

SINAR Instruction Booklet
(short enough for you to read it thoroughly)

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Description and Numbering of the Articles explained see also "SINAR
Construction Unit" Prospectus B

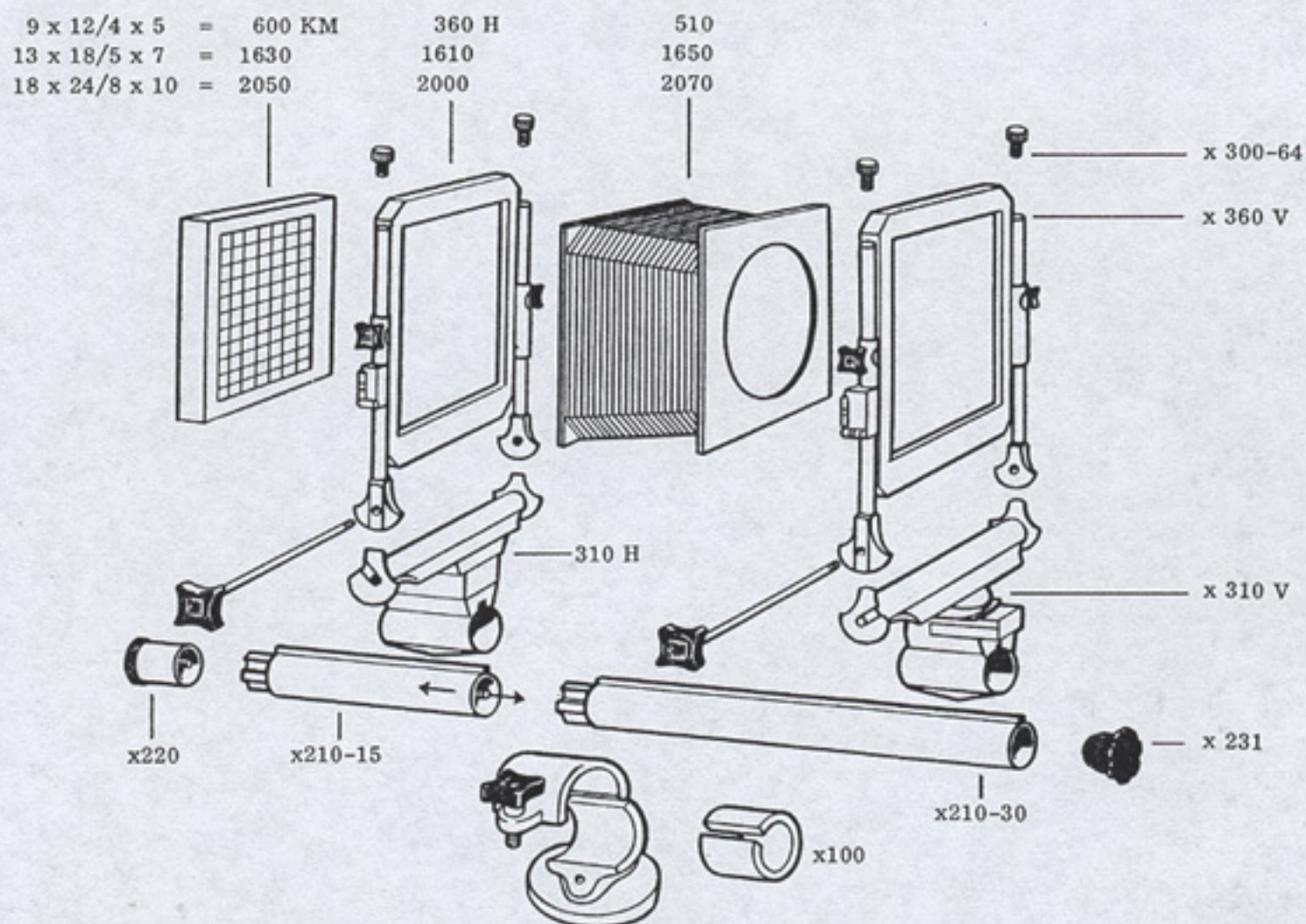


Fig. 1

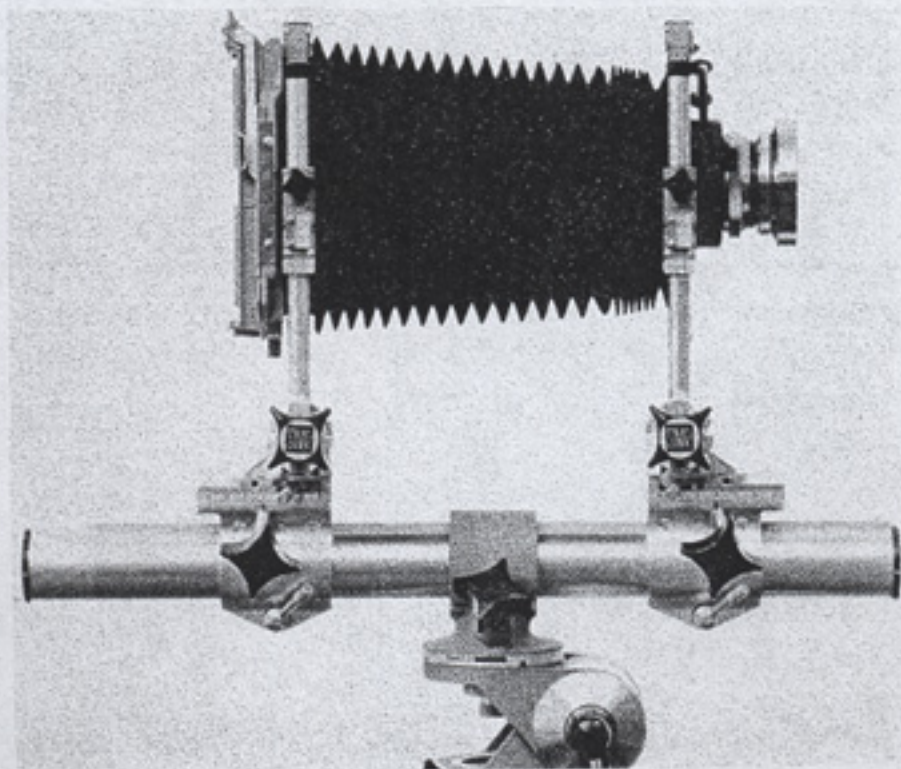


Fig. 2

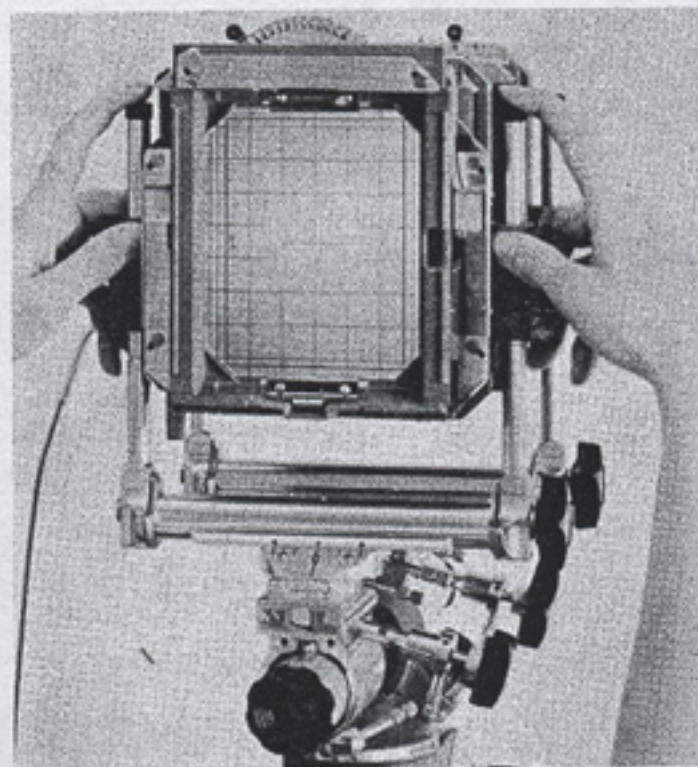


Fig. 3

THE SYSTEM

With the introduction of the SINAR in 1947 the unit assembly system of designing technical cameras made its first appearance. In the SINAR you possess the prototype of this modern trend.

The SINAR System features:

- careful standardization of the assembly units of this technical camera, covering negative sizes from $2\frac{1}{4} \times 2\frac{1}{4}$ " to 8×10 ", therefore,
- extending the scope and efficiency of its universal application
- simplified repair service
- constant adaptation to the latest technical advances.

SINAR owners can easily dismantle the camera into its basic units, as shown in fig. 1.

The front upright columns should not be removed from the base mounting clamp 310 V, since these are adjusted as a complete unit.

All other SINAR components may be exchanged as required:

The camera, assembled in accordance with fig. 2, is

THE SINAR STANDARD (fig. 2 = 4×5 ")

Operation

For the recommended operation of rise-and-fall movement, see fig. 3.

The fine focusing is self-braking. The tension is adjustable by means of the screw behind the fine focusing knob (fig. 3a).

The lock nut of the coarse focusing locking lever is adjustable in six positions, enabling you to set the lever to suit yourself.

The same applies to the lever position of the tilt lock on the 8×10 " back.

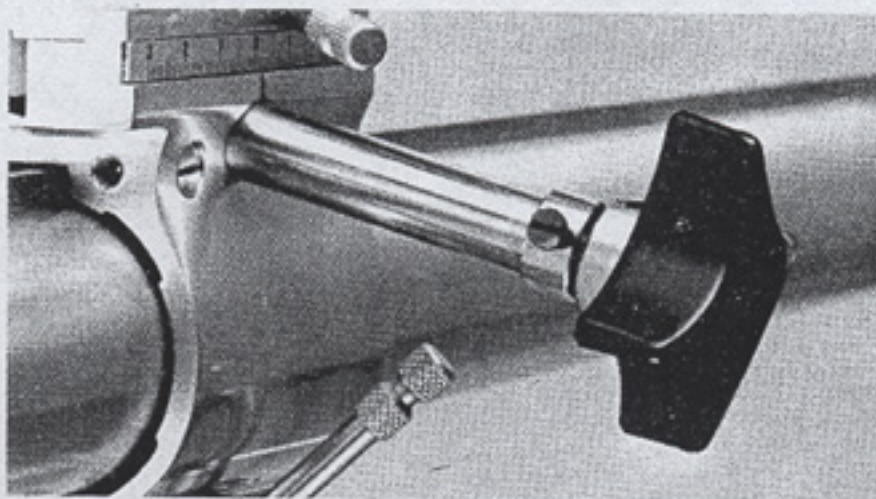


Fig. 3a

Fig. 4



Fig. 5

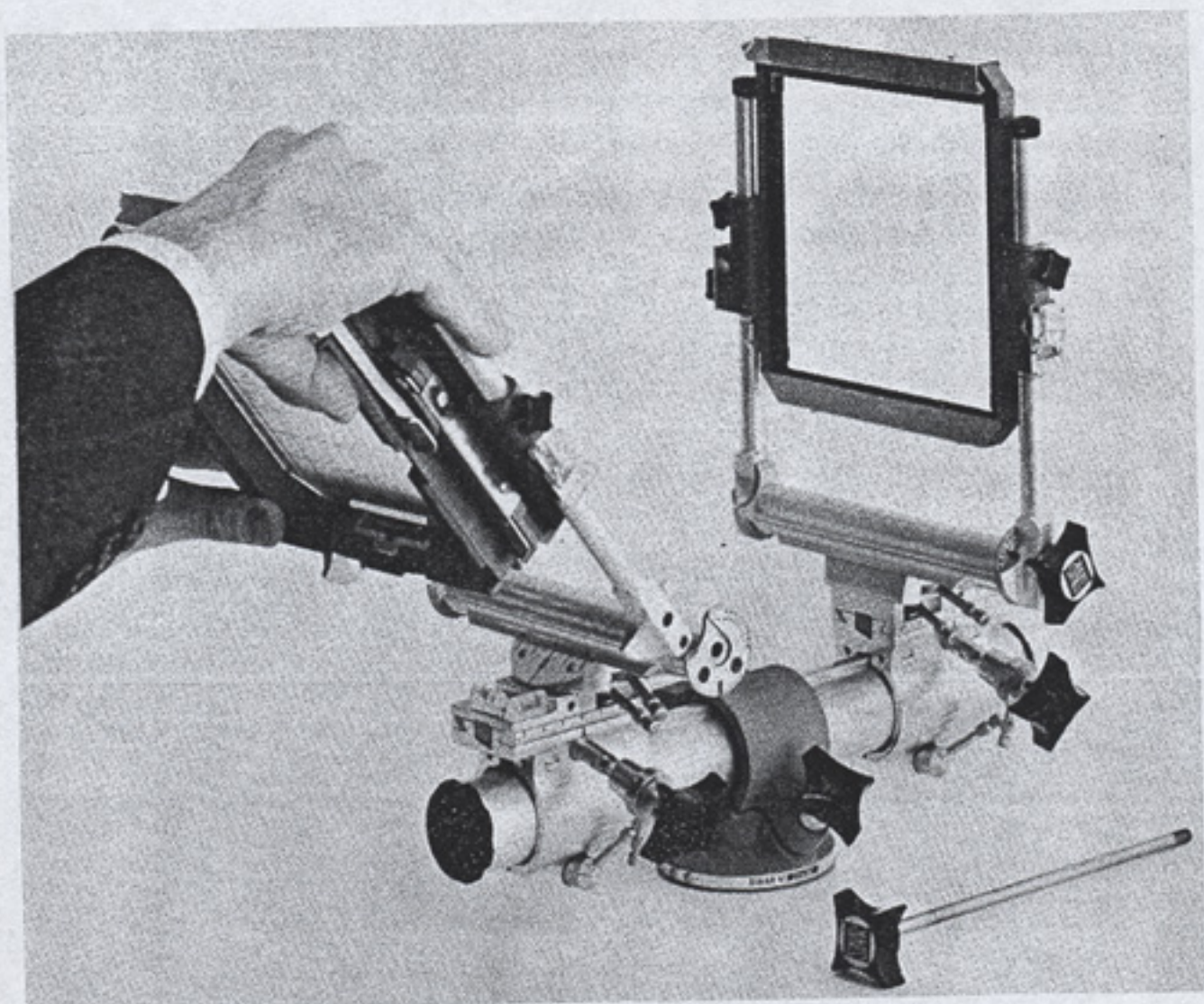
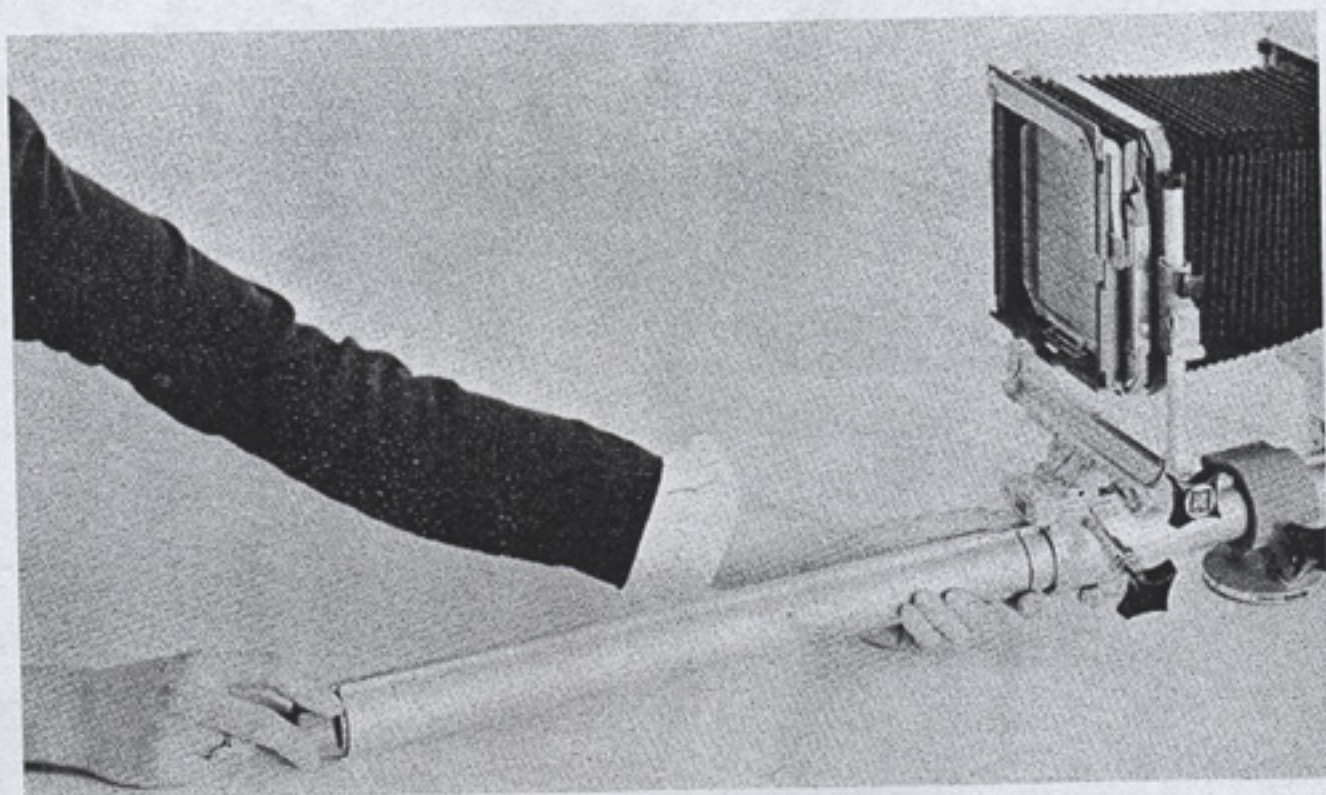


Fig. 6



To obtain accurate reading of the spirit level, the centre must be viewed directly from above. You have the correct reading angle when the rear stroke mark coincides with the front one.

The horizontal spirit level on the rear carrier has to be set slightly off centre, with the bubble approximately in the middle of the right hand mark. By tightening the locking knob of the bench holder (x100), the camera gets exactly in the horizontal position (bubble between the marks - see fig. 4 -)

Changing formats:

For interchanging formats from 4x5/9x12 to 5x7/13x18 or vice-versa (fig. 5)

Before changing over, always securely tighten the rise-and-fall adjustment knobs.

The 8 x 10/ 18 x 24 back requires changing the entire rear assembly including the carrier clamp.

Every time the bellows are changed, make sure the sliding locking clips are right home.

Monorail optical bench:

The optical bench comprises the 15 cm bench unit (x210-15) and the 30 cm bench unit (x210-30). This subdivision increases both wide-angle performance and handiness of the camera.

The optical bench is normally extended towards the rear (fig. 6). Extension towards the front is also possible. Just reverse the benches before assembling them.

The 15 cm bench unit by itself can already be used as a base for the SINAR-STANDARD. To that end, screw on bench cap (x231) first, and then bench cap (x220).

Fig. 7

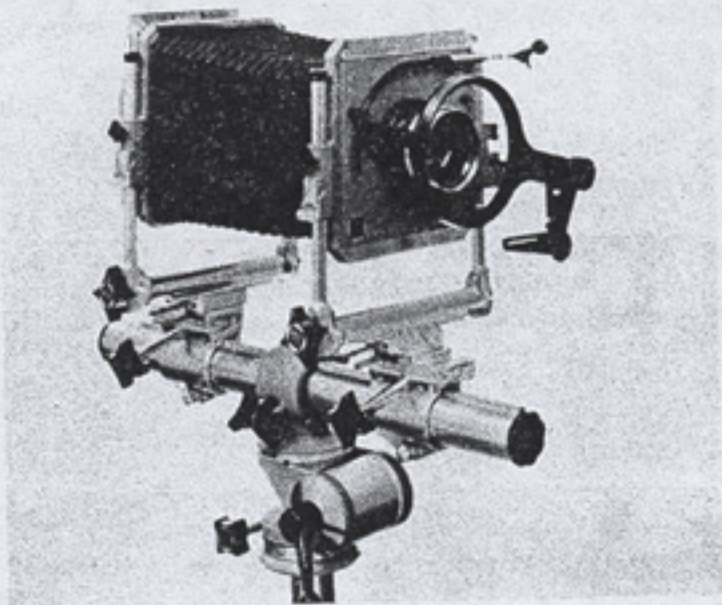


Fig. 8

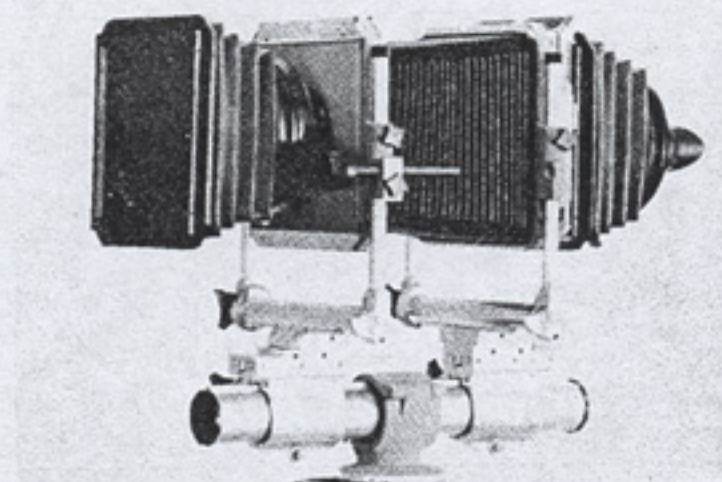


Fig. 9

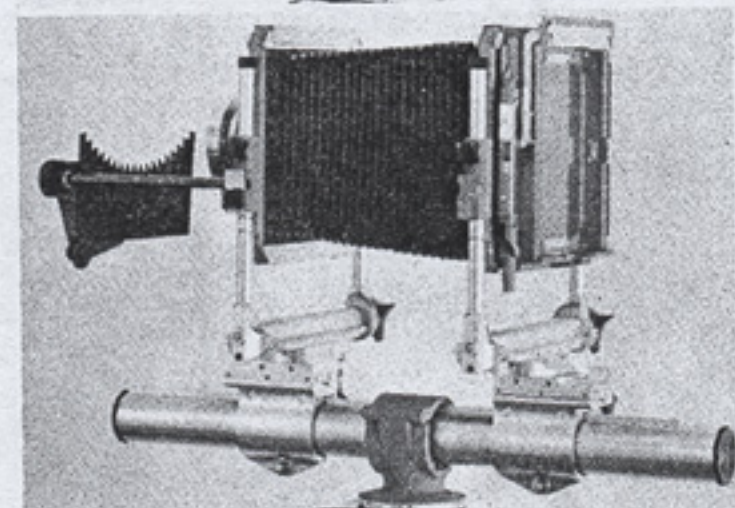


Fig. 10

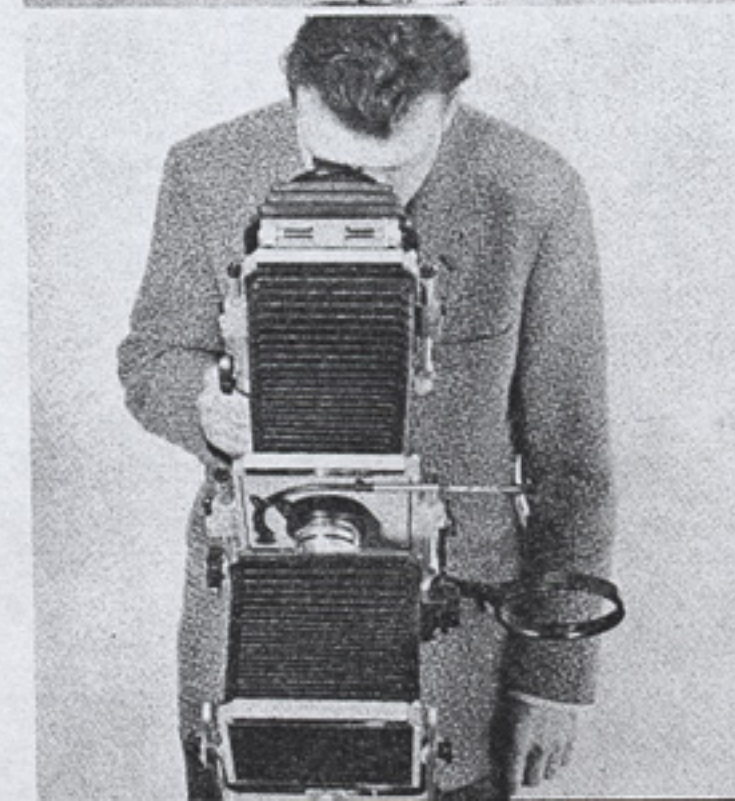


Fig. 11

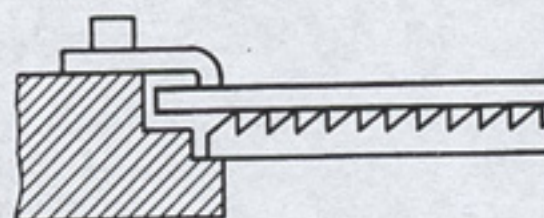
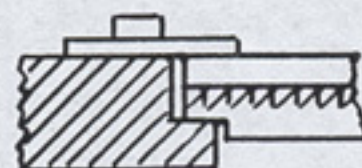


Fig. 11a



Securing the filter-holder and bellows-holder:

This is done with the filter rod (x1140-11 or -16) on the front frame. When inserting it, make sure the red dots coincide.

The filter holder (x1120) can be swung out through 180° in order to adjust the polarizing filter.

For applications of this holder, see figs. 7, 8, 9 and 10.

The rubber bellows (x570), screwed into the filter-holder, can be used as simple lens hood (fig. 8). When inserted into the 4x5/9x12 back (600 KM), it serves to view the focusing screen (figs. 8 and 10). In this case, the use of a Fresnel lens (600 F) is recommended.

Camera Backs:

The SINAR backs are primarily designed for the international type double film- and plate-holders. Film holders for the corresponding centimetre and inch formats with the identical exterior dimensions can be used interchangeably in any one back.

9 x 12 cm and 4 x 5 "
13 x 18 cm and 5 x 7 "
18 x 24 cm and 8 x 10"

The SINAR 4x5" back (600 KM) accepts the following other manufacturers' accessories:

- GRAFLEX light hood for focusing screen viewing (G 9147)
- POLAROID 4x5 film holder (P 500)
- CALUMET film holder for ideal format and film 120, film 220 (C-2)

To secure these heavy holders in the focusing plane, use the two sliding clips on the SINAR plate-holder carrier (600K).

So-called "Million" plate holders can be used: - see page 11 below -

After removing the focusing screen frame (600M), the following GRAFLEX and LINHOF accessories can also be fitted:

- GRAFLEX 6 x 6 / 2 1/4 x 2 1/4 (G 1257)
- GRAFLEX ideal format 2 1/4 x 2 3/4 for film 120 (G 1256)
- GRAFLEX ideal format 2 1/4 x 2 3/4 for film 220 (G 1259)
- GRAFLEX ideal format 2 1/4 x 2 3/4 for 50 pictures (G 1240)
- LINHOF Super-Rollex, 6 x 6, ideal format 56 x 72 and 6,5 x 9
- LINHOF Ciné-Rollex, ideal format 56 x 72 for 50 pictures
- POLAROID rollfilm adaptor (G 9108) with GRAFLEX focusing screen (G 9288) and GRAFLEX light hood (G 9146)
- GRAFLEX "Graflarger" coldlight enlarger attachment (G 6019) with accessories
- GRAFLEX "Dividing back" (G 9109) for 2 pictures on one film 9 x 12 or 4 x 5
- LINHOF police adaptor 6 x 13 cm (L 1623) and LINHOF enlarging attachments (cold light L 3007, condenser L 3022)

Fresnel lenses: available from SINAR ready-cut under (600 F) for 9 x 12/4 x 5 and (1630F) for 13 x 18/5 x 7. These are mounted between the seating area for the focusing screen and the screen itself, with the smooth side of the lens outwards, so that the grooved and matte surfaces face each other. They are sent in the camera back 4 x 5/9 x 12 (600 M) according to fig. 11 and in the camera back 5 x 7/13 x 18 (1630) according to fig. 11a. The Fresnel lenses bought by SINAR are cut in a way that the focus shift of about 0,5 mm resulting from the use of these lenses is necessarily corrected.

In addition, an interchangeable mask and Fresnel lens holder (601) can be supplied for the 4 x 5/9 x 12 back (600 KM) together with special accessories such as Fresnel lens (535.26) and a set of masks (534.16) for the negative sizes 2 1/4 x 2 1/4 (6 x 6 cm), ideal format 2 1/4 x 2 3/4 (56 x 72 mm), 2 1/4 x 3/4 (6,5 x 9 cm), and 9 x 12 cm. To insert the Fresnel lens, remove the 4 plastic spacers from the holder. The grooved surface of the lens must face the ground-glass.

Fig. 12

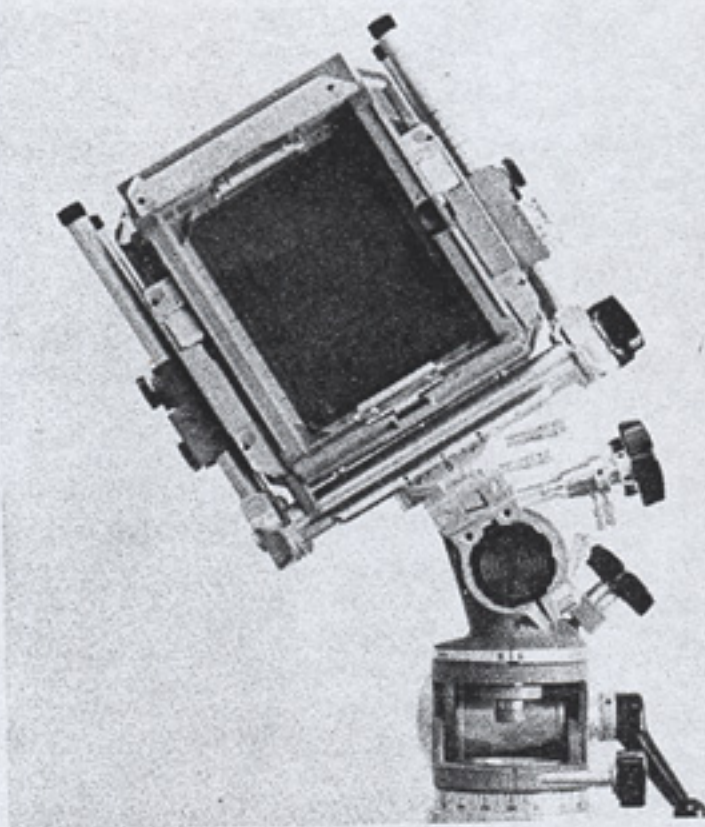


Fig. 13



Fig. 14

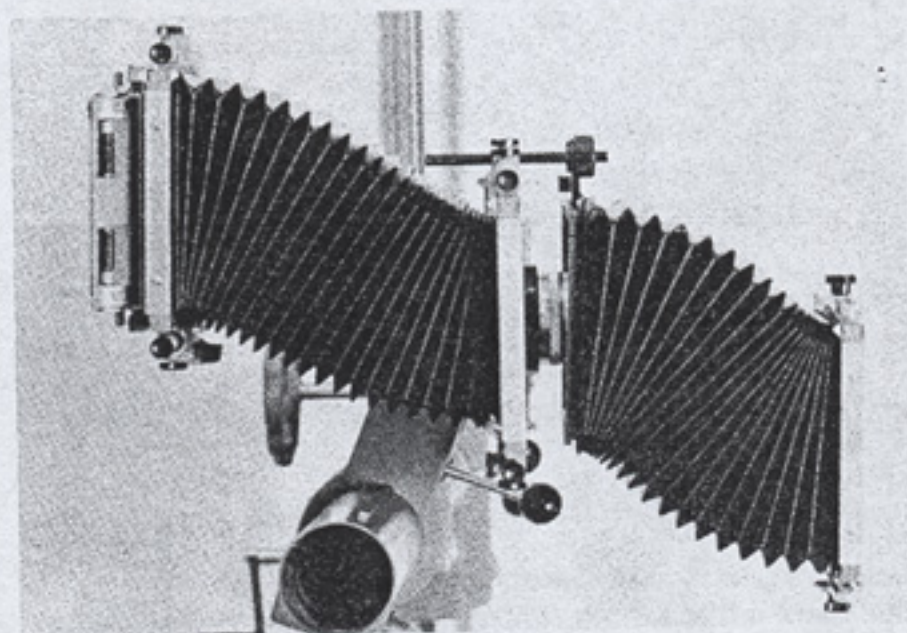


Fig. 15

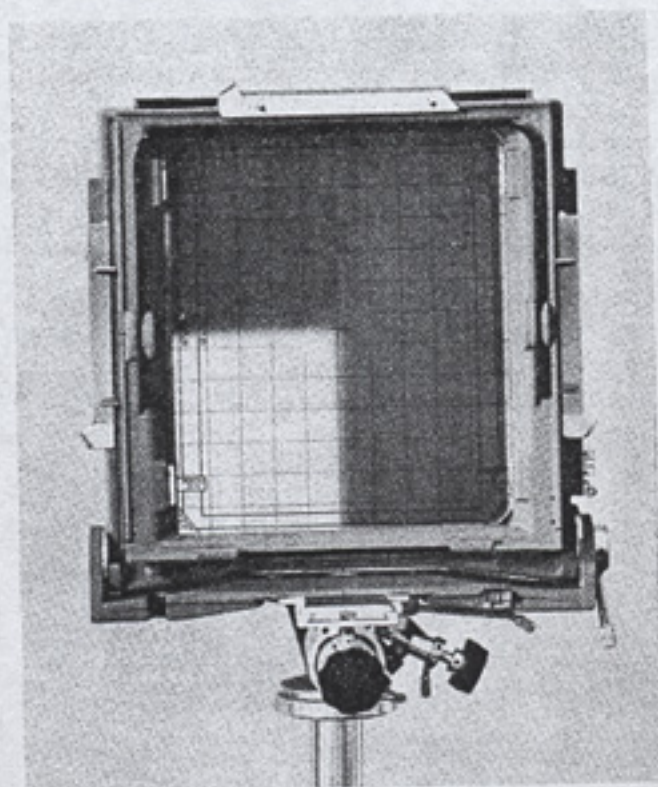
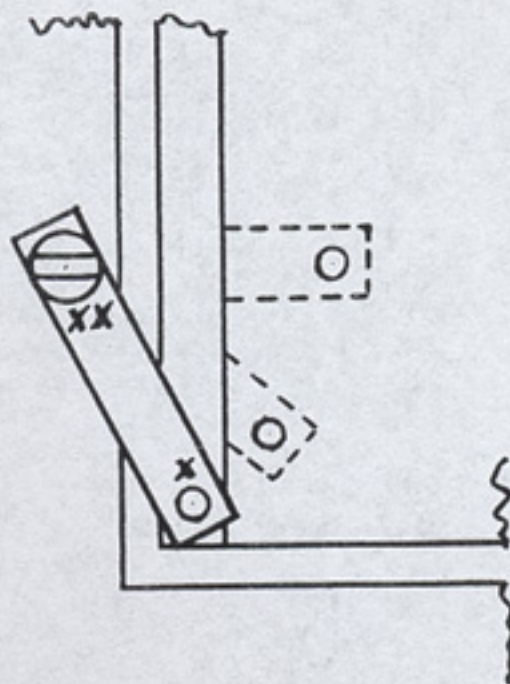


Fig. 16.



Vertical and horizontal pictures: This is done by turning the camera back through 90° .

Intermediate positions with the SINAR: this facility is obtained by swinging the camera (fig. 12). This ensures that the movements maintain the same relationship to the image axis. Furthermore, the matte box or bellows swing with the camera, and moreover, the edges of the image remain fully illuminated.

Swing principle. The SINAR possesses a swing principle of its own. It unites the centre-swinging advantages with the great range and the wide-angle capacity of base swinging. The manipulation of the SINAR swing principle is also feasible as shown in fig. 13.

When the camera is very much inclined and a combination of vertical and horizontal swinging is made, there can arise disturbing deviations of the frames from the vertical axis. (Tilt movement). These can be avoided by fixing the camera on the tripod, according to fig. 14. (Monorail optical bench aside the camera)

Negative Subdivision for Multiple Exposures (fig. 15). By means of moveable masks in the coupling frame (these are supplied with 8 x 10/18 x 24 adaptor) the formats can be divided into two or four parts. With this system it needs to be re-set for each picture position. If you wish to avoid this, you may set a cover mask on one side of the coupling frame. After the first picture, the camera back is swung through 180° and the second picture can be made without needing re-setting.

Another possibility is to insert a format reducing mask into the compendium and then to begin the subdivision by displacing the camera back.

The 8 x 10" back (2050) can be used either with normal negative holders or with special holders for colour separation or test exposures. For the latter the bearing points are adjustable (fig. 16).

- | | | |
|------------|---|---|
| Position 1 | = | normal, for commercial negative holders |
| Position 2 | = | Multicolor 8 x 10 in. Focusing screen lies directly on the bearing points. SINAR Multicolor Holder (2200) with insert (2230) should be used. |
| Position 3 | = | Multicolor 18 x 24 cm. Focusing screen lies directly on the bearing points. SINAR Multicolor Holder (2000) with insert (2220) should be used. |

The adjusting pin marked X is adjusted with sufficient accuracy when supplied.

It should not be altered except in case of necessity.

The bearing member, however, can be adjusted simply by loosening screw XX with a coin. (Loosen it sufficiently to free it from the guide pin provided and re-set it).

For color-separation work the frame stabilizers Nr. 1870/1875 should be used (see fig. 33).

When inserting the negative-holder-focusing screen frames for 5 x 7/13 x 18 and 8 x 10/18 x 24 into the camera body, it is important to check that these components are inserted into the appropriate grooves before the catch is released. If this is not done, light may leak in.

Negative Holders:

The American double negative holders used with the SINAR are very easy to load, but remember:

- Sheet film must always be pushed right home into the holder, i. e. until you feel it come to a positive stop.
- The back of the film will be scratched when there are dust particles between the back of the film and the negative holder.

For plates 4 x 5" - 8 x 10", there are specially made plate-holders available.

It is advisable to store the negative holders in their case with slides pointing downwards, so that the films cannot slip out of their grooves and the slides cannot come out in transit.

Remember: American negative holders 4 x 5 and 9 x 12 on the ASA system and certain European manufactures of this format show slightly different focusing-planes. A small correcting plate can be laid under the ground-glass for European models. This plate is supplied on request.

The Multicolor negative holder can be provided with interchangeable adaptor inserts for 8 x 10" and 18 x 24 cm plates. These inserts can be removed for loading, although this is not absolutely necessary.

For color-separation work and test exposures, plates must be used. The Multicolor holder is therefore designed for plates.

If, despite this, film is used with the holder, (e. g. colour transparencies as colour guides for colorseparation work), it is necessary to use a special sheet film insert. This is fitted into the plate holder with its closed short side facing the dark slide, so that the film cannot rise up and catch on the slide.

When using the Multicolor holder, the back must be re-set: see under 8 x 10" back, fig. 16.

POLAROID P500 holder 4 x 5. The usable area of polaroid negative in the P 500 holder is slightly less than 4 x 5. The normal 4 x 5 sheet film holder gives an actual area of 3 3/4" x 4 3/4", whereas the polaroid is 3 1/2" x 4 1/2". On the SINAR ground glass screen this occupies the approximate area as the 9 x 12 cm marking, within about 1/8".

Sheet metal "Million" negative holders can be used with the SINAR 4 x 5/9 x 12, and 5 x 7/13 x 18 backs, provided that the Linhof intermediate frames, L 1622 for 9 x 12 and L 1621 for 13 x 18 or L 1621 + 21455 for 10 x 15 are used. The sheet metal holder is first slid into the intermediate frame and then the whole assembly is placed into the camera back.

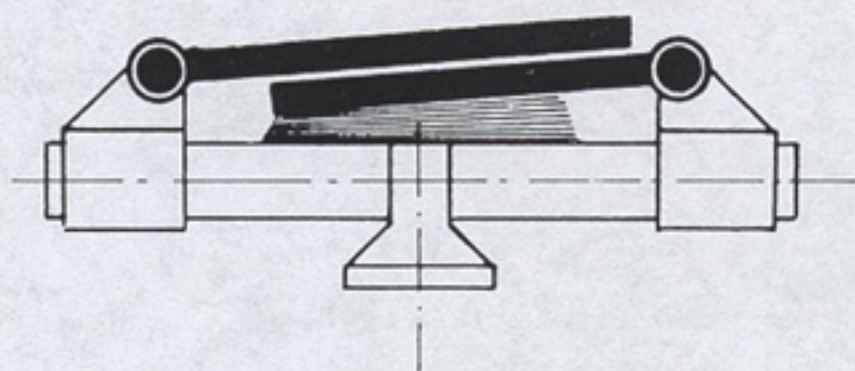


Fig. 17

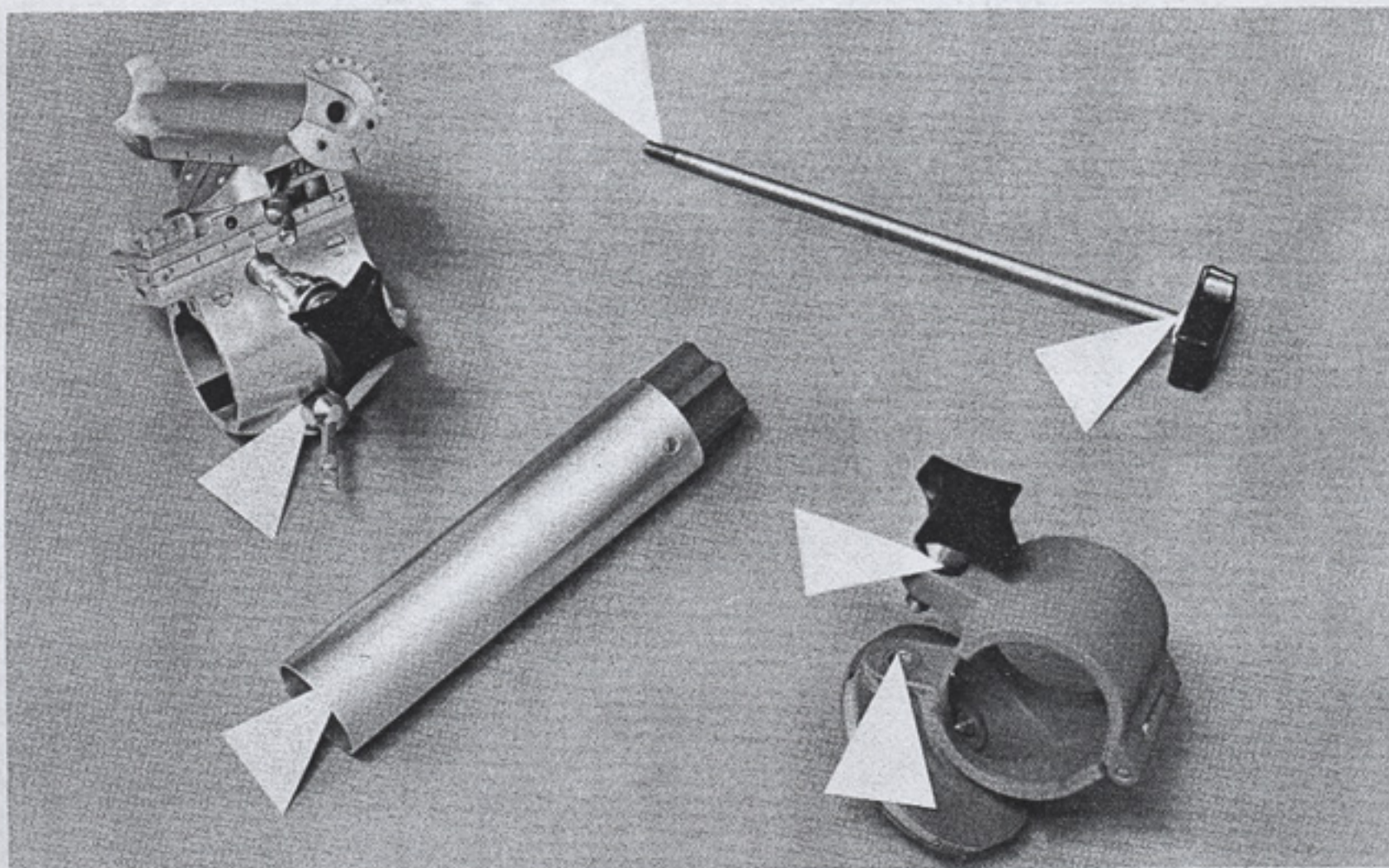


Fig. 18

Folding the camera: fig. 17

Remove the lens and the filter-holder rod.

With the 5 x 7/13 x 18 camera, slide the rear standard approx. 1/2 in. upwards before folding.


With the 8 x 10/18 x 24 camera, before folding, loosen the coarse focusing adjustments, slide the standards to their outermost stops and re-lock them. Set the micro-gear to zero and then loosen rise-and-fall adjustment on the front standard.

The height of the optical axis is marked by two stops on the front standard. The lower stop indicates the optical axis for the format-changing adaptors 4 x 5/9 x 12 and 5 x 7/13 x 18, and the upper stop for the format-changing adaptor 8 x 10/18 x 24.

When unfolding, take care that the bellows are correctly hung and locked!

Maintenance:

Just like a car, a technical camera requires regular careful maintenance.

The points indicated thus  should be cleaned with petrol from time to time, and lightly greased afterwards. The same proceeding is recommended for the threaded spindle of the pan-tilt head x 980, and the parts of the universal clamp x950 and x960.

Clean the micro-gear with petrol. If necessary, loosen the 3 fixing screws on the longitudinal side of the guide rod with acetone, re-set the slides and secure with clear lacquer. Grease lightly.

To this instruction booklet is attached a tin of suitable permanent grease. This grease should be very lightly laid on with a brush, so that there is only an emulsion coating.

With such care, the working life of your camera will be considerably extended.

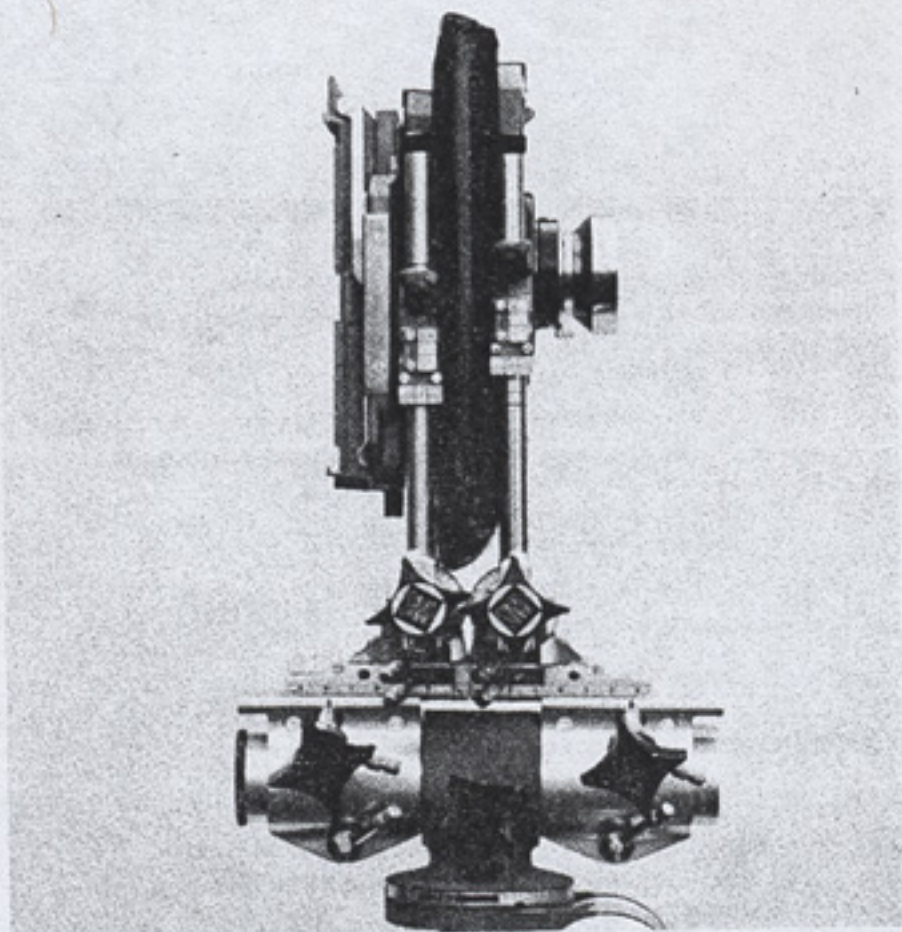


Fig. 19

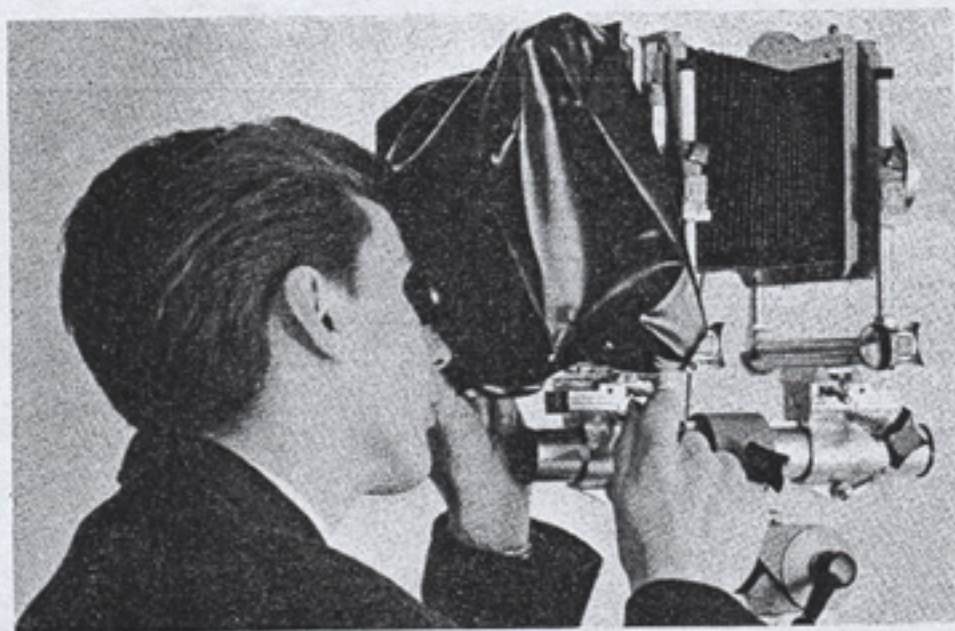


Fig. 20

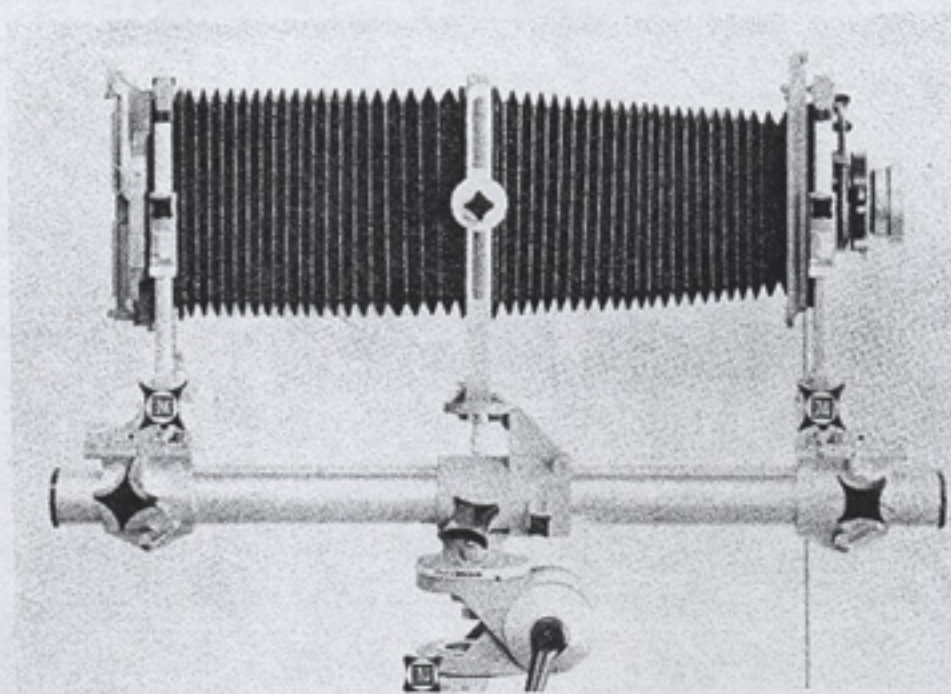


Fig. 21

THE SINAR EXPERT

By extending the SINAR STANDARD with the aid of the following accessories:

- wide-angle bellows
- monorail extension, 18 in. (45 cm), x 210-45
- auxiliary frame, x 400
- square bellows, x 530
- magnifier, x 850
- matte box and filter-holder rod, x1140-11 or - 16
- bellows holder, x1150, etc.

you attain the ultimate in versatility and efficiency. Apart from the wide-angle bellows, which differs according to the format, the accessories marked with x can be used with all SINAR format-adaptors, effecting a great saving in both time and money.

The SINAR EXPERT permits the following combinations:

Use of wide-angle bellows

For wide-angle photography, and considerable use of movements at short extensions (fig. 19).

As a focusing aid in conjunction with the magnifier (fig. 20).

Long extensions

Bellows extension with aid of monorail extension, auxiliary frame and square bellows (fig. 21). (See also under "long extensions" page 21 and fig. 28).

The SINAR EXPERT comprises 3 bench units, i. e. 6 in. (15cm), 12 in. (30 cm), and 18 in (45 cm) long. This permits a convenient graduation of the base length, divided at 6 in. intervals. This gives 6 variations from 6 to 36 inches in length. By acquiring further extension units, the camera base can be extended as required.

Attention! Bench extensions (red tenon) may not be screwed together, without having first screwed one in to a piece marked NORMA, to provide a rigid axis.

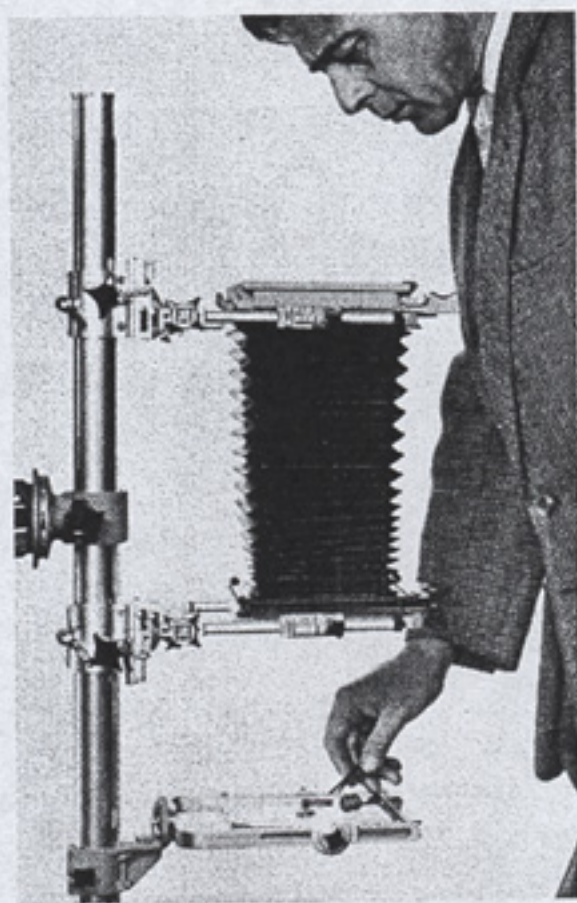


Fig. 22

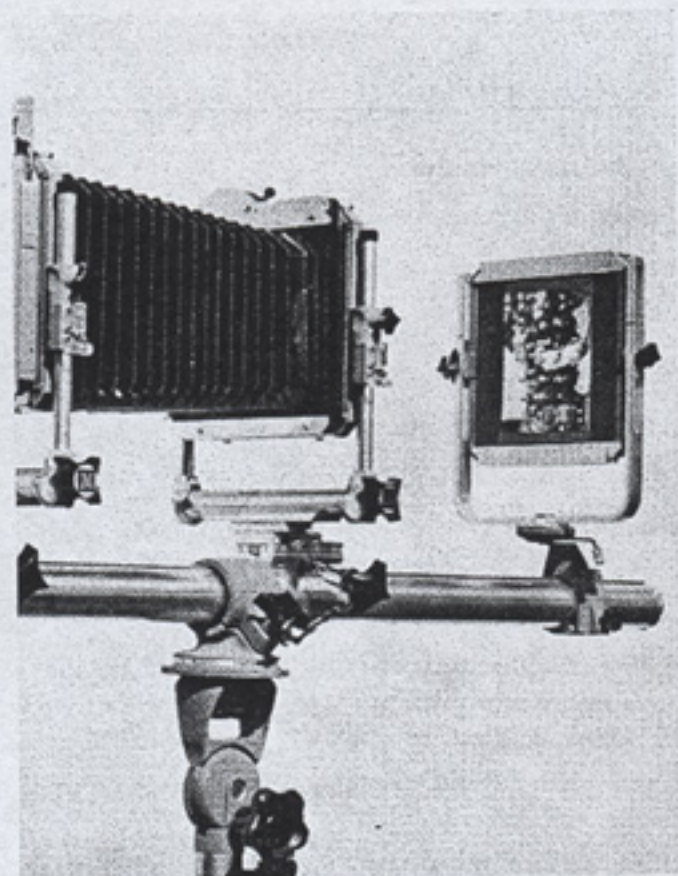


Fig. 23

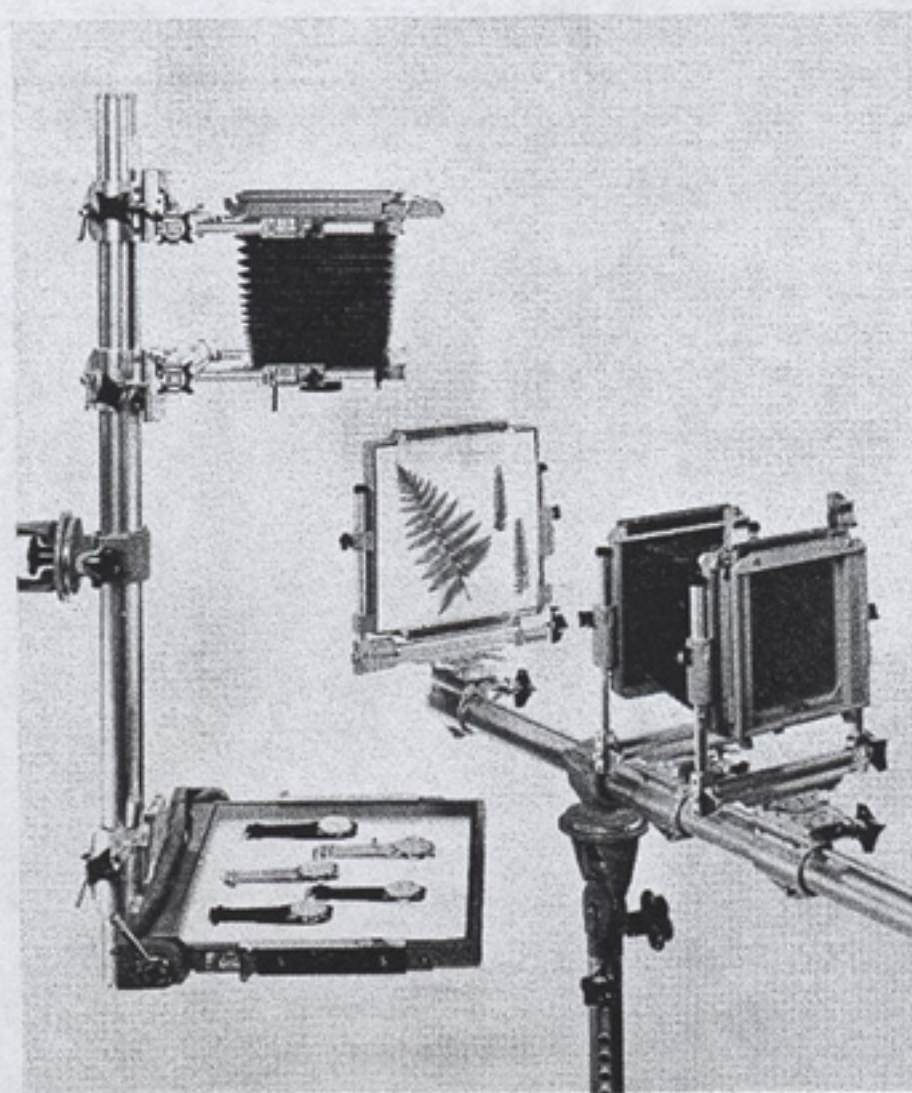


Fig. 24

The auxiliary frame as a copying stage

The use of the auxiliary frame for small-scale copying and macro-photography is highly convenient, achieving excellent results with modest equipment. Fig. 22/23.

A cold light attachment can also be inserted in the auxiliary frame with the aid of the 4 x 5/9 x 12 negative holder frame, No. 600 K.

Heat-reducing light sources can impair image sharpness. Flash or daylight are both ideal sources of illumination for macro-photography.

As a stage for larger objects, the coupling frame of one of the larger format-adaptors is recommended (fig. 24).

The use of the auxiliary frame and large frame as a copying plane has the advantage over a copying table that it can be tilted to provide the distance compensation, so essential for focusing in macro-photography. Furthermore, with this arrangement either reflected or transmitted light can be used as desired.

The use of the main frame as a subject plane has the advantage that the fine focusing can be made from the side of the subject, which means that the image scale, once set, does not have to be changed any more.

Fig. 25

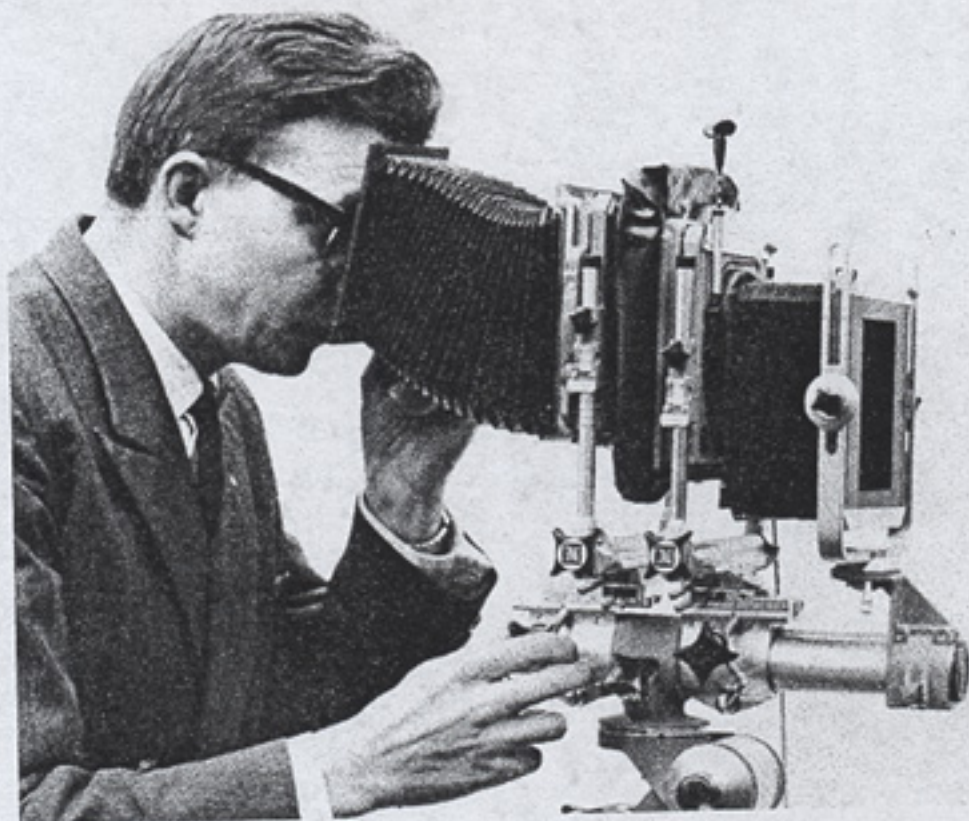


Fig. 26

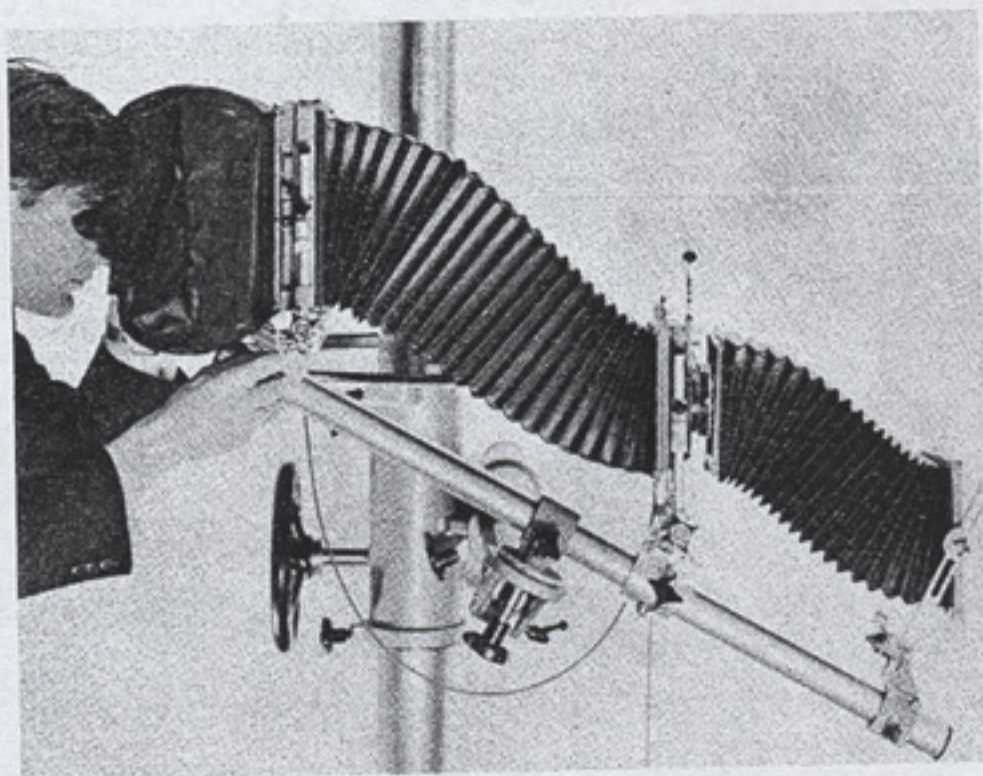
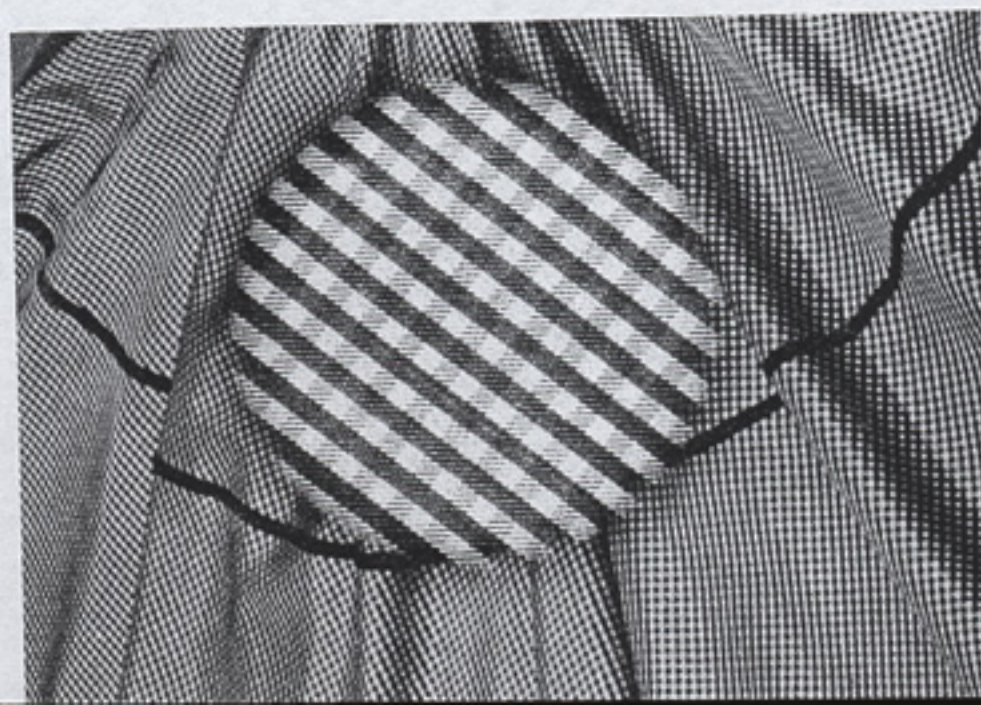


Fig. 27



The Matte Box

To permit the adjustment of the matte box at short extensions, the matte box bellows are not secured at the lens back end (fig. 25).

Fig. 26: Matte box for long extensions. By rotating the auxiliary frame through 180° the extension can be increased still further.

The operation of the matte box is significantly improved if the correct format masks are inserted. Order Nr. x 1050).

By using masks, multiple exposures and similar trick shots can be made (fig. 27).

The control of the best matte box position, and of vignetting, often becomes difficult because of the relatively dark image on the ground glass. When you adjust the matte box at full aperture and then stop down, the vignetting effect in the image increases as one stops down.

The best way to avoid this:

- Look through the corners of the ground glass, which are cut away for this purpose, holding the eye very close. This should be done with the lens at the final working aperture. Move the matte box to and fro until you can see that it is just out of sight.

Control of vignetting with larger lenses such as 165 mm Super-Angulon and 360 mm Symmar, with SINAR No. x1200 shutter.

In order to see the limit of vignetting of these large lenses, used with the SINAR shutter, you look through the corners of the ground glass as above, and stop the lens down to the point where it is no longer obscured by the aperture of the shutter, but can still be seen completely.

For more possibilities of combination and completion of the SINAR see also "SINAR Construction Unit" prospectus.

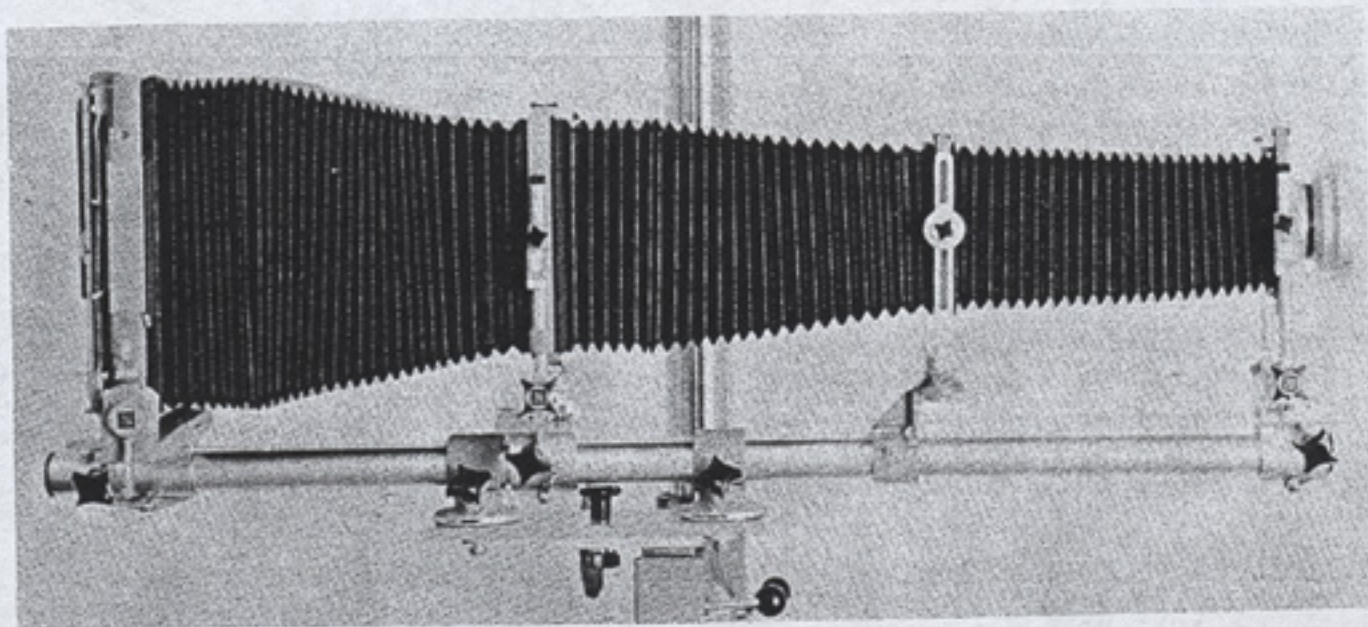


Fig. 28

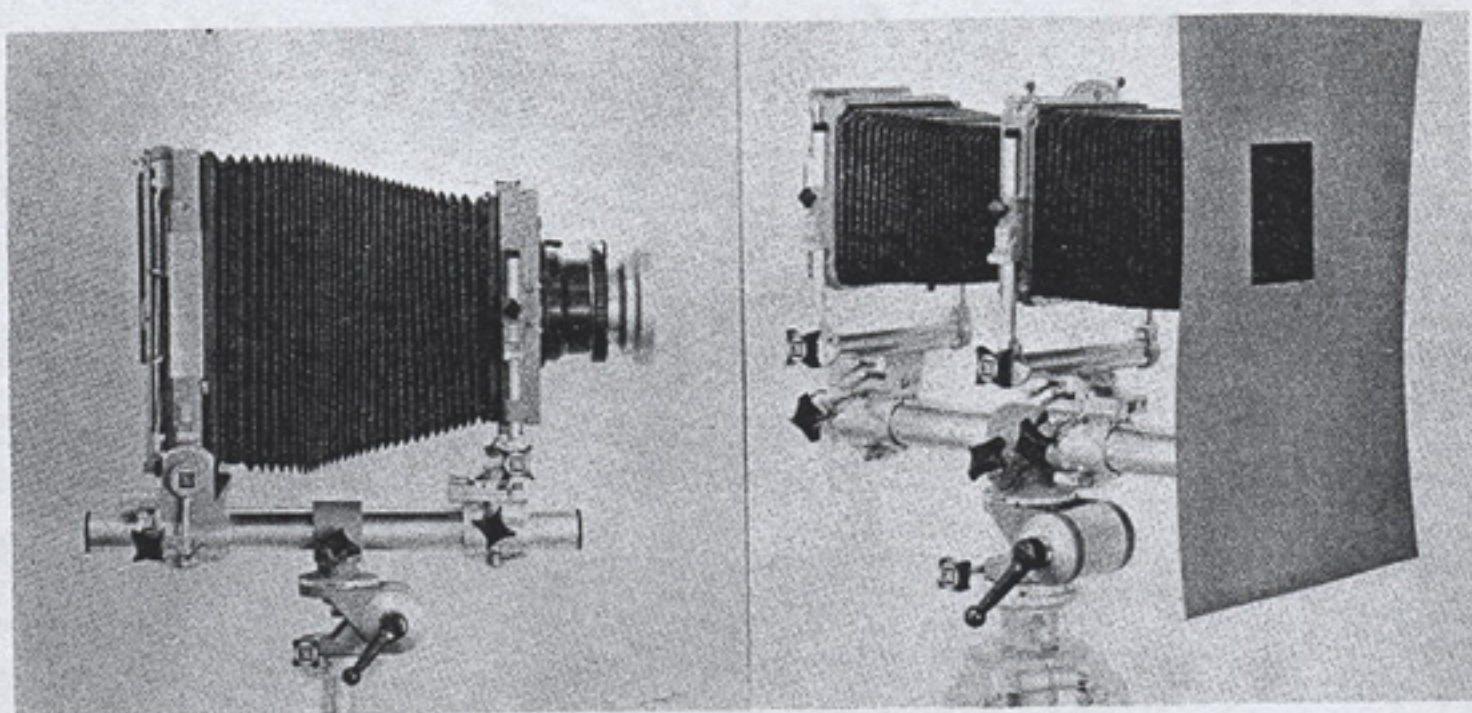


Fig. 29

Fig. 30

VARIOUS COMBINATIONS

Long extensions:

The longer the camera extension, the greater the need for stability. It is therefore recommended in such cases to use the base plate (x110) together with a second bench holder (x100) - fig. 28 -

Extensions longer than 90 cm (36 inch):

(Fig. 28) The mounting of the camera is the same as above. If extensions longer than 90 cm (36 inch) are used, the 5 x 7/13 x 18 rear carrier, No. 1610, and the joint block No. 310H together with bellows No. 1650 have to be employed as a further intermediate element if using the 8 x 10/18 x 24 size. As a connection with the back a special bellows No. 2075 from 8 x 10/18 x 24 to 5 x 7/13 x 18 is needed, which can be supplied on demand.

Specially large lens panels:

(Fig. 29) The SINAR lens panels normally supplied are big enough for all standard lenses for professional cameras. Yet it may happen in very rare special cases that an even larger lens panel is required. This combination is possible through using the rear carrier 5 x 7/13 x 18, No. 1610, together with joint block No. x310V as front lens carrier. Here too it is necessary to use the special bellows No. 2075 from 5 x 7/13 x 18 to 8 x 10/18 x 24, as well as a special lens panel No. 810.

Extreme rise and fall movement:

On extreme movement of this nature, it may happen that the bellows or the back are vignetting. To avoid such special cases the whole camera would have to be built larger and heavier, which would not be convenient. However, this additional movement can be made if desired, in the instance of the 4 x 5/9 x 12 format, by using the 5 x 7/13 x 18 camera back with the reducing adaptor No. 1640. Similarly, with the 5 x 7/13 x 18 format by using the 8 x 10/18 x 24 camera back and reducing back No. 2055, or for 4 x 5/9 x 12 No. 2060.

Protecting the camera against reflections:

(Fig. 30) Cardboard glued to bellows frame, order No. 510-01, and secured to auxiliary frame. It is best to choose a cardboard the brightness and colour of which match those of the object.

Various combinations and completion possibilities:

See also "SINAR-Construction-Unit" prospectus.

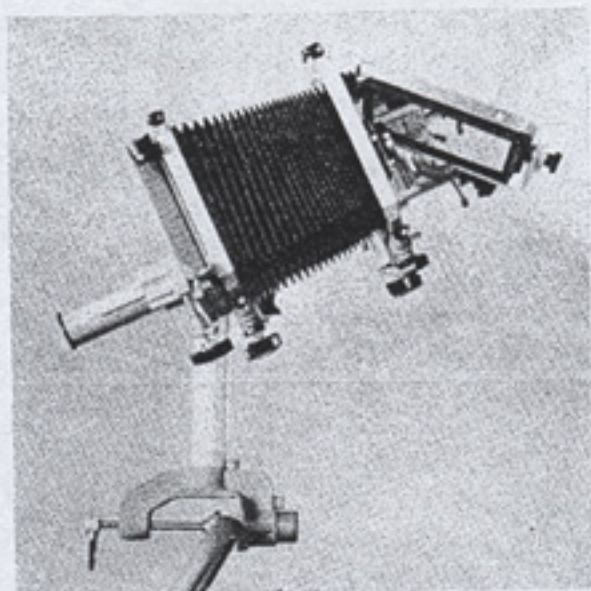


Fig. 31

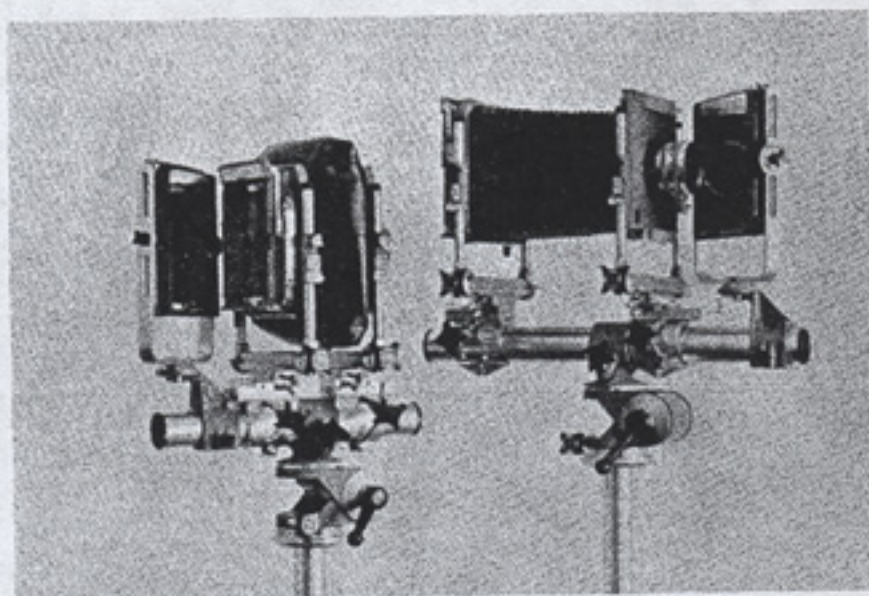


Fig. 32

Mirror No. x 925 (Fig. 31 and 32)

The mirror may be used in front of the lens, without displacement when using short-focus lenses and with displacement when using normal-focus lenses. It will not affect the focusing. The loss of light will not be more than 3%, at the most.

For wide-angle exposures the mirror can be mounted behind the focusing screen.

Reflex focusing magnifier (852)

The SINAR focusing magnifier should only be used together with a Fresnel lens (600 F).

Cleaning of both mirrors:

With well-washed, clean and soft dry linen cloth and lens cleaner.

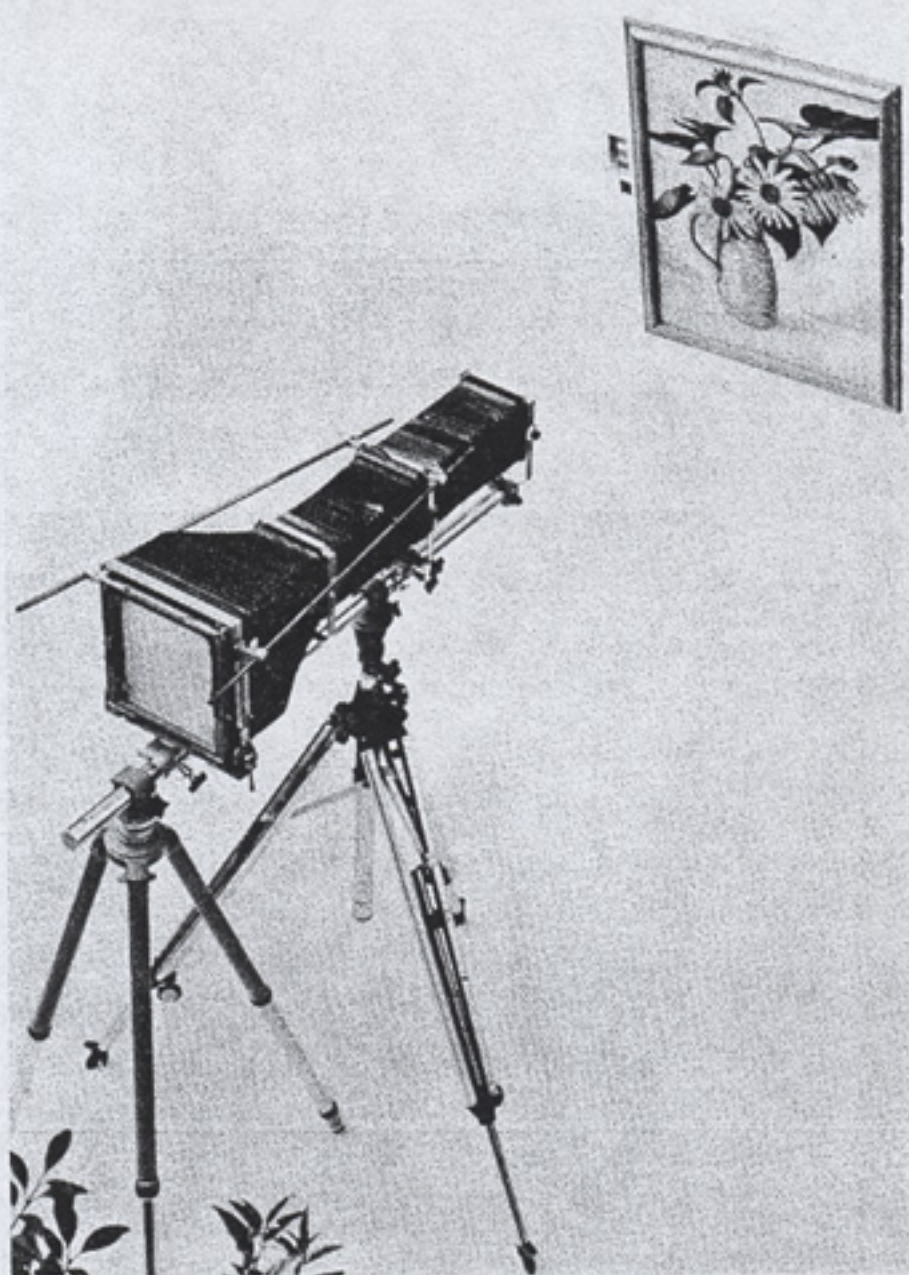


Fig. 33

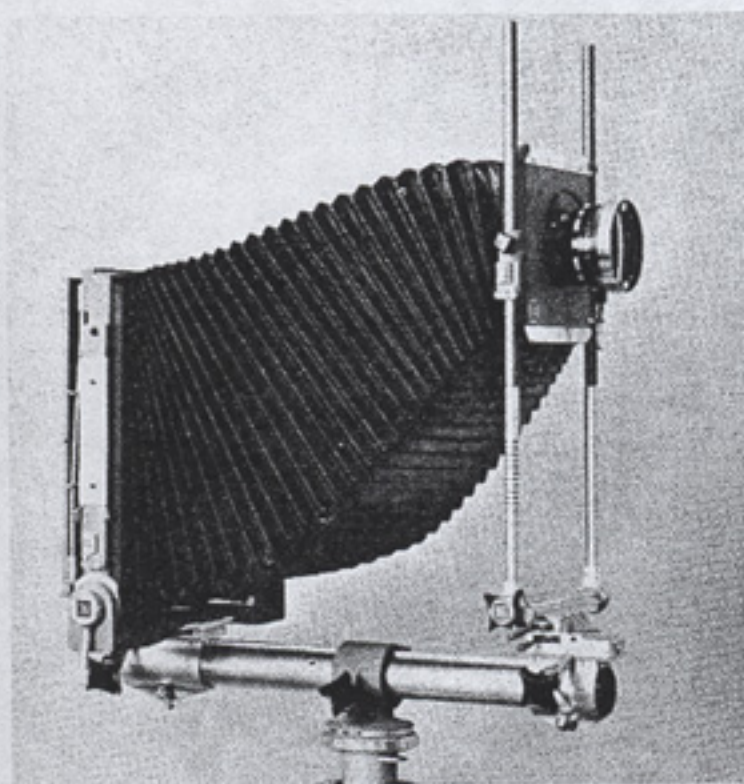


Fig. 34

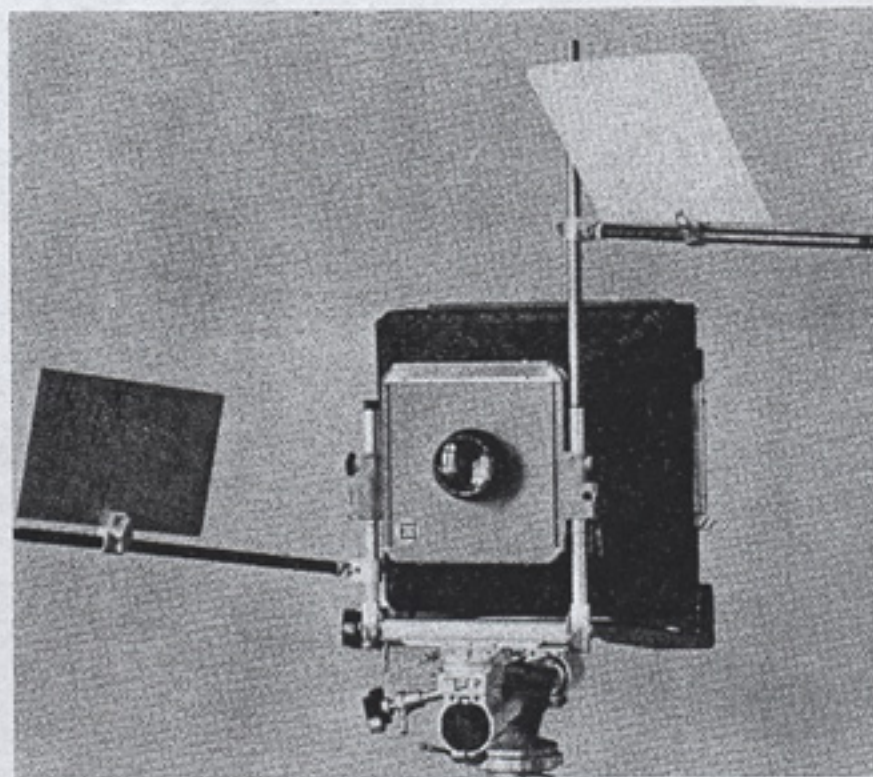


Fig. 35

Use of stabilizing rods and clamping joints (x1870 and x1875)

Fig. 33. Use of frame stabilizing rods and clamping joints for colour separations and test exposures.

Fig. 34. The stabilizing rods (x1870) can be used as extensions to the front standards, enabling a considerable increase in rising front movement in special circumstances.

Fig. 35. They can also be used in various other combinations for securing masks, reflectors or diffusing screens, etc.

The most important combination possibilities are shown in the "SINAR-Construction-Unit" prospectus.

GUARANTEE

SINAR LTD. SCHAFFHAUSEN guarantees this apparatus against failure arising through faulty workmanship or material, for a period of 12 months from date of purchase, for cash or on deferred terms. During this period, the supplier will repair, or at its option, replace any defective part, excepting lenses and shutters other than SINAR shutters (which are covered by their respective maker's guarantees).

Replacement will be made of parts which prove on examination to be defective, provided such defectiveness is not as a result of accident or negligence.

The guarantee will be rendered invalid if any unauthorised alteration or modification is made to the apparatus.

Any apparatus needing service under this guarantee should be sent, packed and consigned carriage paid, to either the dealer through whom it was purchased, or to the main distributor for the country of purchase. The costs of labour, packing and carriage through the implementing of this guarantee, are chargeable to the customer by the supplier, and the supplier accepts no responsibility for damage in transit to or from the purchaser.

SINAR policy is one of continuous improvement. The right is reserved at any time to change prices, specifications and equipment without notice.

Schaffhausen, November 1967

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