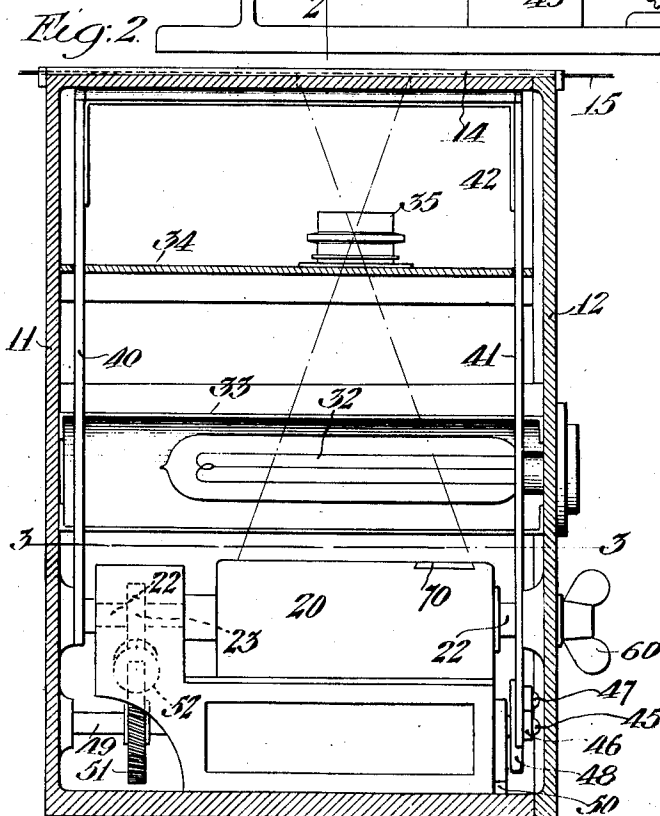
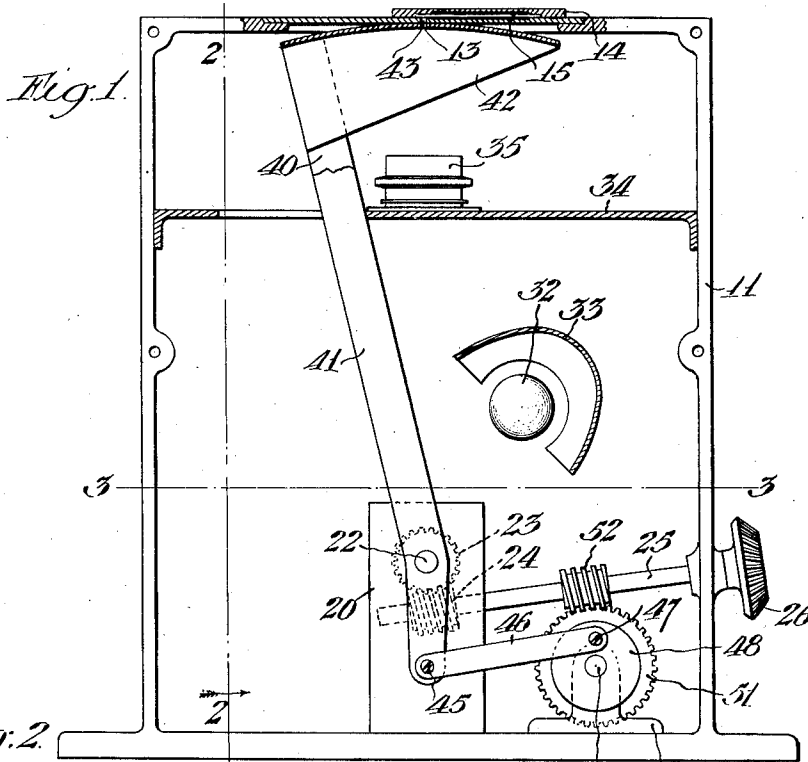


J. ALTSCHULER.
FILM NUMBERING MACHINE.
APPLICATION FILED APR. 28, 1917.

1,428,352.

Patented Sept. 5, 1922.

2 SHEETS—SHEET 1.



Inventor
Joseph Altschuler
by William Harris
Attorneys

1,428,352.

J. ALTSCHULER.
FILM NUMBERING MACHINE.
APPLICATION FILED APR. 28, 1917.

Patented Sept. 5, 1922.

2 SHEETS—SHEET 2.

Fig. 3.

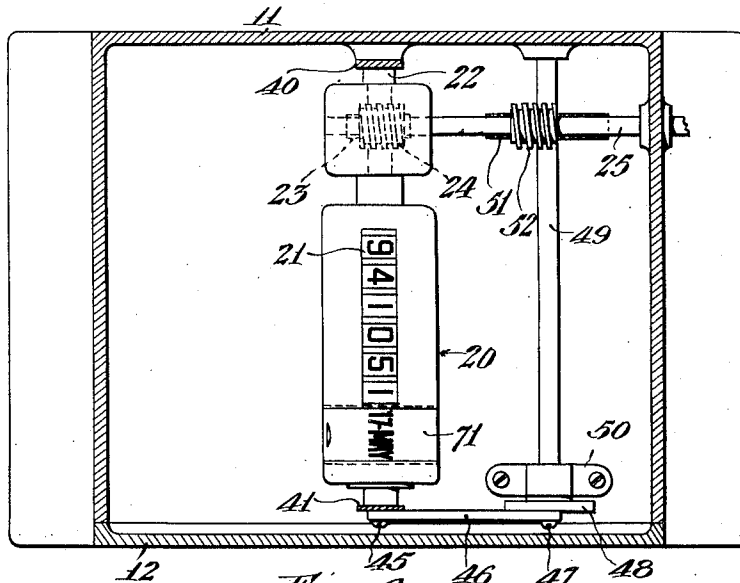


Fig. 4.

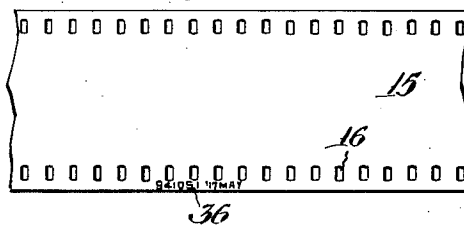
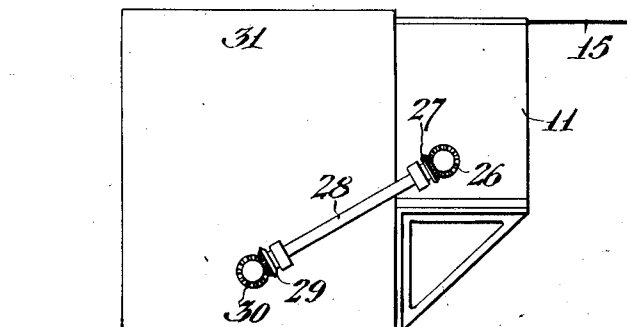


Fig. 5.



Inventor
Joseph Altschuler
by William Harris
Attorneys

Patented Sept. 5, 1922.

1,428,352

UNITED STATES PATENT OFFICE.

JOSEPH ALTSCHULER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO KEYOGRAPH CORPORATION, A CORPORATION OF DELAWARE.

FILM-NUMBERING MACHINE.

Application filed April 28, 1917. Serial No. 165,211.

To all whom it may concern:

Be it known that I, JOSEPH ALTSCHULER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Film-Numbering Machine, of which the following is a specification.

My invention relates to the motion picture art, and the principal object of the invention is to provide means for photographing successive numbers on the edges of a film, so that the handling, replacing, recording and accounting in connection with the said film will be facilitated.

Further objects and advantages will be set forth in detail hereinafter.

Referring to the drawings, which are for illustrative purposes only:

Fig. 1 is a vertical cross section, partly in elevation, through the center of a device embodying my invention.

Fig. 2 is a section on a plane represented by the line 2—2 Fig. 1.

Fig. 3 is a section on a plane represented by the lines 3—3 in Fig. 1 and Fig. 2.

Fig. 4 is a view of a film which has been numbered in accordance with my invention.

Fig. 5 is a diagrammatic view showing my invention used in connection with a perforator.

In the form of the invention illustrated in the drawing, a casing 11 is provided, this casing being provided with a removable door 12 by means of which access may be had to the interior of the casing. Formed in the top of the casing 11 is an exposure slot 13, and located above the exposure slot 13 is a film guide 14, this guide being arranged to receive the film 15 and to so guide it that the slot 13 is between the edge of the film and perforations 16. Secured inside the casing 11, near the bottom thereof, is a standard counter, or numbering machine 20, this counter being of any of the well known forms and similarly constructed to the dial mechanism of a speedometer, etc. This counter is so arranged that a number 21 appears on its face, and the internal mechanism is so arranged that as the shaft 22 is turned this number changes progressively. The shaft 22 is provided with a worm gear 23 which is driven from a worm 24 located on a worm shaft 25. For each revolution of the shaft 25 the number 21 increases by one. The shaft 25 projects

through the side of the case and is provided with a bevel gear 26 which meshes with a bevel gear 27 on a drive shaft 28, this drive shaft 28 being driven through bevel gears 29 and 30 from the driving mechanism of a perforator 31, shown diagrammatically in Fig. 5. This perforator drives the film 15 intermittently, and the mechanism is so arranged that the shaft 25 is driven in synchronism with the film 15.

Secured inside the casing 11 is an incandescent lamp 32 which may be provided with a reflector 33, this lamp 32 being so placed that the number 21 is highly illuminated. Secured in the top of the casing 11 is a diaphragm 34 in which a lens system 35 is secured, this lens system being so placed that the image of the number 21, considerably reduced, is focused through the slot 13 on the edge of the film 15, to produce the printing shown at 36 in Fig. 4. Turning freely on the shaft 22 is a pair of arms 40 and 41, these arms being connected across the top by means of a shutter 42. The shutter 42 is preferably formed of sheet metal and has a shutter opening 43 of similar size to the exposure slot 13, formed near its center. The arm 41 extends down and is pivoted by means of a pin 45 to a connecting rod 46. The connecting rod 46 is pivoted at its other end to a crank pin 47 carried on a crank 48 secured to a crank shaft 49. The crank shaft 49 is mounted in suitable bearings 50, secured to the casing 11, and is driven through a worm gear 51 from a worm 52 carried on the worm shaft 25. The lower end of arm 41 is of suitable length, and the gears are so proportioned, that as the shutter 43 oscillates it never uncovers the exposure slot 13 except at the center of its travel through the shutter opening 43. The parts are also so proportioned that this exposure takes place once for each foot of travel of the film 15, and so that it takes place during one of the stationary periods of the intermittently moving film 15. An adjusting member 60 may be provided by which the counter may be reset according to any of the well known means.

The method of operation is as follows:

The film 15 being driven intermittently by the perforator 31, passes over the slot 13, and the image of the number 21 is photographed on the edge of the film 15, as shown

in Fig. 4, at regular intervals, preferably once for each foot of the film. These numbers being successive indicate the number of feet of film which has been run during a given period. For the purpose of fixing the period, I provide a slot 70 in the top of the numbering machine in which a small numbered card 71 may be placed. The slots 13 and 43 are of sufficient length to allow the image of a date, or other identifying symbol placed on this card, to always appear on the film, as shown in Fig. 4. It is thus possible by changing the card 71 at any desired time to start a new serial number for the film and prevent excessively large numbers from being necessary.

The practical utility of my invention is as follows:

In the production of motion pictures, a negative film is first produced, this negative film including retakes and a great deal of matter which the director later finds necessary to eliminate. This is ordinarily done by printing a positive from the negative as produced, projecting the positive, and thereafter cutting, splicing, and rearranging the positive under the supervision of the director or some other person. It is then necessary to cut, splice, and rearrange the negative to agree with the positive. At the present time this can only be done by comparing the action on the film, and this work is extremely expensive and tedious, and even where skilled labor is employed the results are sometimes unsatisfactory. By numbering the negative film by means of my machine, it is possible by a suitable printer to print these numbers on the positive so that when the positive is cut, spliced, or rearranged there will appear on its margin these numbers by which corresponding portions of the negative film can be readily found.

By the use of my invention, it is supposed that the manufacturer, by changing his dates and using successive numbers, will never use the same date and number on more than one piece of film. This date and number provide positive identification for each foot of film produced, and in case it is nec-

essary to repair or replace films, it is possible, by a suitable system of accounting, to immediately find and reproduce any portion of the film which has ever been manufactured.

It will be seen that my invention, by providing positive identifying means for the film, greatly facilitates the production of motion pictures, their replacement and repair, and further greatly facilitates the accounting and recording in connection with said films.

While I have shown the apparatus used in connection with a perforator, it is obvious that it may be used in connection with any machine having an intermittent drive for the film.

I claim as my invention:—

1. In a film numbering machine; a counter so arranged that it will display successive numbers; counter driving mechanism, means controlled by the length of the film passing through the machine for changing said numbers; a lamp so arranged as to illuminate the numbers of said counter; a lens system arranged to focus the image of said numbers on the edge of the film; and a shutter arranged to expose said film to said image during one of the stationary periods of said film.

2. In a film numbering machine; a casing having a slot in the top thereof; means to allow a film to be passed above said slot and outside said casing; a counter adapted to display successive numbers inside said casing; means for causing said numbers to increase progressively in accordance with the travel of said film; means for illuminating said numbers; means for focusing the image of said numbers through said slot on said film; means for making a light tight closure of said slot; and means for removing said closure for short periods at regular intervals of said film travel.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 20th day of April, 1917.

JOSEPH ALTSCHULER.