



# GRAFLEX Journal

SHARING INFORMATION ABOUT GRAFLEX AND THEIR CAMERAS

ISSUE 3 2020

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*Ed: Mr. Lewis is a Graflex Journal subscriber and author of several articles on repairing and repurposing classic Graflex cameras.*

## NATIONAL GRAFLEX GETS A NEW COAT

By Paul S. Lewis

About five years ago, I was trolling eBay for a new camera project. I found a seller offering a National Graflex. The seller had provided good photos and noted that the old camera was being offered as a part of a retiring camera repair business selling off old inventory. The camera looked very complete with apparently good lens and bellows. It was being sold for a very good price, because it was lacking every panel of leather covering. In this condition, it was pretty undesirable; it looked awful! So, I bought it with the plan to recover it and give this very cool camera a second life.



This was a low risk project because the initial investment was small, and the camera, about the size of a brick, was going to be reasonably easy to manage, since there were not a lot of small panels to cut and not a huge amount of small, detailed fixtures to work around.

The first challenge was to source material for covering. Checking historical photos of the camera told me that I needed something like a pebble grain, black leather. It had to be thin, too, because the cast body is lined with a frame that is not very high. So, I had to find leather that was thinner than the inside edge of the frame. As it turns out, I needed material that was about 1/32<sup>nd</sup> thick. With a little hunting on line, I did find a source for

some leather that was a good match. Thickness was right, color was good, and the pebble grain was close enough. So, I had them send me a large sheet; 12x17. Having a good supply would allow for some mistakes and assure me that there would be enough length and width to cover the missing panels with one complete piece. The source I used was Cameraleather (info@cameraleather.com). I did just check with them to be sure similar material is available. The report is that although the material is available, supply is limited.

So, with material and camera in hand, the next step was to get the new cover panels cut out and attached. I had taken on a couple of smaller projects which gave me good practice and experience ahead of this effort. Also, there are some tutorials online for dealing with this kind of repair. Pulling that all together, I started the project by cleaning the body of the camera to be sure there was a good bonding surface and no little bumps that are a kind of corrosion. The large, flat surfaces got scraped off with a naked box knifeblade.

Then, the whole camera, one panel at a time, was double covered with blue masking tape. The masking tape creates the patterns for the new panels. The tape is layered in a 90-degree overlap, so when the finished pattern is lifted off the body, it will come off in one piece. Also, the double layer adds some thickness which makes it easier to transfer to the new leather. My approach was to cover the whole camera with the double layer of tape and then carefully cut to the edges of the frame with an X-Acto knife with a fresh, sharp blade. I used the blue masking tape because, from experience, I knew it would release easily. The shortside of that material is that when it is layered to that thickness, it is a bit mushy and will move just a tiny bit when being worked. Nevertheless, it made good patterns. The most difficult issue was getting cleanly around small, curved parts like the release buttons on the bottom. I also worked the edges of the tape into the wall of the frame with the dull end of the knife.



With patterns cut and removed from the body, the next step is to transfer the patterns to the new leather. That is pretty straightforward by tracing; cutting around the pattern as it sits atop the leather. Wherever possible, I

did use a straightback razor blade and a steel rule on the straight edges. This gave me the best shot at a clean, straight cut. At that time, I used an old magazine as a backer so the blade could get below the leather and finish the cut with a clean part. Today, I have a Fiskars cutting mat and a rotary cutter. In a do-over, I believe this would be a good, possibly better, choice for cutting the straight edges. Again, I would use the steel rule as a straight edge and be darn careful to keep fingers out of the way, because the rotary cutter is deadly sharp and unforgiving.

Once the patterns are cut out and new leather panels are ready, then some dry-fit testing is a good idea.

I did struggle getting clean cuts around the tight curves and found I needed to do some careful trimming. So, any errors will show up in the dry-fit process. That allows for correction or re-do. The dry-fit also offers an opportunity to plan for the next step, which is affixing the panels to the camera body.

After I had test fit every panel, made adjustments and cleaned up any cut errors, there is a small, intermediate step that will help the finished look. That is to use a Sharpie pen to trace a black line around the entire inside edge of the frame where there is bare metal that can show through even a very close fit. The black marker will create a finished look even if there is a very small gap. The marker line may blur a bit in the next step, which is applying the contact cement.

One of my first jobs was in a cabinet shop where we made plastic tops and bath vanities out of Formica. We used spray-on contact cement to mate the Formica to the particle board core. A good worker could cut a matched set of Formica and wood, spray both up and lay the panel down by hand. The good guys could lay down a 4x8 sheet by taking the laminate in hand, bending it in a "C" shape, then indexing the rear straight edge and corners on the core wood and lay it down in a rolling motion; dead square—pro.

To get the leather on this project, I used a similar technique. First apply the contact cement to both the metal and the leather, taking care not to slop over the edges. I used the 3-oz bottle of Weldwood contact cement and the brush in the cap. The shaft on the brush can build up glue and then drip where you do not want it. So, take a little care to scrape some of that off on the lip of the bottle before you attack the leather or metal surfaces. Start in the middle and work to the edges. (For one reason or another, I never fail to get some glue on my fingers and elsewhere. Stray cement can be removed from the surfaces. When it is fresh, it will kind of roll up in a ball when you rub it off with your finger. Lacquer thinner will clean up the dryer stuff. But, test this chemical on everything, including yourself to be sure you can tolerate the smell and do no harm to yourself or damage to the materials.) When the glue is tacky, you are ready to lay down the leather. This is a high-anxiety effort, because the contact bond is unforgiving. With leather in hand and camera body in a stable position, start with the longest edge dead against the frame edge and perfectly in line with the corners. Since you have test-fit the leather, you know it will finish in the final position. You have now registered one edge and the corners. Start the lay with the leather at about 45 degrees with a little bend back toward yourself, and roll it into the final position. Boom! It's in there, and you can breathe. Use a bit of stroking over the leather to complete the bond, and that one is done! After the first one, settle your heart rate and keep going until you have all the panels attached.



That is about it. You are finished, and you should have a handsome project ready to go to work. Good leather likes hand touch. So, take a little time to rub it all down, and clean up any excess glue.

A couple of quick afternotes here: If you have a mating failure, you can pull the leather off, cut a new pattern, and clean off the old glue and leather with the solvent. Also, I have had good luck getting old leather off other projects with an artist's spatula. This has a thin flexible blade that will work under leather and cut glue. It will also be a little hard to know what kind of glue you are up against, since the factories seemed to have used a variety of cements to apply coverings. – I did shoot the National Graflex and learned the reason it was in the old shop; the film advance gets out of timing around the 6<sup>th</sup> frame. No big deal there, since the camera produced good, usable negatives, and even the overlaps could be cropped. In the end, this beautiful camera does not get work because I find it tedious and clumsy to use. Nevertheless, a fun project with a good learning experience and a satisfying result.

## PHOTOGRAPHER FROM THE FACEBOOK'S GRAFLEX CAMERA GROUP

**ROGER ALAN BECK**

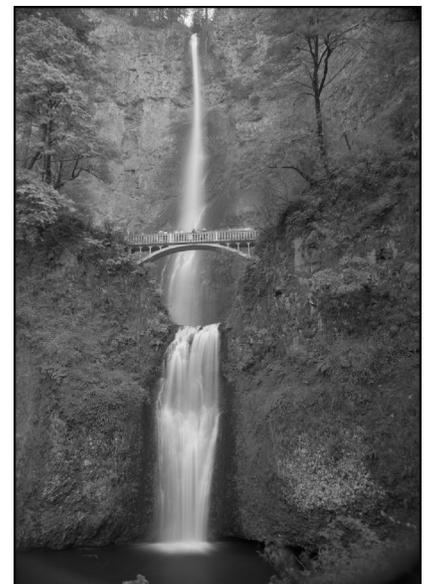
Photography in the 19<sup>th</sup> Century was moody and, through atmospheric texture and printing techniques, became painterly. The cameras, lenses and prints were all hand-made, and Graflex were camera pioneers. In my teens, I was given Edward Steichen's "A Life in Photography." I liked his early dramatic images, more dark than light, "Self Portrait with Brush," "The Pond-Moonlight" and "Flatiron Building," with strong lines and textured shadows. In the 1930s, advances in film, lenses and reproduction had the same photographers now shooting for realistic detail through sharpness, especially in landscapes. Photographers from 1880-1940 went through several changes and styles and covers what, to me, is the most absorbing and enchanting time in photography.

I bought a reconditioned 5x7 Press Graflex and started using barrel lenses that gave a pleasing soft look. The airplane images and "Dane and Gary" were with a 5x7 Press Graflex and Darlot lens. The others are with a 4x5 or 5x7 Speed Graphic and their original or period lenses. The 5x7 Speed Graphic is also an excellent field camera for using barrel or shuttered lenses.

I love everything about the process. The cameras make whirring, clicking and buzzing noises and usually need some restoration. B&W film is an enormous and forgiving palette. Film photography is more science than art, and when combined in the right amounts, produce breathtaking images. Making prints from large format B&W film negatives in any of the historic processes from albumen to ziatype is an adventure in itself.

I started a career as a professional photographer in the 1980s. From commercial photography, I went into weddings and family portraits in the candid style that is now standard. In the 2010s, I began shooting large-format film using older techniques and cameras with natural scenes in the West, Midwest and Southern U.S. as subjects. I grew up in Arizona, California, and the islands of Hawaii and Oahu. I have made a home in Chicago since 1984 and in Evanston since 2017.

My photography is mainly with a 5x7, but I also use 4x5 and 8x10. Some of the old lenses are available only in 5x7 or 8x10 sizes. The film is Ilford FP4 and HP5 at ISO 16-1600. You can buy it everywhere, and HC110 works well with it and is flexible. Wanting to develop more than four sheets at a time in a tray, I set up a nitrogen burst agitation tank. You begin developing, put the lid on, and turn on the lights for the remainder of the development. You can run a combination of film sizes up to 8x10 at the same time, even roll film. Then a hi-res scan to be output for an alt process, digital pigment print or monitor/screen. More images can be viewed at [rogeralanbeck.com](http://rogeralanbeck.com).



## "Photographing Wild Animals at Night"

By William V. Ward, *Camera Craft* August 1935

(Edited)

One of the most fascinating sports in the field of all photography is the picturing of wild animals at night by means of a camera set up in such a way that the animals will take their own pictures. The greatest handicap has been the problem of procuring or making some device which will synchronize the camera shutter and the flash charge; and which will trip the shutter, set at from 1/200 to 1/1000 of a second, at the point of greatest brilliance of the flash charge which burns for 1/25 of a second. Several devices have been developed to do this which, while satisfactory, are either too complicated or too expensive, or both.

The arrangement herein described and illustrated perfectly synchronizes the flash charge with either a Graflex focal plane shutter or a Compur-type shutter, yet it is far simpler than any of the well-known devices. It requires no complicated "flash gun," mouse trap springs, or high frequency spark coils. No synchronization device is needed, because any focal plane shutter, or any between-the-lens shutter, is in itself equipped to do the work.

Suppose we now look at the apparatus to see how it works. The Nesbit pill box flash charge is made from a one and one-half inch round druggist's pill box. In it is placed a photographer's squib fuse (made by DuPont); the yellow paper is removed from the fuse, and its connecting wires pushed through a hole in the bottom of the box. The box is then filled with one-half ounce of normal grade flash powder, and the cover put on. But before the cover is placed on the pill box, a string with a knot on the end of it is run through the cover with the knot on the

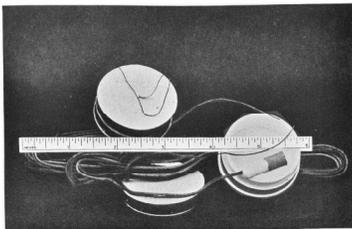


Fig. 1—The Pill Box Flash Charge

Finished powder charge, and empty pill box with photographer's squib fuse. Each charge contains one-half ounce of flash powder and a squib fuse.

inside of the box; this leaves a string coming out of the top of the box, and the two connecting wires coming out of the bottom. Then the whole pill box is immersed twice in melted paraffin to protect it from moisture, and the flash charge is completed (Fig. 1).

The attachment to a Graflex focal plane shutter is simple. A piece of stiff steel wire (a knitting needle) four inches long is bent into a flat curve with a hook at one end and an eye at the other. The hook fits over the curtain key of the

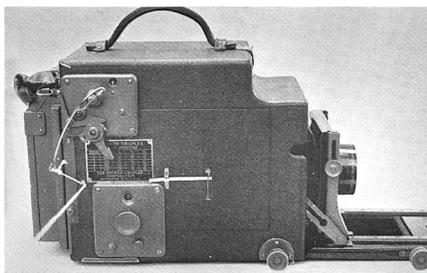


Fig. 3

Method of attaching string from powder box to curtain key of Graflex

Graflex, and the eye receives the end of the string from the powder box. This string runs directly from the powder box to a hook on the Graflex and thence to the eye end of the heavy wire (Figs. 3 and 4). The string is stretched very tightly between the powder box and the end of the wire, the shutter set for 1/1000 of a second, and then the shutter lever is pressed. This causes the

mirror to fly up to release the focal plane shutter. But the shutter is not released, because the string and wire attached to the curtain key do not allow the key to revolve. When the flash charge is exploded, its

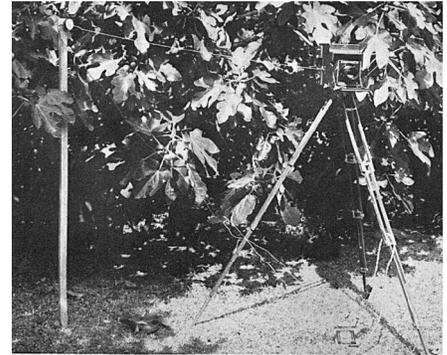


Fig. 4—Camera Set Up with One Flash Charge

cover is blown off, the string is released, permitting the curtain key to revolve, and the aperture of the curtain passes over the film while the powder is burning. An exposure of 1/1000 of a second is thus made in the middle of the flash which lasts for about 1/25 second, and synchronization is achieved.

When the camera is set up, a stake holding the powder box is driven into the ground about five feet to one side of the camera and a little behind it. The shutter releasing string runs directly from the powder box to the camera (Fig. 4). The two firing wires which come out of the powder box, when touched across a number six dry-cell, or radio "C" battery, will fire the charge. These wires are directed to the battery where one of the wires is cut and the firing switch wires inserted (see fig. 5). The firing switch is a small knife switch screwed to a stake one foot long and has about fifteen feet of double lamp cord attached to connect it in series with the battery and flash charges. This stake with the switch fastened to it is driven into the ground close to the spot where the animal is to be photographed, and a string is stretched from the bait to the handle of the switch. When the bait is pulled, the switch is closed, simultaneously firing the powder, and tripping the camera.

In most cases, better lighting is achieved by using two flash charges and placing one on each side of the camera. This eliminates the dense shadows which often are caused by using only one charge.

It must be remembered that flashlight powder is dangerous, and extremely so when confined in pill box flash charges. The greatest caution should be taken to see that no short circuit is caused which would explode the powder charges while one is setting them up—the results easily might be fatal.

The author is aware that several successful experiments have been conducted in wildlife photography with photo-flash bulbs, and that very excellent pictures have been obtained with them. However, two disadvantages present themselves: first, that the bulbs are not as brilliant as the flash powder, and consequently several must be used, which makes the expense greater; second, that the bulk and weight of the flash bulbs is greater than that of flash powder, an important consideration when packing on foot or horseback. Reflectors, too, are necessary when using photo flashbulbs, and this adds to weight and bulk.



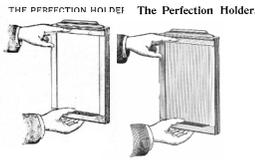
## HOLD IT! Part 1

By Ken Metcalf with Thomas Evans

The goal of this article is to present information about Graflex plate and cut film holders, excluding those targeting the commercial market. Size matters, but not in this article. Most information comes from their retail catalogs (starting in 1894), dealer publication Trade Notes, and sample holders. There are some items, however, like the Press Graflex, that were prominent in both retail and commercial catalogs. This is true for holders and includes inclusion and rebranding of their holders in Eastman Kodak catalogs. See References for company names.

### Early Holders

As an example of the origin of some holders, in 1894 and 1895, Folmer & Schwing Mfg. Co. (of New York City) and the Rochester Optical Co. advertised the Perfection Holder. Then Folmer & Schwing rebranded it as the Graphic Plate Holder in their 1899-1900 catalogs. This holder had a spring-bar at the bottom to hold the plate.



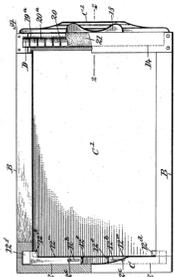
In ca. 1902 and 1903, Folmer & Schwing Mfg. introduced the Graflex, a single-lens-reflex camera, with a fixed spring-back and a reversible spring-back. Unfortunately, no illustration of a holder was included in brochures, although it was noted that a holder was "especially designed" and that a "double cut-off is a new feature made in sections of special material." A clue is in their 1904 catalog, showing their first ebonized holder with a groove on the faces and no groove on the sides, and labeled as "Patent Pending." Plate holders were listed, but still not illustrated for both cameras in a general merchandise catalog dated 1903 from George Murphy (courtesy George Eastman Museum).<sup>1</sup>

Examples of a Graflex-style holder show a plate holder without a patent date, but with face grooves and no side grooves, and other examples show a non-patent stamped Graphic plate holder with slide locks, but no spring-finger cut-off.



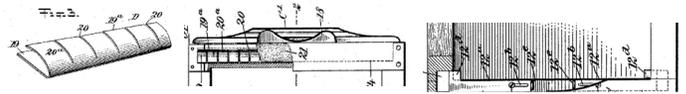
Possibly to direct customers to use roll film, no plate holders were listed in the 1902 and 1903 Graflex brochures.

### First Holder Patent



Their first holder patent by William Folmer, 773,382, was dated October 25, 1904. As pointed out by Les Newcomer, the patent was generic, with neither grooves on the faces or sides. Again from Les, Graflex, with their early holders, referred to a "wood shutter," which he believes (as I now do) that Graflex's term "shutter cover" is what is at the top of the film holder, rather than the light trap inside the film holder. Wood covers started with their first holders.

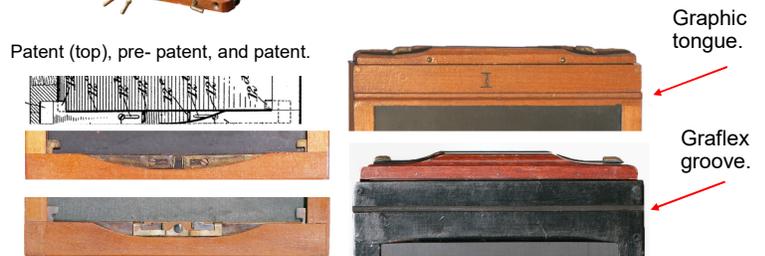
In the patent, there were two major features: spring-finger cut-offs, springs on either side of the septums to hold the plates in "absolute register;" and a unique way to hold plates "The retaining devices consist of opposing locking-slides, movable to and from each other."



Left to right: patent drawings of cut-offs and locking device.



Disassembled 5x7 holder showing removable and replaceable cut-off.



Patent (top), pre-patent, and patent.

Comparing samples of the early version and the holders with a 1904 patent date, in the case of the Graphic holder, it now had a wider shutter cover, spring finger cut-offs, was wider, and had slide locks.



Clockwise: three 4x5 holders, two pre-patent, and one after; before and after patent; and pre on top of post patent.

An example of a 4x5 Graflex-style 1904 patent holder, with the later locks, the Folmer & Schwing Mfg. and "GRAFLEX," stamped on the holder.



Graphic-style holders were made of "well-seasoned cherry and are fitted with matt-finished rubber slides," while the Graflex-style holders were "grooved, instead of tongued, affording increased thickness and strength without increase of space occupied."



Finally, from the 1904 catalog, the Sterling Plate Holder (first shown in their 1900 catalog), pictured the same as the Graflex plate holder, were furnished with Sky Scraper, Crown, F.&S., E.R.&C., Crown Portrait cameras in 8x10 and 11x14. Now a brand for their and the Eastman Kodak professional line.

Although the patent was granted in 1904, they did not appear until the 1906 catalog.<sup>2</sup> Also in 1906, the East-

man Kodak Company, on December 4 registered trademarks for GRAFLEX and GRAPHIC.<sup>3</sup>

## Sheath

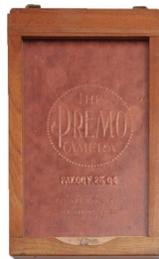


"...holding of flexible photographic film sheets known as 'cut films' in the focal plane of a camera in position for exposure, and it has for its object to provide an improved method of and also a device for so holding the films wherein the sheets will be flattened out to a true plane..." so declared Herman Sievers from Chicago on May 11, 1915, and assignor to the Eastman Kodak Company (patent 1,139,079). About two months later, Folmer was granted a similar patent on July 20, 1915 (1,146,858). He called it a sheath or septum. Over time, the patented item was called a sheath, while the septum was generally used for a film holder in magazine plate holders. That aside, I have never seen a sheath with the Graflex name, only Kodak. Possibly due to Mr. Sievers claim of "promoting convenience in use and simplicity in operation and manufacture."

With most samples from this era, plate holders have sheaths, possibly to accept the more convenient sheet film. However, prior to a major upgrade to the holder in 1923, the bottom was fixed, thus more difficult to load film in the dark.

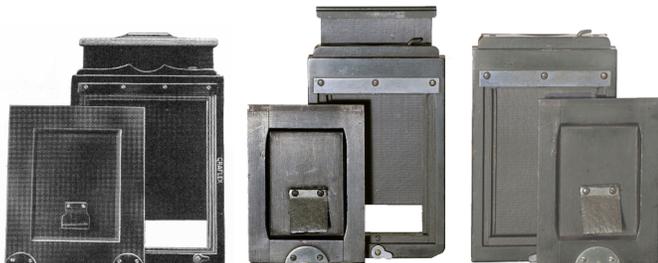
## Premo

When the Eastman Kodak Company purchased the Rochester Optical Company and Century Camera in 1903, they acquired the Century and Premo name and products.<sup>4</sup> A sample Premo plate holder bears the Graflex 1904 patent and was manufactured by the Eastman Kodak Company. It has the spring finger cut-offs, but a Century patented "spring bar" (per their 1904 catalog) to hold plates. It does not appear to fit any Graflex cameras of that size.



## Color Plate Holders

From 1909 through 1921, The Folmer & Schwing Division of EKC listed a specialized color plate holder, still under the 1904 patent.<sup>5</sup>



Left to right, 1915 catalog, sample 4x5 & 2 1/4x3 1/4" sizes.

## Inside Kit

As early as 1894, Graflex listed an "Inside Kit," which "Consists of thin wooden frames, made to fit the Dry Plate Holder, and with rabbets for holding small plates. Our Kits have buttons at each end of aperture for holding plates in place. In ordering, give name of Holder Kit it is to fit." That year they offered eleven kits. They were not listed after 1904 in Graflex retail catalogs. As

an independent company, the Folmer Graflex Corp., in their Professional and Commercial Catalog, listed seven kits for their Folmer Multiple Cameras. In 1929 they were shown in an Eastman Kodak Stores professional oriented catalog.<sup>6</sup>

**Inside Kits**

Kits consist of thin wooden frames, made to fit in the Dry Plate Holder, and with rabbets for holding smaller plates, or Kits. Our Kits have buttons at each end of aperture for holding the plate in place.

4 x 5	to hold 3 1/8 x 4 1/2 plates, each	.....	\$0.20
4 1/2 x 5 1/2	to hold 3 1/8 x 4 1/2 plates, each	.....	.20
5 x 7	to hold 3 1/4 x 4 1/2 or 4 1/2 x 5 plates, each	.....	.25
5 x 8	to hold 3 1/4 x 4 1/2, 4 1/2 x 5 or 4 1/2 x 6 1/2 plates, each	.....	.25
6 1/2 x 8 1/2	to hold 4 x 5, 4 1/2 x 6 1/2, 5 1/2 x 8 or 5 1/2 x 8 plates, each	.....	.30
8 x 10	to hold 4 1/2 x 6 1/2, 5 1/2 x 8 or 6 1/2 x 8 1/2 plates, each	.....	.35
10 x 12	to hold 5 1/2 x 8 1/2, 6 1/2 x 8 1/2, or 8 x 10 plates, each	.....	.40
12 x 14	to hold 6 x 10, or 10 x 12 plates, each	.....	.45
14 x 17	to hold 8 x 10, 10 x 12, or 12 x 14 plates, each	.....	.50
17 x 20	to hold 10 x 12, or 12 x 17 plates, each	.....	.55
18 x 22	to hold 12 x 17, or 17 x 22 plates, each	.....	.60

**EASTMAN KODAK STORES**

**View Plate Holder Kits**

*For holding small plates in large holders*

Made of well seasoned material that will not warp, finished in dead black, and of correct size to nest perfectly.

Outside		Size of Opening for Plates	
4 x 5	3 1/8 x 4 1/2 and 3 1/4 x 4 1/2		\$0.25
5 x 7	3 1/4 x 4 1/2, 4 1/2 x 5, 4 1/2 x 6 1/2		.40
6 1/2 x 8 1/2	4 1/2 x 6 1/2, 5 1/2 x 8, 5 1/2 x 8 1/2 and 8 x 7		.50
7 x 11	5 1/2 x 8 1/2		.60
8 x 10	5 1/2 x 8 1/2 and 6 1/2 x 8 1/2		.60

## Second Holder Patent

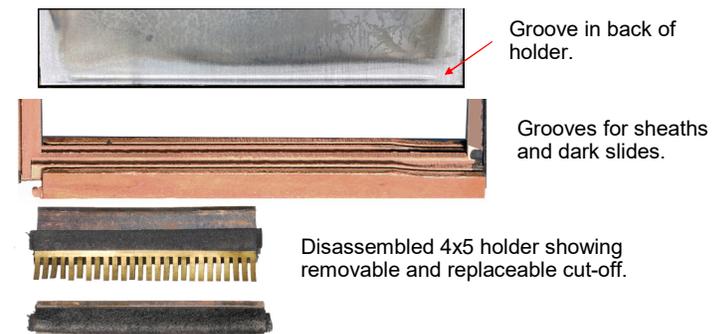


The second holder patent, a combination of a 1920 Folmer sheath patent (1,351,998 and 1,469,814, dated October 9, 1923). This time it was for cut film, issued to William Folmer, assigned to the Eastman Kodak Co., and sold by their F&S Dept. The first listed cut film holder was initially shown in the 1922 F&S Dept. catalog, before the patent was issued.



Left to right: 2 1/4x3 1/4" Graflex-style F&S Dept. (ca. 1917-1925) film holder, with removable sheath, and bottom door; two 3 1/4x4 1/4" Graflex-style F&S Dept and Folmer Graflex Corp. (1926-1944) plate holders, with removable sheaths, and fixed bottom; 4x5 Graphic-style Folmer Graflex Corp. film holder (slide removed), with fixed sheath, and bottom door.

According to Jim Flack, a subscriber and contributor to the Graflex Journal, "First, the center backing or core inside the film holder is held in channels that allow some limited movement for expansion or contraction so that the material behind the film won't distort or buckle even if there are minor dimensional changes to the holder itself, such as due to temperature and humidity. Second, the edges of the film are inserted into channels that force a slight curve or flex at the edges of the film which push the film against the backing or core to assure that the film lies flat against the core."



Disassembled 4x5 holder showing removable and replaceable cut-off.

Also, but not specifically, claimed are "Other novel features...bottom doors...whose structure is well-known." Based on only two samples having the patent date stamped on the holders, these features are on a Graphic-style 4x5 holder, but a removable sheath was used on a Graflex-style 2 1/4x3 1/4 film holder.<sup>7</sup>

From samples, the company did not use all patent features on some of their holders. As an example, here are two 2¼x3¼" holders.



Left to right: F&S Dept, EKC and Graflex Inc. Center, with removable sheath and with fixed sheath. Right, different tops.

**1922 catalog.**

**THE GRAFLEX CUT FILM HOLDER**

**B**Y attaching the Graflex Cut Film Holder, any Graflex camera that uses plates can be adapted to the use of cut film. It takes the place of the plate holder and is similar in outside appearance.

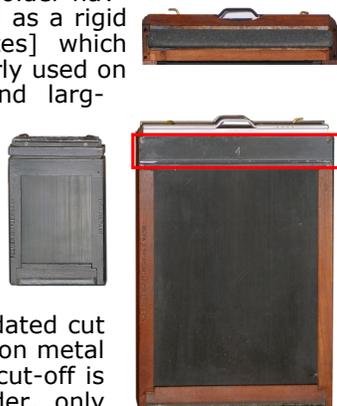
The construction is changed, however, to compensate for the difference in thickness between film and plates, so that the sensitized surface forms a perfect focal plane. The method of loading also differs. The end of each side of the frame is hinged, forming a flap. After the dark slide is withdrawn this flap opens to permit the film to slide easily into place under the metal retaining flanges. Thus the Graflex Cut Film Holder can be loaded much more quickly than can a plate holder. But the most important advantage is that film is lighter in weight and gives superior results.

**Holder patents: 1,631,479<sup>7</sup> (6/7/27); 1,641,420 (9/6/27), 1,954,917 and 1,954,918 (4/17/34).**

Mr. Folmer, and later others, continued to improve their holders, primarily for light leaks and economy of manufacture.

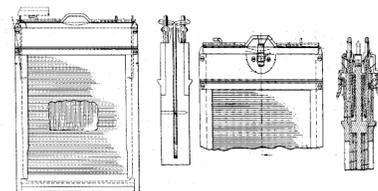
1,631,479 & 1,641,420

The stated purpose was "a holder having a light guard constructed as a rigid member [metal guard plates] which cannot warp, being particularly used on large-size holders [8x10 and larger],...and easily removable [with screws] for repair." These samples, however, are 2¼x3¼" and 5x7". The smaller holder, although showing the patent date, has no metal plate or easy access to the light guard. With the larger dated cut film holder, it has the screw-on metal light guards. As shown, the cut-off is the same as the prior holder, only larger. I have no idea why the guard is painted dark gray.



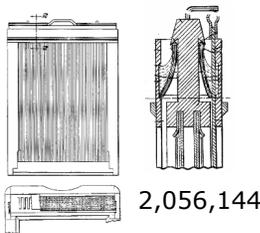
1,954,917/1,954,918

These two patents for prevention of double exposures by William Burnell et al, were assigned to the Folmer



Graflex Corp., but I have yet to find examples of the holders. On one sample 5x7 Century /Riteway professional holder, both patents are shown in addition to two later patents, but there do not appear to have features shown in patents.

**1936 Holder Patent**



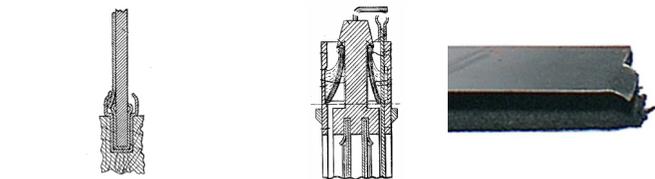
Holder for sensitized sheets have long been provided with light guards but so far as I am aware they have not proved satisfactory under all conditions of operation and particularly with plates or films of great sensitiveness. In the patent to William F. Folmer, No. 1,631,479, June 7, 1927, is disclosed a film holder having a light guard upon which my invention is a distinct improvement, inasmuch as by my invention I am enabled entirely to prevent the penetration of light at the ends of the light guard, whether of the construction there shown or of other construction, or, in other words, at either of the upper corners of the holder.

From samples, the TYPE designation was first used on holders under this patent. From the Thomas Evans collection is a "5x7 Graflex Plate TYPE II" made by Graflex, Inc. Without more examples, it is not clear if this was the first, or first in this class of holders, etc.



Left to right: 5x7 Graflex Inc. plateholder, 3¼x4¼ Folmer Graflex film holder, and 3¼x4¼ Graflex Inc. film holder.

Mr. Folmer died on May 9<sup>th</sup>, and Charles Roth, of Rush NY, filed this patent on May 20<sup>th</sup>. What was the rush? Mr. Roth was convinced his patent was a "distinct improvement" over the Folmer patent. As this holder now has hard-to-remove rivets, out came the drift punch. Here are examples of 4x5 holders:



Except for the upturn on the ends of the light guard, there does not seem to be a significant difference between the two holders. Obviously there is an important difference, as this patent was the source for many holders.

From Graflex employee and historian is this statement "In 1936, the original light finish of Graphic holders was changed to black paint because of the advent of faster films. The hand-rubbed black lacquer finish of Graflex SLR holders was changed about this time to a simpler back enamel - a cost savings."



**Press Holders**

In the 8th 1947 edition of Graphic Graflex Photography is this statement. "A noteworthy improvement in holders has been made through the elongation of the holder at the end the dark slide enters. The additional length makes it possible to provide a convenient finger grip on the holder itself. It is no longer necessary to grasp the holder by the slide handles when inserting the holder into the back of the camera or when removing it. Of greater importance is the fact that this handle forms an additional light trap, since it fits snugly around the edge of the camera body, making it even more difficult for light to enter between the holder and the back of the camera. These holders are known as **Type 5** Graphic Press Sheet Film Holders. (The **Type 4** Holders were of similar design but with a wood instead of a metal light trap cover.)" Type 5 were infrared safe.



Left to right: Folmer Graflex 3 1/4x4 1/4 Type 4 Press sheet film holder (see box-end scan). Some dark slide grips are bright and some are light gray. Wood light trap covers. 2 1/4x3 1/4" Graflex Inc. Graflex-style film holder (same patent but not labeled as "Press", with metal light trap covers, and military identification numbers.

After finding a **TYPE II** holder, we can now add types 4 and 5. Theories abound as to the system Graflex used. But now, more information on Press-style cameras.

**FILM AND PLATE ATTACHMENTS**

	1935	2 1/4x3 1/4	3 1/4x4 1/4	3 1/4x5 1/4	4x5	5x7
Graflex Cut Film Holder.....	3.50	3.75		4.00	4.50	
Graflex Plate Holder.....	3.50	3.75		4.00	4.50	
Graphic Utility Cut Film Holder...				2.50		
Graphic Press Cut Film Holder.....				2.75		
Graphic Press Plate Holder.....				2.75		
Century Cut Film Holder.....					2.90	
Century Plate Holder.....					2.90	
Graflex Lantern Slide Plate Holder...		4.50				
<b>1938</b>						
Graflex Cut Film Holder.....	3.50	3.75		4.00	4.50	
Graflex Plate Holder.....	3.50	3.75		4.00	4.50	
Graphic Press Cut Film Holder.....		2.75		2.75		
Graphic Press Plate Holder.....				2.75		
Century Cut Film Holder.....					2.90	
Century Plate Holder.....					2.90	
Graflex Lantern Slide Plate Holder..		4.50				
<b>1939</b>						
Graflex Cut Film Holder.....	3.50	3.75		4.00	4.50	
Graflex Plate Holder.....	3.50	3.75		4.00	4.50	
Graphic Film Pack Adapter.....	4.75					
Graphic Press Cut Film Holder.....	2.75	2.75		2.75		
Graphic Press Plate Holder.....				2.75		
Century Cut Film Holder.....					2.90	
Century Plate Holder.....					2.90	
Graflex Lantern Slide Plate Holder.....		4.50				

"4x5" Graphic Press Holders - shutter cover (two plates at the top of the holder that carry the ridges which seat into the camera back) were supplied with cast aluminum alloy material rather than the wood previously used. This metal shutter cover had been supplied for some time on the 5x7" and 8x10" film holders." 8, 9



Left to right: standard 4x5 Folmer Graflex Corp Graphic-style film holder. Type 5 elongated film holder. Both with metal light trap covers.

Left to right: Standard 3 1/4x4 1/4 Folmer Graflex Corp Graphic-style film holders, metal and wood light trap covers.



Although this should probably be in a footnote, it is included here to increase the Type designation confusion.

Graphic Graflex Photography, 8th Edition: "Owners of Crown View cameras with Graphic Backs and special reducing backs for studio and larger view cameras should note that the additional step or light break mentioned interferes with the proper seating of the holders in these backs. For these cameras, Graflex maintains a supply of the shorter original **Type 1** Holders. However, it is an easy matter to bevel the offending part of the back, so that the newer holders will fit."

**Metric Holders**

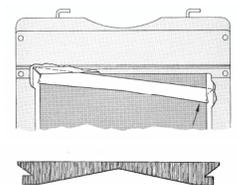
Between approximately 1916-1920, Graflex made 200 13x18 and 18x24 centimeter aerial cameras. The centimeter format may have been to qualify for use with allies during WWI. According to a retail-oriented 1919 catalog, one of the offered cameras was metric, but used roll film. More research is needed in this area.<sup>10</sup>

**AERO CAMERA**

**MODEL K-1**

Aero Cartridge Film No. 75, 9 1/2" x 7 1/2", 100 exposures, 18 x 24 cm. (7 1/16 x 9 1/2 inches) . . . . . 31.00

**2,315,987** Samples of this 1942 patent for "Photographic Cut Film Holders & Identifying Stencils or Tabs thereof." Although described in detail in the 1944 edition of Graphic Graflex Photography, Joel Havens wrote that "The Celluloid tab in the patent is an accessory to the holder that clips over the sheet film holding rooves near the top of the holder. I have never seen this in a holder and don't know if it was actually produced."

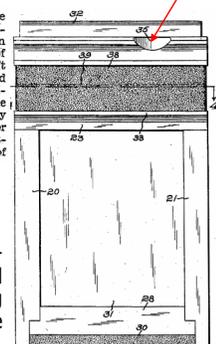


**2,339,658** "Film Holders with Light Valves for Guards." Oy! This war-time patent granted in 1944 to Byron Smith is partially explained by the following items.

There has long been need for a light valve or guard for sensitized material holders used in photographic cameras that will remain light-tight for a long period of time. This desideratum has not been secured by the many light valves of various types heretofore developed, and some of which are of rather complicated structure.

In setting forth my invention, I employ the term "pile-fabric" or "pile-fabric-like," not merely in its strictly literal sense to mean a woven fabric in which the "pile" is composed of loops of one of the sets of threads, usually the weft threads, laid into the fabric over pile knives and then severed to provide the upstanding ends constituting the so-called "pile," but also to include any like fabric having a multiplicity of thickly arranged, upstanding loops of a plush thread or threads, such as formed in certain types of knitting machines. The general characteristics of

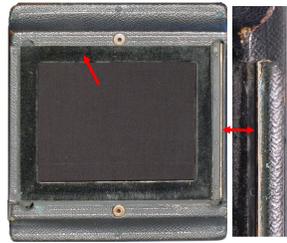
After the slides are left in the holder for any great length of time, particularly through a weather cycle change (by which I mean if the slide were, for example, placed in the holder during a day of extremely high humidity and left there until the weather changed to normal or low humidity), the pile fabric takes a set and will not restore itself when the slide is removed, so as to render the holder light-tight.



Based on the patent drawing of the holder, showing the notch, this holder may have been used primarily by the military in humid areas. Having not been shown in retail catalogs, I may also be considered a commercial product.

## The 3¼x4¼ Speed Graphic of 1935-1939

Ten years after this format had been discontinued, it reappeared, this time as a pre-Anniversary model. The 1948 8th edition of Graphic Graflex Photography states that "The first 3¼x4¼ models, which appeared in 1935 and 1936, were equipped with a Graphic Back designed to accept the Graflex rather than the Graphic holders, which were not available at that time. Cameras of this model supplied after 1936 have the standard Graphic Back for Graphic attachments." Actually, according to the 1935 Graflex catalog, the camera could be fitted with either the Graphic or Graflex back, thus allowing the Graflex-style holder to be used with either back. If fitted with the Graphic back, you received a spring back with a velvet-lined opening and a vertical brass ridge, both standard features of the Graflex back. The Graphic back accepted only the standard Graflex-style holder.



Velvet-lined opening and vertical brass ridge.

As this format had not been popular with the previous Speed Graphic model, Tim Holden thought Graflex believed this one would also not do well, so they did not initially make a holder for the camera.

### Dark Slides<sup>5</sup>

From 1899-1901 hard rubber slides were noted in catalogs. In 1904 "special slides" for Graflex and "matt finish rubber slides" for Graphic holders. From 1906-16 Graflex holders had "special slides that will not warp, buckle or collect dust like hard rubber, while Graphic holders continued as before, but with "special material." From then, the material used was not noted.

When George Eastman acquired the Century Camera Company in 1903, the Century names and products became available to Graflex and other Eastman Kodak companies. Thus this 1904 Century catalog suggests the source of the "special slides."

"Unless otherwise ordered, we fit all Century Holders with special black press-board slides - experience having demonstrated their superiority over hard rubber. We use material for slides made to our order especially for Century Holders. It is cut and coated in our own factory."

8<sup>th</sup> 1947 edition Graphic Graflex Photography: "Every Graflex or Graphic Film or Plate accessory, is provided with a dark slide made of special smooth material, Until recently **hard** rubber was used and those slides identified by 5 (not 3) raised dots on their metal edges are made of specially tested hard rubber and are safe for infrared film. As hard rubber became unavailable due to war-time conditions, aluminum was substituted. This received a special blackening and waxing treatment and should be given an occasional coat of household wax to keep it smooth so that it will slide in and out of the holder easily. These metal slides were displaced as soon as conditions permitted use of a lighter weight and more flexible material. Safe for use with infrared sensitive materials.

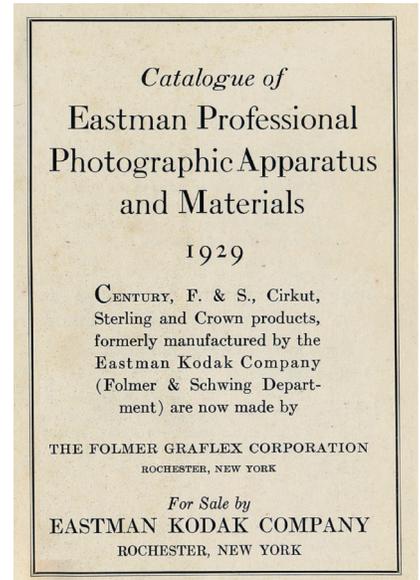
The outwardly protruding end of each slide has a rounded metal edge, one side of which is blackened, while the other is of bright metal. The bright metal side has raised dots on the outside. These raised dots are provided so they can be felt and distinguished in complete darkness.

9<sup>th</sup> 1971 edition Graphic Graflex Photography: "Special laminated plastic material is now being used, but hard rubber and metal have been used in the past. The latter should occasionally be waxed to keep it smooth and prevent wear on the holder light lock."

**Does size matter?** Not in this article. Samples suggest features are different within a model depending on the size of the holder. As noted holders for commercial cameras are excluded. Two sizes 6½x8½" (primarily for early Cycle Graphic cameras), and 3¼x4" (for Graflex Lantern slide plate holders) are shown in early catalogs.

### Kodak

In 1903 Eastman Kodak purchased the Rochester Optical Company (Premo model 1893 and Poco in 1895) and the Century Camera Company. From early F&S Mfg. catalogs, they sold Sterling bicycles. From the F&S Mfg. purchase in 1905, Kodak used the names Premo, Poco, Century and Sterling mostly for their commercial line of products. As an example, in the Folmer Graflex Corp. 1928 Professional and Commercial Catalog, they listed Century and Sterling Plate and Film Holders, made for Century Studio Cameras, Eastman View Cameras, Poco Hand Cameras, and the R.O.C. View.

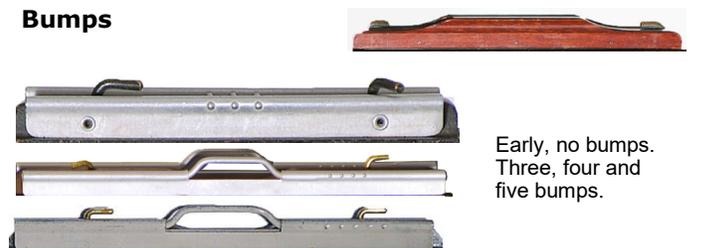


This 1929 Kodak professional catalog cover shows that the newly independent company, Folmer Graflex Corp., was making Kodak products, and selling them through the Eastman Kodak stores.



### Victory Holder<sup>9</sup>

#### Bumps



Early, no bumps. Three, four and five bumps.



In the second part of this article, the Riteway and the Fidelity Riteway holders will be described.

References and footnotes:

**Company timeline**

- 1890 Folmer & Schwing Mfg. Co. (of New Jersey) Primarily for making brass lighting fixtures. Sold Sterling bicycles.
- 1903 Folmer & Schwing of New York (incorporated in New Jersey) "to make cameras"
- 1905 Folmer & Schwing Co.
- 1907 Folmer & Schwing Division, Eastman Kodak Company
- 1913 United States vs. Eastman Kodak Company monopoly suit on 9 June 1913.
- 1917 Folmer & Schwing Department, Eastman Kodak Company
- 1921 "On February 1<sup>st</sup>, 1921. Government Decree was filed.
- 1926 The Folmer Graflex Corporation, Rochester, NY
- 1945 Graflex, Inc.
- 1956 Graflex, Inc., A Subsidiary of General Precision Equipment Corporation
- 1968 Graflex, Inc./General Precision, Rochester New York (GSA catalog) Graflex, Inc./a Subsidiary of the Singer Company, Rochester, NY
- 1973 Graflex dissolved. Singer Education System. Last camera catalog.
- 1974 "Discontinue our production of all major photographic cameras."

**Footnotes**

<sup>1</sup> When first introduced, the Tourist and the Stereo Graflex also had spring backs and ebonized wood on their cameras and holders. There is no primary source material why the finish was changed from a natural wood finish. When the Auto Graflex model was patented in 1905 (serial number 843,140), and shown in a brochure in 1906, the spring back was changed to a slide lock mechanism (Described in the patent as "At the rear of the exposure-opening 10 appropriate ways 14 are provided for a plate-holder.").

<sup>2</sup> By a 1905 Agreement of Consolidation, the Folmer & Schwing Co. (headquartered in New Jersey), with George Eastman and William Folmer as directors, was formed. From state-supplied agreements and article from Les Newcomer. So no actual catalog has been located for 1905.

<sup>3</sup> Graflex, Inc., United States and Foreign Patents and Trade Marks, p. 18.

<sup>4</sup> Kingslake, Dr. Rudolph; The Photographic Manufacturing Companies of Rochester, New York, George Eastman House, p. 40.

A sample 2¼x3¼ Graflex-style holder, with a Division divider and a 1904 patent, is fitted with a spring-bar, and has a red-painted slide handle.



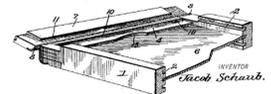
<sup>5</sup> Folmer & Schwing Div., EKC; Graflex and Graphic Cameras, 1915, p. 48 "Graflex Color Plate Holders are designed especially for color photography. They can be used either for Autochrome Plates or with other color plates, which are made through a lined screen. When using Autochrome Plates, a sheet of black cardboard one thirty-second of an inch in thickness should be placed in the holder in order that the sensitized surface of the plate will be brought into correct register. When making photographs on color plates, which are exposed through a lined screen, it is unnecessary to use the cardboard backing, as the thickness of the glass on which the plates are coated brings the sensitized surface into the correct position. Receding springs compensate for glass of varying thickness, which makes this holder suitable for any type of color plate.

Holders are indispensable to those engaged in color photography, as they eliminate all uncertainty as to whether the subject is correctly focused. Graflex Col-

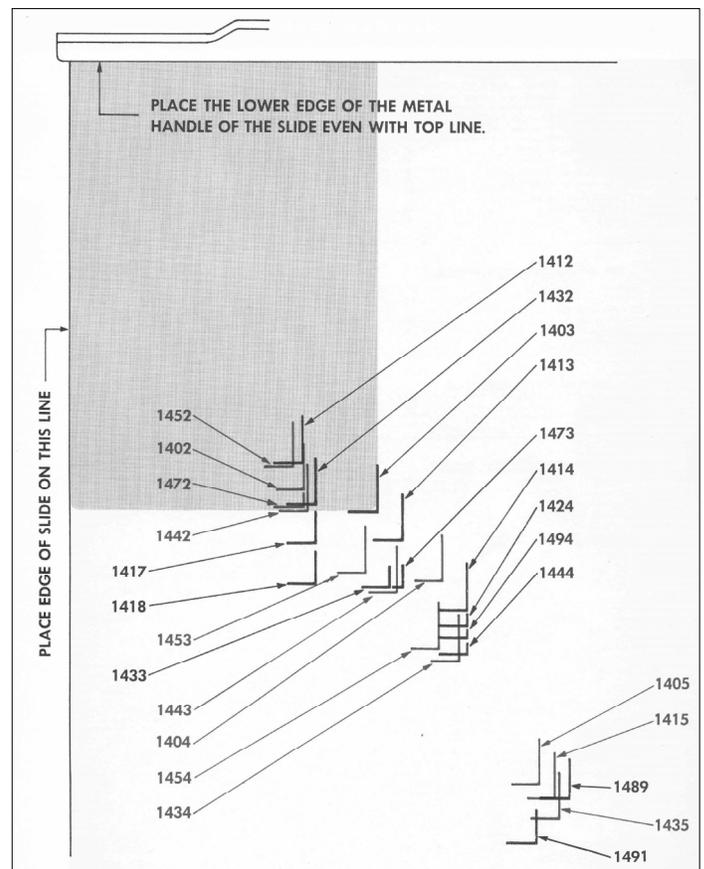
or Plate Holders can be used only with Graflex Cameras to which the regular Graflex Plate Holders are adjustable. These holders are constructed of selected cherry, ebonized and finished in the same manner as the Graflex Holder."

<sup>6</sup> From information supplied by Tim Holden, a Graflex employee for many years: "In 1926 [when they again became an independent company] Graflex had no outlets or distribution capability whatsoever. Therefore, Graflex came to an agreement with Kodak which would involve wholesaling the cameras for five years to the Kodak dealers. In addition, the cameras were advertised in several photographic magazines, and these ads (which were paid by Kodak) appeared over the address of the Eastman Kodak Stores, which were scattered around the country. The agreement with Kodak was renewed every five years until 1946, when the break was made with Kodak."

<sup>7</sup> Within this 1927 patent 1,631,479 is a reference to patent 603,972 from 1898, issued to Jacob Schaub, for a "hinged part," essentially provided for ease of inserting plates. This long-lasting Graflex feature may have been too common to patent.



Also with this holder, metal slide handles were introduced, replacing wood handles which were either natural wood on one and black-painted wood on the other. With these holders, the bright side with raised dots denoted unexposed film and a black side, exposed. Also, probably starting with the Type 5 Press holder, slides had an identifying inventory number on the bright side. Here is a slide chart from 1960.



## HOLDER SLIDES

### FOR GRAPHIC FILM AND PLATE HOLDERS

Cat. No.	Holder Size	Slide Size
1412	2 1/2 x 3 1/2 Film	2 1/2 x 4 1/2
1402	2 1/2 x 3 1/2 Film	2 1/2 x 4 1/2
1472	2 1/2 x 3 1/2 Film—Type 4	2 1/2 x 4 1/2
1442	2 1/2 x 3 1/2 Film—Type 5	2 1/2 x 4 1/2
1413	3 1/2 x 4 1/2 Film and Plate	3 1/2 x 5 1/2
1473	3 1/2 x 4 1/2 Film—Type 4	3 1/2 x 5 1/2
1443	3 1/2 x 4 1/2 Film—Type 5	3 1/2 x 5 1/2
1414	4 x 5 Film and Plate	4 1/2 x 6 1/2
1444	4 x 5 Film—Type 4, 5, and Riteway	4 1/2 x 6 1/2
1644	4 x 5 Type 2 Color Film Use	4 1/2 x 6 1/2
1494	for Type 4, 5 and Riteway 9 x 12 cm Film	4 1/2 x 6 1/2

### FOR GRAPHIC FILM PACK ADAPTER

Cat. No.	Holder Size	Slide Size
1402	2 1/2 x 3 1/2	2 1/2 x 4 1/2
1432	2 1/2 x 3 1/2—Model 2	2 1/2 x 4 1/2
1433	3 1/2 x 4 1/2—Model 2	3 1/2 x 5 1/2
1434	4 x 5—Model 2	4 1/2 x 6 1/2

### FOR GRAPHIC POLAROID BACK

Cat. No.	Holder Size	Slide Size
1434	4 x 5	4 1/2 x 6 1/2

### FOR GRAPHIC-GRAFLEX ROLL HOLDERS

Cat. No.	Holder Size	Slide Size
1432	2 1/2 x 3 1/2 (No. 120)	2 1/2 x 4 1/2
1417	3 1/2 x 4 1/2 (No. 120)	3 1/2 x 5 1/2
1418	4 x 5 (No. 120)	4 1/2 x 6 1/2

### FOR GRAFLEX FILM AND PLATE HOLDERS

Cat. No.	Holder Size	Slide Size
1412	2 1/2 x 3 1/2	2 1/2 x 4 1/2
1413	3 1/2 x 4 1/2	3 1/2 x 5 1/2
1414	4 x 5 Film	4 1/2 x 6 1/2
1414	4 x 5 Film	4 1/2 x 6 1/2
1424	4 x 5 Plate	4 1/2 x 6 1/2
1415	5 x 7 Film	5 1/2 x 7 1/2
1435	5 x 7 Plate	5 1/2 x 8 1/2

### FOR GRAFLEX FILM PACK ADAPTER

Cat. No.	Holder Size	Slide Size
1402	2 1/2 x 3 1/2	2 1/2 x 4 1/2
1432	2 1/2 x 3 1/2—Model 2	2 1/2 x 4 1/2
1403	3 1/2 x 4 1/2	3 1/2 x 5 1/2
1422	2 1/2 x 4 1/2—Model 2	2 1/2 x 5 1/2
1404	4 x 5	4 1/2 x 6 1/2
1434	4 x 5—Model 2	4 1/2 x 6 1/2
1405	5 x 7	5 1/2 x 7 1/2

### FOR GRAFLEX FILM AND PLATE MAGAZINES

Cat. No.	Holder Size	Slide Size
1452	2 1/2 x 3 1/2	2 1/2 x 4 1/2
1453	3 1/2 x 4 1/2	3 1/2 x 5 1/2
1454	4 x 5	4 1/2 x 6 1/2
1491	5 x 7 Film and Plate	5 1/2 x 8 1/2

### FOR STERLING PLATE AND FILM HOLDERS

Cat. No.	Holder Size	Slide Size
1481	8 x 10 Film and 1482 8 x 10 Plate	8 1/2 x 10 1/2
1496	11 x 14 Film (Center Handle Cut-out)	11 1/2 x 14 1/2
1495	11 x 14 Film (Off-Center Handle Cut-out)	11 1/2 x 14 1/2

### FOR CENTURY PLATE AND FILM HOLDERS

Cat. No.	Holder Size	Slide Size
1489	6 x 7	6 1/2 x 7 1/2
1480	8 x 10	8 1/2 x 10 1/2

<sup>8</sup> Trade Notes June 1939, Tim summary: 4x5" Graphic Press Holders - shutter covers (two plates at the top of the holder that carry the ridges which seat into the camera back) were supplied with cast aluminum alloy material rather than the wood previously used. This metal shutter cover had been supplied for some time on the 5x7" and 8x10" film holders.

Trade Notes June-July 1942: "3 1/4 x 1/4 Graphic Press Film Holders. The 3 1/4 x 1/4 Graphic Press Film Holder, as it is currently going to market, is, for reasons of war necessity, equipped with wood shutter covers. In size these holders exactly match those made prior to the model with metal shutter covers, and the following information is important: The slides for these new holders are identical to those currently used with the 3 1/4 x 1/4 Graflex Film Holders and are also the same as those used with the previous wood-shutter-cover 3 1/4 x 1/4 Graphic Press Film Holders."

This slide is No. 1 on Page B of the Holder-Slide Size Chart issued as Data Supplement No.1 of the Trade Price List.

On the inside of one end-flap of each of these holders are stamped the words: "USE SLIDE No. B-1."

<sup>9</sup> Trade Notes July 1943, Tim Holden summary: Announcement that production of film and plate holders was being resumed as rapidly as manufacturing schedules could permit. Priorities not required but priority accompanied orders would receive special handling. However, hard rubber dark slides are being reserved for military use. Formica is the replacement, but not mentioned.

Although given a prominent place in Graphic Graflex Photography 7th edition, samples have not been yet found for the 1944 Victory Film Holders. "The new type of a double sheet film holder for 4x5 Speed Graphics equipped with "Graphic Backs" provides a reasonable assurance that this all-important accessory will continue to be available to photographers needing it in our war effort. Ingeniously designed along lines not requiring any ingredients of 'strategic' importance, such as metals, rubber, etc., the Victory Film Holder fulfills its function so well and so completely that it must be considered as something more than a mere substitute for the previous standard.

The 'springy' and 'live' light-trap is formed by mo-hair tape and is so constructed that it performs best when the draw-slide is entirely withdrawn from the holder for the exposure. This is now a requirement, which will appeal to my photographers: The draw-slide must be entirely removed from the Victory Film Holder for the exposure; failure to do so may result in slight un-sharpness, due to incomplete seating of the holder at the back of the camera.

The sheet film is firmly led to and held in its position by smooth wood guide-strips. The separators and draw-slides of selected and tested fiber-base material are treated to render them waterproof and not liable to warping. All are opaque to infra-red radiation.

The draw-slides are provided with neat wood handles, one side of each is painted light gray to permit positive identification of 'exposed' and 'unexposed' films in daylight. For darkroom identification, each draw-slide has been thoughtfully provided with a 1/2 -inch finger hole near its handle slightly off its center; when the hole can be felt opposite a suitable recess in the holder frame-the film is unexposed; when the hole is not found opposite its recess is an indication that the draw-slide has been turned around and is protecting an exposed negative."

According to Tim Holden, "If we relied on the Victory film holder, we would have lost the war, it was a piece of crap, and we knew it."

Trade Notes Sep/Oct 1944, Tim summary p. 22: The Graphic Press Sheet Film Holders Type 4 (all sizes) shown with wood shutter covers. Longer dimension to give greater lightproof protection and finger grip handling.

Trade Notes, Feb. 1947, Tim Holden summary: Since dark slides for holders have been made of Vinylite due to unavailability of hard rubber material, there was a buildup of an electro-static charge, and we offered Carbowax compound #4000 with Tergitol, a wetting agent, and water formula R4224 to combat the dust situation on these holders. During the war, some of the slides for holders were made of aluminum (but were quite unsatisfactory).

Trade Notes, March 1947 Tim Holden summary: Announcement of availability of 3x4 Graphic Film Holder with metal shutter cover.

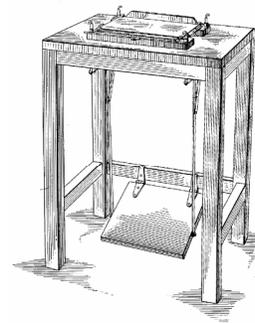
WILLIAM F. POLMER, OF ROCHESTER, NEW YORK, ASSIGNOR TO EASTMAN KODAK COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

#### LOADING DEVICE FOR CUT FILMS.

1,365,975.

Specification of Letters Patent. Patented Jan. 18, 1921.

Application filed August 2, 1920. Serial No. 400,845.



No sample yet found.

## Graflex Journal

The *Graflex Journal* is dedicated to enriching the study of the Graflex company, its history, and products. It is published by and for hobbyists/users, and is not a for-profit publication. Other photographic groups may reprint uncopyrighted material provided credit is given the *Graflex Journal* and the author. We would appreciate a copy of the reprint.

### Masthead Photo

International Museum of Photography. Unidentified woman and photographer, ca. 1935.

### GRAFLEX PATENTS

By Joel R. Havens

There are 314 Folmer (& Schwing) and Graflex patents now available at the website Datamp.org. They may be found by going to the Datamp website Home Page and typing in the *Company Box* either Folmer for the earlier patents or Graflex for the later ones. There will be some overlap in these lists when the company was called Folmer Graflex.

Not all of the patent pages have images as of yet, but the images may be seen by clicking on the PDF link directly below the Image Box that states that No Image Available. Eventually, as I get time, I will fill in the images for these patents. If anyone has any questions or knows of any other patents that should be included, they may contact me by clicking on the *Report data errors or omissions* link and sending me an Email.

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### Welcome to DATAMP!

The DATAMP project is a cooperative effort of the OldWWMachines and OldTools mailing lists. It is intended to be a clearinghouse for information on antique tool and woodworking machine patents, allowing collectors of these tools to easily find information about the history of tools and trades.

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- [RSS feed of the 5 most recently added or updated patents.](#) (Information on RSS can be found [here](#).)
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The information in DATAMP is gathered from the United States Patent and Trademark Office ([USPTO](#)) online database by a group of volunteer "Data Stewards" from the OldTools and OldWWMachine lists. Each steward is responsible for finding and documenting patents related to a particular type of tool or machine, as well as maintaining the DATAMP records in his area of expertise.

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Our database is only as good as our volunteers. There are currently 66,669 patents in our database, but there are thousands more patents of interest that await a volunteer to enter the patent information. If you would like to volunteer to help, please [contact us!](#) All you need is an interest in old tools or machinery. Previous experience in researching patents is useful but not necessary. All information can be entered via simple web forms. All U.S. patents are already available online, and you need merely transcribe the information into our web-form, add manufacturer information and comments (if any), and upload suitable photographs and patent images.

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the ninth-most widely circulated daily newspaper in the United States. Founded in 1919 as an imitation of the British Daily Mirror, it was the first U.S. daily printed in tabloid format. It reached its peak circulation in 1947, at 2.4 million copies a day.