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S. ROSE ET AL

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APPARATUS FOR DRYING PHOTOGRAPHIC STRIP FILM

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FIG. 1

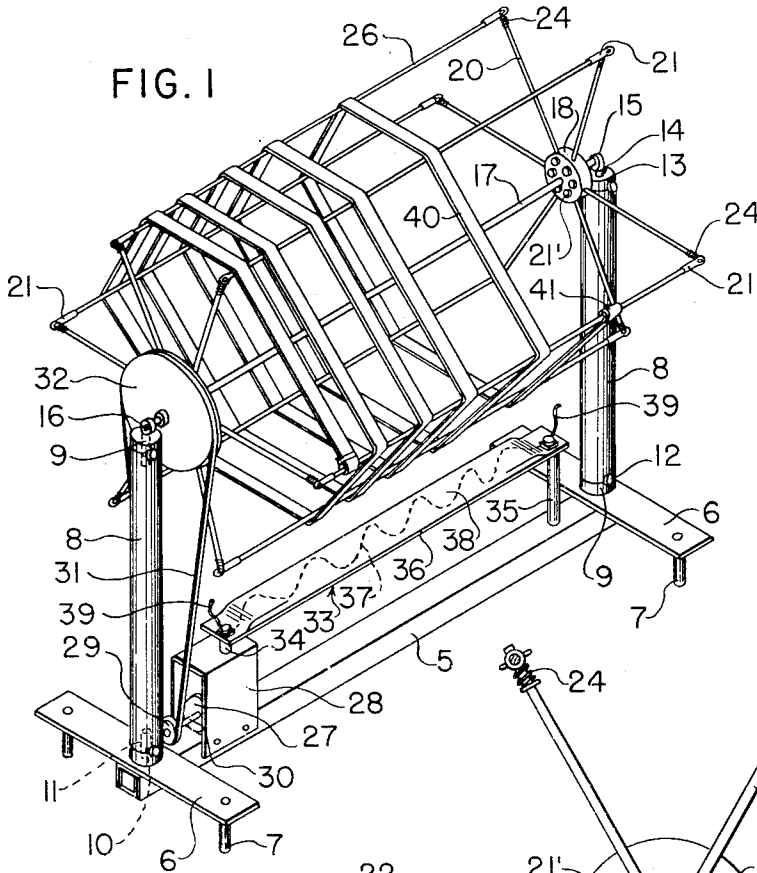


FIG. 2

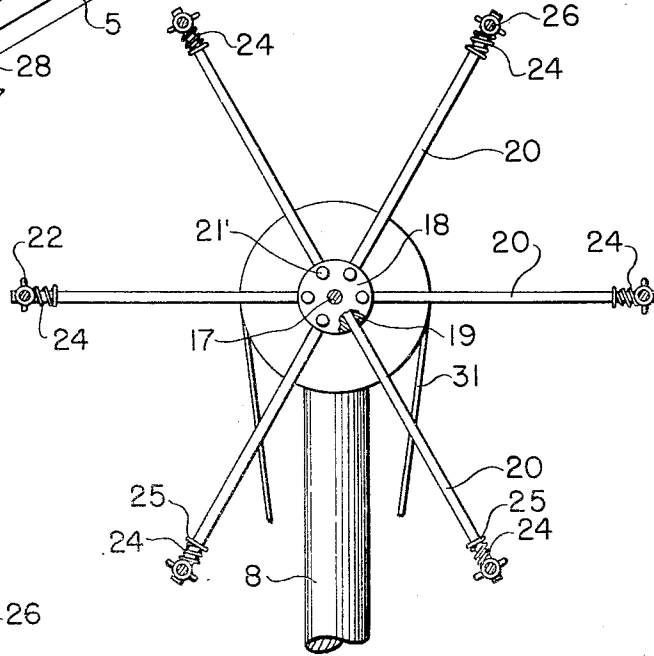


FIG. 3

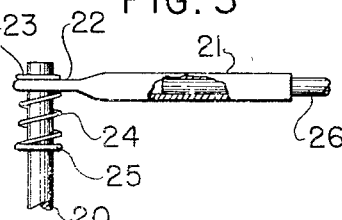
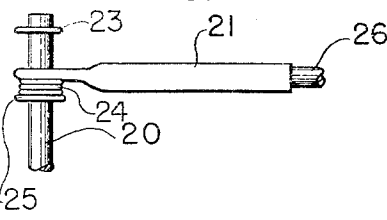


FIG. 4



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APPARATUS FOR DRYING PHOTOGRAPHIC STRIP FILM

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3 Claims. (Cl. 34—153)

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This invention relates to apparatus for drying photographic strip film.

In processing photographic strip film, the film becomes wet and soggy and stretches thereby distorting the images thereon. In order to restore the images to their original state or condition, the film must be dried and permitted to shrink to its natural or original condition without restraint.

It is a prime object of the present invention to provide apparatus for drying photographic strip film that permits the film to become dry uniformly and to resume its normal condition without restraint.

Another object is to provide apparatus of this kind on which the strip film can be readily coiled for drying purposes, and the coils permitted to contract automatically and without restraint.

Another object is to provide a cage or reel member for supporting the strip film in coiled formation which is self-adjusting in diameter, in order to facilitate shrinking of the film.

It is a further object of the present invention to provide a film drying apparatus that is simple in construction, easily assembled and disassembled and capable of being knocked-down and packed in a small package.

Other objects and advantages of the invention will be apparent from the description thereof to follow taken in connection with the accompanying drawing in which—

Fig. 1 is a perspective of apparatus for drying photographic strip film embodying our invention.

Fig. 2 is a vertical sectional view through the center of the reel, on an enlarged scale.

Fig. 3 is a detail view showing the mounting of the socket for supporting the film mounting bar, parts being shown in section.

Fig. 4 is a similar view showing the parts moved.

The embodiment of the invention shown in Figure 1 comprises an elongated hollow base plate or block 5 having end cross-pieces 6, 6 from which feet 7, 7 depend for supporting the apparatus. Upstanding tubular end posts 8, 8 are removably mounted on the cross-pieces at their centers. Each end post has its bottom end closed by a disc or cap 9 having a central opening or socket portion 10 adapted to detachably seat on an upstanding stud 11 on the center of the cross-piece. The post is held tight on its seat against removal by a clamping screw 12 extending laterally through an opening in the wall of the post with its inner end impinging against a flat portion of the stud. At its top, the post is closed by a

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disc or cap 13 having a central opening or socket portion 14. The base, cross-pieces and posts may be made of aluminum or other suitable light and durable metal and constitute a frame.

Mounted in the opening 14 of each top disc 5 is a bearing member having an annular head 15 with an opening 16 therein and journaled in said openings is a shaft or axle 17. An annular hub member 18 is fixed on the shaft adjacent each end post 8. This hub member has a broad periphery formed with a series of spaced socket portions 19. Removably seated in each socket portion 19 is a radial spoke 20 which is held therein by clamping screw 21'. A tubular 15 socket member 21, having one end closed and flattened as indicated at 22 and having its opposite end open, is slidably mounted on the outer end of each spoke. This is accomplished by providing an opening in the flattened end 22 and inserting it over the upper end of the spoke. A snap ring or washer 23 fastened to the spoke adjacent its outer end prevents the withdrawal of the socket member. Surrounding the spoke below and adjacent the socket member 21 is a 25 coiled spring 24, the bottom end of the spring being seated on a snap ring or washer 25 secured on the spoke and its upper end being seated and impinging against the lower surface of the flattened end 22 of the socket member 21 whereby 30 said socket member is urged outwardly against the outer ring 23. The socket members 21 project at right angles to the bodies of the spokes and parallel to the shaft 17. The spokes when assembled on the hubs are directly opposite each other so that the socket members 21 are in alignment and are opposed to each other. Detachably 35 supported in the opposed socket members are bars or ribs 26, the ends of which bars project into the socket members of each pair of opposed 40 spokes. The arrangement and size of the tubular socket members 21 are such that bars of various lengths may be detachably supported therein. The shaft, hubs, spokes, socket members and bars are preferably formed of stainless steel and constitute a cage or reel cylindrical in cross-section. The tubular socket members 21 with their bars 26 45 being movable inwardly and outwardly along the spokes, it will be seen that the diameter of the reel may be adjusted permitting it to contract or 50 become smaller.

A motor 27 is mounted on the base 5, protected by a housing 28 and operatively connected to a source of electromotive power. A grooved wheel 29 secured to the end of the motor shaft 30 drives 55 a belt 31 which in turn drives a pulley 32 fixed

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on the shaft 17 adjacent one of its hub members for rotating the reel.

An electric heating unit 33 of ordinary construction is supported at one end on an insulating post 34 mounted on the top of the motor housing 28 and at its other end on an insulating post 35 mounted on the base 5. This unit includes an elongated base plate 36, a resistance wire or coil 37 on the base plate and an enclosing top plate 38. The coil is connected to a source of electromotive power by conductors 39. The heating unit is positioned directly below the reel so that hot air is directed upwardly circulating throughout and around the reel.

In using the apparatus, a strip 40 of photographic film is wound around the bars 26 in coiled formation with its ends fastened by means of strips 41 of adhesive tape or the like so that such ends can easily be detached.

While the reel is being rotated by the motor 27, the hot air from the heater unit 33 will circulate through and around the reel and over the strip 40 of film thereby heating and drying the entire area of the film. During this drying operation, the strip of film will tend to contract or shrink and assume its original natural condition. This shrinking action will cause a slight inward pull on the supporting bars 26 and the mounting of such bars is such that it permits them to yield and move inwardly on the spokes against the action of springs 24 thereby permitting the size of the diameter of the reel to become smaller so that the strip of film may shrink without restraint. The strip of film is thus permitted to resume its original condition thereby correcting the distortion of the images thereon.

In disassembling the apparatus, the spokes are easily detached from their hubs and the bars 26 easily removed from the socket members 21. The shaft 17 can then be easily removed from the bearings on the posts 8, and the latter detached from their supporting studs 11. The parts of the apparatus may then be readily stacked and shipped in knocked-down condition in a container of small compass.

Changes in details of construction, such as substituting heating lamps for the heating unit shown, may be made without departing from the principle of the invention.

We claim:

1. In apparatus for drying photographic strip film, a base, a reel on the base for supporting a strip of film in coiled formation consisting of a central shaft, opposed radial spokes supported at both ends of the shaft, a tubular socket member slidably supported on the outer end of each

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spoke and disposed parallel with the shaft, a bar detachably supported between each pair of opposed socket members and a coiled spring interposed between each socket member and its supporting spoke for yieldingly supporting said socket member and a heating unit on the base below the bars for drying film supported by said bars.

2. Knock-down apparatus for drying photographic strip film comprising a rectangular elongated base, upright posts removably supported at the ends of said base, a shaft rotatably and detachably mounted on the tops of said posts, hub members fixed to the ends of said shaft, spaced radial spokes detachably mounted in the peripheries of said hub members, socket members supported on the outer ends of the spokes in parallelism with the shaft and detachable bars extending between the opposed ends of said socket members and a heating unit on the base below the bars for drying film supported by said bars.

3. Knock-down apparatus for drying photographic strip film comprising a rectangular elongated base, upright posts removably supported at the ends of said base, a shaft rotatably and detachably mounted on the tops of said posts, hub members fixed to the ends of said shaft, spaced radial spokes detachably mounted in the peripheries of said hub members, tubular socket members supported on the outer ends of the spokes in parallelism with the shaft, detachable bars extending between and supported by the opposed ends of said socket members, an electric motor on the base operatively connected to the shaft for rotating the same and an electric heating unit on the base below the bars for drying film supported by said bars.

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