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APPARATUS FOR SPLICING MOTION-PICTURE FILM

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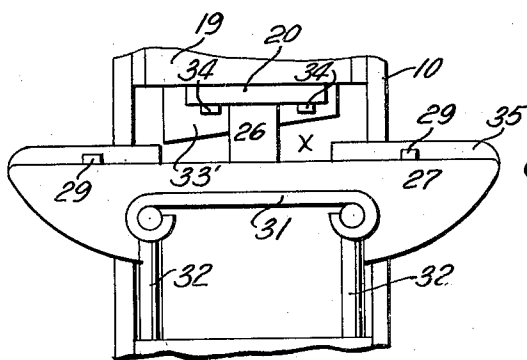


Fig. 4.

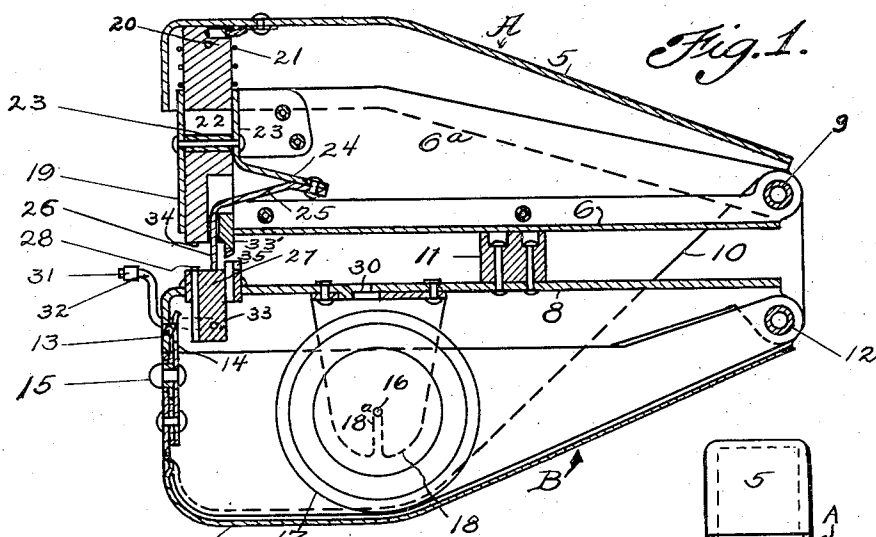


Fig. 1.

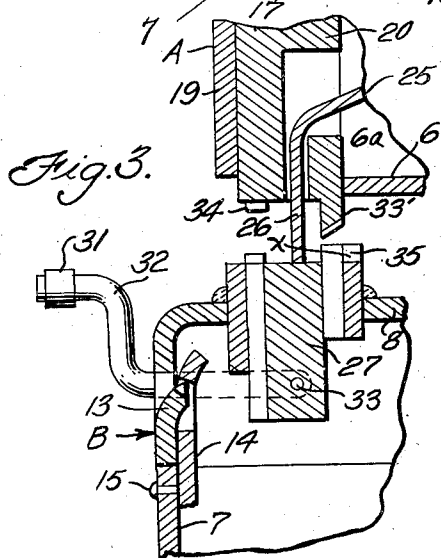


Fig. 3.

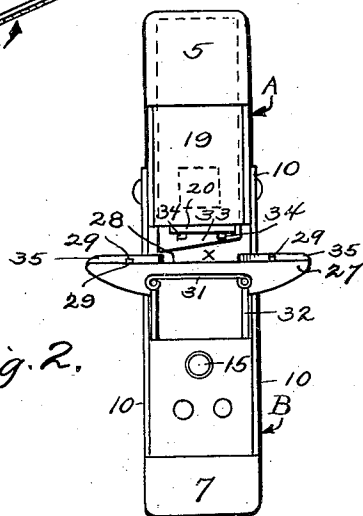


Fig. 2.

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APPARATUS FOR SPLICING MOTION-
PICTURE FILM

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7 Claims. (Cl. 154—42.1)

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This invention relates to a device for applying adhesive tape to motion picture film.

The device is of particular utility for mending or splicing such film when editing the same.

Broadly stated, the invention resides in providing means whereby the two ends of a film to be spliced may be held in proper relation while a piece of adhesive tape is passed therearound, after which the tape is cut off snugly along the edge of the film and the tape is perforated for the reception of the usual sprockets of the projecting machine.

Present methods of splicing home movie film are troublesome and messy. The usual methods employ a cement that is highly viscous and dries very rapidly. An untidy job results from trying to complete the operation before the film dries. Further, the user frequently finds his cement dried up, or in a partially dried up state when he tries to use it. Under the present method it is not necessary to use any cement at all.

The invention will be best understood by reference to the accompanying drawings, wherein:

Figure 1 is a longitudinal sectional view of a machine of the "stapling" type, adapted to rapidly and neatly splice home movie films, and

Figure 2 is a front end elevation of said machine.

Fig. 3 is an enlarged detail view of a portion of Fig. 1, and

Fig. 4 is an enlarged detail view of a portion of Fig. 2.

This structure comprises an upper jaw A, and a lower jaw B. The upper jaw A comprises an upper shell 5, and an upper frame plate 6, while the lower jaw comprises a lower shell 7, and a lower frame plate 8. The two jaws, A and B, considered as wholes, are pivotally connected at 9, the lower shell 7 being provided with an upward extension 10, which constitutes a support for said pivot. The lower frame plate 8 carries an abutment 11 which limits the movement of the two jaws toward each other to about the position shown in Figure 1. In addition to the bodily opening and closing movement of the jaws A and B with respect to each other, the lower frame plate 8 is pivotally connected at 12 to the lower shell so that the left-hand end of the shell may swing away from said lower frame plate when it is desired to introduce a fresh supply of tape into the machine. This is accomplished as follows: The plate 8 has its left-hand end wall struck inwardly as illustrated in Figure 1 to pro-

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vide a detent tongue 13 and the front wall of the shell 7 carries a resilient plate 14 which snaps over the tongue 13 when shell 7 is closed against plate 8. By pressing the button 15 inwardly the plate 14 may be disengaged from the tongue 13 to permit shell 7 to be swung downwardly upon its pivot 12 or, in other words, to open up the lower portion of the structure. When this is done the spindle 16 of a spool of tape, indicated at 17, may be inserted in the slots 18a of a bearing bracket 18, (only one side of said bracket being shown) after which the lower jaw may be closed.

The upper frame plate comprises a slide-way 19 within which a plunger 20 is mounted. A spring 21 surrounds this plunger and bears between the top of the upper shell and the top of the slide-way 19 and thus maintains the upper shell in elevated position or in the position illustrated in Figure 1 until the operator, by taking the whole structure in his hand and squeezing it together, after the manner of some stapling machines, overcomes the resistance of spring 21 and thrusts the plunger 20 downwardly through the way 19. The plunger is slotted at 22 and a rivet and sleeve 23 passes through this slotted portion of the plunger. The upper frame plate 6 carries a web 6a, which aids in supporting the way 19. A plate 24 supports a spring finger 25, said finger having a down-turned terminal end 26, the function of which is to rest upon and hold the film and tape in place, during the splicing operation, as will be presently described.

A transverse table 27 (see Figure 2) has a flat upper face 28 and carries a plurality of teats 29 adapted to be engaged with the perforations of the two ends of film to be spliced. In splicing a film, a length of tape is withdrawn from the roll 17, brought upwardly through the opening 30, then carried forwardly over the table until its end substantially registers with a gauge bar 31 which extends across the apparatus and is carried by a pair of swinging arms 32, the latter being pivoted at 33. The function of the gauge bar is merely to determine the approximate distance that the tape should be drawn out of the machine. The tape may, if desired, be temporarily stuck to the gauge bar while the operator brings the two ends of film in from the opposite ends of the table 27 and positions them upon the teats 29 so that the line of division between them lies substantially at the transverse center of the machine. Then the operator folds the tape back over the film and this carries the tape

far enough so that it underlies a knife 33' that is carried by the lower end of the plunger 20. The spring finger 26 will hold the tape in this folded over position until the operator either strikes or presses upon the top shell 5 to force the plunger downwardly with respect to the upper frame plate. This causes the knife 33' to shear off the surplus portion of the tape along the rear edge of the film. The plunger presses the tape and film firmly together and teats 34 upon the plunger act to perforate the tape in alinement with the perforations of the film so that even though some of the perforations may have been covered by the tape, they will be restored to action by such perforation. The table may be provided with recesses (not shown) to coact in the punching operation of said teats in a way common to punch and die structures of many kinds.

The elements making up the present machine may be incorporated in a hand device of the character of that shown, or they may be mounted upon a base in a way common to many stamping and pressing machines.

An upstanding wall 35 at the rear edge of the table acts as a guide for the rear edges of the two ends of the film and insures that the two ends to be joined will lie in parallelism. However, this wall 35 is not continuous throughout the length of the table but has a gap X at its center through which the tape passes as it is first drawn out beyond the end of the jaw B and then folded back over the film. This gap aids in positioning the tape so that it will pass around the film at right angles to the length of the film.

It is clear that once given the idea of mending a film with adhesive tape and then punching out the tape, as described, many ways will readily suggest themselves to those skilled in the art for accomplishing this result. Therefore, it is to be understood that the invention is not limited to the precise construction set forth but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described my invention, what I claim is:

1. A device of the character described, comprising an upper jaw and a lower jaw, said upper jaw comprising a frame plate and a movable shell pivoted to said plate said lower jaw being made in two parts to open up and to provide a housing and mounting for a roll of adhesive tape, a table extending crosswise of the lower jaw and having a flat upper surface, a slide way carried by the frame plate, a plunger mounted for movement in said slide way and positioned to be thrust through the slide way toward the table when the shell is manually depressed, film positioning means upon said table surface, a knife carried by the plunger positioned to cut lengthwise of the table and along the edge of the film being spliced, and tape perforating means upon the lower end of said plunger.

2. A structure as recited in claim 1 in combination with a retaining finger carried by the upper jaw positioned to rest upon the film and tape and hold the same prior to movement of the plunger.

3. A film splicing device of the character described, comprising a pair of jaws, each of said jaws comprising a frame plate at its inner side and a shell constituting its outer side, each of said shells being pivotally connected at their rear ends to their respective frame plates and

the shells as a whole being pivotally connected to each other, a mounting for a roll of adhesive tape depending from the lower side of the frame plate of the lower jaw and which is exposed for the insertion of a roll of adhesive tape therein when the shell of the lower jaw is swung downwardly upon its pivotal connection with respect to the lower frame plate, a plunger mounted adjacent the forward end of the shell of the upper jaw in position to be thrust downwardly when said upper jaw is moved toward the upper frame plate, a guide way carried by the frame plate of the upper jaw in which said plunger is slidably mounted, a table carried by the lower frame plate and extending transversely across the forward end of the lower jaw and beneath said plunger, film positioning means carried by the table and a knife carried by the plunger which coacts with an edge of the table to sever the splicing tape, the structure as a whole, constituted by both of said jaws being shaped and dimensioned to be grasped in the hand so that the two jaws may be squeezed toward each other.

4. A structure as recited in claim 3 in combination with a spring finger supported from the upper jaw and projecting downwardly through an opening of the plunger to engage the film to be spliced and the adhesive tape, prior to the movement of the jaws toward each other.

5. A structure as recited in claim 3 in combination with a spring finger supported from the upper jaw and projecting downwardly through an opening of the plunger to engage the film to be spliced and the adhesive tape, prior to the movement of the jaws toward each other, a transversely extending guide disposed in spaced relation beyond and extending transversely across the lower jaw and in position to act as a gauge for adhesive tape manually drawn across the table and to said gauge.

6. A structure as recited in claim 3 in combination with a spring finger supported from the upper jaw and projecting downwardly through an opening of the plunger to engage the film to be spliced and the adhesive tape, prior to the movement of the jaws toward each other, a transversely extending guide disposed in spaced relation beyond and extending transversely across the lower jaw and in position to act as a gauge for adhesive tape manually drawn across the table and to said gauge, an upstanding wall along the rear edge of said table, said wall having an opening therethrough in such alignment with the support for the roll of adhesive tape that tape withdrawn from the latter and passed through said opening will be perpendicularly disposed with respect to the length of the table.

7. A film splicing machine comprising a pair of elongated relatively narrow members, one at least of which is of shell form, said members being pivotally connected to each other at their rear ends, and being shaped and dimensioned to be complementally grasped in the palm of the hand and to have their forward ends thrust toward each other when squeezed, a table extending across the front end of the one member of shell formation and projecting beyond the sides thereof, said table having a flat, upper film receiving face, upstanding pins projecting from said face to engage the usual perforations of motion picture film and disposed to position the ends of two pieces of film to be spliced in close relation to each other at substantially the longitudinal central plane of the member of shell form, means for supporting a roll of adhesive

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tape in the member which carries the table and in position to have adhesive film that is withdrawn from said roll drawn across the film at the juncture between the film ends, a knife carried by the other of said members and disposed to cut along the edge of the table in the direction of its length, upon movement of the members toward each other, to sever the adhesive tape close to the said film, and perforating means actuated by the movement of the members toward each other for perforating the applied adhesive tape to receive the sprocket teeth of a film projecting machine.

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