

CHAPTER 1

HOLLYWOOD PHOTOGRAPHY

The City of Geniuses

There is hardly another place where there are as many directors as in a motion picture studio in Geniucity, Hollywood.

Visiting the studio, as we arrive at the gate we meet the first director, who claims that without him there would be no shooting. How right he is; as the gateman, he holds the keys to the studio. They call him *Traffic Director*, who directs all the tourists to the different stages.

He shows us the bench on which people wait for the bus. It is called *The Board of Directors*. "That is nothing," he claims, "wait till you see the canteen, it is named *The Directorate*." The word *payroll* has been replaced by *Directory*—so appropriate. As we proceed, we meet the *First Assistant Director*, *Second Assistant Director*, *Art Director*, *Musical Director*, *Director of Orchestra*, *Dialogue Director*, *Process Director*, *Sound Director*, *Indirector*, who has it "in" for the man who directs the picture, *The Director*.

But the man whose work interests us most is the *Director of Photography*.

Production of a motion picture involves the work of hundreds, and in many cases thousands, of people. Into a motion picture go the dream of the writer, careful planning, scheduling, and budgeting by the production department, design of production and construction of sets by the art department, fashion design and costumes by the wardrobe department, rigging and illumination by the electrical department, and film development and

printing by the laboratory. The photographing of a film is not unlike a concert. Every instrument is important by itself, but a conductor is required to coordinate them all, and this is accomplished through the efforts of the *director of photography*, or *first cameraman*. The work of many artists results in a series of pictures impressed on a narrow strip of film; that is *motion picture photography*.

The Photographic Staff

A large staff is necessary to assist in the photography of a picture. It consists of separate little departments, each with its own peculiar functions. Most of these skilled artists and technicians have their own department heads, but on the set they work under the supervision of the cameraman.

The different crews are the following:

1. Camera crew
2. Electrical crew
3. Grip and his department
4. Process department
5. Special effects department
6. Green department
7. Stand-by painter
8. Stage make-up artists and hairdressers
9. Stage wardrobe men and women
10. Stand-ins
11. Laboratory contact man.

THE CAMERA CREW

The camera crew, under the direction of the *first cameraman*, consists of the *second*, or *operative cameraman*, the *technician*, the *as-*

sistant cameraman, and the *filmloader*. They handle the cameras, lenses, and the loading and unloading of the film. The second cameraman operates the camera during the shooting and does the panning and tilting, while the technician follows focus. The assistant holds the number slate and keeps the report of scenes shot. Thus is handled the mechanical end of the photographing of the picture.

On larger sets, or on scenes such as fights, accidents, aeroplane take-offs, fires, explosions, etc., which can be photographed only once, there may be more than one camera with the necessary operative cameramen, and the corresponding assistants for each camera.

THE ELECTRICAL CREW

The really important function of the director of photography is *illumination*. In this difficult task his right-hand man is the chief electrician, or *gaffer*, who is in charge of the electrical crew on the set. Under the gaffer's orders are the *rigging gaffer* and his crew who do the preliminary work of placing the reflectors in their predesignated places. For the actual illumination the gaffer has his regular crew, consisting of the *best boy*, *dimmer man*, *generator man*, *juicers*, *spot men*, operators, and other helpers

THE GRIP AND HIS DEPARTMENT

Another important assistant to the director of photography is the *key-grip* and his specially trained assistants who do all the incidental construction, breaking down of sets, minor emergency carpenter work, and with the thousand beautifying contraptions help to glamorize the stars. They also operate the crane or boom, and the camera dolly. The key-grip has his best boy, or assistant, the *boom operator*, and other helpers, assistants, and laborers.

THE PROCESS DEPARTMENT

It is sometimes impossible to take entire production crews and cast on certain distant

or difficult locations. This problem has been solved by *process photography*. In most Hollywood studios, one particular large stage is set aside for background process scenes, but there are also portable background machines which can be brought on to any set. In some studios the *director of process* is in charge, but in others the director of photography supervises the *front illumination*, and the process department takes care of the balance.

THE SPECIAL EFFECTS DEPARTMENT

If a scene calls for artificial reproduction of rain, snow, fog, windstorm, lightning, smoke, earthquake, or any other activities of the elements, the *special effects man* with his million tricks is called in.

THE GREEN DEPARTMENT

Nature is beautiful, but sometimes we need a garden or any other exterior to suit our action, and we call in the landscape artist who heads a special *green department*. In his work he is assisted by the *greenman*.

Some studios have their own green departments; others have their work done by outside landscape artists who own huge nurseries and glass houses, and have ready any specimen of tree, plant, flower, of any country of the world the script may call for.

The green department can also reproduce a jungle or a forest right on the stage. If a required tree or plant is not available, the greenman constructs it of cardboard or plaster. Each company, when shooting, has its own greenman and his assistants, the number depending upon the size of the set to be photographed. They stand by to dress (shine) the greens of the set, to move bushes, or to do any other "green" duty.

THE STAND-BY PAINTER

No matter how perfect a set, or how beautiful a countryside, a street, or any other location, changes may be required when actually shooting. There are problems that may

be solved by a slight spray of black paint, a touch of eggshell to bring out a highlight, or by the change of a color. For this work each production unit has a *stand-by painter* on the set.

STAGE MAKE-UP

Make-ups do not endure under adverse weather conditions. Kisses ruin the lip make-up and leave rouge marks on cheeks, the hair gets mussed up, or a backlight accentuates one single hair standing up against a dark background. Hair styles must match, faces must be kept clean and fresh, and at times tears must be created right on the spot. For these purposes the *make-up artists* and *hairstylists* are always on the set. On sets where there are dancers, skaters, or other artists with parts of their bodies exposed, male and female *body make-up artists* are also required.

WARDROBE

The wardrobes of the artists are selected previous to production. However, minor changes often are required on the set. A dress is torn, coffee is spilled on a shirt front, a button is missing, or pants need to be pressed. Any one of a thousand other minor inconveniences may arise which would cause a serious delay in production if not attended to immediately. Hence, when shooting, the presence of a *wardrobe man* or *woman* is required on the set at all times.

The Outstanding Stand-ins

The lighting of artists, whether in a long shot or a close-up, necessarily takes time. Winter pictures sometimes are made in the summertime (why, I don't know), and it is not very pleasant to be constantly exposed to the terrific heat of the powerful lights needed for modern motion picture photography. Especially is this true when heavy fur coats must be worn. Furthermore, the time required for lighting can be utilized by rehearsal of lines,

change of wardrobe, make-up, or hairdress, making of stills, and all the other requirements of production. Therefore each star and featured player is entitled to have someone similar in type, stature, figure, color of hair, etc., to stand in for him or her. Hence the name *stand-in*, or *second team*. The stand-ins just stand or sit, as the case may be, or mechanically go through the different actions the scene calls for, dress exactly like the *first team* or at least in similar tone. They stand in until the lights are ready, and walk through the scene a few times to check the light. When all is ready for the actual photography, the principals are paged. Some stand-ins have made the grade and have become famous stars.

The Laboratory Contact Man

With lighting alone we still do not have photography. An important part is the processing of the film in the laboratory. The director of photography has no time to be present while the processing is going on. For this purpose a *laboratory contact man* is appointed, who sees to it that all of the cameraman's instructions are carefully carried out.

Tools of Motion Picture Photography

Just as the painter must have brushes of different properties, paints of many colors, canvas, an easel, and other equipment to paint a picture, so must his fellow artist, the director of photography, have his implements to make a painting of as many as possible of the hundreds of setups required for a feature length motion picture.

CAMERA EQUIPMENT

The camera is a familiar apparatus, consisting of the box itself, a magazine with one compartment for unexposed film and another for exposed film, the inside mechanism, and the lenses. Figure 1 shows a Mitchell BNC studio camera; in front of the lens is the matte box used to shade the lens and to hold diffusion disks, filters, gauzes, or other gadgets that

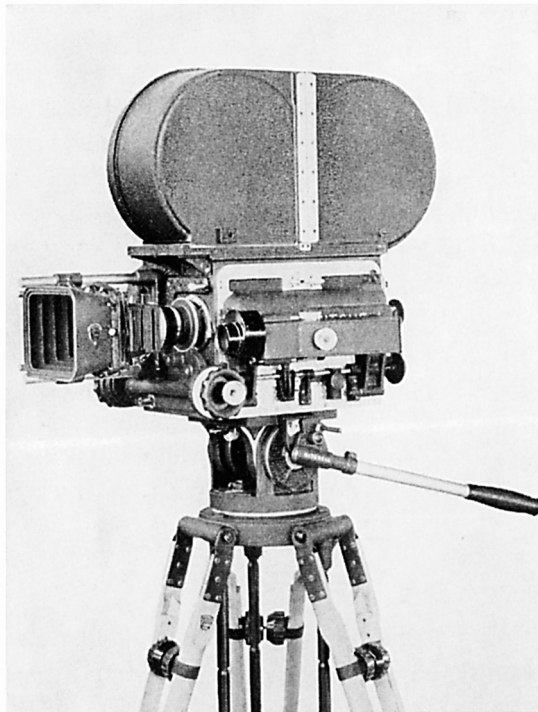


Fig. 1 Mitchell "BNC" 35 mm Studio Camera.
(Merriman Photo.)

individual cinematographers may have developed. Figure 2 shows a Bell and Howell Eyemo camera designed for greater portability than the studio camera.

LENSES

The lenses most widely used are the following:

24 mm or 25 mm lens, used as a wide-angle lens

28 mm lens, narrower in angle, but producing less distortion

30 mm lens, used for long shots with depth

35 mm lens

40 mm lens, used for long shots

50 mm lens, for an angle of view nearest to that of the human eye

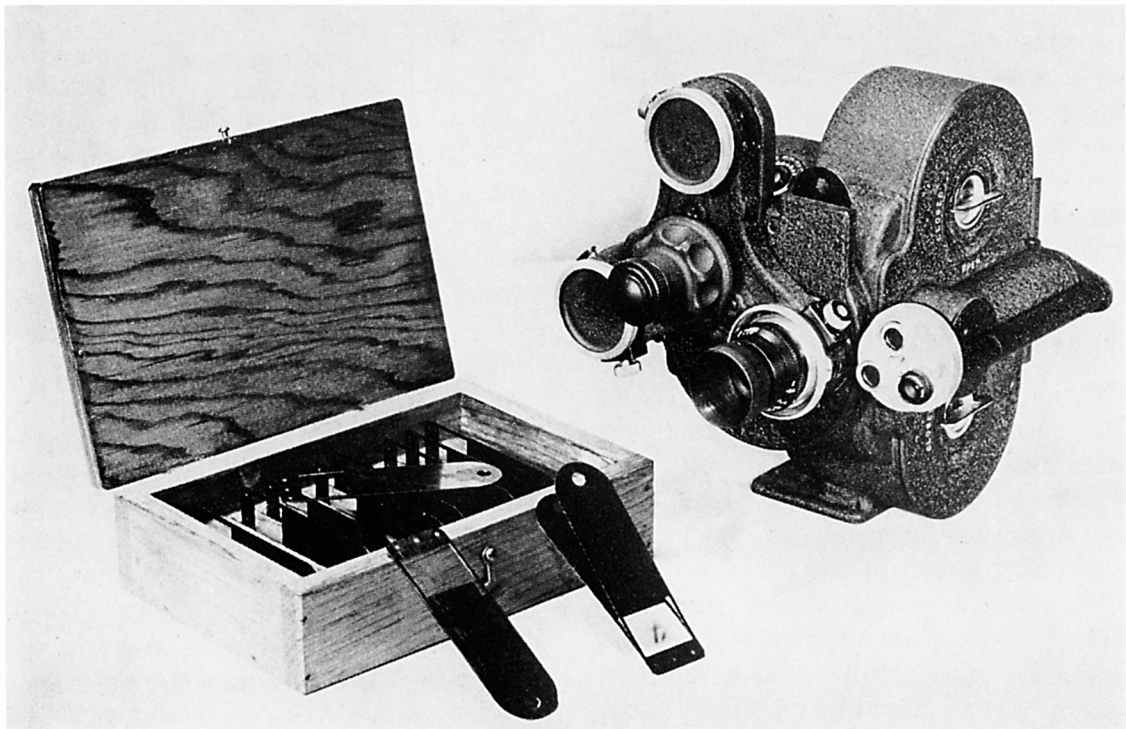
75 mm lens

80 mm lens

100 mm lens } for portraits, close-up, and telephoto shots

On some cameras three of these lenses are mounted on a turret on the front of the cam-

Fig. 2 Bell & Howell "Eyemo" Camera with Filter Holders



era. On a camera of the latest model, only one lens is mounted at one time, but all are interchangeable by means of a bayonet fitting.

FILTERS

When photographing exteriors we sometimes would like to accentuate clouds, darken blue skies, make night shots in the daytime, or emphasize certain parts of the landscape. For these purposes we add *filters*, which may be either of glass or of gelatin.

THE FILTROSCOPE

To select the filter best fitted for the effect in mind, we use an instrument called the *filtroscope* (Fig. 3). This invention of the author's is similar in form to a slide rule, and has different filters mounted on it, each over a round hole. Over the filters slides a special

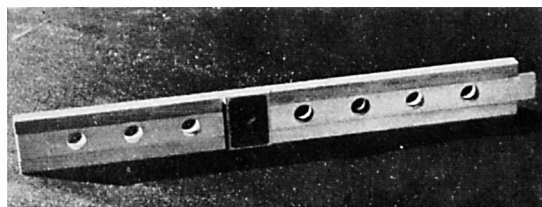


Fig. 3 *The Filtroscope*

type of blue glass; the combination of filter and blue glass gives the photographer an idea of how the use of any filter will change the picture.

DIFFUSERS

Because the camera does not lie, corrections must be made by adding beautifying gadgets called *diffusers*. The most frequently used are glass disks which come in different grades, the choice depending upon the degree of diffusion desired. Besides these commercially available beautifiers, each director of photography has developed his own glamorizers such as gauzes of different densities and colors.

EXPOSURE METERS

There was a time when the cameraman, when in doubt about exposure on exteriors, merely stopped down to $f:5.6$ and blamed the laboratory for the rest. With modern laboratories came chemical engineers, and with them came science; today photography is based on science. If we want a good negative we must expose the film correctly. The human eye is not entirely reliable when subject to light changes, and is far from being as accurate as the photoelectric cell in an *exposure meter*. The meters used by Hollywood photographers are the Weston, the General Electric, and the Norwood. Technicolor has developed a special meter for use in its process of color photography.

NUMBER SLATE

Each scene must be numbered to enable the film editor to select the best take of any scene. The old-fashioned *number slate* is being replaced gradually by an internal numbering mechanism.

ELECTRIC FREEHEAD

When camera motors first were introduced, some cameramen were so short-sighted as to predict that the end had arrived, that with an electrically driven camera there would be no need for a man to operate it, because the director could do it himself. Time has proved these prophets wrong. Today the director of photography has operators, assistants, technicians, and loaders to help him.

All this is mentioned as preface to another improvement which I am about to suggest, an improvement as revolutionary as the camera motor was in its time. Many of us who were so fortunate as to be able to help save democracy have seen the automatic machine gun tiltheads installed in planes. During the great blitzes the casualty rate of machine gunners was very high. Something had to be done about it, and something was done. This new

tilthead was invented, and no longer did the machine gunner have to stick out his head. Instead of operating the gun and aiming it, he looked through the *finder*. When he moved the finder, tilted, or panned, the machine guns turned and converged automatically with it, aiming at the target with the greatest accuracy.

If this instrument was so useful, why couldn't it be utilized successfully for production of motion pictures? It would make an ideal *automatic tripod freehead*. Tripods have improved somewhat since the original tripod head was loosened and with the aid of a club was used as the first freehead. The converted machine gun head would be quite an improvement over the present wheel-driven one. Just imagine the operator looking through a finder, and as he turns it by the slightest touch simultaneously tilting and panning the camera, getting exactly and accurately the same field of composition seen in the finder. It would be a definite step forward in methods of motion picture production.

REFLECTORS

Because some of the old lighting units used metal reflectors with an arc or an incandescent lamp, *reflector* has remained the Hollywood term for a lighting unit. Just as painters use different brushes for different results, so does a director of photography utilize various types of reflectors for the variety of light effects which he may have in mind. We try to imitate light effects that we know exist in nature. In outdoor scenes they are either sunlight for day scenes or moonlight for night. Inside they are sunlight for daylight and incandescent or any other artificial light for night.

GRIP EQUIPMENT

The tendency in motion picture illumination seems to be toward the realistic, which

means shadows—lots of them. To create these shadows, to beautify, to keep light off the lens, to operate the dolly or crane, and for a thousand other missions, the grip and his tool kit come in very handy.

Wherever the cameraman goes he is followed by the grip and his trunkful of magic gadgets. Many of these tricks have no names, but all have their special purposes, and are used at some time or other during the production of a picture. Many of them are described in what follows.

TRIPOD TRIANGLES

For silent shots the old Mitchell type NC camera is taken out of the blimp to facilitate moving around, and is placed on a tripod. On stone floors, or where the tripod points would puncture, scratch, or do other harm, we use a *triangle* under it. There are three kinds: the star, the folding type, and a solid triangle; all are made of wood. On hard floors, a triangle keeps a camera from slipping.

TURNBUCKLE

When we shoot a plate for process, or any other scene where a steady camera is absolutely essential, we *tie* it down. This is done with a heavy metal chain, turnbuckle, and stage screw. This method is used also when shooting on a moving train, car, truck, or on the deck of a moving ship at sea.

CAMERA DOLLY

To be able to move around with the camera, we have taken it off the traditional tripod and put it on a dolly, where it stays most of the time during the shooting of a picture. The dolly is a four-wheeled vehicle pushed by the grip's assistant. It holds the blimp of the old type camera, and the camera within the blimp. The camera can be changed quickly from a position little above floor level to a position six feet above the floor (Figs. 4, 5).

Dollies have hard rubber wheels, and passage over a nail or the slightest obstruction

would cause a jump on the screen. To avoid this, the dolly is moved on metal or wooden tracks that come in sections of four, six, and ten feet. A rug is placed under the entire length of the tracks to absorb floor squeaks and to silence the steps of the assistant grip who pushes the dolly.

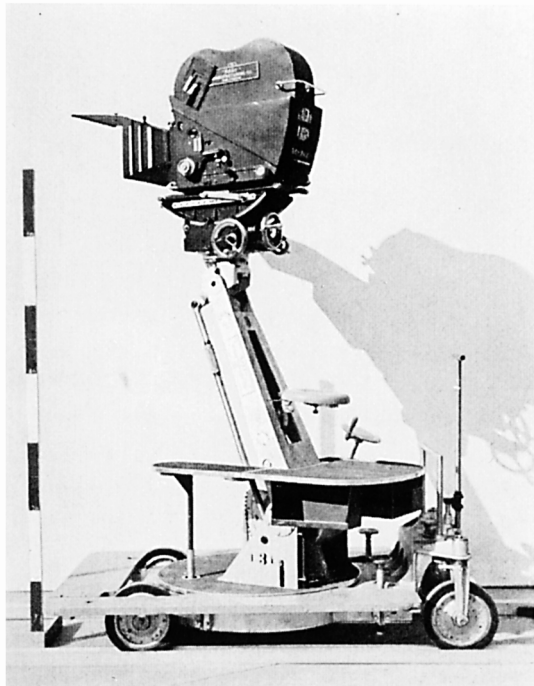
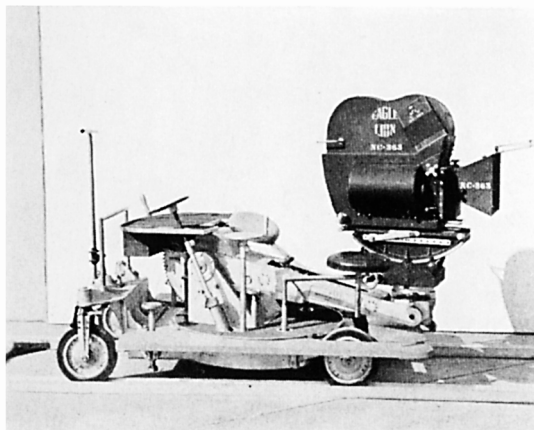


Fig. 4 Camera Dolly with Blimp in High Position

Fig. 5 Camera Dolly with Blimp in Low Position



ADJUSTABLE CAMERA PLATFORM

If the setup is higher than the dolly arm can reach, we use a *platform*. Platforms are made of wood, and are adjustable from two to six feet; for a twelve-foot platform, one of the six-footers is placed on top of another, and they are braced heavily to avoid acci-

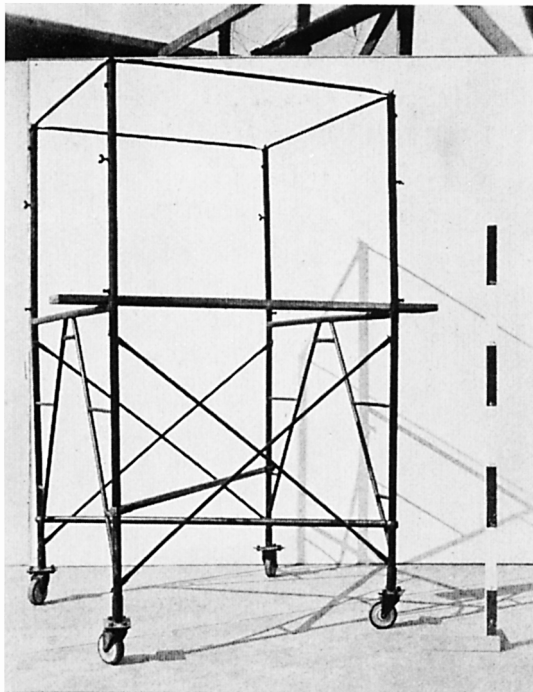


Fig. 6 Steel Tubular Parallel

idents. Platforms are used also to place high lamps or sun reflectors. The new type steel tubular parallel rises from five feet to twenty feet (Fig. 6). There is also a folding adjustable parallel which is available in heights of four and six feet (Figs 7, 8).

CAMERA CRANE OR BOOM

To be able to move from a low setup to a high one, or vice versa, and from a close-up to a full long shot of a set, the dolly is inadequate. For this purpose we use the *crane* or *boom*. The small baby boom is used for small sets (Fig. 9), and the big boom is used for sets in which greater height is required.

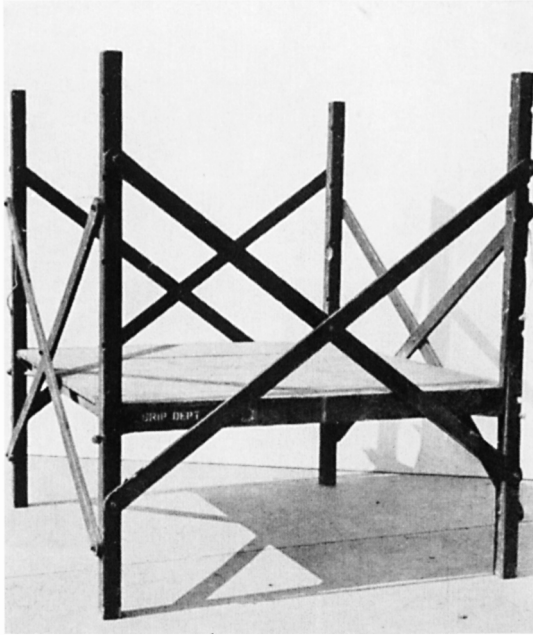


Fig. 7 Adjustable Platform. Low Position

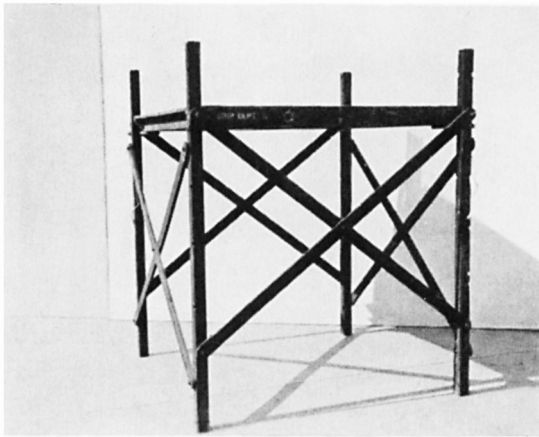


Fig. 8 Adjustable Platform. High Position

Even though a crane has rubber-tired wheels, tracks are used in some studios where the floor is not entirely level. These tracks are made of wooden boards of different lengths.

THE RECEDING TRACK

The moving of the camera, or *trucking* as it is often called, is done either by crane or dolly. This is all very simple, but if the director wants to make a shot that starts with an

insert of a ball on top of a table (Fig. 10, position A) and pull back to a long shot of the entire set (position B) he may run into difficulties with fixed tracks. As the camera

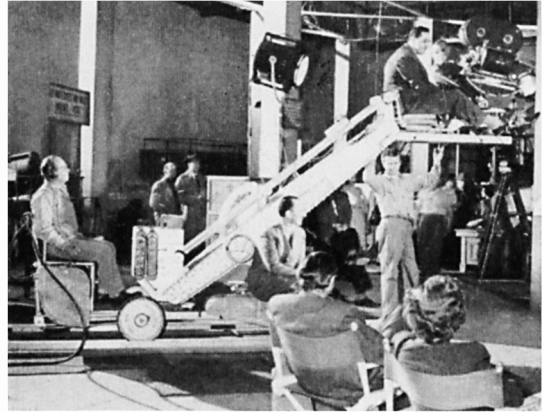


Fig. 9 Small Camera Crane

recedes, the end of the dolly track gets into the picture (Fig. 11).

This problem has been partially solved by having an extra grip pull up sections of the track as we truck back. However, this is dangerous, for the view finder on the camera does not indicate what goes on underneath

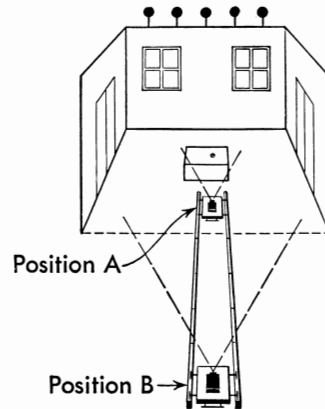


Fig. 10

the camera, and it is only after having seen the rushes that we know whether the grip's high hat did or did not get into the picture. The tracks now in use are made up of sections that join straight on; therefore it is difficult to detach one section from another.

Besides, if we wanted to dolly back to our original position A it would not be possible to join the sections in time. With the new type of track shown in the diagram these

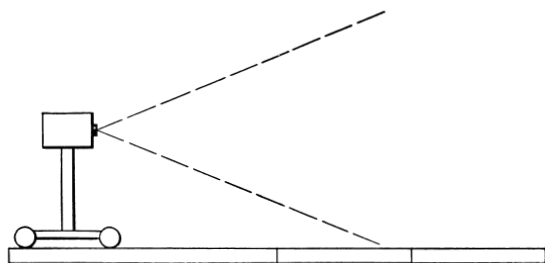


Fig. 11

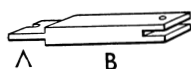


Fig. 12

problems are practically eliminated. Figure 12 illustrates a section of the track. End A of the section hooks on to end B of the preceding section. The ends are not cut straight, but diagonally, thus making it possible to pull sections back, also eliminating the bump as the dolly wheel crosses from one section to another (Fig. 13).

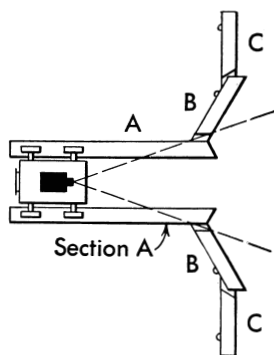


Fig. 13

To facilitate transportation the track is made up of several sections of standard design but of different lengths; it can be made up of sections of any size depending upon how much has to be pulled back to clear the foreground line. The new track is inexpensive to manufacture; in fact the track now in use

may easily be converted into the new type. Considering the time that is lost with the old tracks and also the possible retakes, the new tracks would soon pay for themselves.

THE DESTYCRANE

Wherever we happen to look, the postwar tendency seems to be toward speed and more speed. In order to hold the movie-goer's attention, future films will have to move as fast if not faster than life itself. No matter how modern the camera dolly or how streamlined the boom may be, they are both becoming a bit too slow. In some studios where stages were not built for this extra weight, tracks have to be laid. Floors are uneven and bumpy, and it takes entirely too many rehearsals to make a good shot.

The solution for constant, smooth, and fast camera movement is use of the *destycrane*. It is called that because its arm, like that

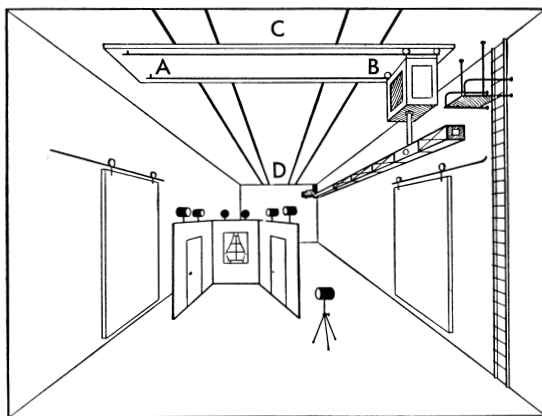


Fig. 14

of destiny, reaches everywhere. Its design and operation are very simple (Fig. 14). There are four parallel rails running in one direction, built on the ceiling of the stage. On these rails a platform runs between points C and D. Underneath the platform there are two more rails and on these the carriage holding the crane arm runs between the points A and B. During the rehearsal of the scene the cameraman gives all necessary instructions to the

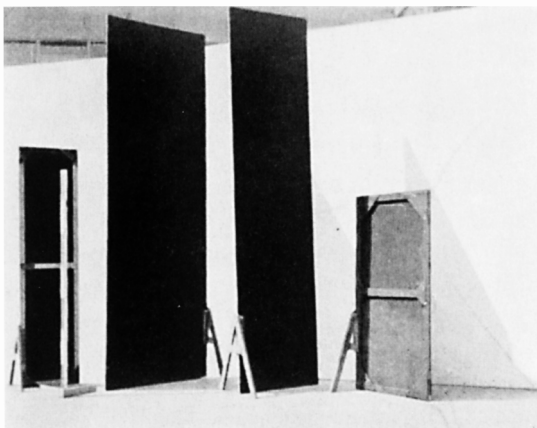
boom operator in the cabin, who carries them out in the take. It is all done electrically. The assistant cameraman is also in the cabin and follows focus by remote control.

There is a phone connection between cameraman and boom operator. The camera has a horizontal pan of 360 degrees and vertical tilt of 180 degrees. In other words the desty-



Fig. 15 Set Jack

Fig. 16 Goboes



crane enables the camera to move in any direction at any time and any speed desired. It can go from an insert of a book on a shelf to an extreme long shot holding almost the entire stage.

The construction and installation of the destycrane may be a bit costly, but considering the saving of time and improvement of the motion picture technique, it will more than pay for itself the first year. Besides it will open new horizons to the imaginative cinematographer, writer, and director. The wildest of T-Men-ish ideas can be realized at short notice and with little or no difficulty. The free movement of destycrane allows us to shoot entire scenes without as much as one cut. Destycrane is definitely a step forward in streamlining the studio, and no modern motion picture stage can well afford to be without it.

SET JACK

The *set jack* is a device used to move a wild wall around quickly and with as little help as possible. It is employed also for transporting sections of a set from the carpenter shop to the stage where the set is assembled (Fig. 15).

GOBO

Goboes are wooden screens made in various sizes and used primarily to cut light from reaching the lens. There are other purposes for which this photographic tool is used. In night shots where the background is jet black, we place a platform with a lamp on it right in the picture, and cover up with a black gobo; it is a perfect black camouflage. If a light happens to hit the finder from behind the camera, it obstructs the vision of the camera operative; a gobo may be used to remedy this too. To absorb light, goboes are painted black (Fig. 16). A double gobo which can be raised to a height of ten feet is known as a *folding slider*. It also is made of wood and is painted black.

FLAG

When there is no room for large goboes for cutting off light, a *flag* is used. This is really a miniature gobo, named because of its shape when mounted on a stand. It may be of plywood, but is much lighter if made of black cloth with a metal frame. A wooden flag is painted black to absorb light. Flags come in different sizes: 6 by 36 inches, 8 by 20 inches, 9 by 30 inches (Figs. 17, 18).

OVERHEAD SOLID TEASER

These are oversized flags used to cut the backlight from the lens. They are made of black cloth or of wood painted black. Their size permits cutting off the light of a row of backlight reflectors. They usually are mounted on overhead stands (Fig. 19), or sometimes are suspended in the air from catwalks.

Fig. 17 *Flag*

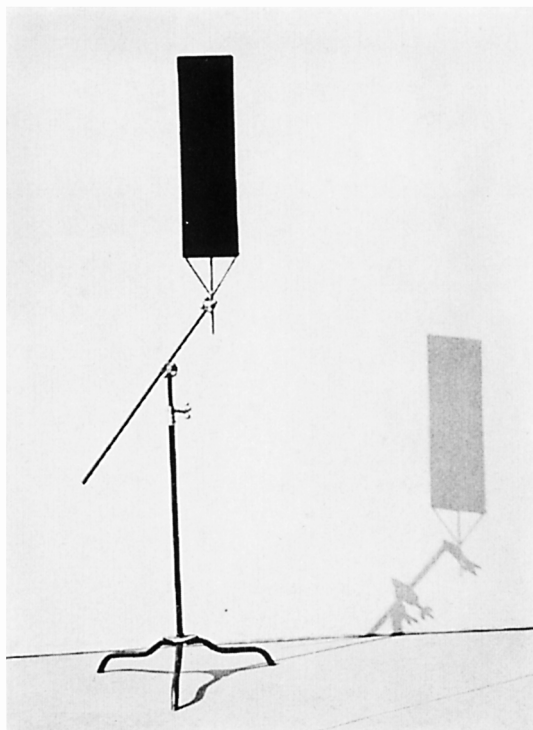
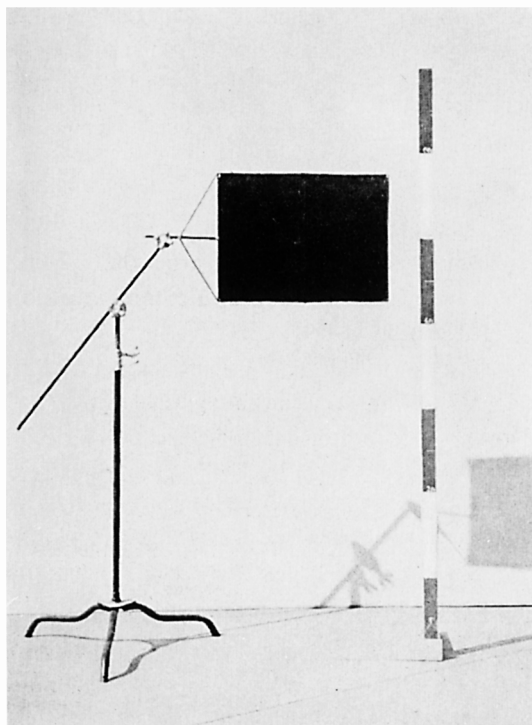
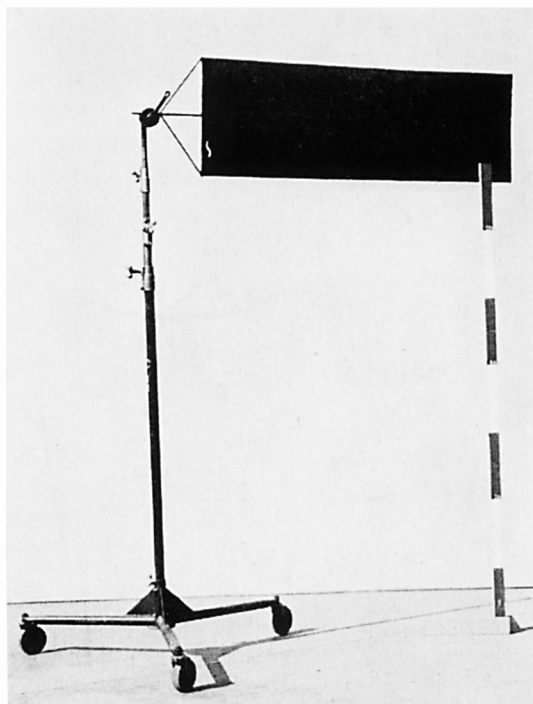


Fig. 18 *Flag*

Fig. 19 *Overhead Solid Teaser*



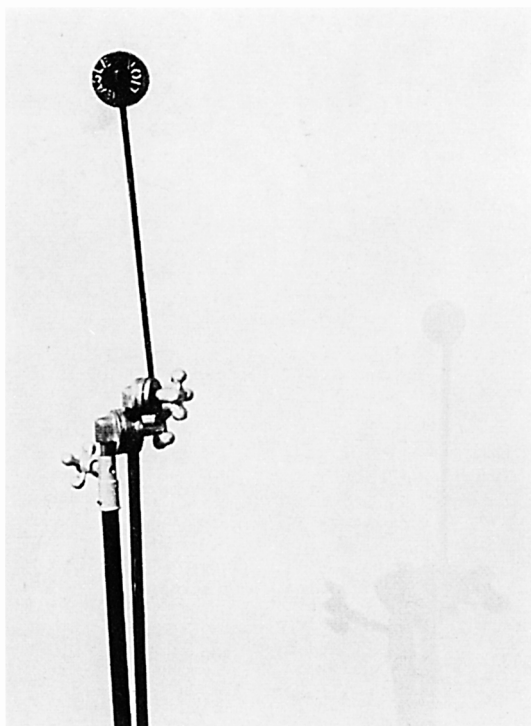


Fig. 20 Dot

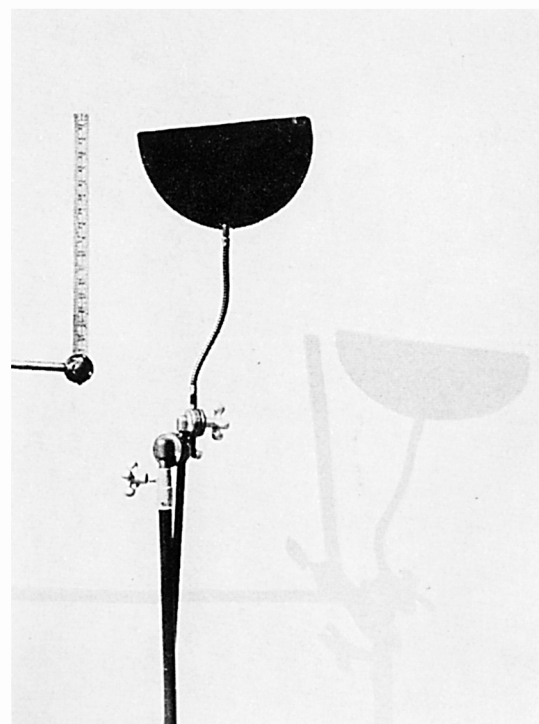


Fig. 21 Half-Target

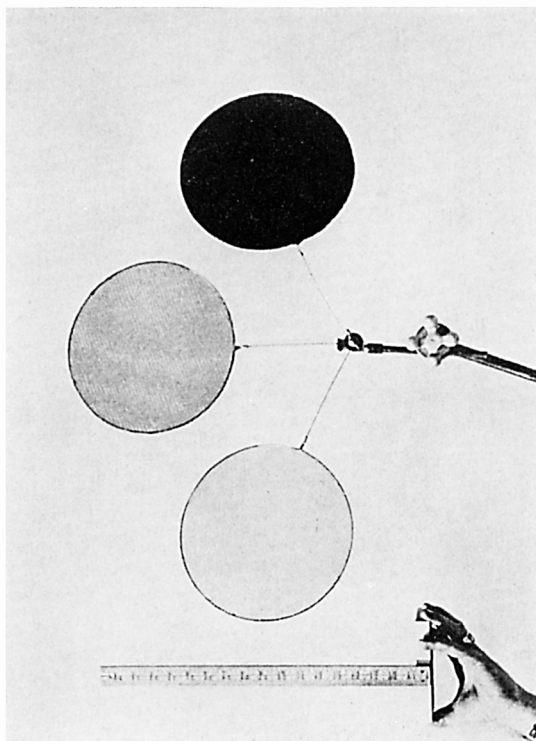
TARGET

For smaller shadows, or where there is no room for a flag, we use a *target*. A target three inches in diameter is called a *dot* (Fig. 20); larger targets are six inches and nine inches in diameter. Targets also come in halves, called half-targets (Fig. 21). Targets may be made of opaque black cloth on metal frames, or of wood painted black. There are also scrim targets in different sizes and in single, double, and triple layers (Fig. 22).

SCRIM

A flag made of a translucent material like gauze or net is called *scrim*. It is used for beautifying purposes of diffusing, softening, or cutting off light. If it has no frame, and one end is open, it is called *open end scrim*. Scrim come in different densities, single, double, and triple (Figs. 23, 24). The *chin scrim* is a U-shaped scrim in single, double,

Fig. 22 Targets



or triple layers, used to cut the light off hot white collars worn with black dinner jackets (Fig. 25).

BLADE

Blades are small flags used for cutting off light, or when only a thin shadow is required, as in light surgery. They come in solids, or in single, double, or triple scrim (Figs. 26, 27).

CLIP

The *clip* is a tiny flag that can be clamped on the reflector, camera, matte box, or the like (Fig. 28).

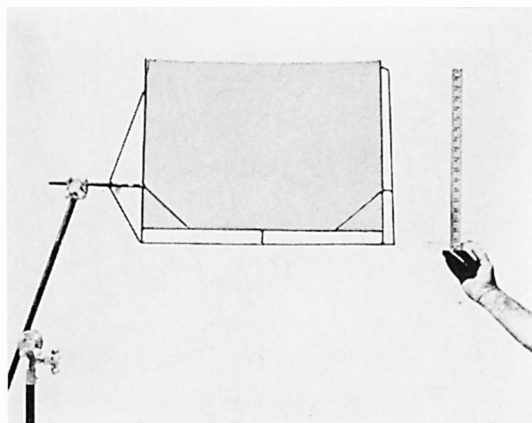


Fig. 23 Scrim

Fig. 24 Scrim

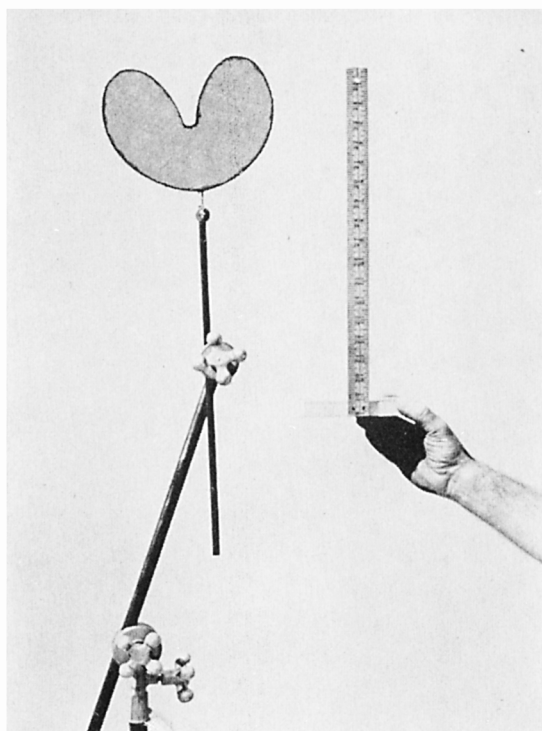
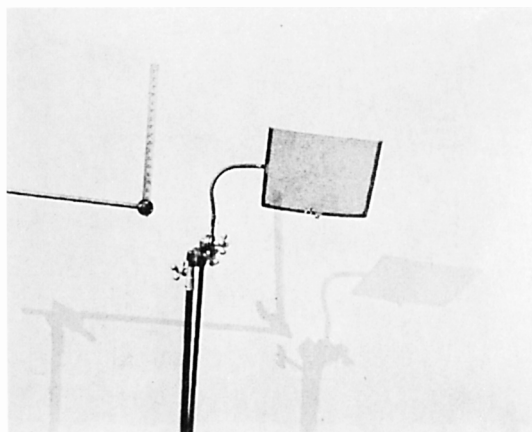
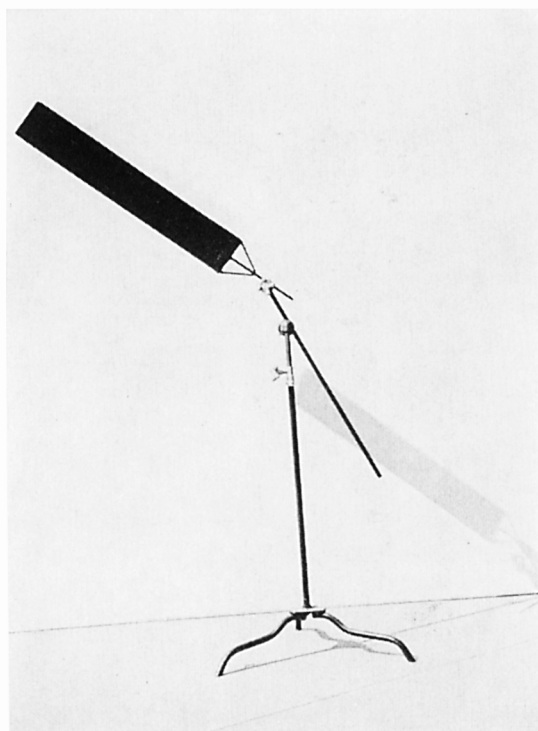


Fig. 25 Chin Scrim

Fig. 26 Blade



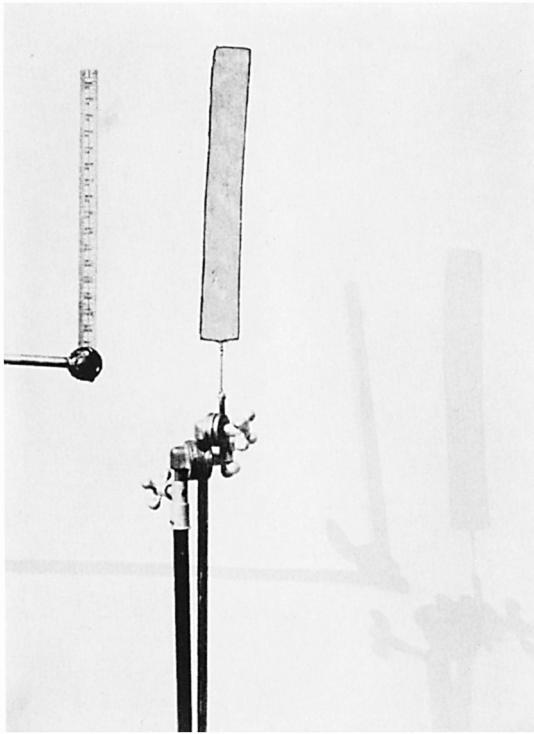
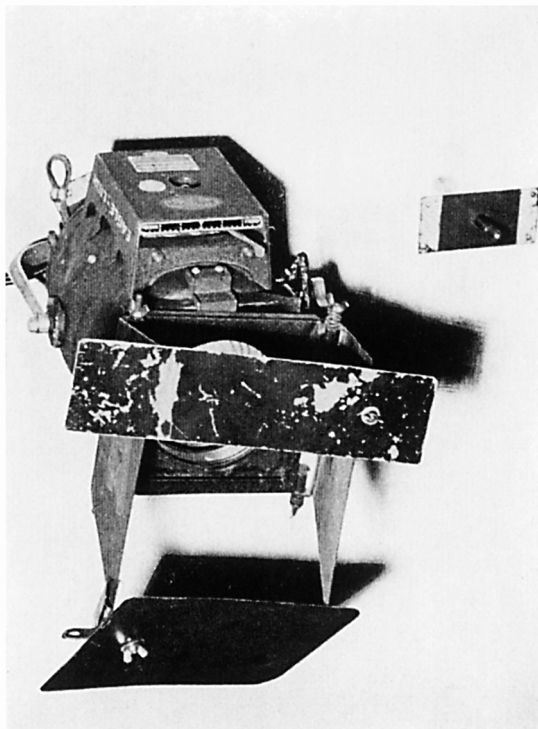


Fig. 27 Blade

Fig. 28 Clip



COOKIE

When a surface is too hot (too much light) and we want to throw a shadow on it to break up the light, the shadow of a gobo or even of scrim would be too much; therefore we use what is called a *cookie*. Cookies are really flags with different designs cut out of them. The designs sometimes resemble natural ones like that of a tree branch with leaves, a dead branch without leaves, a bouquet of flowers, etc., or the familiar patterns of architectural designs. They come in solid wood which throws opaque shadows, or for softer transparent shadows are cut also from celo (celloglass), a transparent glass-like material. Sizes vary from that of a flag to that of a target (Figs. 29, 30, 31).

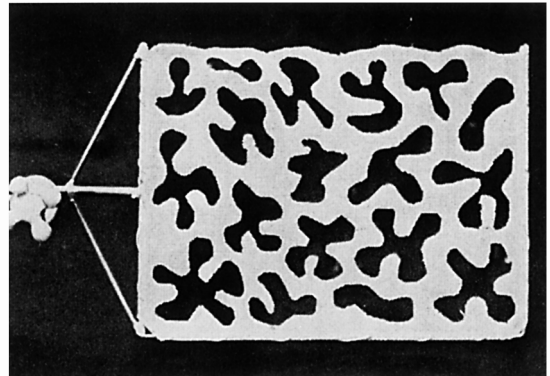
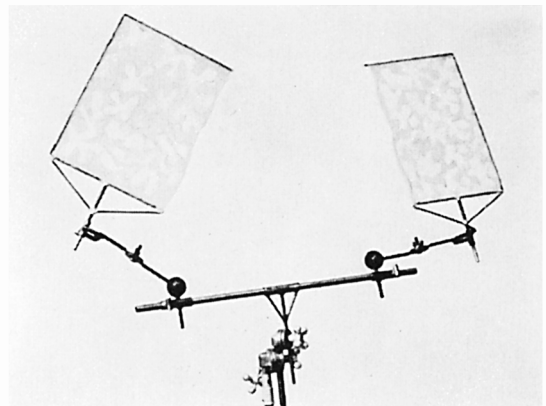


Fig. 29 Cookie

Fig. 30 Cookies



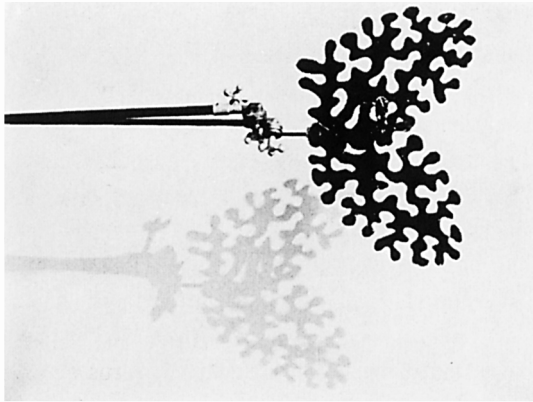


Fig. 31 *Cookie*

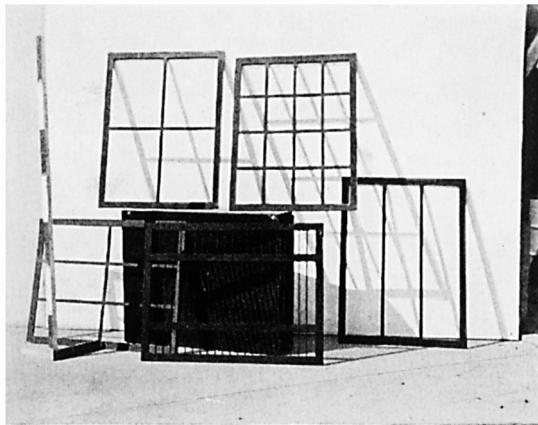


Fig. 32 *Window Frame*

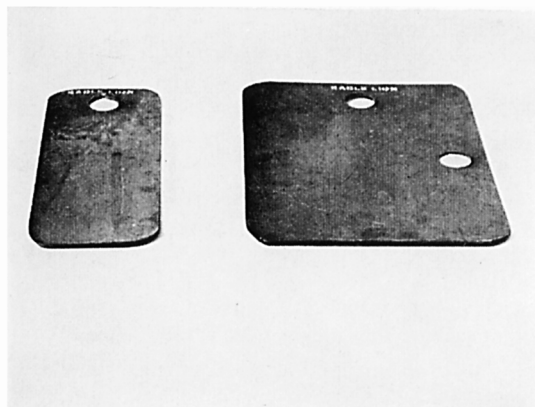


Fig. 33 *Ear*

WINDOW FRAME

Window frames made of plywood in many designs are used to project the effect of a window on a wall (Fig. 32).

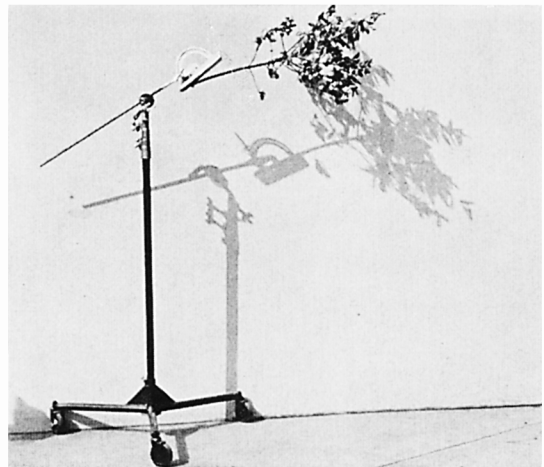
EAR

When the broad (soft, shadowless lamp) is fresh and sends light in all directions into either the eye of the cameraman or into the lens, an *ear* is placed on it. This is really a flag with a hole in it (Fig. 33).

STANDS

Various kinds and sizes of stands are used to hold flags, scrims, targets, and other similar devices. The *gooseneck* is part of a gooseneck lamp, without the lamp, of course; the gadgets are soldered, clamped, or screwed to the end. *Century stands* are tripods used to hold flags and other heavier gadgets. One stand is 44 inches high, and the heavy *overhead stand* rises from 6 feet to 25 feet. To hold a tree branch, a *tree branch adapter* is fastened to a heavy Century stand; this can be used inside or outside with sunlight (Fig. 34). To hold gags together and to clamp them, an *Adapter clamp* is used.

Fig. 34 *Century Stand with Tree Branch Adapter*



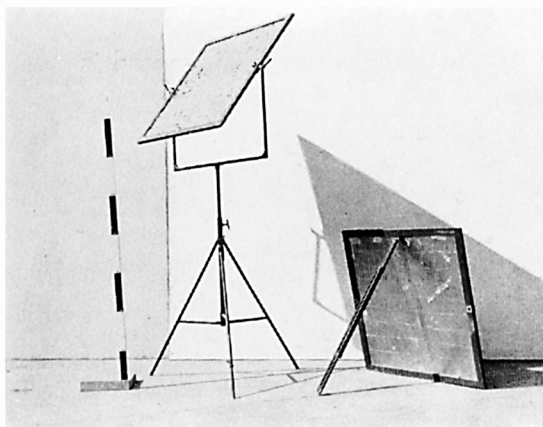


Fig. 35 Sun Reflector

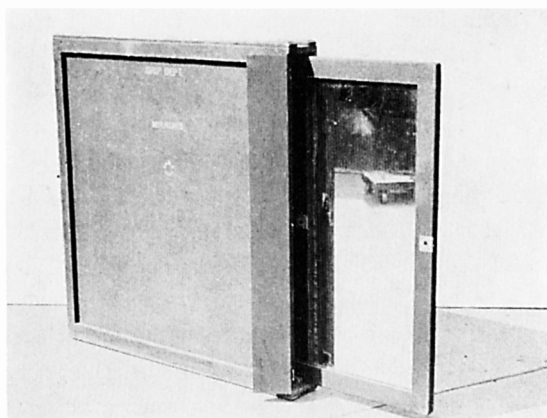
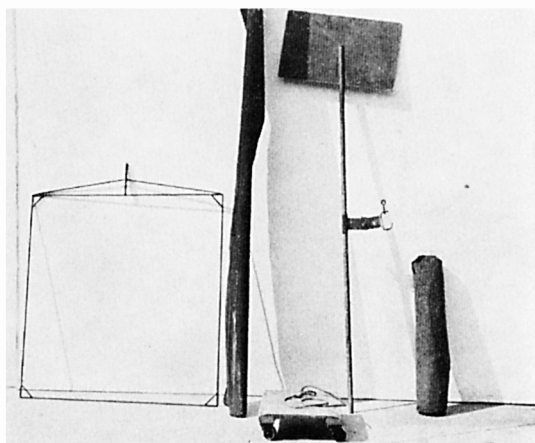


Fig. 36 Mirror

Fig. 37 Butterfly, Black Drop, Furniture Dolly, and Dolly Track Rug



MISCELLANEOUS EQUIPMENT

Various handy devices are used for raising props, cameramen, or actors to different heights above the stage. These include:

Pullman or *one-step*

Three-step, often used by cameramen for the higher setups

Apple box, similar to the one-step

Furniture blocks, which are small three-steps made of 2-inch by 4-inch joist, to provide heights of 2, 4, and 6 inches

Cupblocks, which are similar to furniture blocks but with hollow sides for legs of chairs, for greater safety

Risers, little platforms, 2, 4, and 6 inches in height

The grip transports his equipment in a large *grip's truck*, a *grip box*, and a *grip kit*. The *grip's personal tool kit* is a belt containing simple tools and rolls of tape used to cover up high spots, blemishes, or defects on sets. *Stepladders* of various heights are part of the grip equipment.

If the grip wants to get the next picture, he must see to it that the cameraman is comfortable at all times. For this purpose he carries what is known as the *red apple stool*.

GRIP TOOLS FOR EXTERIORS

SUN REFLECTOR

This is made of wood, coated on one side with gold leaf and on the other with silver. It is mounted on a portable and demountable stand that rises from 6 feet to 12 feet (Fig. 35).

MIRROR

This is a glass mirror in a wooden frame that is used to light up green trees, bushes, etc., and other dark spots where the other reflectors fail (Fig. 36).

TIN

The tin is somewhat weaker than the mirror, but hotter than the gold or silver reflectors.

BUTTERFLY

This is a scrim used to cut and soften the harsh sunlight. It comes in different sizes, with metal or wood frames on which the scrim net is stretched. There are small butterflies in round and square shapes, medium-sized ones 4 feet by 4 feet (Fig. 37), and a large one 12 feet by 20 feet for shading larger areas.

UMBRELLA

This is a regular beach umbrella used on exteriors to shade the camera from the

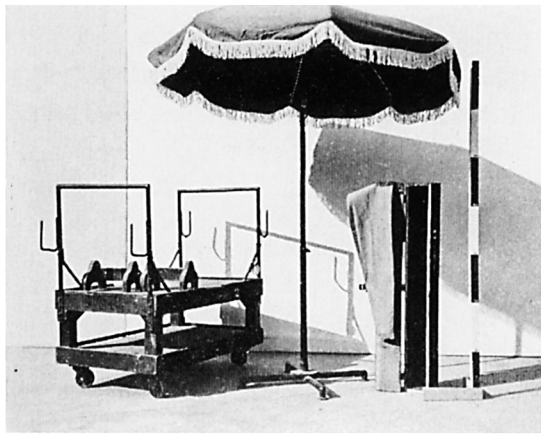


Fig. 38 Beach Umbrella and Grip Truck

sun and to protect against rain or snow (Fig. 38).

CYCLODRUM

This is a device used to project light effects and also shadows on the process stage. It consists of a hollow cylinder with room enough inside for an arc lamp; it is mounted on a

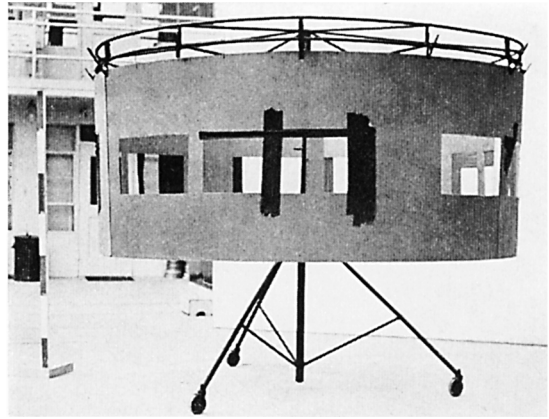


Fig. 39 Cyclodrum

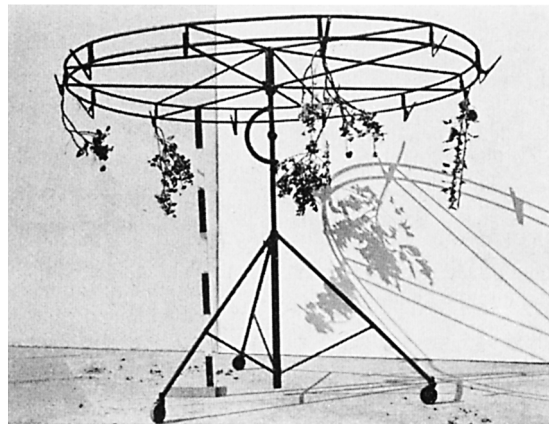


Fig. 40

large stand and may be rotated in either direction and at various speeds. Shadows may be painted on the surface, or little cutouts may be made for train window effects (Fig. 39). The drum can be demounted, and tree branches, cookies, or other objects mounted to its frame for different types of shadow effects (Fig. 40).