

April 29, 1952

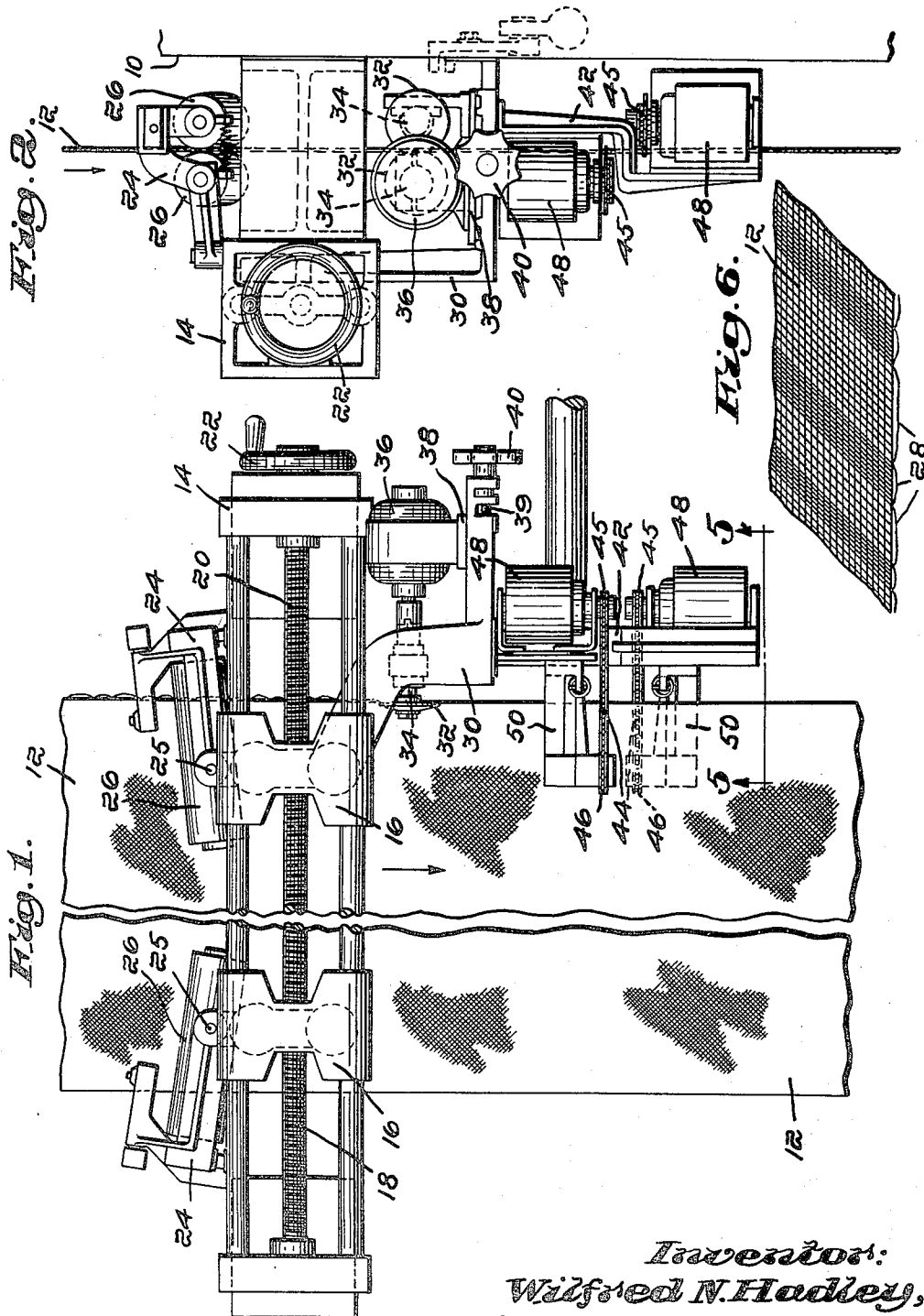
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SELVAGE FINISHING MECHANISM

Filed July 6, 1950

2 SHEETS—SHEET 1



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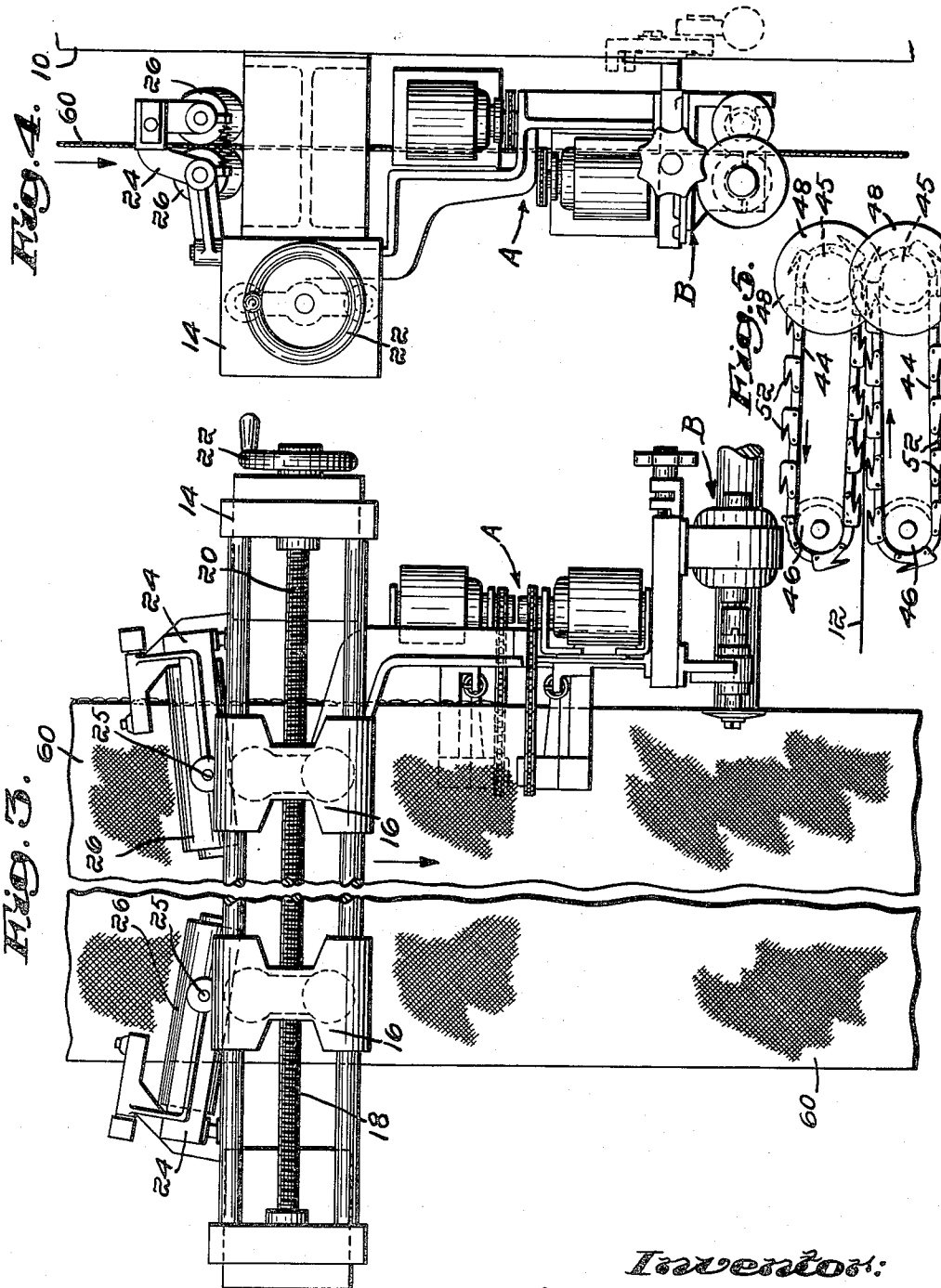
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UNITED STATES PATENT OFFICE

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SELVAGE FINISHING MECHANISM

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4 Claims. (Cl. 26—11)

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This invention relates to an improved mechanism for cutting and trimming from the selvage of woven strip fabrics the loops and threads formed in the weaving operation. The invention contemplates mechanism for supporting and moving a strip of cloth longitudinally in open width and taut condition together with cloth guiding rolls for engaging the two margins of the cloth and keeping it disposed in a predetermined path. The guiding rolls are mounted for adjustment laterally of the fabric path to accommodate different widths of fabric and are constructed to be equally adjusted toward and from each other simultaneously by means of a shaft having right and left hand screw threads for that purpose.

In the loop cutting and trimming operations the cutters must be accurately aligned with the selvage being operated on and this alignment must be constantly maintained if proper cutting and trimming are to be performed without damaging the cloth. In my improved mechanism I perform both such operations automatically by mounting the loop cutting and trimming cutters on a common support with and following the cloth guiding rolls. As thus mounted the cutters are always adjusted with and follow the guiding rolls and since the rolls maintain the cloth aligned in a predetermined path the cutters are constantly maintained in proper operating position relative to the selvage. The production of an improved mechanism of this nature and for the purpose described comprises the primary object of the invention.

These and other features of the invention will be best understood and appreciated from the following description of preferred embodiments thereof selected for purposes of illustration and shown in the accompanying drawing in which,

Fig. 1 is a fragmentary elevation of a cloth guiding mechanism having combined therewith selvage trimming and loop cutting mechanism in accordance with my invention,

Fig. 2 is an end view thereof,

Fig. 3 is a view similar to Fig. 1 but showing a modified arrangement of the trimming and loop cutting mechanism,

Fig. 4 is an end view of Fig. 3,

Fig. 5 is a fragmentary side view of the loop cutting mechanism taken on line 5—5 of Fig. 1, and

Fig. 6 is a fragmentary view of the fabric being trimmed.

Referring first to the form of my invention illustrated in Figs. 1 and 2, 10 indicates a frame

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provided with means for supporting and moving a strip of cloth 12 longitudinally downward in open width and taut condition. A guide rail 14 is mounted on the frame and extends transversely across and parallel with the path of the strip. Two heads 16 are slidably mounted on the rail and are respectively engaged by right and left hand screw threads 18 and 20 on a rod supported at its ends by the rail. Rotation of a hand wheel 22 on the rod simultaneously moves the two heads equally toward and from each other along the rail.

Each head 16 carries a frame 24 pivoted at 25 and supporting a pair of rolls 26 engaging the adjacent margin of the cloth therebetween. This mechanism as thus far described is well known in the art and serves automatically to guide the cloth and maintain it in a predetermined path. The two pairs of rolls are disposed at an angle to the cloth as illustrated and provide a "swing guider" employed to maintain the cloth in predetermined alignment.

As illustrated in Fig. 6, the selvage of the cloth 12 contains threads and loops 28 which must be removed. This operation is performed by trimmers and loop cutters which must be accurately maintained in alignment with the selvage if the loops and threads are to be properly removed without damaging the selvage. The primary object of my invention resides in combining the trimmers and loop cutters with the swing guiders in a manner always maintaining this alignment.

In the drawings, I have illustrated a support or bracket 30 attached to and carried by one of the heads 16, and a like bracket can be carried by the other head if desired. As illustrated in Figs. 1 and 2, a pair of trimming cutters 32 are mounted on shafts 34 and driven by a motor 36. The motor and cutters are mounted on a slide 38 carried by the bracket and a screw 39 operated by a hand wheel 40 serves to adjust the slide in the bracket. As illustrated, the slide is adjusted to a position disposing the trimming cutters in alignment with the selvage to trim the long threads therefrom.

The selvage also has short loops not reached by the trimming cutters and loop cutting mechanism is also preferably mounted on the bracket for cutting these loops. This mechanism, as illustrated, embodies two like loop cutting units mounted to operate respectively at the two faces of the fabric. These units are mounted on an extension 42 of the bracket 30 and each includes an endless chain 44 supported on two sprockets 45 and 46. The sprocket 45 is carried and driven

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en by a motor 48 in turn supported on the bracket 42. The sprocket 46 is carried on an arm 50 supported on the bracket 42. The chains carry loop cutting knives 52 adapted to engage and cut the closed loops at the selvage. It will be noted that, as illustrated in Fig. 5, the inner reaches of the chains are disposed at a converging angle to the fabric selvage whereby they closely approach the fabric at the selvage to engage and cut the loops. This novel loop cutting mechanism is more fully described in and comprises the subject matter of my copending application Ser. No. 173,210 filed July 11, 1950.

The trimming knives 32 sever the loose long threads 28 at the selvage and the knives 52 cut the short loops. Following this treatment the selvage may be further trimmed to remove the short ends resulting from the loop cutting and it will be understood that this operation may be performed by employing the trimming cutters 32 as shown in Figs. 1 and 2 but without employing the loop cutters.

Where the fabric 60 to be treated (Fig. 3) contains only relatively short loops, it may be unnecessary to employ the trimming knives prior to the loop cutting operation. In such case the loop cutting mechanism A can be mounted on the head 16 forwardly of the trimming cutter mechanism at B, as illustrated in Figs. 3 and 4. In such case the mechanism A cuts the loops and the mechanism B does the final trimming of loose threads.

It will be understood that my invention contemplates the mounting of either mechanism A or B or both in any desired relation on one or both heads 16 to perform the particular function or functions required, and it will be apparent that once thus mounted the cutters follow and remain aligned with the selvage under the control of the swing guiders.

Having thus disclosed my invention what I claim as new and desire to secure by Letters Patent is:

1. In a cloth treating machine embodying a frame having means for supporting and moving a strip of cloth longitudinally in open width and taut condition, a guide rail carried by the frame and extending transversely across and parallel with the path of the strip, two heads slidably mounted on and along the rail, two pairs of cloth guiding rolls respectively carried by the two heads and disposed respectively to engage the strip at its two margins and a rod rotatably mounted on and longitudinally of the rail and having oppositely disposed screw threads respectively engaging the heads for simultaneously moving the two heads and rolls toward and from each other; the combination of a support

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carried by one of the heads and movable therewith along the rail, a pair of rotary selvage trimming cutters carried by the support adjacent to the rail, and means for adjusting the cutters longitudinally of the rail relative to the support.

2. The cloth treating machine defined in claim 1 plus two loop cutting units carried by the support adjacent to and following the selvage trimming cutters, the two loop cutting units being disposed at opposite sides of the strip path in position to cut the loops on the adjacent selvage of the cloth following the trimming of loose threads therefrom by said cutters, and power means on the support for driving the loop cutting units.

3. In a cloth treating machine embodying a frame having means for supporting and moving a strip of cloth longitudinally in open width and taut condition, a guide rail carried by the frame and extending transversely across and parallel with the path of the strip, two heads slidably mounted on and along the rail, two pairs of cloth guiding rolls respectively carried by the two heads and disposed respectively to engage the strip at its two margins and a rod rotatably mounted on and longitudinally of the rail and having oppositely disposed screw threads respectively engaging the heads for simultaneously moving the two heads and rolls toward and from each other; the combination of a support carried by one of the heads and movable therewith along the rail, two loop cutting units carried by the support adjacent to the rail and disposed at opposite sides of the strip path in position to cut the loops on the adjacent selvage of the cloth, and power means on the support for driving the loop cutting units.

4. The cloth treating machine defined in claim 3 plus a pair of rotary selvage trimming cutters carried by the support adjacent to and following the loop cutting units and positioned to trim from the selvage the loose threads formed by the loop cutting units, and means for adjusting the selvage trimming cutters longitudinally of the rail.

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