

Jan. 16, 1962

V. M. BOWLER
ADJUSTABLE ROTATABLE HOLDER FOR ROLLS OF
PHOTOGRAPHIC MATERIAL
Filed May 29, 1958

3,017,133

Fig.1

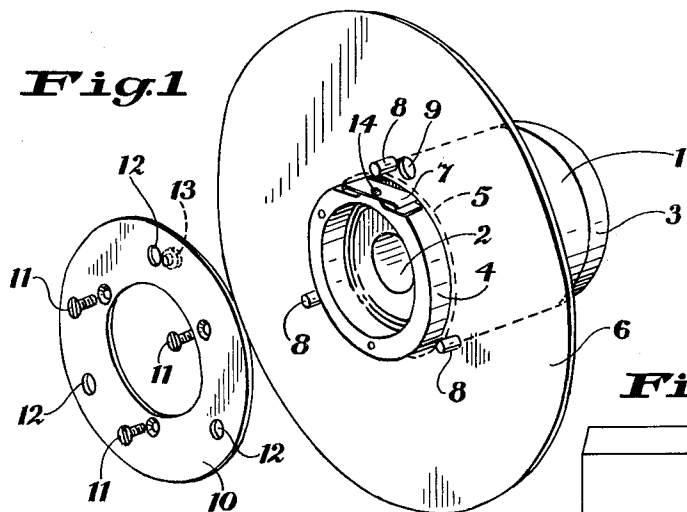


Fig.2

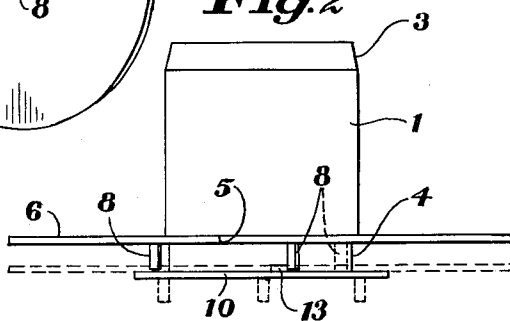


Fig.3

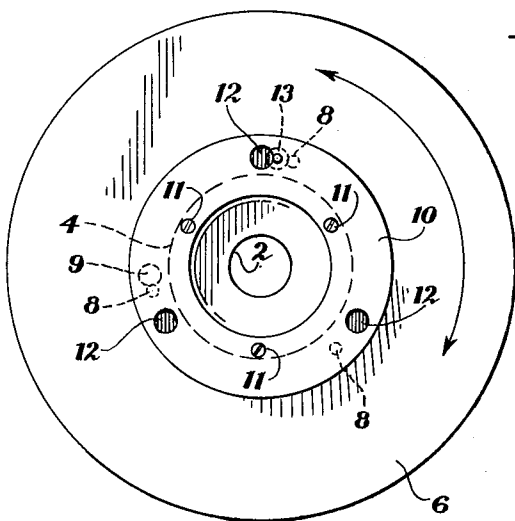
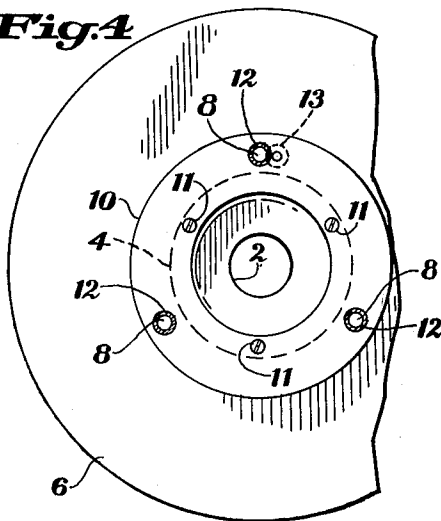


Fig.4



Valentine Marcus Bowler
INVENTOR.

BY *R. Frank Smith*
Steve W. Gumban
ATTORNEYS

1

2

3,017,133 ADJUSTABLE ROTATABLE HOLDER FOR ROLLS OF PHOTOGRAPHIC MATERIAL

Valentine M. Bowler, Wealdstone, England, assignor to
Eastman Kodak Company, Rochester, N.Y., a corpo-
ration of New Jersey

Filed May 29, 1958, Ser. No. 738,747
5 Claims. (Cl. 242—71.9)

This invention relates generally to photographic printers, and more specifically to an adjustable rotatable holder adapted to support rolls of photographic material of two different widths in a photographic printer.

In a photographic printer employing photographic sensitive material in the form of a roll, it is useful to be able to employ two or more different widths of paper to enable the apparatus to be used more economically for printing from a wider range of different negative formats. For this purpose, it is preferable for the longitudinal center line of all widths of paper to occupy the same position relative to the optical axis of the printer. These conditions are fully met by the present invention which provides a photographic roll holder comprising a rotatable hub for receiving a roll of photographic material and a flange which is axially and angularly movable relative to the hub to either of two predetermined positions to accommodate either of two rolls of different widths with their longitudinal center lines in the same position relative to the length of the hub. The flange and a plate secured to the rear end of the hub are provided with one or more cooperating projections and apertures which in one predetermined position of the flange are displaced axially and angularly relatively to one another so that the projections space the flange from the plate, and in the other predetermined position of the flange are in engagement so that the flange bears against the plate.

Accordingly, one of the primary objects of this invention is to provide a rotatable holder for rolls of photographic material that is adapted to be adjusted for two different widths of photographic paper while maintaining the longitudinal center of the paper in the same predetermined position.

Another object of the present invention is to provide a rotatable holder for rolls of photographic material that is simple in design and construction, thoroughly reliable, and economical to manufacture.

Objects and advantages other than those set forth above will be apparent from the following description when read in connection with the accompanying drawing, in which:

FIG. 1 is an exploded rear perspective view of a rotatable holder embodying the invention;

FIG. 2 is a plan view of the holder shown in FIG. 1;

FIG. 3 is a rear elevation view of FIG. 2 showing the flange in one of its two predetermined positions; and

FIG. 4 is a view similar to FIG. 3 showing the flange in the other of its two predetermined positions.

As shown in the drawings, the rotatable holder comprises a hub 1 having a central bore 2 for receiving an idling or driving spindle, not shown, depending on whether the hub 1 is being employed to support a supply roll of photographic material or to take up the material after it has passed through a machine in which a holder is incorporated. The front end of the hub 1 is chamfered at 3 to facilitate its insertion into a roll of material and the rear end of the hub 1 has a portion 4 of reduced diameter terminating in a shoulder 5. An annular flange 6 is freely mounted on the portion 4 and is frictionally held to the hub 1 and prevented from rattling by means of a flat spring 7 secured to the end portion 4 by a bolt 14 and adapted to frictionally engage the inner periphery of the flange 6. The spring 7 is sufficiently wide so as to extend

across the entire portion 4 thereby engaging the flange 6 in all positions thereof. The flange 6 has three equiangularly spaced pins 8 mounted transverse thereto in axial alignment with the axis of the hub 1, and an opening 9 disposed adjacent one of the pins 8.

An annular plate 10 of smaller diameter than the flange 6 is secured by means of screws 11 to the rear face of the hub 1 and is provided with three equiangularly spaced apertures 12 complementary to the pins 8 and adapted to receive them. The plate 10 is further provided with an axially projecting stud 13 adjacent one of the apertures 12 adapted to be insertable in the opening 9 when the pins 8 are inserted in the apertures 12, but does not project beyond the front face of the flange 6. This is so because the length of the stud 13 is less than the width of the flange 6.

Assuming that the holder is to be used with either of two rolls of photographic paper of $2\frac{1}{2}$ inches and $3\frac{1}{2}$ inches width, in order for the longitudinal center of both rolls of paper to occupy the same relative position, it is necessary for the flange 6 to be axially displaceable by a distance of $\frac{1}{2}$ inch. In such an instance, the pins 8 are each made a half inch long. Thus, if a roll of photographic paper $2\frac{1}{2}$ inches wide is to be placed on the holder, the flange 6 is slid forwardly up against the shoulder 5 to the position shown in solid lines in FIG. 2 and rotated in a counterclockwise direction, as viewed in FIGS. 3 and 4 relatively to the plate 10 until the stud 13 is engaged by one of the pins 8, as seen in FIGS. 2 and 3. In this predetermined position, the pins 8 have been angularly displaced with respect to the apertures 12 and are out of registration or alignment therewith and are bearing against the front face of the plate 10. The flange 6 is held against axial movement by the engagement of the pins 8 with the annular plate 10 and the engagement of the front face of the flange 6 with the shoulder 5. Since the hub 1 is rotated in a counterclockwise direction as viewed in FIGS. 3 and 4, while paper is being wound off or onto the hub, there is no possibility of the flange 6 being inadvertently displaced in a clockwise direction to bring the pins 8 into alignment with the apertures 12 and thereby permit axial movement of the flange 6.

Should it now be desired to position a roll of photographic paper $3\frac{1}{2}$ inches wide onto the hub 1, the flange 6 is manually turned relatively to the hub 1 in a clockwise direction as viewed in FIGS. 3 and 4 until one of the pins 8 is brought up against the stud 13 as shown in FIG. 4. The stud 13 has an enlarged head which covers part of the adjacent aperture 12 and is so located relatively to the pins 8 and apertures 12 that when it bears against one of the pins 8, the pins 8 are in alignment with the apertures 12 and the stud 13 is in alignment with the opening 9. Thus, in this position the flange 6 can be slid rearwardly of the hub 1 into the dotted position shown in FIG. 2 and is held against angular displacement relatively thereto by the disposition of the pins 8 and stud 13 into the apertures 12 and opening 9 respectively.

Although but one embodiment has been illustrated and described, it will be apparent from those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. In a photographic roll holder of a predetermined length the combination of: a rotatable hub for receiving a roll of photographic film, a plate member secured to one end of said hub and having an outside diameter greater than the outside diameter of the hub, said plate member having an inner surface abutting the hub at the extremity of said hub, a flange member encircling said hub and located in opposition to the inner surface of the plate member and adapted to be axially movable relative to the

3

hub to one of two predetermined positions on the hub; and cooperating projections and apertures provided by said plate and flange members, said projections and apertures being angularly displaced relative to one another and out of registration when said flange member is in one of said predetermined positions whereby said flange member is axially spaced from said plate member to accommodate a roll of photographic paper of predetermined width, said projections and apertures in the other of said predetermined positions of said flange member registering with and telescoping relative to one another whereby said flange member is axially movable to bear against said inner surface of said plate member to accommodate a roll of photographic paper of a width larger than said predetermined width.

2. The invention as defined in claim 1 wherein a spring member is mounted on said hub adapted to engage the inner periphery of said flange member to frictionally retain said flange member and prevent it from rattling.

3. The invention as defined in claim 1 wherein said one end of said hub has a portion of reduced diameter terminating in a shoulder, said flange member being disposed

4

on said portion and said shoulder forming a stop means for said flange member when it is moved into one of said predetermined positions.

4. The invention as defined in claim 1 wherein said apertures are formed in said plate member and said projections are carried by said flange member.

5. The invention as defined in claim 4 wherein said plate member carries an axially projecting stud disposed adjacent one of said apertures and adapted to cooperate with an opening formed in said flange member, said stud adapted to align said projections and apertures and to register with said opening when it is engaged by one of said projections as said flange member is angularly displaced in one direction relative to the hub, and to prevent alignment of said apertures and projections when said stud is engaged by one of said projections as said flange member is angularly displaced in the opposite direction.

References Cited in the file of this patent

UNITED STATES PATENTS

767,722	Taft	Aug. 16, 1904
1,136,577	Ashlstrom	Apr. 20, 1915