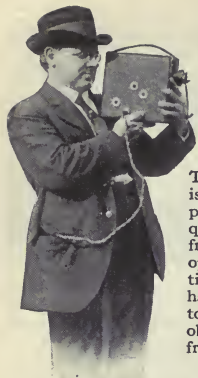


Home-Made Paper Motion Pictures

A safe and sane method by which you can make the pictures and exhibit them to your friends

By Max Fleischer



This motion picture camera is smaller and lighter than the professional machine and requires no tripod. It is aimed from the shoulder through an open finder. The substitution of a motor-drive for the hand crank makes it possible to follow the movements of an object. Current is supplied from batteries in the pocket

WHY is the phonograph in every home, but not the motion picture? Chiefly, because celluloid films are highly inflammable, because rooms must be darkened, because screens must be set up, in a word because elaborate preparations must be made. The making of motion pictures is hardly within the possibilities of the average amateur. In professional motion picture photography, extremely accurate mechanisms are employed at almost every step. Perfect results depend on the accuracy, judgment and experience of experts.

The expert camera man is not called upon to develop his film. Developing processes are often as unfamiliar to the photographer as photography is to the developer. Fixing and drying the film is a separate branch of the process. Printing of positive film from the negative requires the attention of skilled mechanics who may be entirely ignorant of camera work or developing.

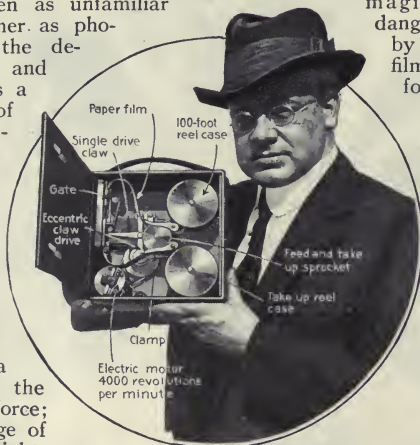
Projection of the completed film is a mystery to almost the entire productive force; for some knowledge of electricity and arc-lighting is necessary. The operator must be alert and cautious. He must

be entirely familiar with his machine and its dependent devices. Thousands of feet of highly combustible film must be driven directly across the path of the blazing arc-lamp's concentrated rays. The speed of the film itself is all that keeps it from being instantly consumed. Failure of the drop-shutter, as the film slows down, would result in a blaze. The operator must be specially trained. As a rule, theater projection machines are quite safe—that is, safe in the hands of an experienced operator.

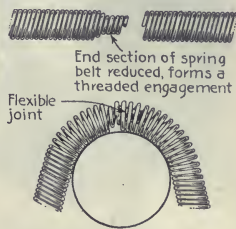
In view of all the knowledge and experience required to go from A to Z in the production and projection of motion pictures, considerable credit is due Mr. Hartwell W. Webb of New York, inventor of the home projector and camera, for his success in simplifying and reducing the cost of the process. In addition to making its operation safe, he has practically succeeded in leveling the complete apparatus to the home basis of the phonograph.

Mr. Webb has produced not only a motion picture camera which is almost as simple in operation as the kodak, but also a projector which requires little more knowledge to operate than the magic lantern. All fire danger has been eliminated by the perfection of a paper film. Incidentally, he has found the paper film to be far more durable and economical than the celluloid.

His camera, which



Interior of the camera. The feed magazine will accommodate 100 feet of film which is advanced by means of a single claw drive



A spring belt, reduced at one end to fit the opposite end of the belt, makes a threaded flexible engagement

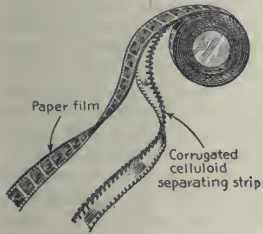
weighs about fifteen pounds, is considerably smaller than the professional machine and is operated by a small electric motor. A cell of dry batteries carried in the operator's pocket supplies the necessary current. The

been perfected in which the negative is chemically converted to a positive with remarkable results'. One solution removes the silver nitrate from the negative; another bleaches the shaded and dark portions leaving the film blank. On exposure to light, the color values are reversed, the most delicate tones and graduations being retained in the color reversion.

Developing the film in the form of a coil reduces the quantity of solution required. About three quarts of solution will develop 500 feet of film



Below: Method of coiling the film over a wood core for immersion. A frilled celluloid strip is used as a separator between the layers of coiled film



camera can be loaded in daylight. No tripod is necessary.

The amateur photographer who has developed his own films will require no ad-

ditional knowledge for developing the paper motion-picture film. The film is wound around a wood core together with a celluloid strip frilled on the edges. The frill acts as a separator between the layers of the film and at the same time allows the developing solution free access to every part of the surface. The film is rinsed, fixed and washed in the usual manner. It is dried on a collapsible wooden drum.

By converting the negative into a positive, it is evident that only one finished positive film can be obtained from each negative. For quantity requirements, a number of experiments have been made with the half tone or engraving process as a printing medium. In this process, the positive film is reproduced on a sensitized copper surface and etched with nitric acid to produce printing plates. In this manner an unlimited number of positive prints could be produced for circulation purposes, paper and ink being the only material required for the work. As the initial outlay for the half tone plates would be large, this method would prove practical only for quantities running into the

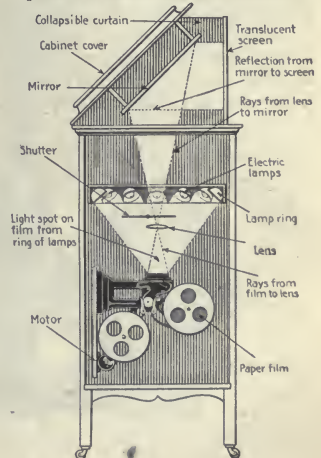
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An important feature of Mr. Webb's process is the production of the positive film. The paper negative film is not transparent; therefore a positive film cannot be made by contact. Even if it were possible to do so, it would not prove practical for the amateur, because motion picture film printing by contact is necessarily done by machinery and entails the additional expense of another length of film. A much simpler method has



At right: The projection principle of the cabinet explained. The reflecting mirror is disposed at an angle of 45° under the lid

At left: The screen on which the picture is thrown is in a shadow box



thousands. One hundred feet of film could then be sold for a little more than the cost of the paper; or rented for much less.

Two types of projectors have been made. One model is intended for use in schools and churches, while the other is suitable for home use. The operating principle of both types is the same; there is a difference only in the range of focus.

The home model is built into a cabinet, resembling that of a phonograph. In fact, phonograph cabinets with slight interior alterations are at present being utilized to assemble the home projector.

Paper film being opaque, it must be reflected, rather than projected on the screen. In carrying out this principle, the projection machine is placed in the lower part of the cabinet with its lens directed upwards towards the lid. Fixed directly over the projector is a brace containing a ring of nitrogen lamps and reflectors which are arranged to throw their concentrated light on a spot over which the paper film passes. Since the nitrogen lamp is very cool, there is no danger of burning the film. The picture is reflected upwards

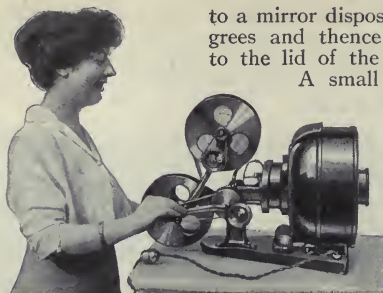
to a mirror disposed at an angle of 45 degrees and thence to the screen attached to the lid of the cabinet.

A small motor drives the projector mechanism, electric current being supplied to the motor and the ring of lamps from any convenient lamp socket.

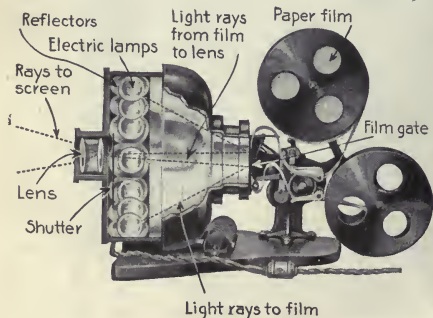
In addition to the animated pictorial record that can be preserved of family and

friends and of interesting incidents of sentimental value, Mr. Webb proposes to establish a circulating library which will furnish by mail, at nominal cost, films of current interest occurring the world over. Judging from the popularity of the motion picture theatre, there is every reason to believe that the home picture cabinet will prove as popular as the music cabinet.

It can be made to harmonize with the surrounding furniture, and is as ornamental as the phonograph cabinet, with which it is identical in appearance except for the screen on which the pictures are projected. This screen is collapsible when not in use. It is set in an ornamental frame which serves as a shadow box, so that the pictures may be shown in broad daylight as successfully as they can at night or in a darkened room.



This form of projector is intended for small assemblages. It may be operated by hand or motor



At left: Interior of the protecting mechanism

Circular arrangement of the lamps

