



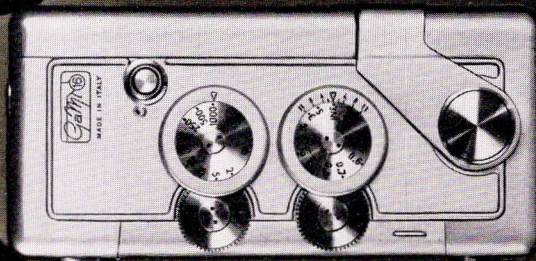
***The 16 mm Subminiature Camera
with Automatic exposure-meter***

OFFICINE GALILEO DI MILANO



***The 16 mm Subminiature Camera
with Automatic exposure-meter***

OFFICINE GALILEO DI MILANO (ITALY)
VIALE EGINARDO 29 - TELEFONO 464846



Exposure-meter automatically controlling exposure

GaMi 16 mm. Subminiature camera.

Officine Galileo of Milano, Italy, after many years research, have successfully developed a totally new type of camera of the highest quality, both for amateurs and professionals.

The camera uses 16 mm color or black-and-white films.

Here are some of the GaMi 16 camera outstanding features, which cannot be found combined in any of the existing subminiature models.

★ It is light and compact, truly pocket size.

★ It has a built-in exposure-meter automatically coupled to the mechanism controlling exposure (stop aperture and shutter).

This represents a unique achievement in the field of photography.

★ Range finder, viewer and parallax corrector are built-in and coupled to the lens. Focussing and stop aperture are regulated by the operator while looking into the viewer window, where he finds all indications needed.

★ The film transport from frame to frame is automatic after each shot.

- ★ To perform the motion of the film and to cock the shutter, there is a special built-in spring mechanism allowing three shots in rapid sequence without any intermediate operation.
- ★ The lens consists of **six elements, F:1,9** anastigmatic with antireflecting coating.
- ★ The shutter ranges from 1/2 second to 1/1000th second and B.

This high speed, combined with such a wide aperture lens permits the tacking of any fast moving object.

A built-in yellow filter can be inserted or excluded at will. The exposure-meter will automatically take into account the insertion of the filter.

When the front cover springs open, the camera is ready to take pictures.

- ★ The special fast loading film magazine, double cassette arrangement, can be

inserted or removed in broad day light, even partial use of the film without damage of the shots already taken. This allows quick change from Black-and White to color or micro-film, at any time.

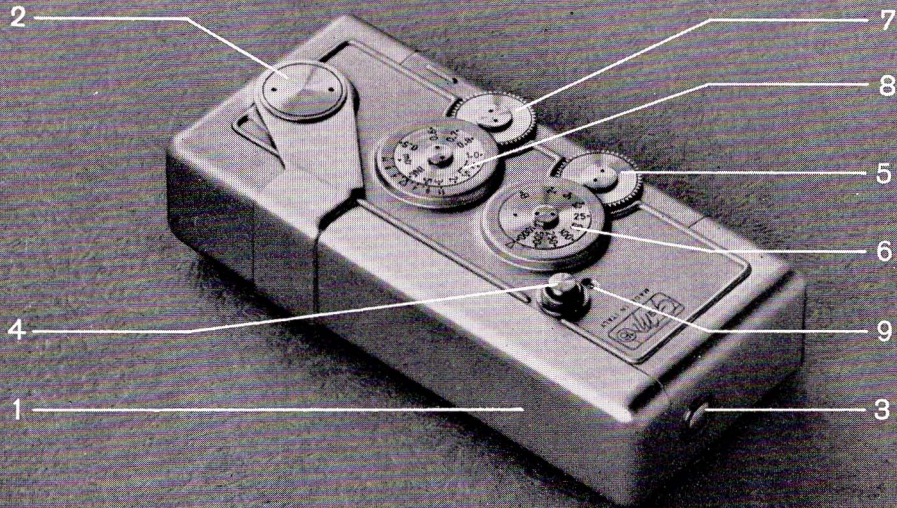
With this small camera more natural and spontaneous photos can be taken than with a larger and heavier one.

The negatives obtained are so clear and sharp the enlargements seem to be good contact printed photos of larger negatives. With color film, one can project on the same screen dimensions as from standard thirty-five millimeter transparencies.

MAIN FEATURES

Size of Negatives: 12x17 mm nonperforated 16 mm film (about 2.5 times the

Fig. 1



size of the 16 mm movie picture) or 10x17 mm perforated 16 mm movie film.

Type of film: regular 16 mm movie film or 16 unperforated film. Color or Black and-White one.

Weight: 290 grams (about 10 oz.).

Overall Dimensions: 115x55x27 mm (about $4\frac{1}{2} \times 2\frac{3}{16} \times 1$ inches).

Built-in Spring Mechanism: for snapping open the cover transporting the film and cocking the shutter after each shot. This mechanism allows three shots either separately or in fast sequence. The spring mechanism is automatically reloaded by closing the front cover.

Six Element Anastigmatic F:1,9 Lens, 25 mm (1 inch) focal lens fully corrected for

color, black and white or microfilm. Antireflecting coating of all surfaces.

Iris Diaphragm with click stop adjustments from F/1,9 - F/2,8 - F/4 - F/5,6 - F/8 - F/11.

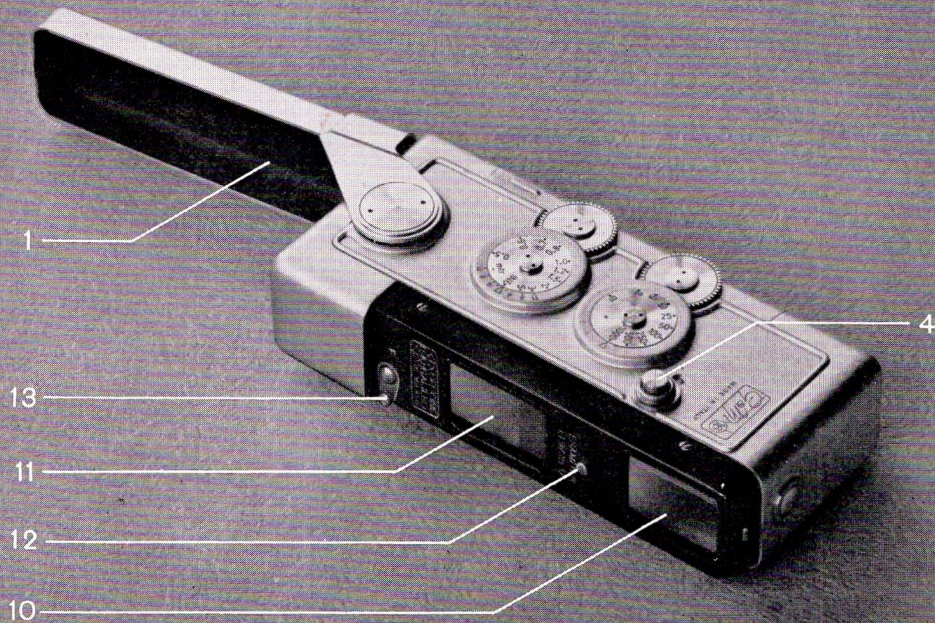
All Metal Lens Shutter with speeds from 1/2 to 1/5, 1/10, 1/25, 1/50, 1/100, 1/250, 1/500, 1/1000th second and B.

Viewer Galileo type, at eye level adjustable eyepiece for individual eye correction from - 3 ÷ 3 diopters.

Superimposed Split Image Rangefinder: located at center of the field of the viewer, ranges from 50 cm (20 inches) to infinity.

Automatic Parallax Corrector coupled to range-finder, so that it regulates the correct framing of the image at close-ups.

Fig. 2



Depth of Field Indicator: engraved on the scale of distances connected with the rangefinder.

Emulsion Speed Indicator: calibrated for film speed from 6 - 12 - 25 - 50 - 100 ASA black-and-white, and 10 - 20 - 40 - 80 ASA color.

Built-in Automatic Exposure meter of the optical extinction type coupled to shutter speed, stop number, emulsion speed indicator and filter inserter.

The exposure meter can be matched either by setting the time of exposure and adjusting the aperture. In both cases when the exposure is matched, all other elements are automatically adjusted.

Built-in Yellow filter: can be inserted or excluded by means of a small lever, which also acts automatically on the exposure meter, to correct exposure-time.

Built-in Flash Bulb Synchronization: Flash attachment can be screwed on the threaded tripod socket - X type synchronization (also for electronic flash).

Frame Counter: sets back to zero automatically when camera is reloaded.

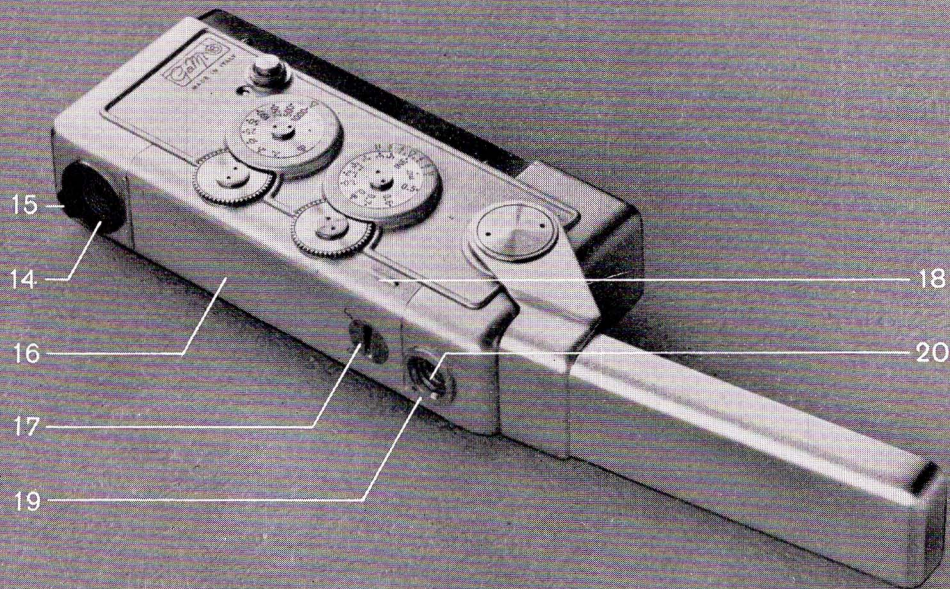
Threaded Collar around release button for attachment of flexible release, self-timer, or special synchronizer.

Built-in Tripod Socket (standard 3/8") or 1/4" attachment.

Red Warning indicator appears when camera is unloaded or film fully exposed.

Automatic Lock on shutter prevents release when front cover is closed or camera unloaded.

Fig. 3



Back Cover of camera can easily be opened for loading or inspection.

Loading and Unloading of camera very easy even in full daylight, with fast loading magazines for 30 exposures, color, black and white or microfilm.

Change of Magazine, can be performed in broad daylight, at any time. It is, therefore, unnecessary to wait till the film is fully exposed before changing the magazine. When opening the back cover of the camera the last exposure is not damaged and one can use the unexposed film later on.

The camera is an All Metal Construction. Metals used are mainly stainless steel, phosphor-bronze and anodized light alloys.

Beautiful duraluminium finished, in two-tone satin anodized, streamlined.

All optical parts are protected by front cover so that the camera can be carried in a pocket without its case.

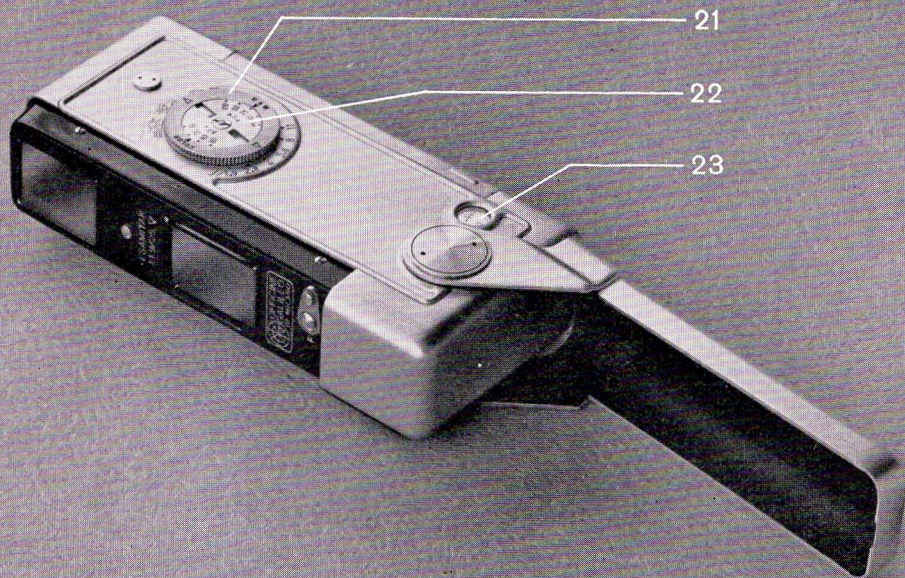
Since the GaMi 16 is an entirely new camera, different from any type so far manufactured, it is necessary both for the professional and the amateur to read carefully the following instructions.

PARTS.

Figure 1.

- 1 Front cover, when open, is also a strong and comfortable grip. When closed, it reloads the spring mechanism which provides the film transport

Fig. 4



and the cocking of the shutter after each shot. Each winding of spring mechanism allows 3 single shots or sequence.

- 2 Hinge of the front cover.
- 3 Push button for opening the cover.
- 4 Release button with standard threaded collar for attachments of flexible extension, « autorelease » special synchronizers.
- 5 Dial control thumbwheel for shutter speed adjustment coupled to exposuremeter.
- 6 Calibrated dial for shutter speed (reading from 1/2 to 1/1000th second ad B).
- 7 Dial control thumbwheel for lens focussing, coupled to rangefinder.

8 Calibrated dial for range, reading from 50 cm to infinity, including depth-of-field indicator related to stop number.

9 « Loaded camera » indicator, showing a white signal when camera is loaded and a red signal when camera is unloaded or film totally exposed.

Figure 2

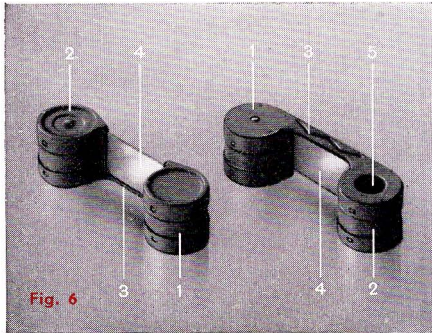
- 10 Combined front window for viewer, rangefinder and exposuremeter.
- 11 Front window for the lens and for the other base-end of the rangefinder.
- 12 Reference pin for accessories (tele-lenses, sunshade, filters, ect.).
- 13 Lever for inclusion or exclusion of built-in filter.

Fig. 5



Figure 3

- 14** Eye-piece for combined viewer, range-finder, parallax corrector and exposuremeter.
- 15** Focussing control knob for adjustment of eyepiece to individual eye correction.



- 16** Hinged back cover for camera loading.
- 17** Screw locking back cover (O = Open, C = Closed).
- 18** Finger grips for easy opening of back cover.
- 19** Screw socket for tripod and flash attachment.
- 20** Electric contact for flash, at bottom of screw socket.

Figure 4

- 21** Dial for stop number setting, coupled to exposuremeter.
- 22** Emulsion speed indicator, coupled to exposuremeter.

- 23** Frame counter, setting back to zero, automatically, when back cover is opened.

Figure 5

- 16** Back cover of camera in open position ready to receive film magazine.
- 24** Film pressure plate, pressing film against frame window.
- 25** Film advantage gear with square pin for winding film on magazine spool.

Figure 6 - Fast loading magazine

- 1** Cassette containing unexposed film.
- 2** Cassette with spool receiving the exposed film.

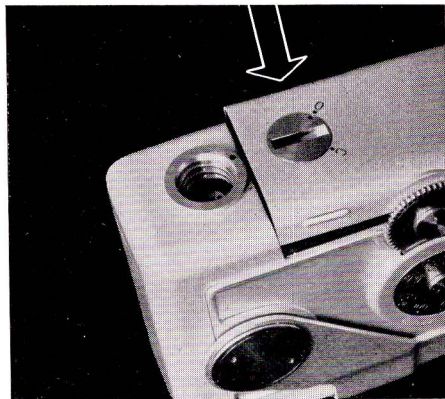


Fig. 7

- 3** Connecting piece.
- 4** Film.
- 5** Cavity spool to engage square pin of take-up gear in order to advance film.

Loading of Camera

It can be done in broad daylight if care is taken to avoid direct rays hitting open camera and magazine.

- 1 Open back of camera (fig. 7) using a penny, dime, or similar object to turn the opening screw towards the left, until back is on position O (Open).
- 2 Pull out arm 1 (fig. 8) carrying the pivot for winding spool.
- 3 Insert winding spool on pivot 2 (fig. 9), gently push cassette downwards into the camera, following the rotation of the arm carrying the pivot (fig. 10).
- 4 Rotate magazine upwards in order to allow the other cassette to enter upper lodging of camera (fig. 11), take care that magazines enter easily

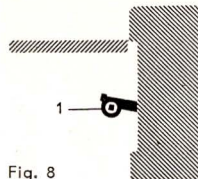


Fig. 8

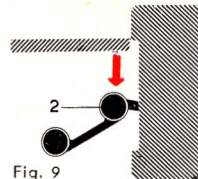


Fig. 9

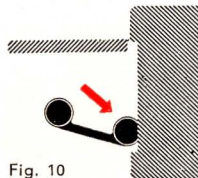


Fig. 10

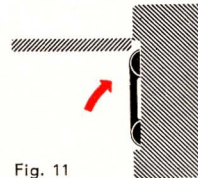


Fig. 11

into camera; this will always be true unless magazine has been accidentally damaged.

- 5 Close back cover and turn screw towards the right, to position C (Closed).

Speed and Type of Emulsion

After loading the camera, adjust the emulsion speed indicator in accordance with the type of film used 22 (fig. 4). When the film is Black-and White adjust « B & W » arrow so that **coincides** with the black ASA number nearest to the ASA number of your film.

Example: **50 ASA Black-and-White** (fig. 12) - When you use color film adjust the « color » arrow until it reaches the position nearest to the ASA number of your

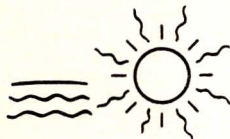
film - **Example: 20 ASA Color** (fig. 13). This setting will automatically adjust the exposuremeter calibration to the particular film you are using.

For bigger speed than 200 ASA see directions which are attached in film cassettes.

Opening of Camera

Open the front cover by pressing button 3 (fig. 1).

MEANING OF THE SYMBOLS ENGRAVED ON DIAL OF DIAPHRAGM STOP NUMBERS

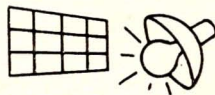


**Dazzling
sunshine**

Sunshine



Cloudy sky



**Interior
day-light**

**Artificial
light**

Fig. 12

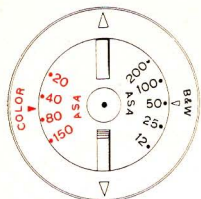


Fig. 13

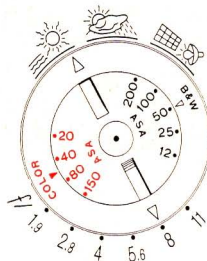
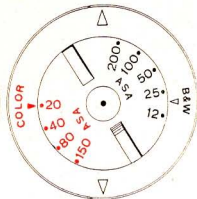


Fig. 14

Button of release 4 (fig. 2) is now set ready for use. Press it three times till the frame counter passes from red indication to zero reading on film counter. Close front cover again, to reload spring mechanism and reopen it.

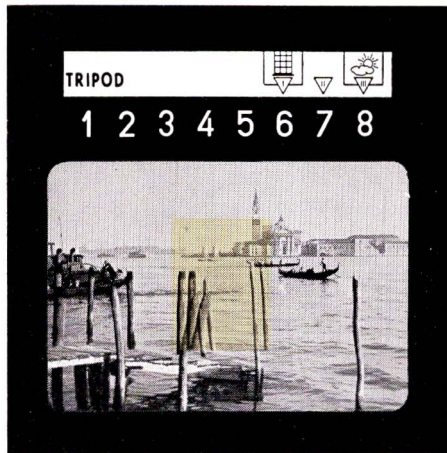
Setting of Stop

Use large dial 21 (fig. 4) where stop numbers (1,9 - 2,8 - 4 - 5,6 - 8 - 11) are engraved.

To choose suitable stop number you can refer to the symbols which indicate the different gradations of light. For example: Sun symbol corresponds to stop number F/8 - (fig. 14).

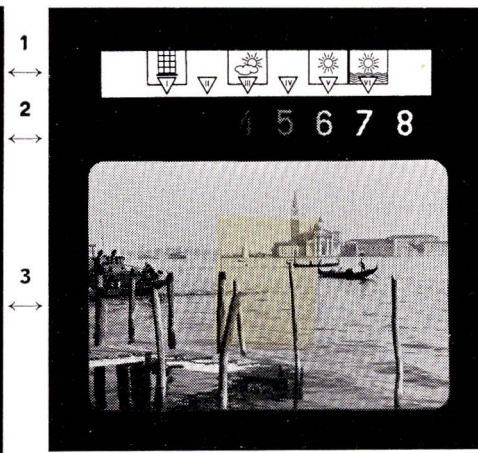
Viewer adjustment

Look into viewer (fig. 3) and adjust eyepiece lever 15 (fig. 3) until symbol



a

of exposuremeter are focussed in higher section of Viewer 1 (fig. 15). Now the viewer field will give all the indications necessary to set the camera for proper adjustment of exposure-time.



b

Fig. 15

How to regulate exposure-time

Looking through viewer, direct camera towards the object to be photographed and look at exposuremeter indication

appearing on top of viewer field 1 and 2 (fig. 15). You will notice a series of transparent numbers from 1 to 8 appearing on a dark background. This visibility increases from the lowest to the highest number after having adjusted stop aperture according to previous paragraph the lowest numbers will be darkened (fig. 15 b). You must now pick out the first number that is just visible. We shall call it the « photometric number ». The number immediately preceding the « photometric number » must be thoroughly invisible. In (fig. 15 b) 4 appears to be the « photometric number ».

You now proceed to act on the dial control thumbwheel for shutter speed adjustment with the lefthand thumb until the symbol best representing the outside light condition of the subject will appear directly over the « photometric number ».

The example in (fig. 15 b) shows the symbol « cloudy sky » over « Photometric number » 4. This operation automatically adjust the speed of the shutter in relation to the stop number already set and to the speed of the emulsion. If the word « tripod » appears in the field, (as in fig. 15 a) it means that either the tripod or a firm support is necessary; because the shutter speed has been set at a longer time than 1/25th of a second and it would be difficult to keep the camera steady.

When letter B appears at the extreme left, it means that light conditions require a time-exposure. Shutter is open when set on B by pressure on shutter button, and closes by release of that pressure.

How to Set Rangefinder

The rangefinder built in the Viewer is

MEANING OF PHOTOMETER SYMBOLS



TRIPOD



B-Exposure

**Fixed
Support Required**

**Interior day-light
or artificial light**

Cloudy sky

**Sunshine
Dazzling
sunshine**

coupled automatically to the focussing mechanism of the lens. It operates from 50 meter (20") to infinity.

The central part of viewer field is framed in a small rectangle, slightly colored where the image appears double (as in fig. 16 a) when lens is not exactly focussed. By turning on thumbwheel 7 (fig. 1), the two images can be brought to coincide (as in fig. 16 b). When this is done the lens is properly focussed on the subject.

Depth of Field

The range within which the subject will appear sharp enough on the negative can be read on the depth of field indicator incorporated in the rangefinder dial (fig. 17). The range of distances contained between the two equal numbers representing the stop number used, will represent the depth of field. (example: using a F/8 stop, depth of field in fig. 17 is from 1,50 meter to 5 meters.



Fig. 16 a



Fig. 16 b

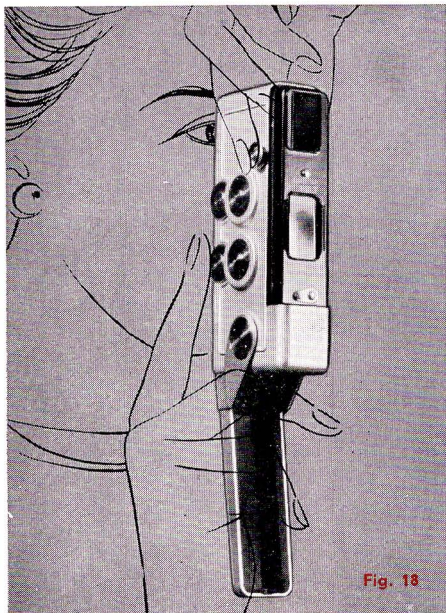
Parallax Correction

The difference in framing between viewer and camera lens at all distances is automatically compensated when camera is correctly focussed.

Yellow Filter

The built-in yellow filter can be inser-

ted by pushing to the right small lever F13. (fig. 2). Looking into the Viewer, one is aware of the presence of the filter, because the exposure meter field will also appear yellow colored. The exposure meter will thus automatically consider the presence of the filter.



Frame Counter and End of Film

Each shot is registered by an advancing number of frame counter 23 (fig. 4). After loading camera, the frame counter will register zero only when the release button has been pressed three times. This is necessary to use the first bit of film which has been exposed to light during loading.

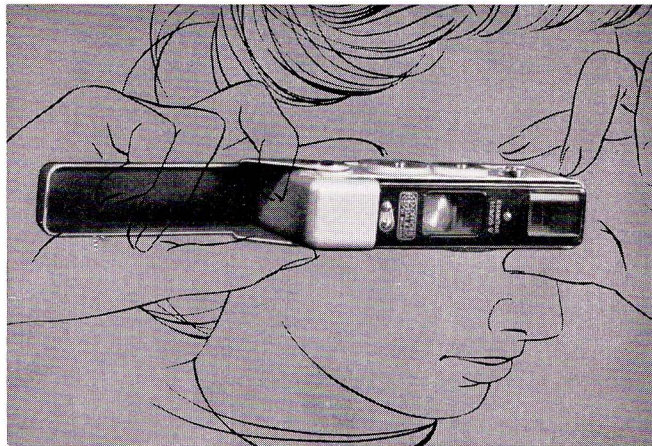
When the film all exposed, the red warning signal appears near the release button, the release itself will be locked and cannot be operated.

Unloading of Camera

Open the back cover and take out magazine, holding it by the connecting link of the cassettes. Pull out the **upper cassette first**, then the lower.

The counter will automatically go back on the small red area preceding zero.

Fig. 19

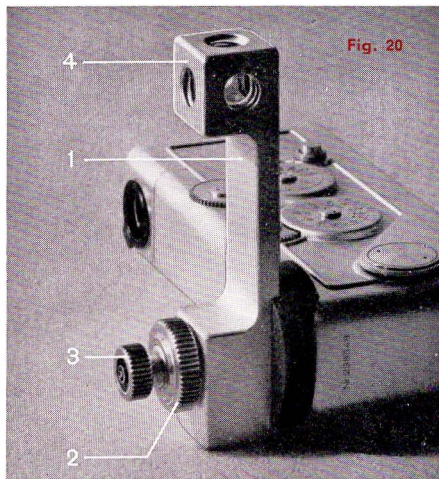


Change of film

Back cover of loaded camera can be easily opened any time, and film cartridge changed with another one having diffe-

rent speed either in black-and white or in color.

After having closed the camera, make three shots, then camera is ready.



The removed film may be reloaded into camera until it is fully exposed.

Automatic Lock of Shutter Release
locks:

- 1) when camera is closed (very safety against eventual impacts)
- 2) after sequence of three shots. (camera is easily reset by reopening the shutter)
- 3) at the end of film, or when camera is not loaded.

Red Warning Indicator close to the shutter release: 9 (fig. 1).

Changes from white to red when camera is not loaded or film is fully exposed.

Use of Flash

To employ flash bulbs or electronic flash it is necessary to use special attachment 1 (fig. 20). To do this tighten buttons (2) and (3) to one another.

Bring the attachment against the threaded socket of the camera and screw on button (3) all the way. Successively, tighten button (2) against attachment.

The flash attachment (bulb or electronic) must be screwed on one of the five threaded holes 4 (fig. 20) on the upper part. The threads are all standard 3/8" Connection for 1/4".

The electric cord is plugged in button (3) which has a standard concentric bipolar plug (central contact insulated and the other grounded).

Electronic flash can be used at any shutter speed up to 1/250th second (1/500th and 1/1000th excluded). Flash bulb can be used for shutter speeds up to 1/25th second.

Higher speeds can be obtained following special instructions given by makers of different type of bulbs. **GaMi 16** provides X-type synchronization, that is, the circuit is closed at the moment when the shutter attains maximum aperture.

Fig. 21



