified above. The drum may comprise spaced heads 10, 11, secured together by tie-bolts 12 and a rim 13, having an integral card retaining rail 14 associated therewith. The rail comprises a central web 15 and a laterally enlarged head 16, adapted to be received in key hole-shaped slots 17 in cards 18. The rail 14 is interrupted at spaced points where the rim is cut away or slotted as at 19.

Movable card retaining rail sections 20 are associated with the drum at these points. Each section preferably comprises a base 21 positioned interiorly of the drum, a web portion 22, connected to the base and projecting outwardly through the slot 19, and a laterally enlarged head 23, shaped like the fixed head 16 and normally constituting a continuation thereof. The base 21 is provided with a plurality of apertures 24, by means of which it is slidably mounted upon pins 25 carried by the rim 13 adjacent the slot 19 and projecting radially inwardly therefrom. The pins 25 at their inner ends carry heads 26 which support coil compression springs 27, bearing against washers 28 beneath the base 21. Hence, the movable rail section is urged outwardly by the springs 27 and is normally maintained in position with the rail web and head in alignment with the corresponding elements of the fixed rail sections. When it is desired to remove cards from the drum en bloc, the movable rail section is simply pressed inwardly to an inoperative position, as shown in dotted lines in Figures 3 and 4. The cards may then be moved circumferentially of the drum to a position above the inwardly moved rail section and removed from the drum.

The form of the invention shown in Figures 5–8 differs from the first form in that only the laterally enlarged head portions of the rail are moved to an inoperative position when it is desired to move cards from the drum, the rail web

being fixed. The drum comprises a rim **30**, heads not shown, and a card retaining rail **32** including a web **31** which is preferably circumferentially continuous. The fixed head **33**, however, is interrupted at spaced points where movable head sections **34**, **35** are carried by the web. If desired, the web, of course, can be made of a plurality of sections, but a circumferentially continuous web is preferred.

At the points adjacent the plane-sided web portion **36**, the rim is preferably shaped to provide grooves or depressions **37**, **38** from the bottom of which the web **36** projects upwardly. If desired for simplicity of manufacture, the depressions **37**, **38** may be circumferentially continuous, or slots in the rim may be substituted therefor.

The plane-sided web sections **36** are provided with a plurality of substantially radially disposed slots **39**, **40**, through which pins or screws **41**, **42** extend, the pins being adapted to secure the movable head sections **34**, **35** together in predetermined relation to each other and to the plane-sided web portion. The pins also act as guides, to control the inward and outward movement of the movable rail head portions, between the operative and inoperative positions, as shown in full and dotted lines, respectively.

Friction means are provided for retaining the movable head sections in the position to which they are moved by the operator. Preferably, an elongated leaf spring **43** is positioned in a cavity **44** cut in the inner face of the head section **34**. The spring is preferably of serpentine form or otherwise bent, so that one portion thereof bears against the bottom of the cavity **44** and another portion against the adjacent face of the plane-sided web section **36**, thereby providing frictional resistance to movement of the head and retaining the same in place.

If desired, a coil compression spring **45** may be positioned in a bore **46** in one of the movable head sections and held in place by a cap screw **47**, as shown in Figure 8 to perform the same function in a similar manner.

The invention is not limited to the specific details of construction shown in the accompanying drawings and described above, as many modifications will readily occur to one skilled in the art. All such modifications as come within the scope of the appended claims and their equivalents are within the present invention.

I claim:

1. A rotary filing drum comprising a cylindrical rim, and rail means projecting outwardly from the rim and having a headed portion adapted to be disposed in keyhole-shaped slots in cards to retain the cards on the rim, a section of the headed portion being mounted for inward movement toward said rim to a position out of alignment with the slots in the cards, to permit removal of the cards from the drum en bloc.

2. A rotary filing drum comprising a cylindrical rim, and card retaining means projecting outwardly from the rim and normally extending circumferentially continuously therearound, portions of said means being movable in a radially inward direction relative to adjacent portions and to said rim, whereby said movable portions may be moved out of alignment with cards on the rim to permit removal of the cards from the drum en bloc.

3. A rotary filing drum comprising a cylindrical rim, and card retaining rail means projecting outwardly from the rim and including sections having fixed headed portions and other sections having headed portions movable radially inwardly with respect to the rim and the adjacent fixed sections, whereby when the movable headed portion is moved to the last-mentioned position, cards may be removed from the drum en bloc.

4. A rotary filing drum comprising a cylindrical rim, a normally substantially continuous card retaining rail projecting outwardly from said rim, said rail comprising fixed portions and a movable headed portion, the movable portion being mounted for movement radially inwardly of the drum to a position out of alignment with the adjacent fixed portions, and means normally holding the movable portion in the outer position in alignment with the fixed portions.

5. A rotary filing drum comprising a cylindrical rim, a fixed card retaining rail projecting outwardly from said rim and a movable rail section normally aligned with the fixed rail and constituting a continuation thereof, said movable section being mounted for movement radially inwardly with respect to said rim to a position below the inner edges of cards supported on the fixed rail.

6. A rotary filing drum comprising a cylindrical rim, a fixed card retaining rail projecting outwardly from said rim and a movable rail section normally aligned with the fixed rail and constituting a continuation thereof, said movable section being mounted and guided for straight line movement radially inwardly with respect to said rim to a position below the inner edges of cards supported on the fixed rail.

7. A rotary filing drum comprising a cylindrical rim having fixed card retaining rail sections projecting outwardly therefrom, movable rail sections carried by the rim and normally constituting continuations of the adjacent fixed sections, and supporting and guiding means for the movable sections adapted to enable said sections to be moved radially to a position inwardly of the adjacent fixed rail sections and the rim.

8. A rotary filing drum comprising a cylindrical rim having a circumferentially extending slot therein, a fixed card retaining rail projecting outwardly from said rim and terminating adjacent an end of said slot, a movable rail section having a base disposed inwardly of the rim and a rail portion projecting through said slot and normally disposed in alignment with the fixed rail, and resilient supporting means for the rail base normally urging the movable rail section outwardly, whereby the movable rail section may be depressed against said resilient means to a position out of alignment with the fixed rail.

9. A rotary filing drum comprising a cylindrical rim having a circumferentially extending slot therein, a fixed card retaining rail projecting outwardly from the rim and terminating adjacent one end of the slot, a movable rail projecting outwardly through said slot and normally disposed in alignment with said fixed rail, and inwardly movable supporting means for said movable rail, disposed interiorly of and carried by said rim, whereby the movable rail may be moved inwardly out of alignment with the fixed rail.

10. A rotary filing drum comprising a cylindrical rim having a circumferentially extending slot therein, a fixed card retaining rail projecting outwardly from the rim and terminating adjacent one end of the slot, a movable rail

projecting outwardly through said slot and normally disposed in alignment with said fixed rail, and supporting means for said movable rail, disposed interiorly of said rim and connected thereto and including resilient means urging the movable rail outwardly.

11. A rotary filing drum comprising a cylindrical rim having a circumferentially extending slot therein, a fixed card retaining rail projecting outwardly from the rim and terminating adjacent one end of the slot, a movable rail projecting outwardly through said slot and normally disposed in alignment with said fixed rail, supporting means for said movable rail, said supporting means comprising guide means projecting inwardly from the rim, a connection between a portion of the rail and the guide means, and spring means urging the movable rail outwardly.

12. A rotary filing drum comprising a cylindrical rim having a circumferentially extending slot therein, a fixed card retaining rail projecting outwardly from the rim and terminating adjacent one end of the slot, a movable rail comprising an apertured base disposed interiorly of the rim and a rail web projecting outwardly through said slot and normally disposed in alignment with said fixed rail, and supporting means for said movable rail comprising pins projecting inwardly from the rim through the apertures in the rail base, and compression springs surrounding the pins and engaging said base to urge the movable rail section outwardly.

13. A rotary filing drum having a card retaining rail associated with its rim, said rail comprising a web connected to the rim and a head adapted to be embraced by the edges of apertures in cards mounted on the drum, a section of said head being movable radially inwardly relative to the web to a position below the apertures in the cards on the adjacent rail, whereby the cards may be removed by radial movement over the exposed outer edge of the web when the movable section of the head is in the last-mentioned position.

14. A rotary filing drum comprising a rim, a substantially continuous circumferentially extending web projecting outwardly therefrom, a laterally enlarged rail head carried by the web and adapted to be disposed within keyhole slots in cards on the rim to retain the cards thereon, certain sections of the laterally enlarged rail head being movable radially inwardly relative to the web and the rim, to permit the removal of cards en bloc over the outer edge of the web thereby exposed.

15. A rotary filing apparatus comprising a rim, a substantially continuous circumferentially extending web projecting outwardly therefrom having laterally projecting enlargements adjacent its outer edge forming a rail head adapted to be disposed within keyhole slots in cards on the rim to retain the cards thereon, said laterally projecting enlargements being interrupted at spaced sections thereby providing substantially plane-sided web sections, and a plurality of laterally projecting strips carried by the last-mentioned sections and normally constituting continuations of the card retaining rail head, said strips being movable radially inwardly to positions below the inner edges of the cards, whereby the cards may be removed en bloc from said plane-sided web sections.

16. A rotary filing apparatus in accordance with claim 15, characterized in that said plane-sided web sections are slotted and in that said laterally enlarged strips on opposite sides of the web are interconnected by means extending through said slots.

17. A rotary filing apparatus in accordance with claim 15, characterized in that said plane-sided web sections are slotted and in that said laterally enlarged strips are interconnected by pins extending through said slots, and in that friction means are interposed by the said web section and at least one of said strips to prevent inadvertent movement of the strips.

18. A rotary filing apparatus comprising a cylindrical rim, a substantially continuous circumferentially extending web projecting outwardly therefrom, laterally projecting enlargements carried by the outer edge of the web and constituting a card retaining rail head, said enlargements being interrupted at spaced sections, thereby providing plane-sided web sections, the rim adjacent said plane-sided web sections being provided with circumferentially elongated recesses, and laterally projecting strips carried by the plane-sided web sections and supported for movement from an outer position where they constitute continuations of the laterally projecting enlargements to a position disposed within said recesses, whereby, when said strips are in the last-mentioned position, cards may be removed en bloc from the plane-sided web sections.

19. A rotary filing drum comprising a cylindrical rim having a card retaining rail projecting outwardly therefrom, adapted to secure upon the drum, a plurality of cards having rail receiving slots adjacent their inner edges, characterized in that a portion of said rail is displaceable inwardly relative to said rim to an inoperative position while still connected to the drum, whereby cards may be removed en bloc from the drum without removing the rail therefrom.

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