

**BELL & HOWELL**  
*Standard Automatic*  
**Film Splicing Machines**  
*for the*  
**Laboratory, Exchange and Projection Room**

# Standard Automatic Film Splicing Machines

*for the*  
**Laboratory, Exchange and  
Projection Room**

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## BELL & HOWELL COMPANY

1801-15 LARCHMONT AVE., CHICAGO



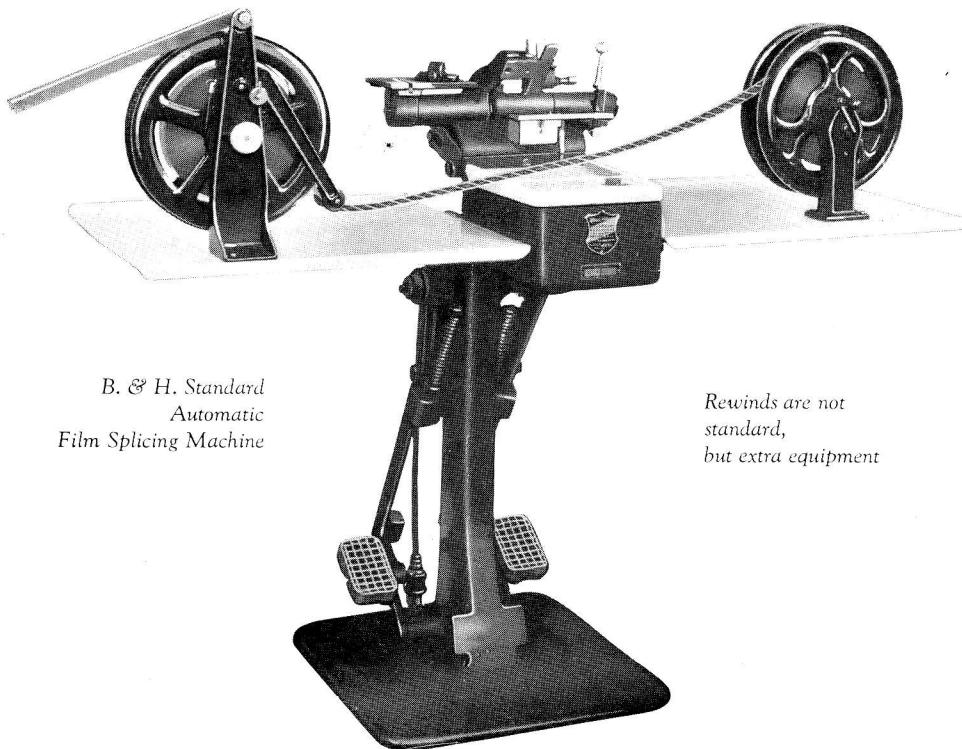
NEW YORK  
11 W. FORTY-SECOND ST.

HOLLYWOOD  
6324 SANTA MONICA BLVD.

LONDON, (B. & H. Co., LTD.)  
320 REGENT ST. W. 1.

ESTABLISHED 1907

*Pioneer manufacturers of professional cinematograph cameras and equipment  
used almost exclusively by the world's foremost film producers*



## The Bell & Howell Standard Film Splicing Machines

**B**ELL & HOWELL Standard Film Splicing Machines splice film quickly and permanently without adversely affecting its flexibility or encroaching upon the picture space. These machines have eliminated huge wastes of time and money by very substantially reducing overhead costs and minimizing film mutilation, thus insuring accuracy and efficiency in the processing and exhibition of motion picture film. They have proven to be indispensable units for the modern laboratory and film exchange.

More than twenty years ago the Bell & Howell Company introduced these splicing machines. Since then, B. & H. Splicers have established themselves as the world's standard and as such are being used today by the largest producers and exchanges, as well as by a great majority of the up-to-date motion picture laboratories, throughout the world.

Operation with these machines is conducted at an efficiency increase of from 100% upward over that of any other known film splicing practice, with

a corresponding degree of improvement in quality of output. Their celerity of operation and nicety of results in making perfect and permanent splices in the film are important factors contributing to the keen satisfaction enjoyed by the user.

Efficiency, safety, uniform superior quality, greatly increased output, and cleanliness are distinguishing points of merit of these Splicers. Their interchangeability for negative or positive splicing, to give any desired width of splice, and their special attachments for variable frame line splicing and for splicing of unperforated raw film stock, firmly establish their versatility and applicability for film splicing of every nature.

Particularly is the Bell & Howell Splicer a valuable asset to the film exchange, where it cuts film inspection overhead in half and makes possible the furnishing of superior quality prints long sought by the exhibitor. Splices made by means of the Bell & Howell Splicer leave the film as pliable at the point of splice as at any other; these splices being automatically located in proper relation to the picture frame lines and perforations. This automatic accuracy eliminates all misframes and prevents other similar evils so long identified with the faulty hand patch. A print joined on the Bell & Howell Splicer is perfectly welded in accurate alignment and registration, thereby insuring uninterrupted projection and prolonging the life of the film.

Remarkable and complete as was their original design, B. & H. Splicers have recently been improved as the result of further research and experience, with the result that present models are capable of handling all classes of modern work with a maximum of efficiency and dispatch.

## **Features Common to all B. & H. Splicer Models**

### 1.

INTERCHANGEABILITY OF OPERATION for negative or positive joining, and conversion for 16 mm. film.

By inserting the new full hole lap or the regular positive blades, when using the machine for positive work, an increased width of splice is obtained, namely, a joint .156" or .072", respectively, in width, as compared to the .030" wide splice effected by the use of the regular negative blades. This not only enlarges the scope and usefulness of each individual machine, but effects a considerable increase in efficiency over all other methods of joining. This is an improvement of considerable significance, as it makes the machine's applicability for film splicing of any nature obvious.

Any standard 35 mm. splicer can be converted for splicing 16 mm. film. Conversion can be made either to the regular 16 mm. model, or to the combination 16 mm. and 35 mm. splicer. (Splicers to be converted for 16 mm. operation must be returned to the factory.)

Many laboratories, handling a varied type of work, have found the special combination splicers a veritable God-send. With them, it is possible to handle all classes of splicing quickly and efficiently at a very reasonable cost. The interchangeability features are of the greatest value and importance to every laboratory.

2.

**IMPROVED STYLE NEGATIVE AND POSITIVE CUTTER BLADES.** Protruding edges of all cutter blades are beveled and have pilot openings placed two perforations to the left of the cutting edges. This allows a greater latitude in regrinding than heretofore, thus lengthening the life of the blades. In designing the improved blades the Bell & Howell engineering department constantly kept in mind the necessity for simplicity in construction and ease of interchangeability. This improved design has materially reduced the time required to change blades and has eliminated the need for the services of skilled help in the maintenance of these machines.

3.

**NEW SAFETY SPRING ACTUATED TOGGLE LINKS.** Eliminating the former hazard of possible injury to the fingers and absorbing unevenness in operation by creating a constant pressure on the films to be joined, these links displace the former eccentric link pin adjustment.

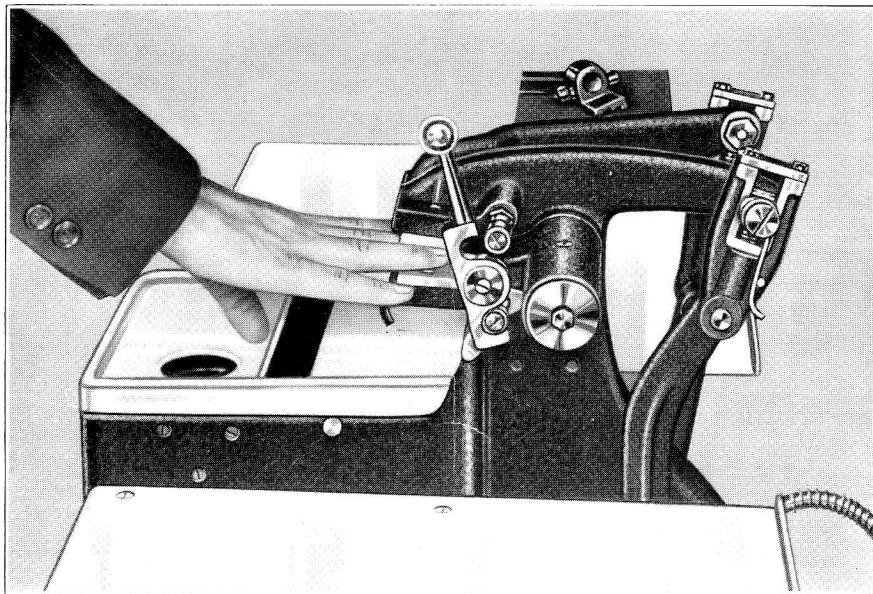
4.

**NEW TYPE SERVICE SHELF.** With a built-in setting gauge, this shelf forms an integral part of the machine, providing a support for the scraper block. It is a decided improvement over the earlier model, both in point of rigidity and in its convenience to the center of operation.

5.

**IMPROVED TABLES AND WASTE RECEPTACLES,** which make for greater convenience for the operator and add materially to the general efficiency of the splicer. Special double width tables also available, if desired.

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*Demonstrating the effectiveness of the safety toggle link feature*

6.

ALL METAL CONSTRUCTION, insuring ruggedness and stability and conforming to all requirements of the Board of Underwriters with reference to laboratory equipment.

7.

SCRAPER BLADES, made from the finest quality steel. Figure 1 shows the positive scraper blade and Figure 2 the scraper blade used in the negative splicer.



Fig. 1. Positive scraper blade

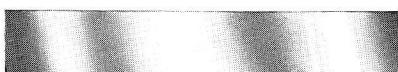


Fig. 2. Negative scraper blade

## 8.

**HEATING UNIT.** In order to make a lasting film splice quickly it is necessary that the cement, the film, and the machine parts with which the film comes in contact be kept at the proper temperature. This is accomplished by mounting a resistance unit in the upper part of the pedestal. The heat transmitted by this unit to the plates, cutters, and scraper blade keeps them at a steady maximum temperature of 120° Fahr. At this temperature the cement dries quickly and forms a perfect binder, but the heat is not sufficient to damage the film nor to effect the emulsion adversely.

The heating or resistance unit is an important element in the general efficiency of the splicing machine. It is impossible for it to become overheated and no danger can arise from its use.

When ordering a B. & H. Splicer, indicate the voltage of your electrical supply if other than 110 volts, as all splicers are equipped with 110-volt heating elements unless otherwise specified.

\* \* \*

Bell & Howell Film Splicing Machines have long since passed the experimental stage. They are manufactured along the lines of precision standardization so closely adhered to by Bell & Howell engineers. Not unlike other fine apparatus of this nature, they require a certain degree of intelligent operation if their advantages are to be enjoyed to the fullest extent. This does not imply that operation is complex, even to a slight degree. It only serves to stress the importance of the proper joining of film and the increased efficiency attendant on the employment of machinery in contrast to the uncertainty of hand splicing.

Exhibitors and exchange men are quick to recognize progressiveness or the part of the producer when manifested in the quality of his product and by the stability of the completed picture in the projection machine, thus insuring improved results in the performance. When accurate machinery is employed in the various processes of manufacture and assembly of film, the utmost in smooth continuity is assured in the theater performance.

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## Models—Bell & Howell Film Splicers

Model numbers and code words given below facilitate locating prices in price list form No. 7000.

**IMPORTANT:** When ordering splicers please use the code word indicating the type of pilot (whether for standard or rectangular perforations) and the model of splicer desired. Specify the voltage if it is to be other than 110 volts. Standard film cement will be supplied unless "non-flam" cement is requested in the order.

MODEL No.	DESCRIPTION	*REGULAR B. & H. PILOTS CODE	*RECTANGULAR PILOTS CODE
1.....	NEGATIVE Film Splicing Machine, .030" beveled splice with pedestal, service table, scraper block, 25 scraper blades, and bottle of cement.....	DUCOD	DUCOA
2.....	POSITIVE Film Splicing Machine, .072" splice with pedestal, service table, scraper block, 25 scraper blades, and bottle of cement.....	DUCPO	DUCOB
3.....	POSITIVE Film, Full Hole Lap Splicing Machine, .156" splice with pedestal, service table, scraper block, 25 scraper blades, bottle of cement. Equipped with double-ended stainless steel cutter blades.....	DUDAL	DUCOC
4.....	COMBINATION Film Splicing Machine, for splicing both unperforated and perforated film (.072" positive splice).....	DURAW	DUCOE

\*For explanation of footnote, see page 8.

MODEL No.	DESCRIPTION	*REGULAR B. & H. PILOTS CODE	*RECTANGULAR PILOTS CODE
5.....	**16 MM. Film Splicing Machine.....	DUDGS	.....
6.....	**16 AND 35 MM. COMBINATION Film Splicing Machine for interchangeable splicing of 35 mm. .072" and 16 mm. film.....	DUDFA	DUCOF
7.....	POSITIVE Film Splicing Machine, identical with Model No. 2 except also includes extra blades for splicing NEGATIVE film.....	DUDGT	DUCOG
8.....	POSITIVE Film, Full Hole Lap Splicing Machine, identical with Model No. 3 except also includes extra blades for splicing negative film.....	DUDGU	DUCOH

\*Film perforated with the new rectangular perforations can be spliced on splicers equipped with pilots ground for the regular Bell & Howell perforations, but for accurate splicing we do not recommend this practice. Owing, however, to the slightly larger dimensions of the rectangular sprocket hole, film perforated with the regular Bell & Howell perforations cannot be spliced on machines equipped with the rectangular pilot.

When desired any Bell & Howell Splicer Model can be supplied with special wide tables, complete with braces. This permits two operators to work at one machine. Prices furnished on application.

**\*\*B. & H. 16 mm. Film Splicers.** B. & H. Film Splicer Models 5 and 6 are newly developed units for handling 16 mm. film, built to meet a recently born demand.

With the startling progress and wide-spread use of 16 mm. film, commercial motion picture laboratories have found it advisable, and certainly profitable, to equip themselves to handle this class of work efficiently. Industrial firms are using 16 mm. equipment for sales and educational purposes. Schools are being equipped with 16 mm. projectors. Many amateurs are using 16 mm. negative and positive stock. These users are turning to properly equipped laboratories for their editing and splicing work. Therefore, the most important of the recent advances in Bell & Howell Standard Film Splicing Machines has been the introduction of these two new models.

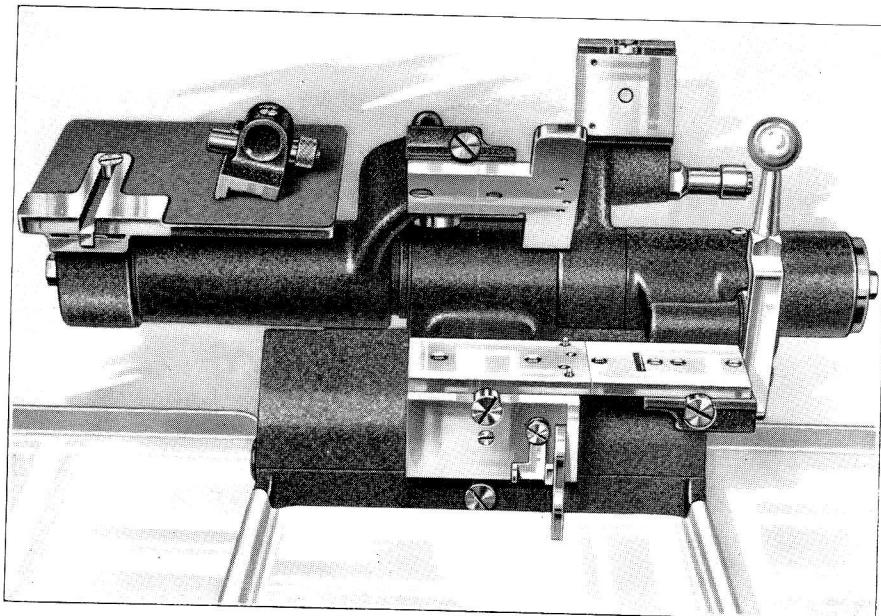
**Model No. 5**

B. & H. Film Splicer No. 5 is designed solely for 16 mm. work—and is recommended for those laboratories who are already handling a considerable volume of this sub-standard film and for those laboratories whose prospects of getting such business warrant the installation of a splicer devoted exclusively to 16 mm. work.

This unit is essentially the same as the Standard Positive Splicer, except that the pilot pins are set diagonally so as to give the diagonal 16 mm. splice originated by the Bell & Howell Company. This diagonal splice is much stronger and more flexible, on the comparatively narrow 16 mm. film, than a straight splice would be.

**Model No. 6**

B. & H. Film Splicer No. 6 is a combination splicer which is proving to be extremely popular with those laboratories that do not have a sufficient volume of 16 mm. work to warrant the purchase of the regular 16 mm. splicer. Essentially, this unit is a standard positive splicer, but disappearing pilots for splicing 16 mm. film have been installed. These pilot pins are set diagonally, as in the regular 16 mm. splicer. When it is desired to splice standard positive film, they are lowered below the level of the cutting plate by the pilot operating lever.



Model 6, Combination Splicer, set for splicing 35 mm. positive film

## Dimensions, Weights and Shipping Data

### *Bell & Howell Film Splicing Machines*

Height of Splicer (over all).....	38 $\frac{1}{2}$ in.
Width (over mechanism and service shelf).....	15 in.
Width (over service tables).....	48 in.
Depth .....	19 in.
Base .....	18x18 in.
Weight—net, approx.....	195 lbs.
Weight—gross, approx.....	275 lbs.
Weight packed for export, approx.....	285 lbs.
Dimensions of shipping case.....	22x23x44 in. or approx 12.9 cu. ft.

## Extra Splicer Cutter Plates

When ordering extra splicer cutter plates, specify the serial number of your machine. This number will be found stamped on the name plate attached to the front of the splicer waste receptacle. Use of the following data will further insure the meeting of your requirements correctly.

### *For Splicers Serial Nos. 3 to 54, Inclusive*

	Regular Positive	Negative
Left Upper Clamp Plate Cutter.....	3616	3616
Right Upper Clamp Plate Cutter.....	3404	3404
Right Lower Clamp Plate Cutter.....	3423	3403
Left Lower Clamp Plate Cutter.....	3426	3304

### *For Splicers Serial Nos. 55 and Up*

	Wide Positive	Regular Positive	Negative
Left Upper Clamp Plate Cutter.....	3239	3401	3401
Right Upper Clamp Plate Cutter.....	3240	3404	3404
Right Lower Clamp Plate Cutter.....	3241	3423	3403
Left Lower Clamp Plate Cutter.....	3242	3422	3402

## Bell & Howell Film Cement



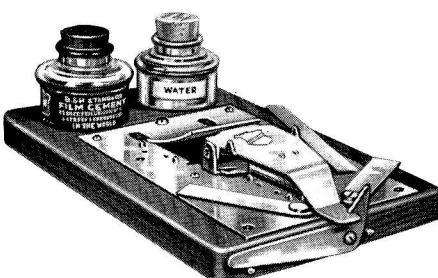
A one-ounce bottle of Bell & Howell Film Cement is furnished with each B. & H. Film Splicer. Ordinarily this service bottle will make several hundred splices. This cement sets quickly and makes exceptionally neat, permanently strong splices. It is composed of ingredients compounded in correct proportion to insure the most gratifying results. The chemical constituents are of the purest and are scientifically combined in accordance with a formula devised after years of research work.

In addition to a vast number of theatres and exchanges, practically all the motion picture producers, studios, and laboratories throughout the country, and many in foreign lands, are using Bell & Howell Film Cement exclusively. It is an aid to maximum efficiency in operation of the splicing machines described in this catalog.

B. & H. Film Cement is made in two varieties, one for regular film and one for "non-flam" stock. Please specify which type is desired.

Additional B. & H. Film Cement may be had, both for standard and "non-flam" film, in 1, 8, and 16-ounce bottles, 32-ounce can, and  $\frac{1}{2}$  and 1 gallon crockery jars. See price list form No. 7000 for codes and prices.

## B. & H. 35 mm. Convertible Hand Splicer



The Bell & Howell Convertible Hand Splicer is provided with its own cutter, which shears the film in exact register for scraping and joining. The finished joint will be found in perfect alignment, neat, clean, and imperceptible when the picture is projected upon the screen.

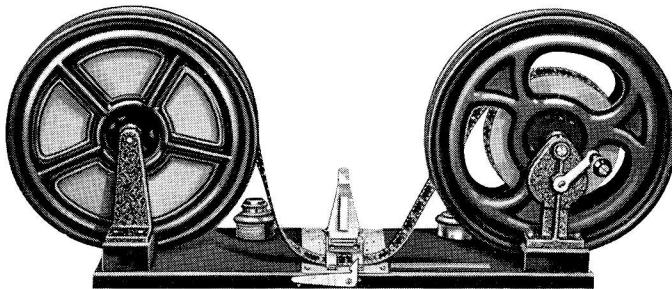
Each Splicer is neatly mounted on a suitable base, and is equipped with a bottle of cement (sufficient for several

hundred splices), a water bottle with cork and brush for applying moisture to the emulsion surface to be scraped, and a scraper blade, as well as complete instructions for preparing and making the splices correctly.

**Convertible Film Splicer** for 35 mm. film.....Code **ESTEM**

Note: Parts can be supplied to enable conversion of this splicer to splice 16 mm. film.

## B. & H. Combination Rewinder and Splicer



The Combination Rewinder and Splicer unit consists of the following devices:

(1) Reel or Spool holder	(5) Rewinder
(2) Splicer	(6) Hardwood base on which the above
(3) Water Bottle	units are mounted.
(4) Bottle of Film Cement	

The Splicer unit is the same as that illustrated and described above.

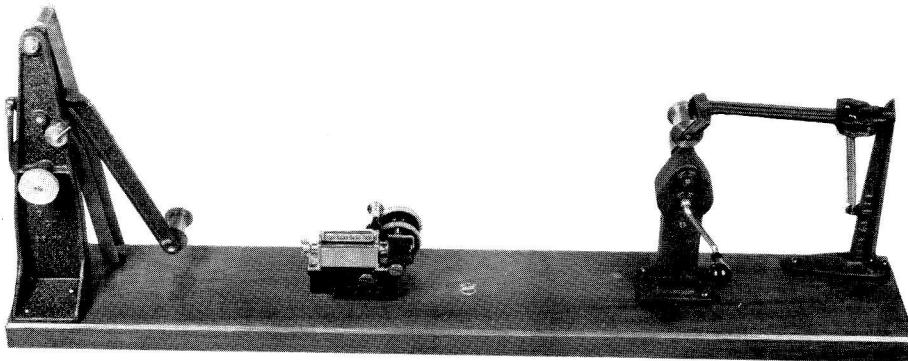
The rewinder is geared so that each turn of the crank revolves the reel four times. Ten-inch, 1000-foot spools are accommodated.

By combining the rewinder and splicer units, a device is provided which is ideal for examining, editing, and titling 35 mm. films, as well as for arranging continuity, joining together two or more 100-foot rolls, and rewinding the films after projection. The same kind of construction that has made Bell & Howell Standard Motion Picture Equipment famous throughout the world is embodied in this outfit—the same genuine Bell & Howell workmanship that has always given complete satisfaction under all conditions.

**Combination Rewinder and Splicer** for 35 mm. film.....Code **ESTAR**

## B. & H. Standard Combination Rewind Unit

The Bell & Howell Standard Combination Rewind Unit meets thoroughly and ideally every rewinding need in the handling of either negative or positive film. It is a genuine asset to the alert and practical handlers of motion picture film and, because of its labor and money saving qualities, is worth many times its original cost. Genuine Bell & Howell workmanship insures superior performance and complete satisfaction under all conditions.



The complete rewind unit consists of the following devices:

1. Automatic Retarding Film or Reel Holder	4. Tight Winder
2. Film Measuring Machine	5. Collapsible Hub
3. Rewind	6. Stripping Flange with Hub
	7. Polished Oak Base

This equipment is sold as a complete unit or by the individual piece.

The service tables of the B. & H. Film Splicers are drilled for the reception of the Automatic Retarding Film or Reel Holder and the Rewind. The Splicing Machine equipped with these devices, as illustrated on Page 2, constitutes the most highly efficient unit for film splicing, inspecting, and rewinding that the industry has ever known.

THE AUTOMATIC RETARDING FILM OR REEL HOLDER represents a new departure from the "dummy" end of the ordinary rewind set, both in design and in resulting utility. One of the distinctive features of this mechanism is the automatic compensating brake, or retard, which automatically regulates the speed of the film discharge to correspond to the speed of the

rewind take-up. Regardless of the speed, there is no coasting or paying out of film. This facility in no way interferes with the coasting ability of the rewind set because, when coasting is desired, the brake may readily be released. When rewinding film for inspection purposes, the continual compensating retard greatly increases the operator's efficiency by reason of its automatic, positive action. By way of contrast compare this feature with the brake on the "dummy" end of the ordinary rewind set which has ever been a source of annoyance and lost time and energy because of the uncertain action attending its operation. Another feature of improved design incorporated in this unit is the spring tension guard, which is moved into or out of position with great ease and celerity, and which secures a film roll on the holder spindle with a never-failing surety that is entirely lacking in the average rewind.

THE REWIND proper is a very neat and compact device, yet one of extraordinary rigid, rugged construction. It is so durably made as to be practically indestructible. The main structure or housing of the rewind is of machined reinforced cast iron. A very important feature is the spring actuated ratchet key, situated at the end of the rewind spindle. This key acts automatically to secure either film reel, collapsible hub, or stripping flange onto the spindle. Instead of requiring a special operation to lock the reel or hub on the spindle, as in the case with ordinary rewinds, the ratchet automatically engages with the slot in the reel or hub core. When it is desired to remove either of these devices from the rewind spindle, a little pressure will cause the key to recede into the spindle, permitting the operation with ease and with no loss of time. To facilitate the rewinding film without inspection, the rewind handle unit is so made as to permit its being pulled forward during the operation to an extent that permits the gears to become disengaged. In this manner the rewind coasts as rapidly as desired. The Bell & Howell Rewind is undoubtedly the finest device of its kind ever made and, together with the Automatic Retarding Film or Reel Holder, provides a set which excels the average rewind set in every way.

THE COLLAPSIBLE HUB AND THE TIGHT WINDER represent the best known means for winding the film very neatly and tightly without the use of a stripping flange. Film thus wound is so compact that it cannot possibly become damaged, regardless of how roughly it is handled. In addition to being entirely immune from scratches the film may be so wound in any lengths upwards of 1,000 feet.

THE FILM MEASURING MACHINE is a product that has been used for over a decade for the purpose of substituting accuracy for guess work in measuring motion picture film. The registering device, a four-column revolution counter, will add or subtract and may be set back at will. All movements are of the direct or positive drive type—no springs are used. The sprocket guide roller, roller lever, spiral gears, and shaft are machined with the utmost care. The machine may be operated at the maximum speed at which the rewind is driven without the least damage to the mechanism or to the film itself.

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A 16 mm. Film Measuring Machine is also available.

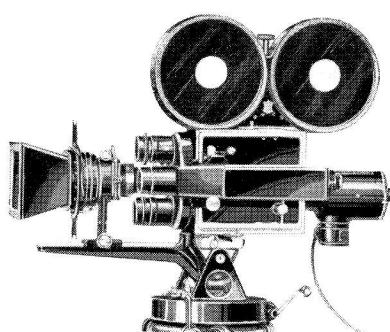
**B. & H. Combination Rewind Unit**, complete as illustrated and described above, including Film Measuring Machine.....Code REJUB  
See price list, form No. 7000, for prices on this complete unit and its component parts.

## The B. & H. Standard Cinematograph Camera

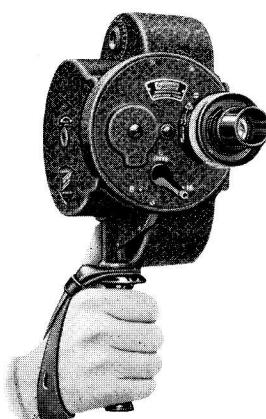
The Bell & Howell Professional Camera was responsible for bringing precision and standardization into the chaos existing in the early days of motion pictures. This camera maintains the supremacy it so justly won many years ago, for today it is still favored for the most advanced technical and artistic work. It enables the user to do the most elaborate process work with the utmost confidence and accuracy.

New improvements and accessories are added as occasion demands, and are designed so that they may be adapted for any of the existing camera models.

The B. & H. Professional Camera is readily adaptable for sound recording purposes. Full details will be supplied on application.



*The instrument which has contributed most to the making of artistic motion pictures.*



*The portable and compact hand-held EYEMO camera*

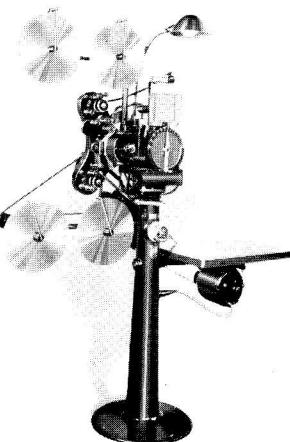
## The B. & H. EYEMO Camera

A definite need in motion picture photography is met by the B. & H. hand-held EYEMO camera. Wherever news reels, photoplays or other 35 mm. pictures are produced it is considered an invaluable asset. Most of the large news reel organizations as well as the studios in Hollywood and elsewhere employ a number of EYEMOS constantly. These cameras are indispensable for short shots, trick work, difficult speeds and for use in locations where the heavier standard professional equipment is not easily handled. The remarkable compactness and portability of the EYEMO is ideally adapted to such duties. Its perfection insures pictures which are of a quality meeting the present day high standard.

## B. & H. Standard Model D Continuous Printer

THE BELL & HOWELL Model "D" Continuous Printer has long been accepted as the world standard. It combines perfect accuracy and yet prints nearly twice as fast as any other machine available. You can now obtain this printer especially adapted for sound record negatives and for direct 16 mm. contact printing. The 16 mm. semi-automatic continuous Printer is offered to all laboratories with the confidence that it will give the same perfect satisfaction that the standard continuous printer has given for over twenty years.

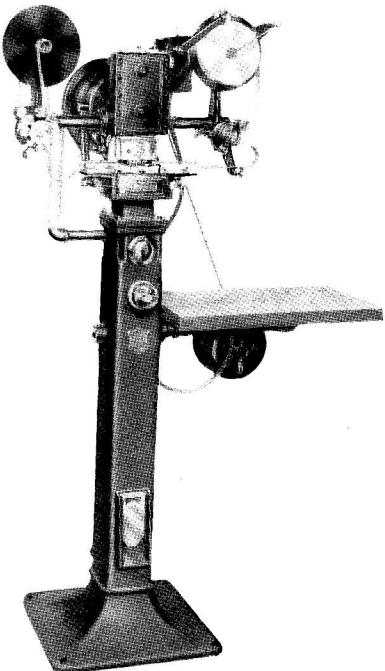
Particular attention is directed to the fact that the standard printer can now be obtained equipped with special triple adjustment sound masks, which effectively print any of the sound on film process negatives with the maximum speed. These masks are so arranged that the picture area or sound area of the negative can be printed either forward or backward. All three masks can be instantly lifted so that the machine can be used interchangeably for printing silent negatives when desired.



*Used by the leading Motion Picture Laboratories throughout the world.*

## B. & H. Standard Model D Film Perforator

THE BELL & HOWELL COMPANY established the size and shape of the perforation now used as standard throughout the world. In developing this, the necessity for extremely accurate performing was met with the B. & H. Film Perforator. For the first time, the basic Bell & Howell idea of employing pilots was utilized, so that after a series of perforations had been cut the pilots would engage in these perforations so as to line up the film for the next stroke of the machine. The accuracy and certainty of this perforator is such that it is used for perforating practically all of the motion picture film now used. The perforator is made only to special order, and full particulars will be gladly given on request. Special perforators for perforating different widths of film will be constructed by special arrangement.





FORM 7001-B 12-15-20

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