GaMi 16

and accessories

GaMi 16

Sub miniature camera GaMi 16

Exposure-meter automatically controlling exposure

New precision sub-miniature camera, made in Italy, entirely automatic operation, of compact streamlined design, handsome lightweight, pocket size, of universal use for still and rapid sequences, on standard or special 16 mm. films, ready for instant use, ideal for color.

★ **A genuine new feature is the built-in exposure meter, automatically coupled with all exposure controls.**

★ Built-in optical parallax correction.

★ Viewfinder, range - finder and spring motor for both automatic film transport and shutter cocking.

The small negatives obtained are so neat and sharp that the enlargements seem to be good contact printed photos of larger negatives.
By using color films the advantages of this camera will be still more readily appreciated as, owing to its small sized design, the cost of films is considerably reduced, whilst the lack of grain in color films allows projection in big sizes, comparable to those obtained with 35 mm. cameras.
As the camera provides for immediate repetition of a subject or a small sequence, it is possible to select best negative.

★ Speed from 1/2 to 1/1000 th. second.

★ Lens opening 1 : 1,9 coated.

The high speed of the shutter connected with the large lens opening allows one to take every kind of subject in action, without the use of high speed films, so that the use of extra fine film grain guarantees the best enlargements.

Principal features:

Frame size: either 12 x 17 mm. or 10 x 17 mm. (silent film).

Film used: unperforated 16 mm. film, color, black and white, microfilms, in special fast loading cartridges for 30 exposures.
16 mm. standard movie films in strips can be loaded in the fastloading cartridge.

Weight: less than 10 $\frac{1}{2}$ ounces.

Size: 4 $\frac{1}{2}$ x 2 $\frac{3}{16}$ x 1 inch.

Built-in spring motor: providing the motion of the film and the cocking of the shutter.

Each winding of the spring motor allows three single photos or sequence.

Galileo Esamitar Anastigmatic, extra fast lens, 6 elements, opening 1 : 1,9, focal lenght 1".
Corrected for color, black and white, and microfilm.
Coated on all surfaces.
The field is similar to Leica and Contax with 2" lens.

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, 1/1000 th. second and B.

Range-finder, View-finder, exposure me-ter, parallax corrector.

★ Superimposed split-image range-finder coupled with view - finder in one window.

★ Focusing range from 20" to infinity.

★ Eye-level view _ finder with view adjusting lens.

✱ Automatic parallax - corrector displacing the view-finder and coupled with range-finder.

Depth-of-field indicator in connection with diaphragm and distance, symmetrically engraved on both sides of the distance scale index and coupled with range-finder.

Built-in film type indicator calibrated for films speed from 6 - 12 - 25 - 50 - 100 ASA black and white and 10 - 20 - 40 - 80 ASA color.

Built-in yellow filter which can be placed before the objective; it acts automatically on the exposure meter for correction of shutter speed.

Built-in visual extinction type exposure meter visible through the lens of view and range-finder, coupled with: shutter-speed regulator, iris diaphragm, sensitivity indicator and yellow filter.

★ The exact exposure can be determined after the diaphragm or the shutter speed have been adjusted by simply observing the view-finder ocular.

★ By adjusting the exposure meter, all other elements connected with exposure are automatically adjusted.

★ When the shutter speed is inferior to 1/25 th. second a visual indicator indicates that camera is to be held still by tripod or other means.

Built-in flash contact: X synchronization for electronic and open-flash.

Automatic counting device registering each exposure and counting up to 36 exposures.

Prevision for standard cable release, self-timer, flash synchronizer etc.

Built-in tripod socket - standard 3/8" or 1/4" attachment.

★ Red signal near the shutter release shows when the camera is unloaded or when the film is finished.

★ Automatic shutter lock when the camera is closed or unloaded.

★ Back removable for quick, positive film loading and internal inspection.

★ Very easy and simple loading and unloading in full daylight with fast cartridges for 30 exposures, black and white or color or microfilm.

★ The cartridges consist of two rolls assembled by a rod. One roll contains the film not yet exposed and passes on the other roll when exposed.

★ Change of cartridge possible in daylight whenever it is desired.

★ It is unnecessary to wait until all the film in a cartridge is exposed.

★ When opening the camera at the back the last photo is not damaged and the loss of the film is only about I"

★ Apart from the optical parts in glass and the insulating pieces for the flash circuit all parts are made of metal.

★ The parts of light alloy are anodized: other parts are of bronze, phosphore bronze, stainless steel and chrome steel.

★ Beautiful duraluminium finished in two tone satin, anodized, streamlined

★ All optical parts are protected so that camera can be carried in pocket or purse, even without the case.

Ref. n. **1650** *Gami*

GaMi 16 ENLARGER

This enlarger is designed for the specific purpose of enlarging photographs taken on 16 mm film with GaMi 16 or with other subminiature cameras.

Outstanding features are:

* Predetermined focusing system, excluding adjustements by the operator.

* Optical system especially designed for high correction on subminiature formats.

* Ruggedness and stability.

Many details in design make this enlarger unique for handiness and efficiency. The base is in plywood, dimensions 45 x 45 cm, or 18 x 18 inches. The column, ground to strict tolerances, is 26" high and detachable.

The light-housing, double walled for efficient air cooling, holds a 60 W. bulb on a socket which is centerable and adjustable in hight.

The light-housing is held by a pivoting arm, so that it can be tilted upwards for inspection and cleaning of the condenser and of the negative. In the tilted position the negative is invested by grazing light which reveals the slightest specks or other defects, so that they can be easily detected and removed. This helps in obtaining enlargements free from spots and other blemish.
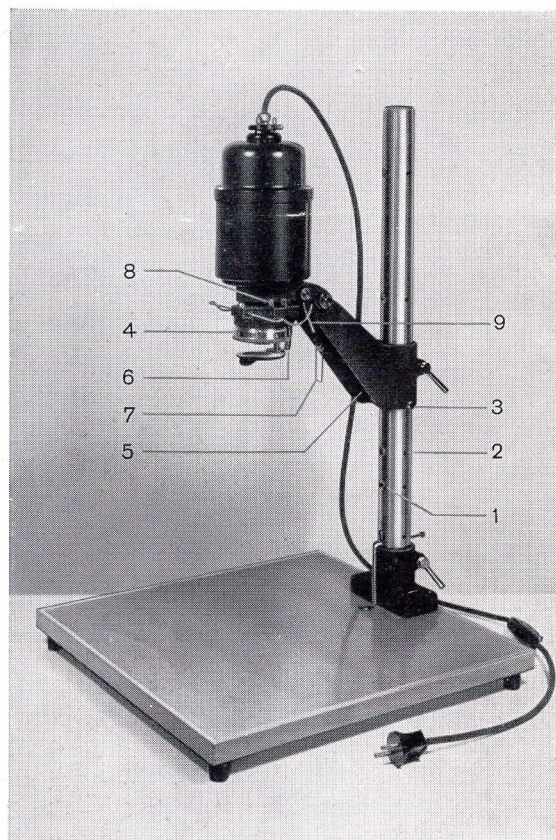
Focusing

The arm holding the head can be stopped at different heights of the column corresponding to different numbers engraved on the column. The same numbers appear on the focusing ring of the objective. By matching these two series of numbers, perfect focusing is achieved for a certain magnification. .

The focusing obtained by this procedure is perfect inasmuch it has been calibrated at the factory using a microscope. Therefore, the operator should not worry about focus control if he works with the stan-

dard enlarged sizes for which the enlarger is calibrated.

If the operator, on the other hand, wants to use the enlarger to obtain enlargements intermediate or outside the range provided for, he must proceed in the conventional way stopping the head at any height on the column and adjusting the helicoidal focusing mount of the objective until he obtains to his own judgement the best focus. For higher magnifications than those allowed by the height of the column one can turn the arm and head of the enlarger by 180° around the column and operate outside of the base.

1 – Column. 2 – Numbers engraved. 3 – Pin.
4 – Focusing ring. 5 – Arm. 6 – Filter. 7 – Hook.
8 – Film. 9 – Lever to tilt light–housing.

Optical system

The optical system is particularly designed for high resolution on subminiature formats.

To avoid as much as possible the reproduction of grains structure, scratches or other blemish, the illumination of the negative is partly by diffusion. The lens has high resolving power, gives high contrast and is chromatically corrected over the whole format. The objective has a fixed stop, adjusted to the value found to give best results.
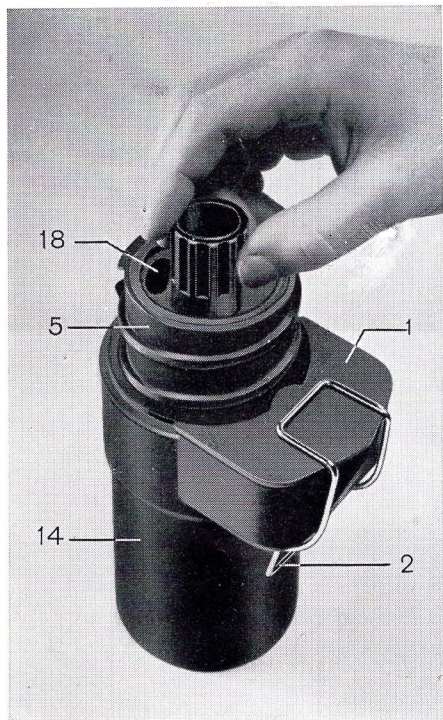
Ref. n. **1670** *Gaing*

OBJECTIVE FOR ENLARGER

The objective only, herefore described, F/4 - F=30 mm, with special adapter for use with other 35 mm enlargers. (Leitz etc).

Ref. n. **1692** *Gaobb*

GaMi 16 DAYLIGHT DEVELOPING TANK

This daylight developing tank can be used to develop all negative films, black and white, reversible or color, used with the GaMi Camera, without any need of a dark room.

All operations take place without touching or handling the film. The film magazine is introduced in the tank and the film is transferred automatically from the magazine to the developing tank.

The tank uses a minimum of liquid (about 4 fluid ounces) so that a freshly prepared bath can be used every time at negligible cost.

The solutions can be thermally controlled. The film, once transferred to the tank, finds itself wound on a helix at the outer surface of a cylinder, emulsion side outwards. It can thus be easily subject to the light exposure which is necessary for the inversion of reversible black and white films or for color.

1 - Cover. 2 - Hook. 5 - Internal cilinder.
14 - Tank. 18 - Inlet for thermal control liquid.
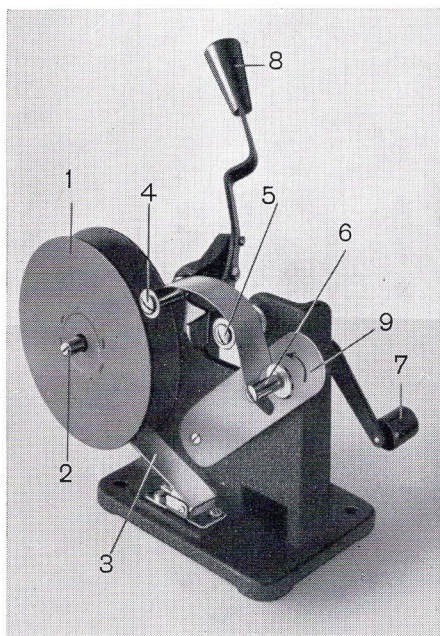
Ref. n. **1660** *Gasvi*

GaMi 16 SPOOLWINDER

The spoolwinder has been designed to load the GaMi 16 subminiature camera magazines with proper length of 16 mm negative film.
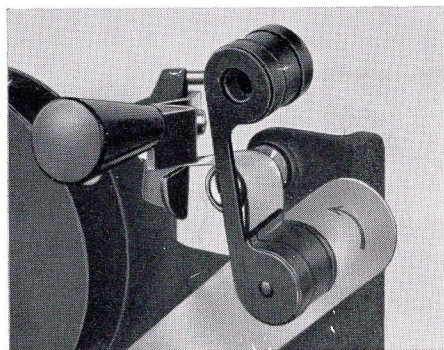
The spoolwinder can be attached to table or bench by a special clamp or screws. The film can be taken from regular reels up to 100 feet. If the available film does not already come on a standard metal spool it can be mounted on a special reel composed of two discs which can be assembled. The taper cut makes the film tail useful when using the GaMi 16 tank developer, and operates the authomatic lock of the GaMi 16 when all exposures are taken.

Ref. n. **1680** *Gabob*

1 - Special reel. **2** – Axie. **3** – Lever. **4** – and **5** – Rollers. **6** – Axie with slit. **7** – Handie. **8** – Knife. **9** – Extracior
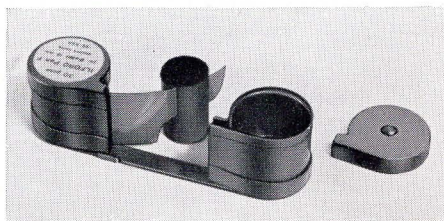

EMPTY FILM CARTRIDGES

May be filled with any film 16 mm by the GaMi 16 Spoolwinder.

N.B. - Available are cartridges filled with different kind of films: Black and Withe, Color and Microfilm, ready for use in GaMi 16. They are enlisted separately.
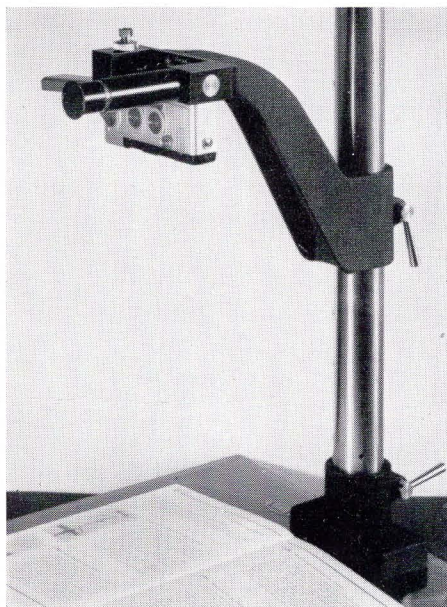
Empty cartridge

Ref. n. **1668** *Gaspo*

GaMi 16 COPYING OUTFIT

The GaMi 16 copying outfit is used to take pictures of documents, drawings, illustrations or small objects, which must be accurately focused at short range.

The outfit consists of a base and column similar to the GaMi enlarger, on the top of which the GaMi camera can be securely attached, lens downwards, by means of the screw of the GaMi flash attachment. In this way a regular flash (bulb or electronic) can be used as a light source to take the picutres.

The outfit carries a small horizontal telescope looking into the GaMi's viewer. In this way the operator makes use of the camera's coupled rangefinder, viewer and parallax corrector to frame and focus the subject.

The GaMi can be set at the maximum distance of 75 cm (30") from the subject. For distances between 10" and 20" (25 to 50 cm) the GaMi camera must be equipped with the « Prox » close-up additional lens.

The setup is rugged enough to mantain the camera in position during the loading of the spring every three exposures, (by closing and opening the front cover) and when changing the film magazine.

Ref. n. **1671** *Garip*

Arm with telescope, but without column and base, to be attached to the column and base of Enlarger for GaMi 16.
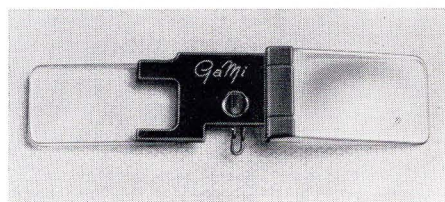
Ref. n. **1672** *Gabra*

CLOSE - UP ADDITION LENS - PROX -

The minimum range of the GaMi camera is 20 inches (50 cm.).

To take pictures of close-ups at less than 20 inches, one can use an additional lens which permits to take sharp pictures at a range of 10 to 20 inches (25 to 50 cm.). The « Prox » outfit consists of a mount which carries two lenses: one which combines with the camera lens and the other with the viewfinder. This second lens acts on the rangefinder and the parallax corrector in such a way as to mantain the proper authomatic coupling of range and parallax with the camera lens, within the range from 10 to 20 inches.

Ref. n. **1652** *Galen*

GaMi 16 FRAME VIEWER

The GaMi 16 frame viewer consists basically of the aplanatic loupe, the base and two special holders, and serves two ends.

1. Inspection of films, black and white negative or color, obtained with the GaMi 16 camera, in order to select the frames suitable for enlargement or to be mounted into regular projecton slides. The selected frames are identified by a small hole punched on the edge of the film.

2. Viewing of color pictures after they are mounted in the regular 2" x 2" slides.

Inspection of films

For this use the viewer is assembled as shown in fig. 1. The viewer is set on a table oriented so that the light should hit the white surface of the base.
The white surface acts as a diffuser permitting a clear, glareless and shadowless observation through the lens.
The lens is a Steinheil triple aplanat, highly corrected, of about 7 magnifications, set in a helicoidal mount for focusing.
To operate the punch on the film it is only necessary to exert a positive pressure on plate.

Vision of color slides

The instrument is set up as in fig. 2 that is, assembling slide holder to the base by means of thumbscrew (2). The slide holder permits observation and prompt substitution of regular 2"x2" slides.
The first slide is set in the slide track from one side and pushed towards the center when it comes under the eyepiece. Edge (9) of the slide track stops finger the moment the slide has reached position allowing picture to be observed through eyepiece (4).
Subsequenetly, other slides can be pushed into the track one after the other, towards the center. The slides already viewed are

automatically pushed out from the other side and become free.
The viewer has enough power to present to the observer the image of a GaMi frame as one would normally observe a postcard size picture and gives perfect detail with optimum luminosity.
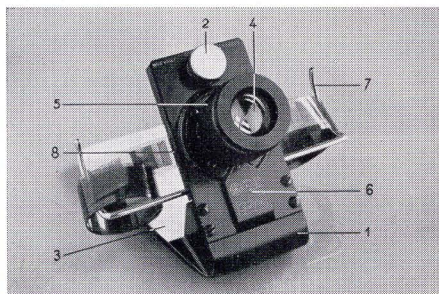

Fig. 1

1 - Base. **2** - Thumbscraw. **3** - White surface of the base. **4** - Steinheil triple lens. **5** - Helicoidal mount of lens. **6** - Plate to operate punch. 7 - Metal rod for film.
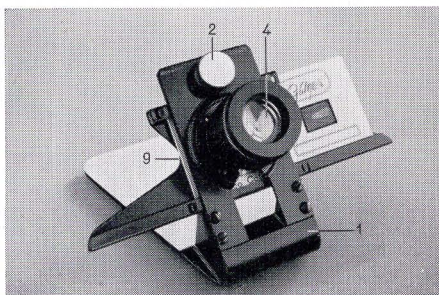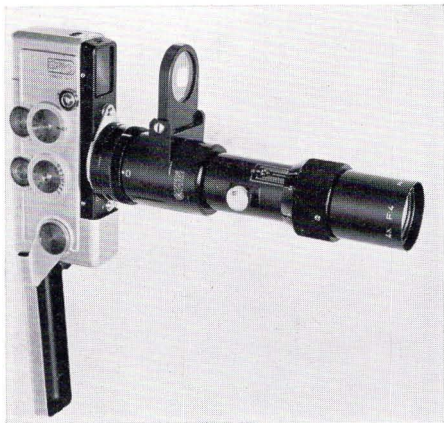

Fig. 2

GaMi 16 Frame viewer.

Ref. n. **1681** *Gasvi*

AFOCAL TELELENS FOR GaMi 16 - F:4

MAGNIFICATION 4 x

For taking pictures of landscapes, architectures, animals etc. at a great distance, une uses afocal telelens to be fitted on the front of the GaMi 16.

It is a lens of F/4 and a magnification corresponding to that of a telelens of F = 200 mm fitted to a normal 35 mm camera.

Collapsible lens which works in conjunction with the viewer of the GaMi, enlarges the image given by the viewer.

The built-in exposure-meter is still used with this telelens.

Ref. n. **1665** *Gatel*

MICROSCOPE ADAPTER

The GaMi subminiature camera can be also used as a microphotographic attachment when used in conjunction of a special adapter which can be attached to the eyepiece tube of any standard microscope. The exposuremeter incorporated in the GaMi will work regularly also in conjunction with the microscope adapter and therefore the time of exposure is automatically set.

This is the first time that a microphotographic outfit of minimum size and weight si available which includes an automatic exposure meter.
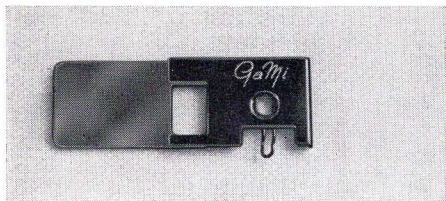
The microscope adapter features a lateral frosted glass screen for framing and focusing of the subject, by means of the movements and fine adjustment of the microscope.

The top of the adapter is provided with a clamp to hold the GaMi camera and the bottom carries a special eyepiece which is introduced in the eyepiece holder instead of the regular eyepiece used for visual observation. In the body of the adapter a sliding mirror is located which performs the following functions:

1. projects image on screen for proper framing and focussing;

2. allows reading of GaMi exposure meter and automatic setting of time;

3. sequence shooking of one - two - or three exposures without cocking or resetting, as provided by the automatic features of the GaMi camera.

Ref. n. **1674** *Gamic*

GaMi 16 COLOR FILTERS

On the front of the GaMi 16, a color filter can be inserted instead of the built-in yellow filter.
The front cover can be closed even with the additional filter inserted.
The filters normaly supplied, are optically flat and made of colored glass.
We supply the following colors and shades:

- yellow . . . . . time factor 2-3
  Ref. n. **1653** *Gagia*

- red . . . . . . time factor 6-10
  Ref. n. **1654** *Gares*

- green . . . . . . time factor 2-5
  Ref. n. **1665** *Gaver*

- pale-blue
  for tungsten-light . . time factor 2-3
  Ref. n. **1656** *Gablu*

- U.V. for color . . . time factor 1
  Ref. n. **1684** *Gauv*

SIGHT CORRECTING LENSES FOR GaMi 16

The viewer of the GaMi 16 can be adjiusted for the individual eye correction, from + 3 and — 3 diopters. By fitting in the viewer small correcting lenses of + 3 or — 3 diopters, one can augment the compensation up to about + 6 or — 6.

Sight correction lens + 3 diopters
Ref. n. **1657** *Gapiù*

Sight correction lens — 3 diopters
Ref. n. **1658** *Gamen*

PRISME FOR VIEWER FOR GaMi 16

To take pictures without directing the camera on the object, a small prism can be fitted on the viewer which deviate at right angle the direction of the shot.

Ref. n. **1659** *Gapris*

GaMi 16 PROJECTION LENS - PROL -

The GaMi 16 transparencies, once mounted in the GaMi 16 slides, can be projected by any standard projector taking the 2 x 2" slides. It is anyhow advantageous to use a projection lens of a shorter focal length than normally used for miniature films projection.
We have accordingly designed a projection lens of shorter focal length which would give, for a given distance of projection, approximately the same screen format for a GaMi 16 frame than would be obtained with a regular miniature frame and a regular projection lens.
This GaMi « PROL » lens has a high speed of f/1,9 and a focal length of 2"3/16 or 55 mm.

Ref. n. **1691** *Gapro*

GaMi 16
FLASH ATTACHMENT

The GaMi 16 has an incorporated Flash-synchronization X-tipe.

To employ flash-bulbs or electronic flashes it is necessary to use a special attachment which must be screwed in socket of GaMi 16.
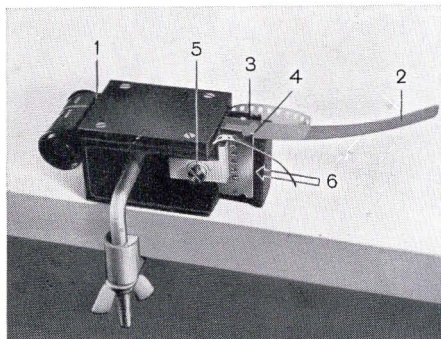
The screw has on its top a standard concentric bipolar plug for electric cord.

Any kind of electronic or bulb flash can be used.

Ref. n. **1651** *Galam*

GaMi 16 FILM CUTTER

The film cutter has been designed with the purpose of providing an easy method of cutting out a 16 mm unperforated strip from any regular 35 mm film, in strips or cartridges. It does not cut strips longer than 1.50 meters.

The device can be secured to bench or table by clamp or screws.

1 – Slide. **2** – Film. **3** and **4** – Razor blade. **5** – Clamp-blade.
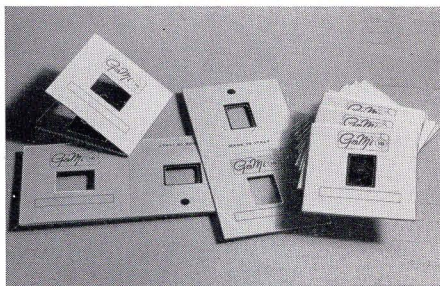
Ref. n. **1682** *Gateg*

SLIDES FOR GaMi 16 TRANSPARENCIES

These slides are used to mount color transparencies taken with the GaMi 16 camera, for the purposes of viewing and projection. These slides are made of a double cartboard sheet and contain a thin black mask which sharply limit the format.

The mounting of a picture in the slide is easily obtained slipping the film between the black mask and cardboard and framing properly the subject with reference to the black mask.

The cardboard is glued on the inside so that when moistened it can be folded and the picture permanently held in place. The format of the black mask corresponds to the GaMi 16 cardboard slide and is of the standard 2 x 2" dimension, used for all miniature slides. These slides can therefore be used with any miniature film projector.
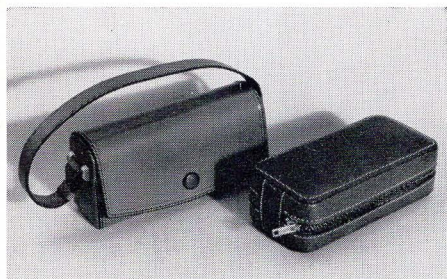

The slides bear a reference dot for the proper orientation of the picture in the projector.

The slides are supplied with two different types of markings, one for horizontal and one for vertical frames.

Ref. n. **1690** *Gadia*

SPECIAL GaMi 16 CARRYING CASE

The regular leather case which is normally supplied with the GaMi 16 camera can be, on request, substituted by a special pig-skin type deluxe case.

Ref. n. **1683** *Gastu*

GaMi 16 NEGATIVE FILES

GaMi negatives can be properly preserved and filed in special leatherette album with special detachable plastic sheets in which the single negative strips can be inserted and easily traced.
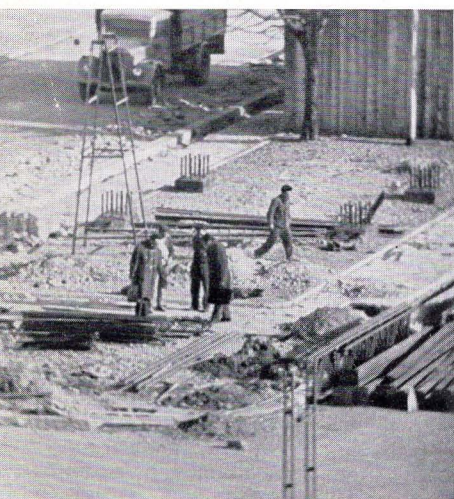
Ref. n. **1688** *Gabum*

TRIPODS - SELF-TIMERS - CABLE RELEASES

N.B. The Gami 16 has a threaded tripod inset for the 3/8" standard with a connector for the 1/4" so that it can be used both with european and american tripods. Also the threads for the cable release are standard.

13

Print from GaMi 16

Print from GaMi 16
with Telelens 4 x