United States Patent

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[54] **MANUAL TALLY DEVICE**
18 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** ..... **116/133,** 30/34 A, 235/103
[51] **Int. Cl.** **G09f 9/00**
[50] **Field of Search** ..... 235/103, 87, 78, 88, 122, 117; 116/133, 135, 136; 30/34 A

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ABSTRACT: This device is for manually tallying the number of times an occurrence happens or some operation is accomplished. The device comprises an assembly of two relatively coaxially slidable and rotatable parts having complementary rotated means and being biased together axially by magnetic means. One use of such an assembly is to tally the number of shaves obtained with one blade of a safety razor.

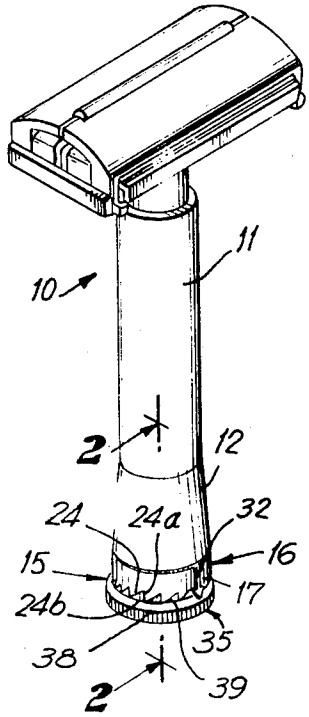


FIG. 1

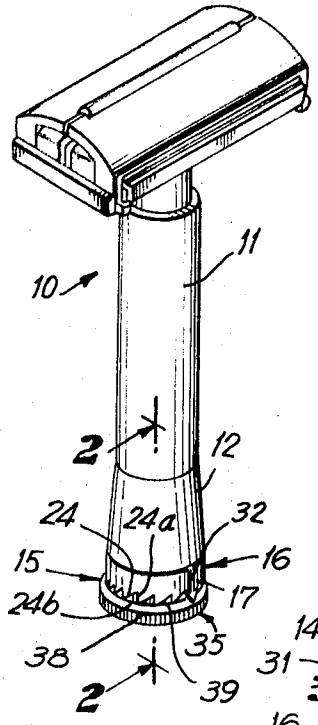


FIG. 2

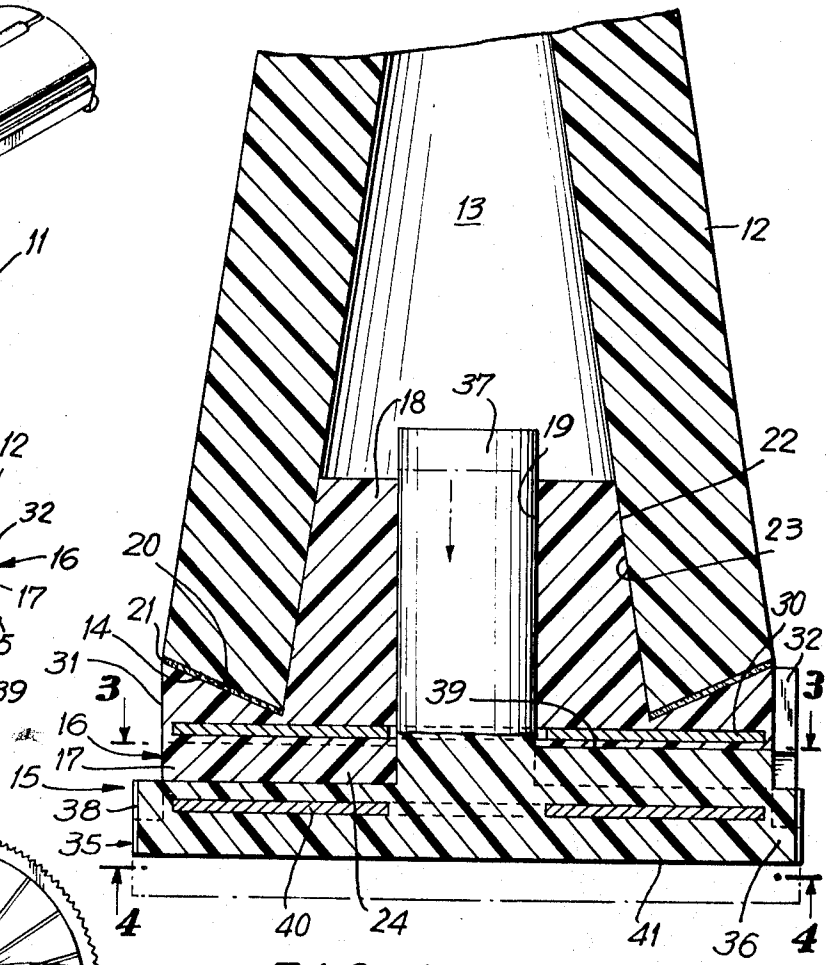


FIG. 3

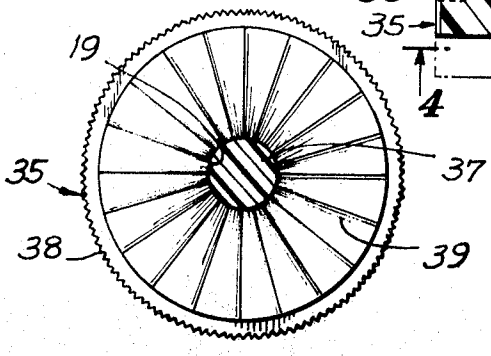


FIG. 4

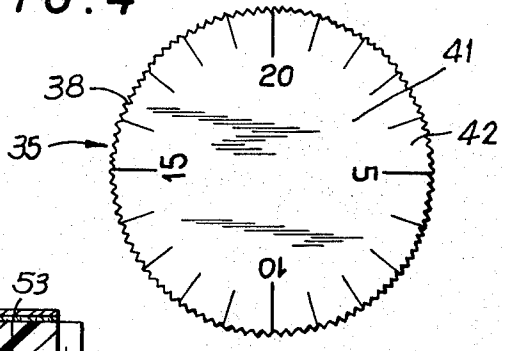
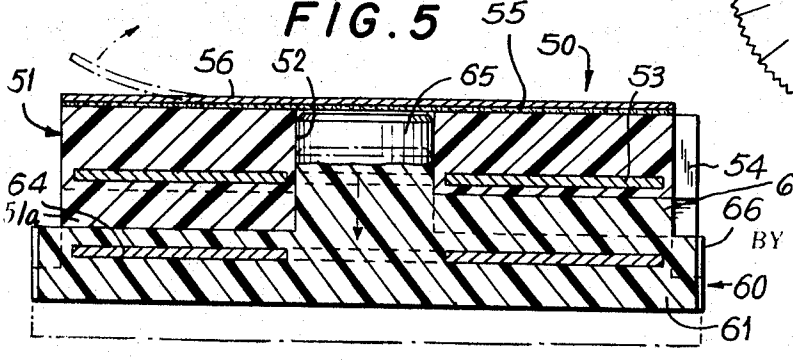


FIG. 5



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MANUAL TALLY DEVICE

This invention relates to manually operated tally devices for keeping count of number of operations performed or number of occurrence, as for example the number of shaves obtained from one blade of a safety razor.

An object of this invention is to provide a device of the character described comprising an assembly of two relatively slidable and rotatable coaxial parts, one of said parts having a circle of teeth, the other part having at least on tooth, with means to bias said parts axially toward each other, and means arranged to permit stepped rotation of one part relative to the other in one direction only through equal angles, corresponding to the angles of the teeth of one part one tooth at a time.

Another object of the invention is to provide a device of the character described having easily readable means to indicate the tally count as said device is operated manually step by step.

Still another object of this invention is to provide an assembly of the character described in which the parts are magnetically biased toward each other, and in which one part moves axially away from the other part as said one part is rotated relative to the other.

Yet another object of this invention is to provide a device of the character described comprising a safety razor having a tally device, incorporated into its handle, for counting the number of times the blade in the razor has been used.

A further object of this invention is to provide a highly improved assembly of the character described which may be used to count occurrences and which may be incorporated with or attached to various devices for manually tallying the number of times something is done or happens; which is easy to manually operate; which remains in assembled relation by magnetic means and without use of screws or springs or other such fastening devices; which has a counter to permit easy reading the tally count; in which each single added count may be both heard and felt by the operator; which shall be relatively inexpensive to manufacture; and which shall yet be practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the drawing:

FIG. 1 is a perspective view of a safety razor with a tally device embodying the invention incorporated therein;

FIG. 2 is an enlarged cross-sectional view taken on line 2-2 of FIG. 1;

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 2, but showing only the lower part of the assembly embodying the invention.

FIG. 4 is a bottom plan view taken in the plane 4—4 of FIG. 3; and

FIG. 5 is an axial cross-sectional view of an assembly embodying another from of the invention

Referring now in detail to the drawing and particularly to FIG. 1–4, numeral 10 designates a safety razor having a tally device embodying the invention incorporated therein. The safety razor may be generally of the Gillette type. The razor 10 has a handle 11. As illustrated, the handle 11 has a rotary-tapering lower end 12 formed with an axial, downwardly diverging frustoconical to tapered hollow 13 forming a circular lower edge surface 14 which may be tapered upwardly and outwardly.

Mounted on the lower end 12 of the handle 11 is a tally assembly 15 embodying invention. Said assembly 15 comprises an upper part 16 which may be made of plastic. Part 16 comprises a lower annular disc portion 17 from which a central hub 18 extends upwardly. The disc and hub are formed with an axial cylindrical through hole 19. The disc portion 18 may have an upwardly and outwardly tapering upper surface 20 complementary to the surface 14 and attached thereto by a layer 21 of glue or other adhesive. The outer surface 22 of hub 18 is complementary to the inner surface 23 of the hollow 13.

At its underside, the disc portion 17 is formed with radial teeth 24. Said teeth 24 may each have a vertical surface 24^a from which an inclined surface 24^b extends.

Embedded in the disc portion 17 of part 16 is an annular ringlike or washer-shaped flat magnet 30 spaced above the teeth 24 and surrounding the axial hole 19.

At one point in the outer surface 31 of said disc portion 17 is a downwardly pointed arrow 32 which is used to indicate a reading point for the tally count, as will be explained hereinafter.

Assembled with part 16 is a second part 35, which may also be made of plastic. Part 35 comprises a lower disc portion 36 from which a central stem or pin 37 extends upwardly through said opening 19 in part 16 for sliding as well as rotary movement relative to hub 18. Disc portion 36 has a radius somewhat greater than the radius of portion 17 of part 16. The outer periphery of said disc portion 36 is knurled as indicated at 38. At the upper side of disc portion 36 are radial teeth 39 complementary to teeth 24 of upper part 16 and having vertical and inclined surfaces matching and contacting the vertical surfaces 24^a and inclined surfaces 24^b of said teeth 24 of said upper part.

Embedded in the disc portion 36 of part 35, is a flat ringlike magnetic disc 40. The magnetic discs 30 and 40 are magnetized to produce lines of force, perpendicular to said discs, whereby to cause the lower part 35 to be attracted or biased upwardly toward the upper part 16.

The bottom surface 41 is marked or embossed, adjacent its periphery with dial markings 42 corresponding to the teeth 24, 39 of said parts 16, 35, respectively.

Thus, if said parts each have 20 teeth, then the circle of the surface 41 is marked with 20 equiangular divisions to count from 0 to 20.

In operation, to start the "20" mark on dial 42, which is equivalent to "O," is placed angularly at the arrow or pointer 32. At this time a new or fresh blade is placed into the razor. At the time of the first shave with the new blade, the user rotates the lower part 35 in a counter-clockwise direction, relative to part 16 which is fixed to handle portion 12. Part 12 of the handle is held by a thumb and finger of one hand while part 35 is rotated by a thumb and finger of the other hand. The teeth 24, 39 comprise a ratchet. When part 35 is being rotated, said part will be moved down or away from part 15, axially, due to the camming action of the teeth 42, 39. When part 35 has rotated one-twentieth of a revolution or the angular extent of one tooth, the magnetic attraction of the magnetic discs will snap the lower part 35 upwardly to interengage or interfit all the teeth. This action is accompanied by a clicking sound to make it easy for the user to know that the dial has been turned to a position for number "1," thus indicating that one shave has been had in the blade. Each count can be read on dial 42 and can be heard and felt.

This action is repeated each time the user has another shave. Thus, he can read the dial the dial 42 how many shaves he gets on one blade. The dial is turned to "20" which is the zero point each time a new blade is inserted into the razor.

Upon rotating the lower part, the magnetic force restrains the outward pull of the lower part as it rides over the teeth, one step or motion at a time.

Furthermore, if desired, only one of said parts may be provided with a magnetic disc or be made of magnetic plastic, while the other part is made of nonmagnetic plastic with a disc embedded therein, which is made of iron or steel or any material that is attracted to a magnet. Such other part further more may be made wholly of iron or steel or other material which is attracted to a magnet.

Only one of the parts 16 or 35 need have a full set of teeth. The other part may be made with fewer teeth. The angular advance of part 35 relative to part 16 will nevertheless occur as long as the camming and clicking takes place one step at a time.

While the invention has been explained in connection with a safety razor, it will be understood that this is only one example of a utilization of the present invention. This use in itself is important, and should have considerable appeal to razor blade users, especially at this time of intense competition among manufactures stressing better and longer usefulness for their respective blades.

The average user of razor blades strives to obtain maximum usage of a blade for several reasons such as economy, aversion to waste, the desire to know that he has chosen the best, and the pride in knowing one has done so. Unfortunately one most often finds oneself in a quandary as to the number of times the blade was used and over extends it to a point beyond its capacity and then condemns the product or, on the other hand discards it before that point is reached with a feeling of doubt and a sense of guilt.

It should be pointed out that portion **12**, instead of being tapered as shown in FIG. **2**, could be cylindrical, in which case the hollow **13** would be cylindrical and the hub **18** would also be cylindrical. The lower end of the hollow part **12** as well as the upper surface of the disc portion **17** would be horizontal, or perpendicular to the axis of the handle **11**.

In FIG. **5** there is shown an assembly **50** embodying another form of the invention which is adapted to many uses, whenever a tally of occurrences is to be manually made.

Said assembly **50** comprises an upper part **51** having an axial hole **52**. Part **51** has radiating teeth, **51***a* like teeth **24** of part **16**, at its underside. Part **51** may be made of plastic with a flat ringlike magnetic disc **53** embedded therein.

Part **51** has a vertical pointer or arrow **54** at one point in its periphery. Its upper surface may carry a layer **55** of adhesive, covered by a strip sheet **56**.

Assembly with part **51** is a plastic part **60** comprising a lower disc portion **61** in which a flat magnetic ring like disc **64** is embedded. Extending up from disc portion **61** is a peg or pin **65** rotatably and slidably engaged within opening **52**. At the upper side of disc portion **61** are radial teeth **61***a* meshing or interengaging with and being complementary to the teeth on the lower side of part **51**.

The periphery of disc portion **61** is knurled as at **66**. At the underside of part **60** is a diallike dial **42**.

By peeling off the strip sheet **56**, part **51** may be attached by adhesive to any other device or support. Then part **60** may be rotated one step at a time relative to part **51**, as described above for part **35**, to make a tally or count.

Only one of the parts **51** or **60** may have a magnetic disc and the other part may have an iron or steel disc or may be made entirely of iron or steel.

Said parts **51**, **60** may both be made of magnetic plastic, or only one of said parts may be made of magnetic plastic and the other part made of iron or steel or have an iron or steel disc for attraction to the other part.

Also only one of the parts **51**, **60** may have a full complement of teeth and the other may comprise fewer teeth.

The magnetic discs may comprise Alnico or other suitable permanent magnetic material. The magnetic plastic parts may comprise permanently magnetized fine ferrite particles embedded in plastic.

Referring to FIGS. **1–4**, the part **12** of the handle can have the teeth **24**, thereby eliminating part **16**.

In such case, part **35** will have to be axially rotatably and slidably mounted on said part **12**. Since part **12** is made of iron, only part **35** will then have to comprise a magnet.

It will thus be seen that there is provided an article in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings, is to be interpreted as illustrative only.

What is claimed is:

1. A tally assembly comprising a hand-held member, a pair of members, means for fixing one of said pair of members to said hand-held member, means for mounting one of said pair of members on the other for rotary movement relative to the other and for sliding movement about the axis of rotation, means to bias said pair of members toward each other in the direction of the axis of rotation, complementary cooperative toothed means on said pair of members to permit rotation of one of said pair of members relative to the other in one direction only and prevent rotation thereof in an opposite direction when said hand-held member is held tightly, and to cam said pair of members apart axially as one of said pair of members is rotated relative to the other in said direction, through an angular extent of one tooth to permit said biasing means to then move said pair of members toward each other, to complete a one step operation of said assembly, and dial means on said pair of members to indicate the number of said operations performed from a beginning point.

2. The combination of claim **1**, said biasing means comprising magnetic means.

3. The combination of claim **1**, said dial means comprising angular markings on one of said pair of members corresponding to the angles of said teeth, and a pointer on the other of said pair of members to indicate point of reading of the count on said dial.

4. The combination of claim **3**, said fix means comprising a layer of adhesive on said one of said pair of members and a strip sheet on said layer.

5. The combination of claim **2**, said magnetic means comprising a magnet fixed with respect to one of said pair of members, and means fixed with respect to said other of said pair of members, and made of material which is attracted to a magnet.

6. The combination of claim **1**, said pair of members being made of plastic said biasing means comprising a magnet embedded in one of said pair of members and means embedded in the other of said pair of members, of material which is attracted to a magnet.

7. The combination of claim **1**, at least one of said pair of members being made of plastic having permanently magnetized fine particles embedded therein, and said other of said pair of members comprising material which is attracted to a magnet.

8. The combination of claim **2**, said toothed means comprising radial teeth on one of said pair of members and at least one tooth on said other of said pair of members meshing with said teeth on said one of said pair of members.

9. The combination of claim **8**, said tooth means on said other of said pair of members being complementary to the teeth of said first of said pair of members.

10. The combination of claim **1**, said hand-held member comprising a handle of a safety razor said one of said pair of members being fixed to said handle.

11. the combination of claim **10**, said pair of members being coaxial with said handle.

12. The combination of claim **1** and a safety razor having a handle constituting said hand-held member, said one of said pair of members being fixed to a lower end portion of said handle, and said other of said pair of members being disposed below said first of said pair of members.

13. The combination of claim **12**, said biasing means comprising mutually attractive magnetic means in said pair of members.

14. The combination of claim **13**, a numbered dial at the underside of said other pair of said pair of members, and a pointer on said one of said pair of members pointing toward said dial.

15. The combination of claim **14**, said handle having an axial hole, and said one of said pair of members having an integral axial sleeve projecting up into said hole, said pin being journaled in said sleeve.

16. The combination of claim **15**, said other of said pair of members having a peripheral outer portion extending beyond

said one of said pair of members and being knurled to facilitate rotation thereof.

17. The combination of claim 16, said means for mounting one of said pair of members on the other for rotary and sliding movement, comprising a pin on said other of said pair of members rotatably and slidably, mounted in a hole in said other of said pair of members and being axially separable therefrom.

18. The combination of claim 1, said means for mounting one of said pair of members on the other for rotary and sliding movement, comprising a pin on said other of said pair of members rotatably mounted in said one of said pair of members and slidably mounted thereon and being axially separable therefrom.

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