United States Patent [19]

Weggeland

[11] **3,869,819**

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[54] **PICTURE VIEWER**

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[52] **U.S. Cl.** ..... **40/64 A,** 40/106.1

[51] **Int. Cl.** **G09f 11/30**

[58] **Field of Search** ..... 40/106.1, 63 R, 63 A, 64 R, 40/64 A, 79

[56] **References Cited**

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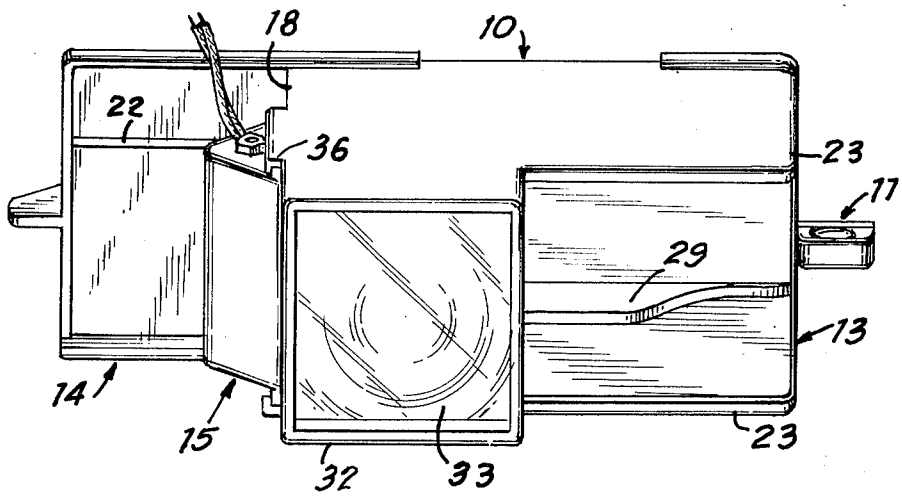
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Primary Examiner—Robert W. Michell
Assistant Examiner—A. Heinz

[57] **ABSTRACT**

A magnifying, illuminated, and shuttle-operated print or picture viewer combined with picture-storing means, hereinafter called a picture viewer, that comprises a housing provided with a shuttle for simultaneously feeding pictures from the bottom of a stack by a rearward portion of the shuttle to a viewing position, and pictures in the latter position into a pile on an extensible tray by the forward edge of the shuttle. A weighted picture-storing member is provided to flatten the pictures fed from the stack, successively and one at a time, so the feed of pictures is efficiently carried out.

7 Claims, 8 Drawing Figures



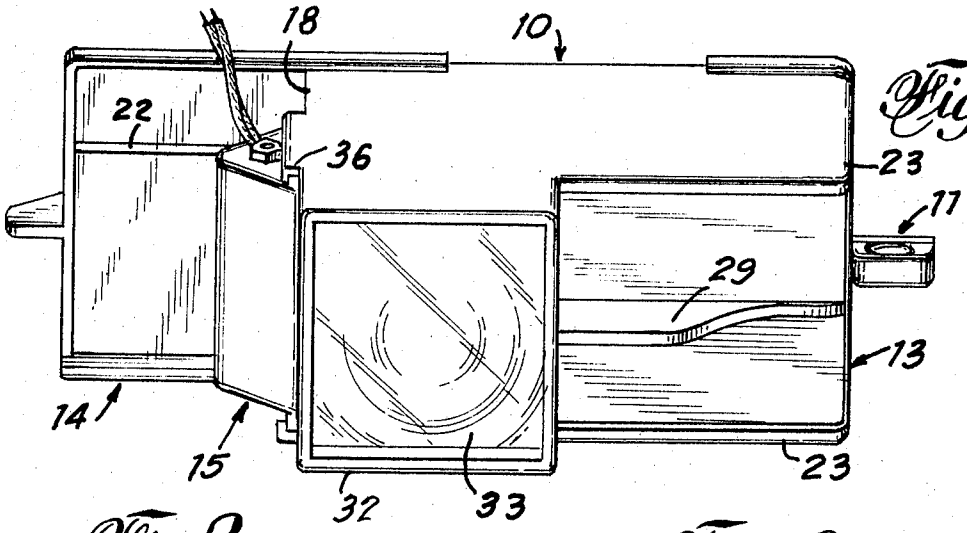


Fig. 1.

Fig. 2.

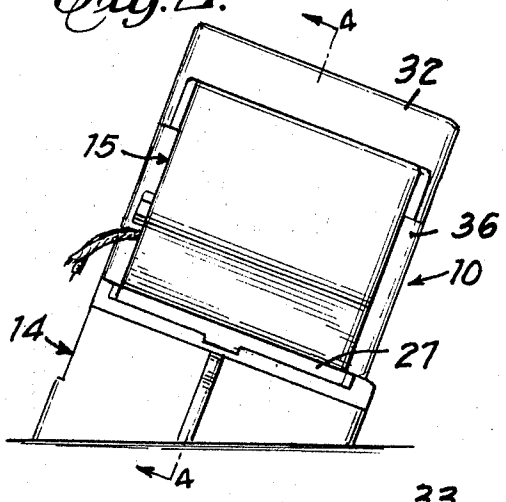


Fig. 3.

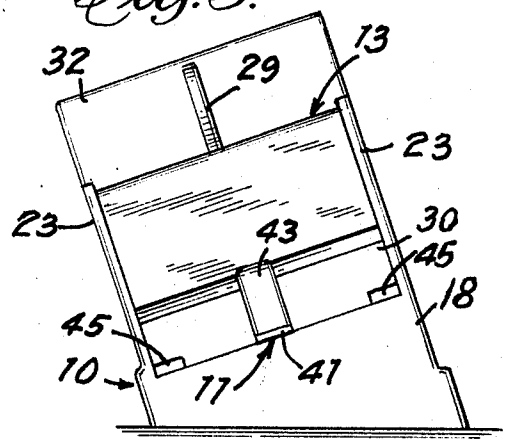
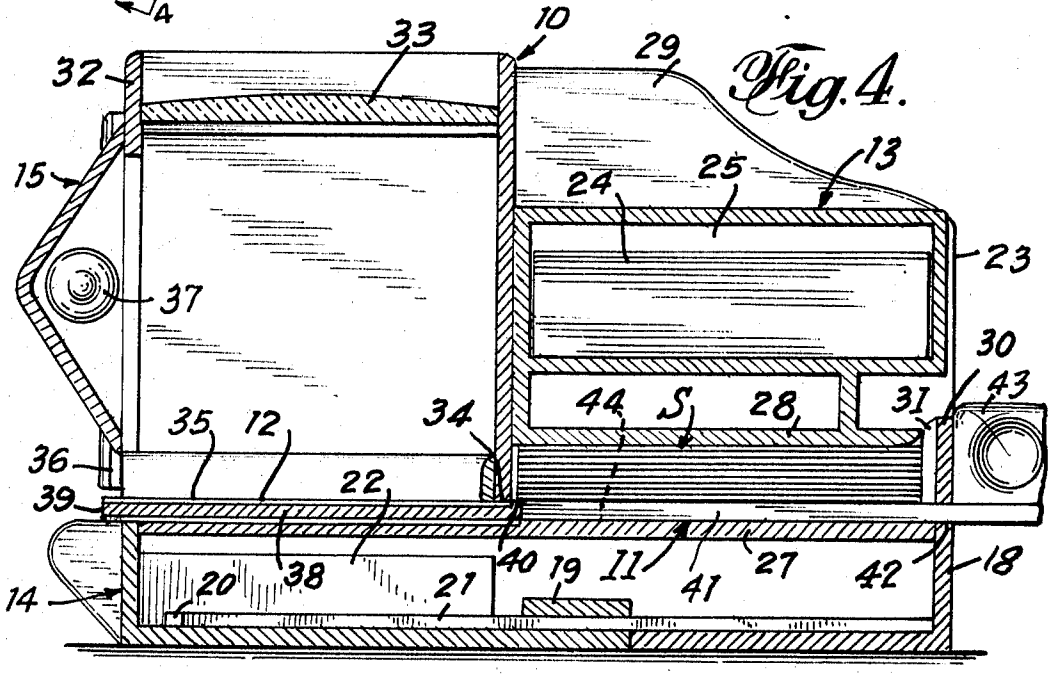
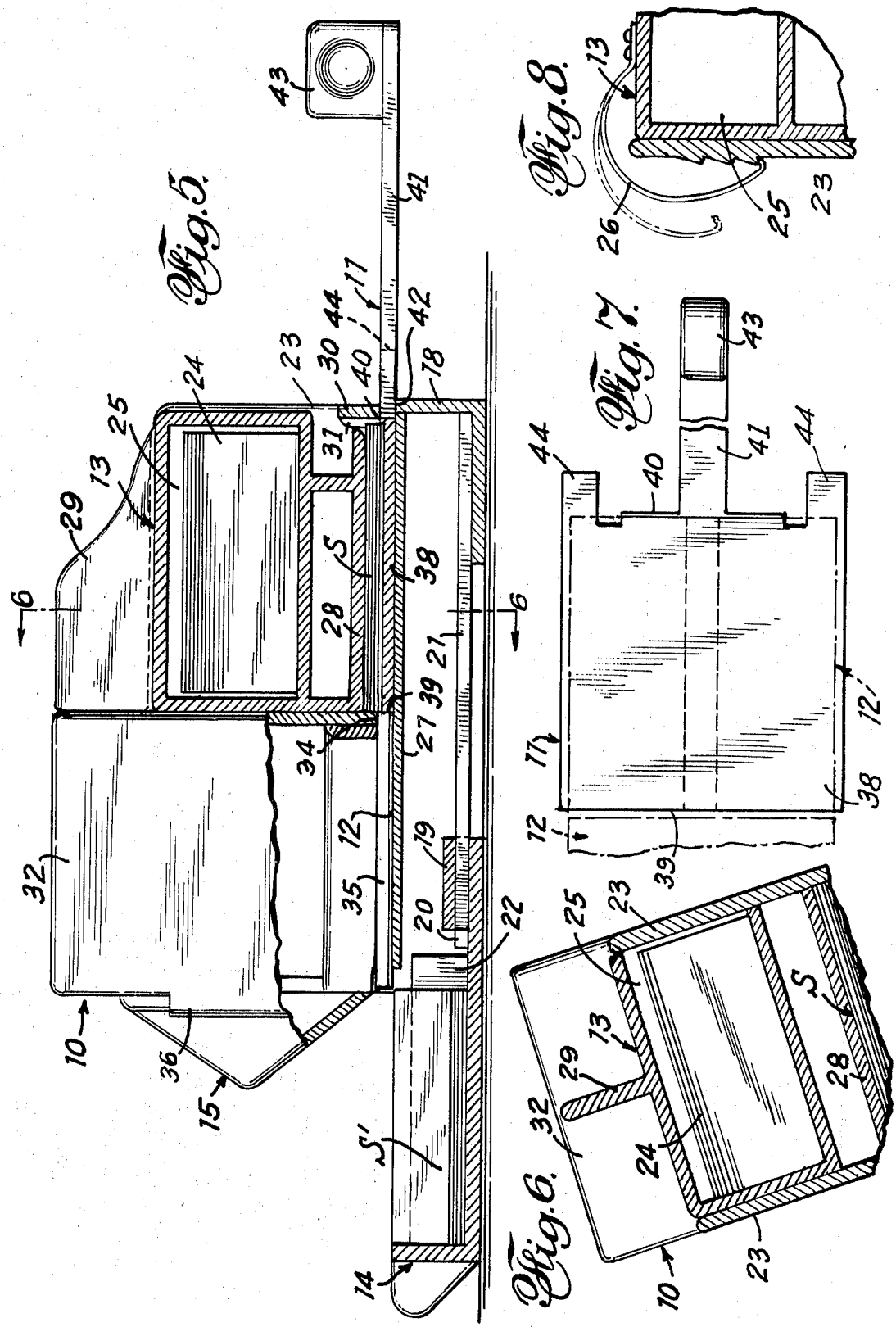


Fig. 4.




Fig. 5.
Fig. 6.
Fig. 7.
Fig. 8.

PICTURE VIEWER

BACKGROUND OF THE INVENTION

1. Field of the Invention

Viewing of prints, pictures or snap shots successively from a stack thereof and re-stacking them in the same order they had been initially stacked.

2. Description of the prior art

Applicant's U.S. Pat. No. 3,495,345 is deemed to be an example of the prior art as it relates to feeding pictures successively from a stack that is located in viewing position and effects successive transfer of pictures from the top of the stack to the bottom thereof by means of a shuttle, the operation, thereby, having a closed cycle making it more time-consuming to add to or remove pictures from the stack thereof, or exchange one or more of said pictures for others.

SUMMARY OF THE INVENTION

Rendering efficient the handling and feeding of pictures from the bottom of a stack, one at a time, to a viewing position beneath a magnifier lens, while simultaneously feeding pictures from viewing position to a pile thereof in which the pictures are in the same arrangement that they were when in stack arrangement, providing a single shuttle to carry out said simultaneous picture feed, and further providing a tray for collecting said picture pile and mounting said tray to be slidable from a non-operative retracted position to an operative extended position to receive the pictures of said pile.

An object of the invention is to provide a picture viewer embodying the above outlined characteristics, as well as providing for utilizing the picture-flattening component of the device with means for storing additional pictures.

Another object of the invention is to provide a picture viewer, as above characterized, that is of such simplified form and construction that complicated and expensive means for insuring proper feed of pictures are unnecessary, thereby materially reducing manufacturing cost and yet greatly improving the accuracy of picture feed.

This invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description which is based on the accompanying drawing. However, said drawings merely show, and the following specification merely describes the preferred embodiments of the present invention, which are given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top plan view of a picture viewer according to the present invention, the same being shown in operative condition.

FIGS. **2** and **3** are end elevational views as seen, respectively, from the left and right ends of the viewer.

FIG. **4** is an enlarged sectional view as taken on the line **4—4** of FIG. **2** with the view in closed non-operable condition.

FIG. **5** is a view similar to FIG. **4,** partly in elevation and shown in open, operable condition preparatory to simultaneously feeding a picture from stacked to viewing position and a picture in viewing position to a re-stacked pile.

FIG. **6** is a broken sectional view as taken on the plane of line **6—6** of FIG. **5.**

FIG. **7** is a partly broken plan view of a picture-feeding shuttle used in the viewer.

FIG. **8** is a fragmentary sectional view of means for placing an additional picture-flattening bias on the component disposed upon the stack.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The picture viewer that is illustrated comprises, generally, a main housing **10,** a shuttle **11** for feeding pictures **12** disposed in a stack S adjacent one end of said housing to a viewing position adjacent the opposite end, a member **13** disposed upon said stack to flatten the same to have edgewise engagement with the shuttle for feeding movement of the picture at the bottom of the stack, a tray **14** at the picture-receiving end of the main housing movable between a closed non-operative condition, as in FIG. **4** and an extended, operative condition, as in FIGS. **1** and **5,** to receive and form a pile S′ of pictures displaced by pictures that had been moved to viewing position by the shuttle. The shuttle, thereby, performs the dual function of simultaneously feeding a picture to viewing position and a picture from viewing position to restacking position. Means is provided to illuminate the pictures that are in viewing position.

The main housing **10** is preferably integrally formed to have a base **18** that is open at the end thereof that houses the tray **14.** The bottoms of the base **18** and of the tray **14** are coplanar to provide a support for the housing and enabling ready extension of the tray from the closed, non-operative position of FIG. **4** to the operative position of FIG. **5.** To limit the extension of the tray, in the operative position, the same is provided with a stop **19** that engages a projection **20** on the end of a member **21** affixed to the bottom of the base **18** to effect suitable location of the extended tray forwardly and relative to the housing base **18.** As shown at **22,** a longitudinal rib is provided in the interior of the tray to prevent the piled or re-stacked pictures from assuming a flat position on the tray bottom, the same rendering it easier to remove the picture pile S′ before sliding the tray back to the contracted position of FIG. **4.**

Extending upwardly from the base **18** is a pair of guide walls **23** that locate the member **13** between them so the same has freely slideable movement, either by its own weight, by the added weight of a quantity of additional pictures **24** housed in a pocket **25** formed in said member, and/or by the additional bias of means **26** (FIG. **8**), whether by spring or by additional weight. This weighted member **13** has the purpose of placing a flattening bias upon the pictures of the stack S and yet enabling the same to be fed, consecutively, to viewing position by the shuttle **11.**

It will be noted that the top wall **27** of the base **18** (see FIG. **2**) is disposed at an angle to the base of the viewer so the stack S′ disposed thereabove has a similar

angular disposition as do the upper portions of the body **10** and the member **13.** Accordingly, insofar as the wall **27** is concerned, the same constitutes the base plane for all portions of the viewer except the base **18.**

The member **13** is provided with a flat bottom plate **28** for engaging the top of the stack S, and with a handle **29** at its top by which removal and replacement of said member is facilitated.

It will be noted that a wall **30** encloses the rear edge of the stack of pictures S, one or more ribs **31** being provided to engage the rearward edge of the bottom plate **28** of member **13** to retain the member **13** in operative position.

Forward of the space occupied by the stack-weighting member **13,** the body **10** is provided with an upwardly extending hollow portion **32,** at the upper end of which is provided an enlarging lens **33** through which the interior space of said portion may be viewed. The above-mentioned wall **27** extends forwardly along the bottom of said interior space, the lower edge **34** of portion **32** being spaced from the sloping top wall **27** of the base **18** to form a slideway **35** for the shuttle **11.**

The means **15** for illuminating the interior of the housing portion **32** may be detachable and be slid from its guides **36** on the portion **32** for access to a lamp **37** in said means for replacement thereof as required.

The shuttle **11** is disposed to slide upon the top face of the wall **27,** being guided in the slideway **35.** Said shuttle is provided with a forward portion **38** with a forward edge **39** for displacing pictures from their viewing position, and a rearwardly positioned shallow rib **40** for displacing the bottom picture of the stack S. It will be noted from FIG. **7** that the space between the shuttle edge **39** and the rib **40** and the width of the pictures **12** are substantially equal.

Said shuttle is provided with an extension **41** that passes through an opening **42** in the wall **30,** a manipulating handle **43** being provided on the outer end of extension **41.**

It will be understood that the pictures **12** are of the type that are approximately 0.010 inch thick. In order that the rib **40** shall engage only the rear edge of the bottom picture of the stack, the latter's height should be less than the pictures thickness, for instance 0.0008 inch, so said rib will not engage the picture in the stack next above. Also the space between the edge **32** and the shuttle portion **38** shall be such as to allow free passage of a picture **12** but intercept the picture of the stack next above. Such space, if one and one-half times the thickness of a picture, will insure proper single picture feed as the shuttle is actuated.

The foregoing should be considered as exemplary inasmuch as back-provided pictures or other thicker than the 0.010 inch thickness above mentioned may be handles in viewers proportioned accordingly.

Rearward of the rib **40** of the shuttle **11,** adjacent the front and back edges thereof, are provided tab means **44** that are rearward extensions of the shuttle portion **38.** When the shuttle is retracted preparatory to moving the bottom picture of the stack S to viewing position, these tabs extend from openings **45** of the wall **30.** When the shuttle is shifted to the position of FIG. **4,** said tabs **44** will remain beneath the forward portion of the stack to prevent the same from dropping behind the pickup rib **40.** These tabs thereby prevent jamming of the shuttle feed as well as facilitating loading the viewer with pictures.

While the foregoing has illustrated and described what are now contemplated to be the best modes of carrying out the invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention.

I claim:

1. A picture viewer comprising:

a housing having a forward end and a rearward end, the forward end having a hollow picture-viewing portion with means to illuminate the interior thereof, the rearward end of said housing having a space to accommodate a stack of pictures of uniform width, the pictures having forwardly and rearwardly directed edges,

a shuttle having a forward portion guided longitudinally in said housing between a retracted position with said forward portion in register with the stack of pictures disposed thereon, and a projected position with said forward portion substantially in register with the hollow picture-viewing portion of the housing, and

said shuttle being provided with a rib to engage the rearwardly directed edge of the lowermost picture of the stack and with a forward edge that is spaced from said rib a distance substantially equal to the width of a picture,

said shuttle, upon projection thereof, simultaneously moving the lowermost picture of the stack to picture-viewing position by means of said rib, and moving the picture that is in viewing position to a position forward of the viewing position to form a pile of pictures that are in the same order as were said pictures when in the stack,

the mentioned rearward end of the housing being provided with spaced guide walls, a weight member being guided by said walls to have a disposition upon the stack to flatten the same so the lowermost picture of the stack is biased to a flat position on the shuttle and the rearward edge of said picture is retained in operative engagement with the rib on the shuttle during projection of the shuttle, and

the weight member being provided with a pocket to store a quantity of extra pictures to increase and decrease the weight of said member according to the number of pictures stored in said pocket.

2. A picture viewer according to claim **1** in which, said rib is of lesser height than is the thickness of each of the pictures engaged thereby, and

the mentioned picture viewing portion of the housing having a bottom edge spaced above the picture being moved to viewing position and less than twice the thickness of said picture.

3. A picture viewer according to claim **1** in which said weight member is provided with means interengaging the weight member and one of the guide walls to produce a resilient bias upon the stack of pictures.

4. A picture viewer according to claim **1** in which a tray is provided to receive the pile-forming pictures, and means slidingly connecting said tray and housing for movement of the former between a contracted position beneath the picture-viewing portion of the housing, and an extended position with the forward end thereof in position to receive the pile-forming pictures.

5. A picture viewer according to claim **4** in which the tray is provided with a bottom on which a longitudinal rib is so disposed that the pile of pictures falling there-

upon is retained thereby elevated above the tray bottom for easy removal of said pile.

6. A picture viewer according to claim **2** in which the shuttle is provided with tab means extending rearwardly of the rib to intercept the stack to prevent the lower picture thereof from dropping behind said rib portion when the shuttle is in picture viewing position.

7. A picture viewer according to claim **6** in which the housing is provided with openings to enable said tabs to project rearwardly from the housing when the shuttle is in position beneath the stack of pictures preparatory to movement thereof to picture viewing position.

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