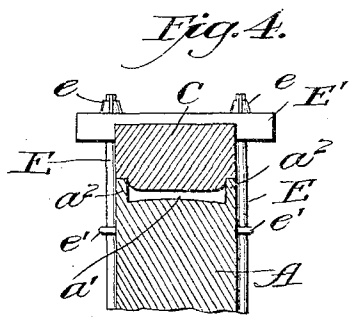
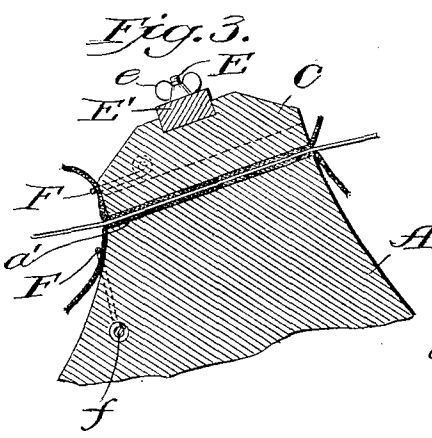
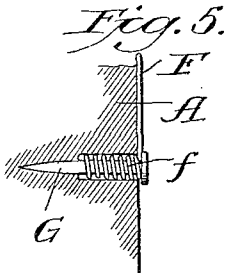
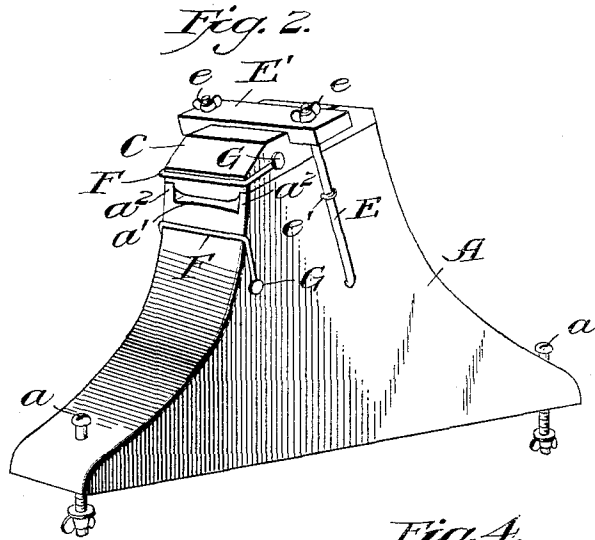
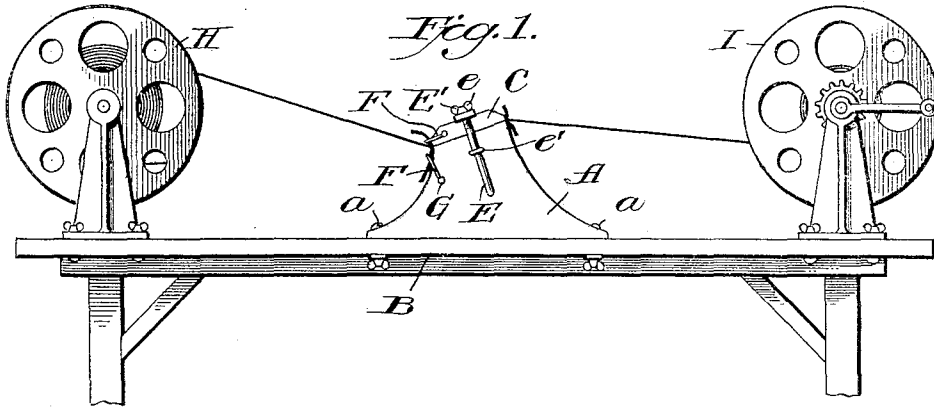


J. E. SINGLETON & S. T. WHITE.
 FILM CLEANER,
 APPLICATION FILED JULY 7, 1916.

1,205,039.

Patented Nov. 14, 1916.



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UNITED STATES PATENT OFFICE.

JAMES E. SINGLETON AND SAMUEL T. WHITE, OF GREENVILLE, NORTH CAROLINA.

FILM-CLEANER.

1,205,039.

Specification of Letters Patent.

Patented Nov. 14, 1916.

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To all whom it may concern:

Be it known that we, JAMES E. SINGLETON and SAMUEL T. WHITE, citizens of the United States, residing at Greenville, in the county of Pitt and State of North Carolina, have invented certain new and useful Improvements in Film-Cleaners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to means for cleaning moving picture films, and more particularly to a device of the character referred to whereby dust, grease and impurities adhering to a film may be effectively and quickly removed without using a brush or other device that is liable to scratch and injure the film.

It is a common practice in devices of this character as heretofore constructed, to use at some distance from the intake end of the cleaner a pair of brushes between which the film is drawn before it passes through the cleaner, and also to use means for moistening or saturating the pads which are used for cleaning the films, and such cleaning devices are more or less objectionable and liable to injure the film, and one object of our invention is to provide an improved cleaning device that dispenses with brushes or a cleansing fluid, and avoids injuring the film, which is drawn between opposed surfaces or strips of fibrous material under suitable pressure in such manner that each side of the film is held more tightly against one of said surfaces at one end of the cleaner, than against the other surface, at the other end of the cleaner, in the forward passage of the film between the two surfaces so as to effectively remove any grease, dirt or other impurities that may collect on the film from time to time in actual use.

Other objects of the invention are to provide a simple, efficient and inexpensive device of the character referred to, which can be easily manipulated and the parts of which when worn or broken may be easily renewed, and which will protect and prevent the perforated edges of the film from being torn or injured as it is drawn through the cleaner between the opposed fibrous surfaces or strips of flexible material under compression.

The invention will first be hereinafter

more particularly described, with reference to the accompanying drawings, which form a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Figure 1 represents a side elevation of a film cleaner embodying our invention as applied in actual use; Fig. 2 is a perspective view of the cleaning device; Fig. 3 is a fragmentary detail longitudinal sectional view of the same, and Fig. 4 a transverse section thereof; and Fig. 5 is a detail sectional view illustrating the mode of attaching one of the spring clamps.

Referring to said drawings, in which the same reference letters are used to denote corresponding parts in different views, the letter A may denote the lower pad holder or base portion of the cleaning device, which is preferably constructed of wood and provided with threaded bolts *a* tapped through opposite ends thereof and adapted to enter holes bored through a table B or other support on which the cleaning device is mounted; said bolts having winged or other suitable nuts screwed on the threaded ends thereof for attaching the cleaner to such support. The base A of the cleaner has its upper end or head portion inclined upwardly and provided with a longitudinal groove *a'* having marginal ribs or flanges *a''* underlying the marginal portions or edges of a superposed pad holder C, the intermediate portion of which is preferably slightly rounded, for a purpose hereinafter stated, and projects slightly into the underlying groove between said ribs or flanges.

In order to adapt the upper member or pad holder to be adjusted and secured upon the lower member so as to hold more or less tightly therebetween strips of fibrous material lying in the groove of the lower member, preferably ordinary lamp wicks between which the picture moving film may be drawn, the two parts A and C are adjustably secured together. Any suitable means may be employed for this purpose; the means shown consisting of L-shaped bolts E having their shorter arms fitted in sockets or holes bored in the sides of the base A while their longer arms extend up through a cross-bar E¹ secured to or on the pad holder C and are threaded to receive winged or other suitable nuts *e* for adjusting and securing the member C in position. The bottom of the groove in the head or upper end of the base A is also

preferably slightly rounded to correspond with the confronting surface of the superposed member C, in order that the marginal portions of the channel formed between the upper and lower members of the cleaner may be of sufficient depth to permit the edges of the film to move freely without exerting any appreciable pressure thereon, which would tend to compress and tear or injure the perforated edges of the film as it is drawn through the cleaner between the two pads pressing thereagainst with gradually diminishing force toward either side, thus preventing the perforated edges or margins of the film from being clamped and torn so as to injure or destroy the film.

The rods or bolts E may be secured in a fixed position so as to prevent longitudinal movement of the pad holder C by means of eye-bolts or staples *e*¹ secured to the base A on opposite sides thereof through which said rods pass. In order to secure and hold the flexible strips or pads in proper position between the confronting surfaces of the upper and lower pad holders, we provide a spring catch F on each holder adapted to grip the underlying end of the strip or pad and press it against the holder with sufficient force to prevent the strip or pad from being pulled out as the film is drawn through the cleaner between the two pads. Each of these catches preferably consists of a U-shaped rod having its ends formed integrally with a spiral bend or coil constituting springs *f* which are non-rotatively secured in sockets or holes bored in opposite sides of the holder by means of set-screws or nails G passing through the coils of the springs within the sockets and screwed or driven into the body of the holder, as more clearly shown in Fig. 5 of the drawings. As will be seen, these catches are so constructed and arranged that the pull upon the strip or pad due to pulling the film through the cleaner in contact with the opposed surfaces of the two pads tends to draw and hold the catch down against the face of the holder, so that the greater the pull upon the strip the more tightly it will be clamped to the holder. Said strips or pads preferably consist of ordinary lamp wicks, which we have discovered are especially adapted for cleaning a picture moving film without using a cleansing fluid or brushes such as are ordinarily used in advance of the cleaner and are not liable to scratch the film. But any suitable fabric or flexible material, such as flannel or felt or other similar material adapted to clean the film without scratching or injuring the same may be employed.

The cleaning device is so constructed that the film is drawn through the cleaner between the two pads in such manner that the upper side thereof is caused to bear more tightly against the overlying strip or pad

than against the lower pad at that part thereof where the film enters the cleaner, while the under side of the film bears more tightly against the lower strip or pad than against the upper pad at that part thereof where the film leaves the cleaner, as shown in Fig. 1, in which the film is shown passing through the cleaner between the two pads from the upper side of a reel to be unwound, as the reel H, to the lower side of a reel upon which it is to be wound, as the reel I; the latter reel being turned toward the operator, as usual in rewinding. This construction adapts the device to readily remove any grease, dirt or other impurities that may have collected upon the film without injury thereto.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. A film cleaner comprising a pad holder having upper and lower members between which the film is drawn; said members having inclined confronting surfaces which are farther apart at their edges than at their intermediate portions, whereby they are adapted to grip the intermediate part only of the film and permit the edges of the film to pass freely therebetween, and means for securing a flexible strip or pad upon each of said surfaces.

2. A film cleaner comprising a pad holder having upper and lower members with inclined confronting surfaces between which the film is drawn; the intermediate portions of said confronting surfaces being closer together than the margins thereof, so as to prevent gripping the margins of the film, and means carried by said members adapted to grip and hold the ends of flexible strips or pads lying upon said inclined surfaces.

3. A film cleaner comprising a pad holder having upper and lower members with inclined confronting surfaces the space between which is of greater depth along the margins thereof than at an intermediate point, means for securing a flexible strip or pad upon each of said surfaces, and means for adjusting said members to adapt them to press the film more or less tightly between the pads.

4. A film cleaner comprising a pad holder having upper and lower members with inclined confronting surfaces, means for securing a flexible strip or pad upon each of said surfaces, and means for adjusting said members to adapt them to press the film more or less tightly between the pads; said surfaces being slightly rounded so as to gradually increase the space between the pads toward opposite sides, whereby the edges of the film may be drawn freely therebetween.

5. A film cleaner comprising a pad holder in two parts mounted one upon the other,

one of said parts having an upwardly inclined longitudinal groove therein with marginal flanges and the confronting surface of the other part overlying said groove between said flanges, together with means for securing flexible strips or pads to said confronting surfaces; the intermediate portions of said surfaces being closer together than the margins thereof, so as to prevent gripping the edges of the film.

6. A film cleaner comprising a pair of pad-holding members with means for holding pads therebetween, together with means for drawing a film between such pads and causing one side of the film to bear more tightly against one pad than against the other at one point in its passage through the cleaner, while the other side of the film is caused to bear more tightly against the other pad at another point.

7. A film cleaner comprising a base portion having an upwardly inclined surface with a pad thereon, a superposed pad holder having a correspondingly inclined surface with a pad thereon confronting the first

named pad, and means for adjustably securing said superposed pad holder to said base portion, together with means for drawing a film between said pads in such manner that one side of the film is caused to bear more tightly against one pad than against the other at one end of the pads, while the other side thereof is caused to bear more tightly against the other pad at the opposite end of the pads.

8. A film cleaner comprising a plurality of pad holders having inclined confronting surfaces, the space between which is of greater depth along the margins thereof than at an intermediate point, and means for securing a flexible strip or pad upon each of said surfaces.

In testimony whereof we affix our signatures in the presence of two witnesses.

JAMES E. SINGLETON.
SAML T. WHITE.

Witnesses:

BESSIE HASKETT,
T. F. MAGUIRE, Sr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."