

- [54] **METHOD AND APPARATUS FOR PROCESSING A FILM INSERT ON AN APERTURE CARD**
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- [73] Assignee: **Eastman Kodak Company**, Rochester, N.Y.
- [22] Filed: **Apr. 8, 1974**
- [21] Appl. No.: **459,241**

Related U.S. Application Data

- [63] Continuation of Ser. No. 309,311, Nov. 24, 1972, abandoned.
- [52] U.S. Cl. **354/317; 354/323**
- [51] Int. Cl. **G03d 5/00**
- [58] Field of Search **354/297, 300, 317, 323, 354/328**

References Cited

UNITED STATES PATENTS

- 2,587,350 2/1952 Maiwald 354/317
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- 3,149,550 9/1964 Lohse et al. 354/323 X

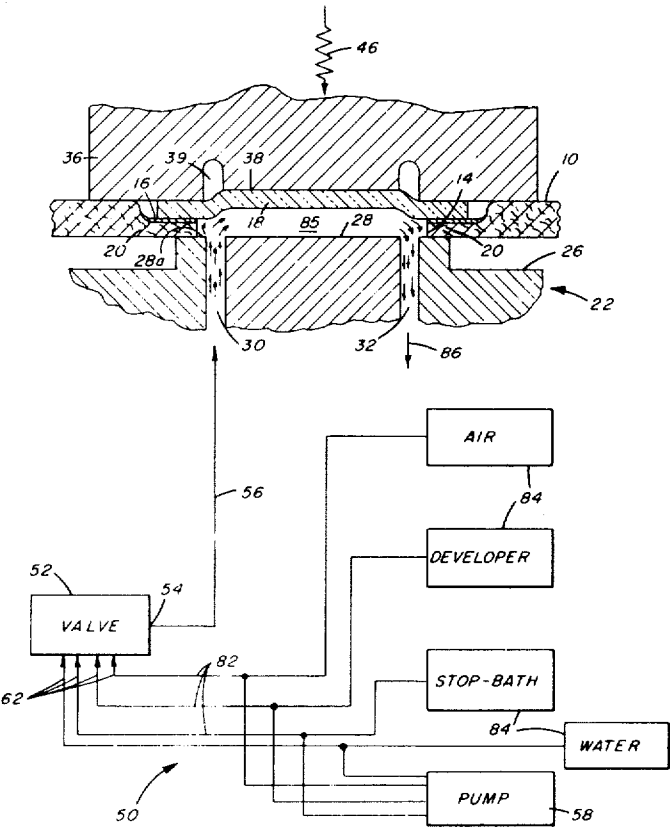
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[57] **ABSTRACT**

A method and apparatus for photographically processing an exposed film member mounted on an aperture card without damaging the card from wetting effects of the processing solutions. The card is positioned in contact with a sealing member on a processing receptacle so that the sealing member engages a portion of the card bordering the aperture to form a processing chamber which includes all of the exposed area of the photographic emulsion on one side of the film. The card is compressed against the sealing member to render the compressed portion impervious to processing fluids, which are supplied to the chamber to flow across the entire exposed area of the emulsion on the film for processing.

9 Claims, 4 Drawing Figures



3 Sheets-Sheet 1

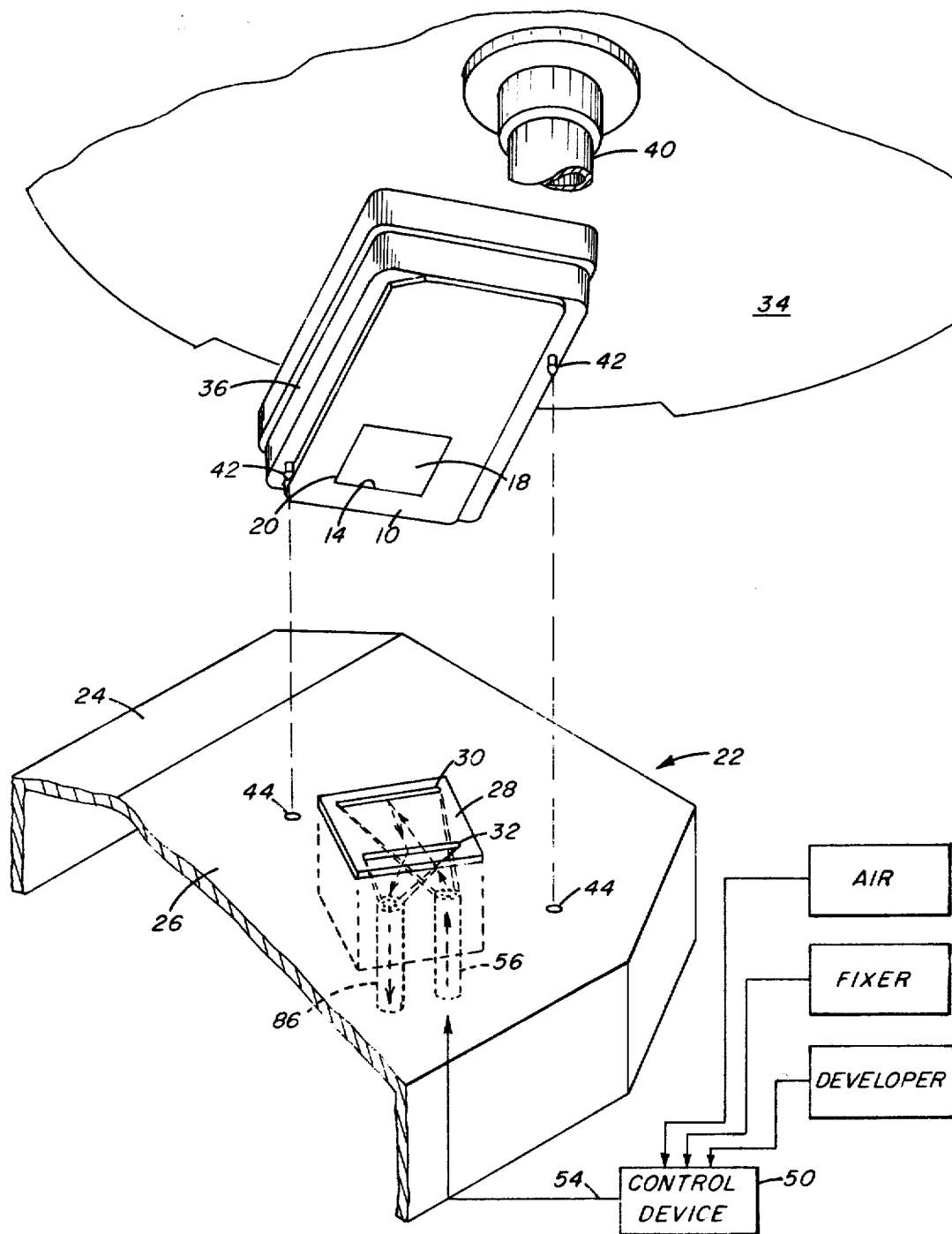
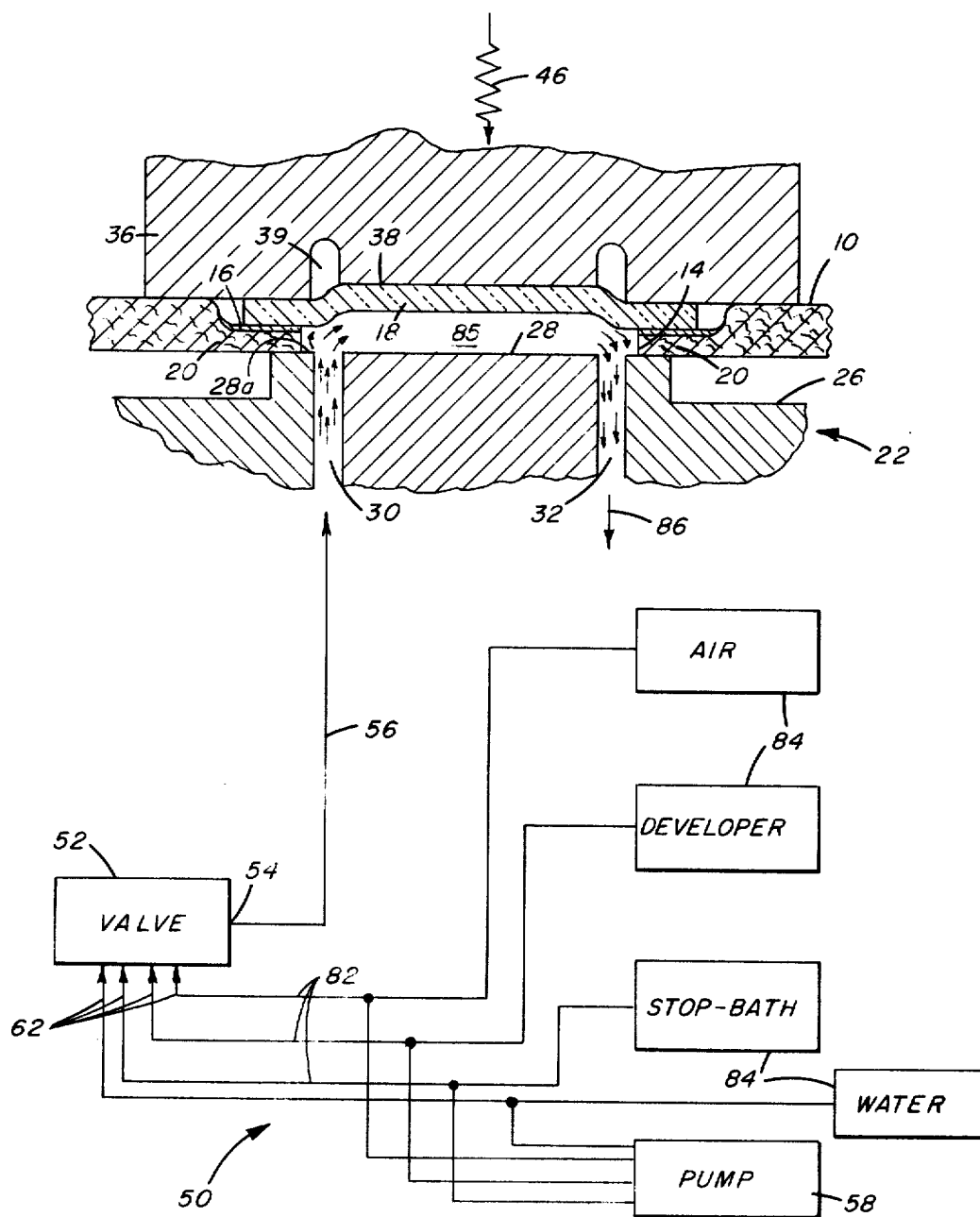


FIG. 1

FIG. 2



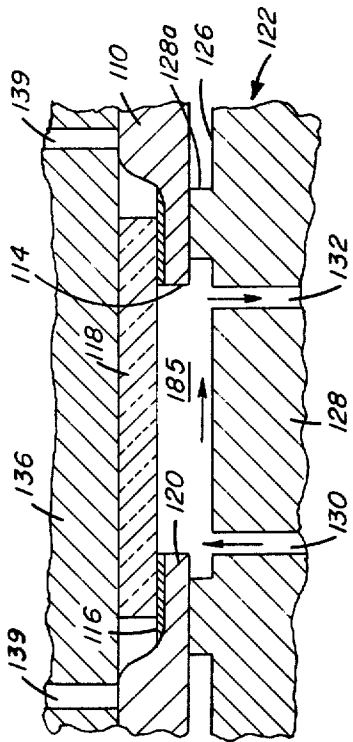


FIG. 4

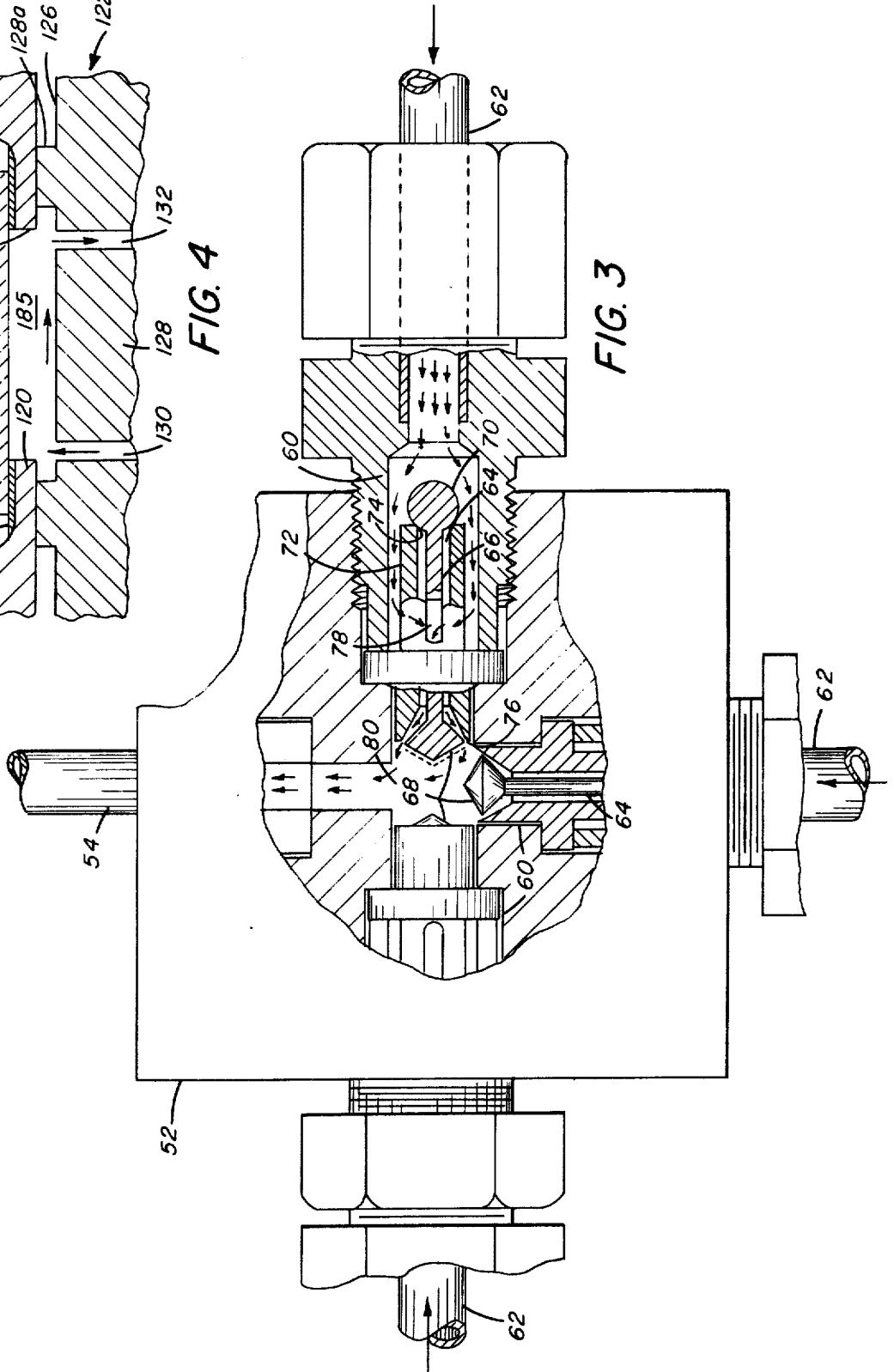


FIG. 3

METHOD AND APPARATUS FOR PROCESSING A FILM INSERT ON AN APERTURE CARD

CROSS REFERENCE TO RELATED APPLICATION

This is a Continuation of Application Ser. No. 309,311 filed Nov. 24, 1972, now abandoned.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention generally relates to a method and apparatus for processing photographic film, and more specifically, to a method and apparatus for processing a photographic film member in an aperture card.

2. DESCRIPTION OF THE PRIOR ART

Aperture cards are of course well known and have gained wide-spread acceptance in business and industry as a means of recording and storing large amounts of photographic information, as well as alphanumeric information, in a relatively small area. During the period when aperture cards were first introduced the standard procedure for photographically recording information on these cards consisted of exposing a film insert to light from an object or scene and photographically processing the latent image formed thereon to produce a visible image on the insert. The film insert was then mounted in registry with an aperture cut from a card. Among the disadvantages to such a procedure was that it was time consuming and required separate handling of the film and the card portion. Developments in the aperture card art followed where it became possible both to expose the film insert to scene light and process the insert while mounted in the card portion. This of course provides a significant advantage over what was at that time the prior art since such an approach eliminates the need for handling the film insert twice in producing the final aperture card and therefore reduces the overall card handling time.

A problem is presented, however, when a film member is to be photographically processed while mounted on the aperture card. This problem involves protecting the card portion from adverse effects which can result if the card is exposed to the processing solutions. These solutions can produce a number of undesired effects such as card swelling and buckling, card delamination and general discoloration as well as long term effects such as a shortened useful life of the card when subjected to regular and systematic handling.

The prior art shows a recognition of the advantages to be gained if a photographic image can be produced directly on a card. Exemplary of the early attempts to achieve these advantages is U.S. Pat. No. 2,206,206 issued to C. H. Smith on July 2, 1940 which discloses a tabulating card (not an aperture card) having a water-proof coating. A portion of the tabulating card is subsequently provided with a coating of photographic emulsion. When the emulsion is developed, the water-proof coating protects the card from the photographic developing solutions. A further development in this area is disclosed in U.S. Pat. No. 2,951,304 issued to Herte on Sept. 6, 1960. The Herte patent shows a plastic coating aperture card having an unexposed film insert. Although there is no disclosure in the Herte patent for developing the film insert, it can be assumed that when the insert is developed, the entire card is subjected to the processing solutions and that the plastic coating serves to protect the card from these solutions.

Subsequent to the early attempts to avoid card damage due to processing an integrated card, it was found generally desirable to mask or isolate the paperboard portion of the card from the photographic solutions.

For one reason, this avoids the expense of specially treating the paperboard portion to render the card impervious to photographic processing solutions. A further, and perhaps the more important reason, is that masking can be used to isolate the film member during film processing and hence prevent damage to the card portion, while avoiding the step of specially treating the paperboard portion of the card. A further benefit achieved is that a more efficient allocation of the processing solutions is possible since generally only the film insert is brought into contact with these solutions and thereby waste can be significantly reduced.

Early disclosures leading to the aforementioned method of processing an aperture card are concerned with isolating a preselected portion of an exposed film prior to processing. Exemplary of such an early disclosure is U.S. Pat. No. 3,115,079 issued to M. M. Saffian on Dec. 24, 1963. The Saffian patent discloses a method for developing motion picture film, frame by frame. Apparatus for practicing this method includes a plurality of cavities for containing each of the different processing solutions. Each of the cavities is surrounded by a gasket having knife-like edge members for containing processing solution within the cavity when the film is urged against the gasket by a pressure member disposed above the film. In this manner, leakage of processing solutions between the film and the gasket is eliminated and such solutions can be confined to preselected areas of the movie film.

A further reference of general interest in this area is U.S. Pat. No. 2,727,446 issued to C. M. Tuttle on Dec. 20, 1955. The Tuttle reference is similar to the Saffian patent in that a method is disclosed for isolating an area of exposed film for development without contaminating other portions of the film which are attached.

A still further reference in this area of isolating a portion of a film is U.S. Pat. No. 2,446,668 issued to C. M. Tuttle et al. on Aug. 10, 1948 and assigned to the assignee of the subject invention. U.S. Pat. No. 2,446,668 discloses a cup member mounted for movement into and out of liquid-tight engagement with the emulsion surface of a photographic film. The cup includes a lip portion which rests flat against the film to effect this engagement. When the cup is in engagement with the film, predetermined quantities of processing solutions are successively delivered into the cup. Such solutions after passing over the emulsion surface are withdrawn from the cup by vacuum. When the last processing step is completed, the cup is withdrawn from the engagement position to permit the film to be advanced.

Another patent of general interest in this area, but one which is specifically directed to photographically processing the film insert in an aperture card, is U.S. Pat. No. 3,423,204 issued to Kutchera on Jan. 21, 1969. The Kutchera reference discloses a method and apparatus for forming information on the film insert portion of a conventional aperture card, wherein a central portion of the exposed film insert is isolated from the card portion so that processing solutions applied to the film are confined to the central portion of the film and are not brought into contact with the card. The Kutchera reference achieves this result by clamping the emulsion side of the exposed film insert in registry with

four knife-like edges which enclose an area that is slightly less than the area of the insert. When the film and the knife-like edges are in registry, the edges contact the emulsion slightly inwardly of the periphery of the film insert. The isolated emulsion side of the film insert is subjected to processing solution by directing a spray of each solution onto the exposed film insert. An opening is provided beneath the film for draining excess solution into a suitable residue container.

Although the arrangements in the above four patents are perhaps suitable for use under some circumstances for processing the film insert of an aperture card, such arrangements suffer from a number of disadvantages. First, clamping the masking member such as the knife-edges to the film prevents utilizing the total available area of the film insert for recording information. Information exposed onto the peripheral area of the image field is precluded from being processed; and to include such information in the processed image it is necessary to de-magnify the size of the recorded image to squeeze all information into the reduced area of the film insert. Furthermore, such an approach requires that surface irregularities in the knife edges be eliminated so as to avoid leakage of the processing solutions between these edges and the film surface. Systematic inspections of the knife-edges may be necessary to locate surface pittings and defects resulting from regular application of the knife edges to the film surface to prevent leakage. Still furthermore, the knife-edges must be sufficiently honed to avoid unnecessarily masking portions of the film surface, yet such edges must be blunt enough to avoid cutting and scratching the film under the influence of the clamping force.

Yet another disadvantage of some of the prior art, particularly the Kutchera patent, is that the necessity for preventing contact between the processing solutions and the card has required masking of the card continuously through the development process. Consequently, all development steps had to be performed at a single processing supply station, or the masking device had to be transported with the card from one successive development station to the next which requires complex masking equipment that is less reliable and more expensive.

Moreover, such prior art methods leave after processing a residue of unprocessed emulsion bordering the periphery of the image. Not only is this aesthetically unattractive, but it also creates dirt problems which can interfere with viewing the microimage since the unprocessed emulsion border is softer than the processed image and is thus more prone to flaking off.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an improved method and apparatus for photographically processing a film member, such as an insert or chip, on an aperture card.

Another object of the invention is to provide a method and apparatus for photographically processing the entire exposed emulsion surface on a film insert or chip mounted on an aperture card.

Still another object of the invention is to provide a method and apparatus for processing a film member on an aperture card wherein processing solutions contact areas of the card adjacent the film member, yet damage of the paperboard portion of the card by such solutions is substantially eliminated.

Another object of the invention is to provide a method and apparatus for processing a film member on an aperture card wherein a portion of the card bordering the aperture is compressed to render the paperboard substantially impervious to processing solutions supplied to the film insert.

Yet another object of the present invention is to provide a method and apparatus for photographically processing a film member on an aperture card wherein the card can be masked and compressed intermittently so that each of the photographic processing steps can be performed at individually distinct solution supply stations.

A still further object of the invention is to provide a method and apparatus for photographically processing a film member on an aperture card in which the apparatus for effecting such processing does not contact the emulsion side of the film.

In accordance with a preferred embodiment of the invention these objects are accomplished by a method and apparatus for processing an exposed photographic emulsion layer on a film member mounted on a compressible record card in registry with an aperture therein by the step of contacting a portion of the card bordering the aperture, on the side of the card corresponding to the emulsion side of the film member, with a sealing member on a processing receptacle to form a processing chamber that confines processing fluid in the chamber to an area on the card including all the film member overlying the aperture. The card is compressed against the sealing member to render a portion of the card bordering the aperture substantially impervious to processing solution, so that processing solution can be supplied to the portion of the card defining the chamber including all the film member overlying the aperture for processing the entire exposed area of the film member.

The apparatus for practicing the method of this invention comprises a sealing member on a receptacle arranged to contact a portion of the card bordering the aperture to form a processing chamber that confines processing solutions to an area on the card including all the film insert overlying the aperture, and means for compressing the card against the sealing member to render the compressed portion of the card substantially impervious to processing solution. The apparatus further includes means for supplying processing solutions to a processing chamber including all the film member overlying the aperture. Preferably the processing chamber formed by the receptacle sealed to a card is adapted to flow the solutions from one end of the film member to the other end for processing the entire exposed area of the film member.

In accordance with this invention compression of a portion of the card bordering the aperture renders that border portion impervious to liquid thereby avoiding damage that would otherwise occur from wetting by processing solutions. Accordingly, there is no need to continuously compress the card during processing and the card can be compressed intermittently which enables movement of the card sequentially between distinct work stations for supplying each of the necessary processing solutions. In this manner, the processing solution supplying means can be of relatively simple design and construction and economical to manufacture.

The invention, and its objects and advantages, will become more apparent in the detailed description of the preferred embodiment presented below.

BRIEF DESCRIPTION OF THE DRAWINGS

In the detailed description of the preferred embodiments of the invention presented below, reference is made to the accompanying drawings, in which:

FIG. 1 is a fragmentary perspective view of a processing station and exemplary apparatus for positioning an aperture card in registry with the station, in which a portion of the station is illustrated in phantom lines and another portion is illustrated in block diagram form to more clearly show the overall processing station and its relation to the aperture card positioning apparatus;

FIG. 2 is a cross sectional view of the processing station having an aperture card positioned thereon and further illustrating, in block diagram form, apparatus for supplying processing fluid to the station;

FIG. 3 is a plan view of a valve assembly for supplying processing solutions to the processing station with a portion of a sidewall and other selected portions of the assembly cut away to illustrate various internal features thereof; and

FIG. 4 is a cross sectional view of the processing station according to an alternative embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Because photographic film processing apparatus and general operations associated therewith are well known, the present description will be directed to elements forming part of, or cooperating more directly with a method and apparatus in accordance with the present invention. It is to be understood that apparatus not specifically shown or described may take various forms well known to those skilled in the art.

In accordance with this description of the preferred embodiment of the present invention, reference is made in the specification and claims to the terms processing solution or processing fluid. These terms are meant to include not only photographic developer and photographic fixer but also fluids for washing and drying those developers and fixers such as water and air, respectively, as well as other commonly known fluids suitable for use in the overall method of photographically processing exposed film. Reference is also made herein to film members, such as inserts or chips having an emulsion layer. It should be understood that these terms refer to any form of photographic film mounted on an aperture card, regardless of the means for attachment to the card and regardless whether or not the film member is mounted between the planes of the opposed sides of the card. For example, the film member can be adhesively fastened in a recess bordering the aperture, fitted within the card aperture with the film edges attached to the aperture edges by adhesives or plastic welds, or mounted in facing relation on one of the major card surfaces with the film overlying the aperture and a portion of the card bordering the aperture. Thus, the dimensions of the film member and the means of attachment to the card are not critical to the practice of this invention, and for convenience the film member is variously referred to as a film insert or chip.

Shown in FIGS. 1 and 2 is a perspective and a cross-section view, respectively, of an aperture card 10. Card

10 comprises a compressible paperboard portion upon which alphanumeric information may be recorded. An internally located aperture 14 is cut or formed from the paperboard card. Mounted in registry with aperture 14, for example, by means of a suitable adhesive 16 is a film member or insert 18. As shown most clearly in FIG. 2, the card described in this embodiment includes a shoulder portion 20 of reduced thickness formed about the outer periphery of aperture 14 to provide a recessed seating area for the film member 18 which is mounted therein with the emulsion side thereof facing the shoulder of the card, as shown. As indicated above, the film member need not be mounted in such a card recesses as shown in this embodiment.

An aperture card processing station 22, a portion of which is shown in the perspective view of FIG. 1, comprises a housing 24 having a deck portion 26. Coupled to deck 26, and disposed in a plane immediately thereabove, as shown most clearly in FIG. 2, is a processing plate or slab 28 having spaced elongate apertures 30 and 32 formed therein. Apertures 30 and 32 are molded or formed in the processing plate 28 at opposed ends thereof, being separated a distance corresponding approximately to the width of aperture 14. For reasons made apparent hereinafter, the dimensions of the processing plate 28 are slightly greater than the corresponding dimensions of aperture 14.

A turret 34 is disposed above deck portion 26 and comprises means for positioning an aperture card 10 in registry with the processing station 22 and more particularly for placing film insert 18 in registry with the processing plate 28. Turret 34 is provided with at least one card holder 36 adapted to carry a card 10 by means known in the art, such as a vacuum cup or recess 38 supplied by passages 39 as shown in FIG. 2. Turret 34 is mounted on a rotatable shaft 40 for movement both in a circular direction and in a vertical direction between raised and lowered positions. Although only the upper end of shaft 40 is shown in FIG. 1, the shaft is coupled, preferably at the lower end, to suitable drive means (not shown) such as a motor. This motor drives or indexes shaft 40 in the circular direction for aligning card 10 above processing station 22, and in the vertical direction for positioning film insert 18 into registry with the processing plate 28. As indicated in FIG. 1, downwardly depending locator pins 42 are provided on holder 36 which engage corresponding holes 44 in deck 26 to provide this registry. Since the processing plate 28 is higher than deck 26 and has slightly greater overall dimensions than aperture 14, when turret 34 is moved into the lowered position, the peripheral portion of the processing plate, denoted 28a, engages the underside of rim 20. Such an engagement serves to seal card 10 for confining processing fluid to an area on the card which includes all of film insert 18 in registry with aperture 14, that is the entire exposed area of the insert.

Disposed in the upper portion of card holder 36 is a compression spring 46, shown symbolically in FIG. 2, which constitutes means for applying a compressive force through holder 36 and the periphery of the processing plate 28a to the shoulder portion 20 of the aperture card 10. When aperture card 10 is placed in registry with processing station 22, the shoulder portion 20 is compressed and, as such, is rendered substantially impervious to processing fluid.

A control device 50 constitutes means for supplying processing fluid to processing station 22 in the proper

portions and the proper time periods. Control device 50 comprises, as is symbolically shown in FIG. 2, a valve assembly 52 having an output port 54 connected to one end of a conduit 56 and a pump 58 for feeding one or more processing fluids through the valve assembly and onto the processing plate 28.

Although FIGS. 1 and 2 show only a single processing station 22 and in conjunction therewith, a single control device 50 for supplying processing solution to such a station, it shall be understood that included within the scope of another preferred embodiment of the invention is a plurality of processing stations and a corresponding number of solution supply means in order to permit photographic developing of the film insert in a step by step manner at each of such stations. In this manner, the solution supply means can be of simple design and be economical to manufacture since it is only necessary to supply a single solution at each of such stations. In so doing, aperture card 10 can be transported from one processing station 22 to the next, such as by driving turret 34 in the circular direction to the next station so that, for example, developing and rinsing takes place at a first station, fixing and washing at a second station, and drying at a third station.

In accordance with a preferred embodiment, valve assembly 52 may, for example, be comprised of a plurality of poppet valves, denoted 60 in FIG. 3, of the type manufactured by Gorman-Rupp Industries. A valve assembly 52 of this type is comprised of a plurality of input ports, denoted generally 62, each of which communicates with an elastic poppet 64 one of which is shown in cross-section in the right hand portion of FIG. 3. Poppet 64 is comprised of an elongate stem 66 connected at one end to a diamond-shaped head portion 68 and at the other end to a ball-shaped base portion 70. Poppet 64 is disposed in a tubular member 72, which has at one end a relatively narrow opening or aperture 74 for receiving ball portion 70 and at the other end has an enlarged funnel-shaped opening 76 adapted for receiving diamond portion 68. Molded or formed in the side of tube member 72 is an orifice 78 for receiving processing solution into the throat of the tube member when such solution is directed into valve assembly 52. When solution flows through an input port 62 and into the corresponding tube member 72 the flow force acting between the walls of the tube member and diamond portion 68 serves to stretch stem 66, to thereby cause the diamond portion to move inwardly toward the center of valve assembly 52 as shown by the dashed lines at the inner tip thereof. This movement creates an annular orifice between the outer side edges of diamond portion 68 and the walls of tube member 72 to permit processing solution to flow to a central chamber 80 and into output port 54 as shown.

As shown in FIG. 2, each input port 62 is coupled through conduits 82 to respective reservoirs or tanks 84 for storing processing fluid such as photographic developer, fixer and water as well as compressed air. The compressed air serves to dry film insert 18 during the processing cycle and may also substitute for the pump 58 to feed the other fluids under pressure to processing station 22. Because of film processing considerations which are well known in the art, it may be necessary to provide the developer and fixer tanks 84 with a solution heater assembly (not shown) for maintaining these fluids at a predetermined temperature.

To effect feeding of the fluids into valve assembly 52, pump 58 is connected to each of conduits 82 as symbolically shown in FIG. 2 if the air pressure is not employed for this purpose. Pump 58 is operably coupled to a suitable power supply (not shown) which functions to automatically actuate the pump upon closure of a microswitch (not shown). Such a switch would normally be closed by the presence of an aperture card 10 in registry with processing station 22.

As is shown in FIGS. 1 and 2, the opposite end of conduit 56 communicates with aperture 30 to permit processing solution to be fed through aperture 30 and into a processing cavity 85 defined on the top and bottom by the film insert 18 and the processing plate 28, respectively, and on the periphery by the compressed card shoulder 20. Mounted beneath aperture 32 is an exit conduit 86 for receiving and draining off processing solution to an appropriate waste reservoir (not shown) after it has flowed across cavity 85.

Processing fluids are supplied to station 22 under air pressure or by pump 58 and are caused to flow within cavity 85 across the emulsion side of film insert 18 in a direction indicated by the arrows in FIGS. 1 and 2, contacting all exposed areas thereof while wetting only that portion of paperboard 12 constituting the exposed end portions of the card shoulder 20. The remaining portions of the aperture card 10 are protected from these solutions because of the gasket-like effect created by the compressive force acting on the card shoulder 20. Moreover, it will be appreciated that, due to the gasket-like effect of the compressed card shoulder, the minor irregularities in the surface of the periphery 28a of the processing plate will be accommodated without leakage of processing solutions. This, of course, reduces the tolerances necessary in the manufacture of the processing apparatus and the maintenance necessary to keep the sealing surfaces leak-free, resulting in substantial economies in the cost of constructing and maintaining the apparatus.

DESCRIPTION OF AN ALTERNATIVE EMBODIMENT

While the preferred embodiment illustrated in FIG. 2 shows that the periphery 28a of the processing plate overlies a portion of the film insert 18, within the inner periphery of shoulder 14, the processing plate is spaced from the film in that region by at least the thickness of the shoulder so that the entire area of the film insert is exposed to the processing solutions. In this instance only the edge face of the shoulder is contacted by the processing solutions.

In an alternate embodiment illustrated in FIG. 4, wherein similar elements are given the same reference numeral with the prefix "1", the periphery 128a of the processing plate 128 is spaced outwardly from the aperture 114. In this construction slightly more of the shoulder 120 is contacted by the processing solutions, yet the gasket-like effect is still achieved to prevent substantial contact of the aperture card 110 by the processing solutions. Also, in this embodiment, the back-up plate 136 is planar with card-holding vacuum passages 139 formed therein. The processing chamber is formed by a recess in the processing plate 128. While these two modifications are, for convenience, both shown in the embodiment illustrated in FIG. 4, it will be appreciated that either may be used with either of the features illustrated in FIG. 2.

It will thus be apparent that the present invention provides a method and apparatus for processing an exposed film chip in an aperture card that both protects the card from the deleterious effects of the processing solutions while assuring the processing of the complete surface of the film chip. Moreover, the present method and apparatus accomplish this without physically contacting the emulsion surface with the potential hazard thereto.

The invention has been described in detail with particular reference to a preferred embodiment thereof, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention.

I claim:

1. Apparatus for processing an exposed photographic emulsion layer on one side of a film member mounted on a compressible aperture card with the emulsion side of the film member facing and overlying the card aperture, said aperture card being normally subject to damage by the wetting effects of contact with a processing liquid, said apparatus comprising:

- a. a processing receptacle having a sealing member arranged to contact a portion of such a card bordering the aperture, on the side of the card opposite the film member, to form a processing chamber defined partially by an edge portion of the card bordering the aperture and partially by the exposed emulsion layer;
- b. means for compressing such a card against said sealing member to render said aperture-edge portion of the card substantially impervious to processing liquid; and
- c. means for supplying processing liquid to said processing chamber to process the exposed emulsion layer of such a card.

2. Apparatus for processing an exposed photographic emulsion layer on one side of a film member mounted on a compressible record card with the emulsion side of the film member facing through and overlying an aperture in the card, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said apparatus comprising:

- a. means for contacting a portion of the card bordering the aperture, on the side of the card corresponding to the emulsion side of the film member, with a sealing member on a processing receptacle to form a processing chamber defined partially by an edge portion of the card bordering the aperture and partially by the exposed emulsion layer;
- b. means for compressing said card against said sealing member to render said aperture-edge portion of the card substantially impervious to processing liquid; and
- c. means for supplying processing liquid to said processing chamber to process said exposed emulsion layer.

3. Apparatus for processing an exposed photographic emulsion layer on one side of a film member mounted on a compressible record card in registry with an aperture therein, said film member being fastened to said record card with the periphery of its emulsion layer side adjacent the edge of the aperture, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said apparatus comprising:

- a. a sealing member arranged to contact a portion of the record card bordering the aperture to form a processing chamber partially defined by an edge portion of the card bordering the aperture, said sealing member and processing chamber being arranged to restrict the flow of a processing liquid to a predetermined area of the card including at least all of the exposed area of the emulsion surface of the film member;

- b. means for compressing said card against said sealing member to render the compressed portion of the card substantially impervious to processing liquid; and

- c. means for supplying processing liquid to said processing chamber into contact with the entire exposed area of the film member for processing.

4. A method of processing an exposed photographic emulsion layer on one side of a film member mounted on a compressible record card in registry with an aperture through the card, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. contacting a portion of the card bordering the aperture, on the side of the card corresponding to the emulsion side of the film member, with a sealing member on a processing receptacle to form a processing chamber defined partially by an edge portion of the card bordering the aperture and partially by the exposed emulsion layer;

- b. compressing said card against said sealing member to render said aperture-edge portion of the card substantially impervious to processing liquid; and

- c. supplying processing liquid to said processing chamber to process said exposed emulsion layer.

5. A method of processing an exposed photographic emulsion layer on one side of a film insert mounted on a compressible record card, the card defining an aperture and having a shoulder portion of a reduced thickness around the aperture, said film insert being mounted with its emulsion side facing and overlying the card aperture and fastened to said shoulder portion, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. contacting the shoulder portion of the card, on the side of the card opposite the film insert, with a sealing member on a processing receptacle to form a processing chamber defined partially by an edge portion of the shoulder around the card aperture and partially by the exposed emulsion layer;

- b. compressing said card against said sealing member to render said shoulder-edge portion of the card substantially impervious to processing liquid; and

- c. supplying processing liquid to said processing chamber to process said exposed emulsion layer.

6. A method of processing an exposed photographic emulsion layer on one side of a film chip mounted on a compressible aperture card with the emulsion side of the film chip facing and overlying the card aperture and a portion of the card bordering the aperture, said aperture card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. contacting the aperture-border portion of the card, on the side of the card opposite the film chip, with a sealing member on a processing receptacle to

form a processing chamber defined partially by an edge portion of the card bordering the aperture and partially by the exposed emulsion layer;

- b. compressing said card against said sealing member to render said aperture-edge portion of the card substantially impervious to processing liquid; and
- c. supplying processing liquid to said processing chamber to process said exposed emulsion layer.

7. A method of processing an exposed photographic film member mounted on a compressible record card in registry with an aperture therein, said exposed photographic film member having an emulsion surface and being mounted on said card with the periphery of the exposed emulsion surface adjacent the periphery of said aperture, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. contacting the record card at the periphery of the aperture with a sealing member to form a processing chamber which includes the edge of the aperture and at least all of the exposed emulsion surface of the film member;
- b. compressing said card against said sealing member to render the compressed portion of the card adjacent the film member substantially impervious to processing liquid; and
- c. supplying processing liquid to said processing chamber into contact with the entire exposed emulsion surface of the film member for processing.

8. A method of processing an exposed photographic emulsion layer on one side of a film member mounted on a compressible record card with the emulsion side of the film member facing and overlying an aperture in the card and a border portion of the card around the aperture, said record card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. contacting said border portion of the card, on the side of the card opposite the film member, with a sealing member on a reservoir to form a processing chamber that restricts flow of liquid in the chamber

to a predetermined area of the card including at least all of the exposed area of the emulsion layer on the film member;

- b. compressing said card against said sealing member to render said contacted border portion of the card substantially impervious to processing liquid; and
- c. supplying processing liquid to said processing chamber to flow into contact with the exposed emulsion layer for processing.

9. A method of processing an exposed photographic emulsion layer on one side of the film member mounted on a compressible aperture card with the emulsion side of the film insert facing and overlying the card aperture and a portion of the card bordering the aperture, said aperture card being normally subject to damage by the wetting effects of contact with a processing liquid, said method comprising the steps of:

- a. at a first work station contacting the aperture-border portion of the card, on the side of the card opposite the film member, with a sealing member on a processing receptacle to form a processing chamber defined partially by an edge portion of the card bordering the card aperture and partially by the exposed emulsion layer;
- b. compressing said card against said sealing member to render said aperture-edge portion of the card substantially impervious to processing liquid;
- c. supplying a first processing liquid to said processing chamber at said first work station to flow said liquid into contact with the entire exposed area of the emulsion layer;
- d. removing said card from said sealing member at said first work station, and transporting said card to a second work station; and
- e. repeating at said second work station the steps of contacting with a second sealing member on a second processing receptacle, compressing said card against said second sealing member, and supplying a second processing liquid to the processing chamber formed at said second work station.

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