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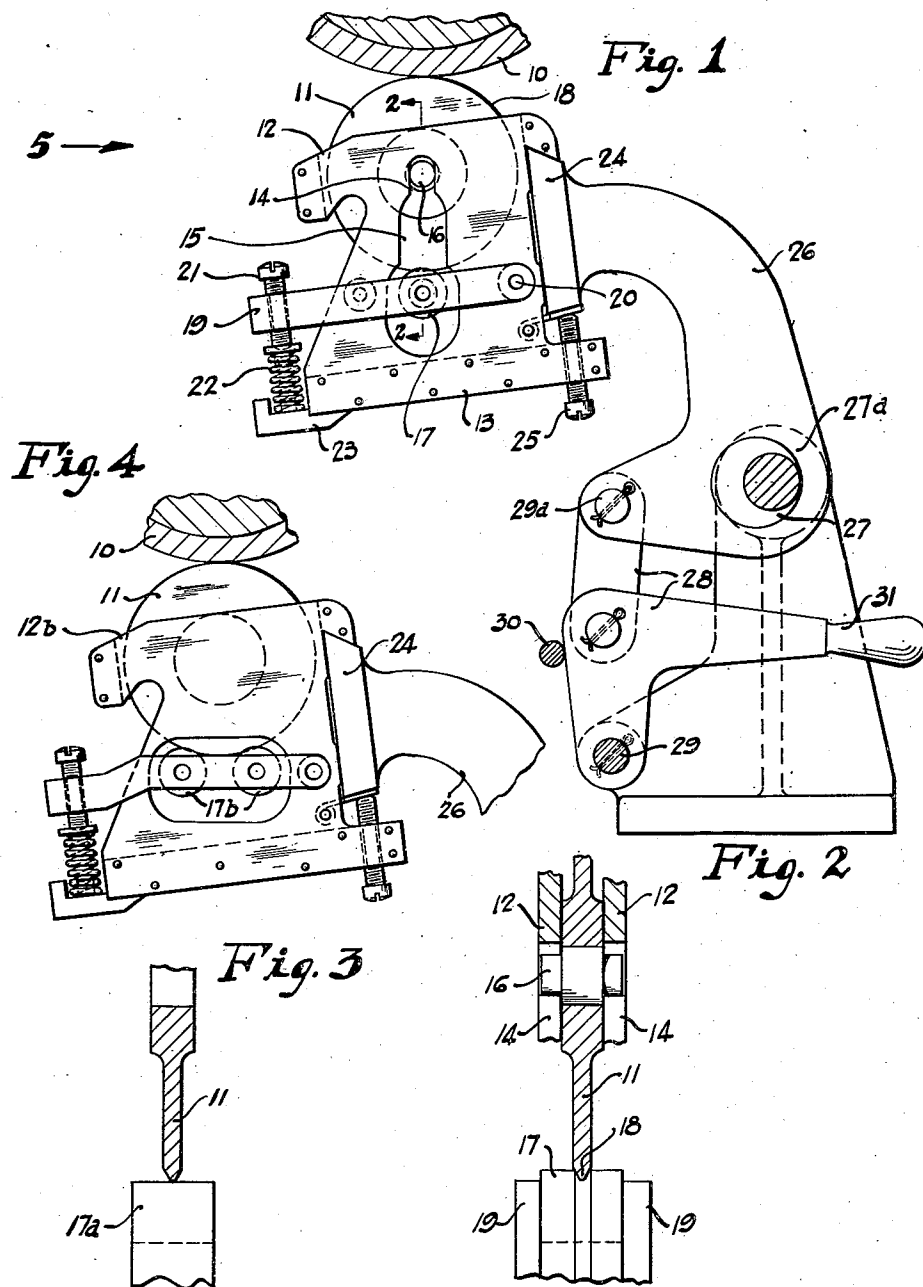
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SLITTING MEANS

Filed July 21, 1934

2 Sheets-Sheet 1



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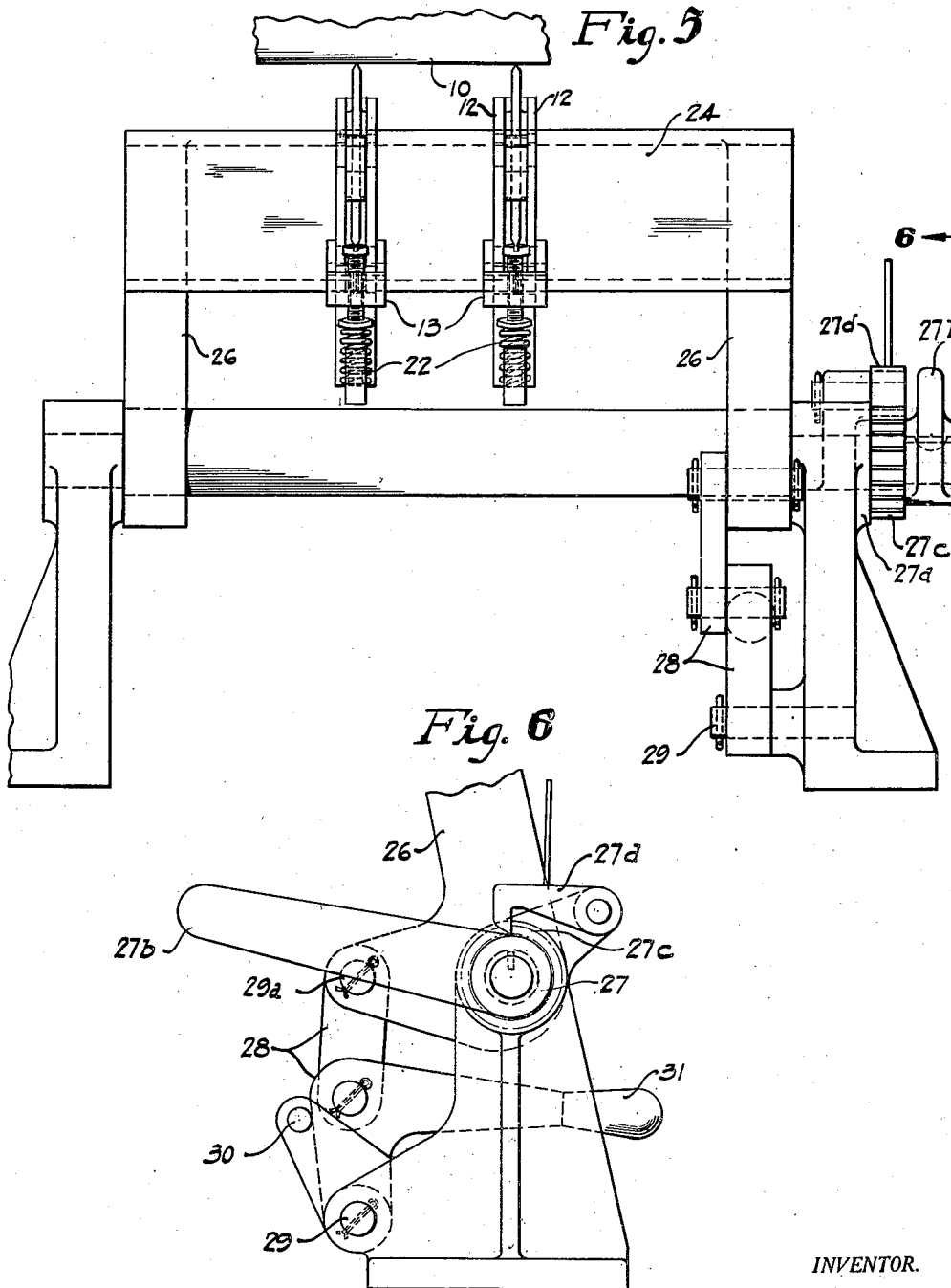
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SLITTING MEANS

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12 Claims. (Cl. 164-60)

This invention relates to slitting means of the score-cut type, and has for its main object and feature the production of slitting means of a more simple and reliable character than those heretofore used.

In the accompanying drawings the invention is shown in several concrete and preferred embodiments in which

Fig. 1 is a view partly in side elevation and partly in section of slitting means showing one form of the invention;

Fig. 2 is a fragmentary vertical sectional view substantially on the plane of line 2-2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing a modified form of the invention;

Fig. 4 is a view similar to Fig. 1 showing still another modification of the invention;

Fig. 5 is a view looking in the direction of arrow 5 of Fig. 1; and

Fig. 6 is a view looking in the direction of arrow 6 of Fig. 5.

10 indicates a backing member in the form of a rotatable smooth-face roller having a glass-hard surface with which cooperates a rotatable score-cut slitter 11 in such manner that, when a web of flexible material is passed between the two elements, said material is slitted lengthwise in accordance with well-known practice.

Referring to Figs. 1, 2 and 5, the score-cutter is confined between side cheeks 12, of a slitter holder 13, provided with slots 14 having an enlarged lower portion 15, and into these slots fit shouldered studs 16, so that the slitter is rotatably and slidably carried.

In the normal operation of a score-cut slitting device the cutting edge acts against the material to be slitted and the score-cut slitter penetrates the web and presses against the platen roll or backing member that supports the web; the slitting operation occurring by the rotation of the platen roll and the score-cut slitter. It is evident therefore that the score-cut slitter should have a correct profile for satisfactory action, and that in the operation of the mechanism which occurs with a rolling action under pressure, there will be some distortion and change of shape of the slitter edge. The reconditioning device, consisting of a grooved roller 17, engages the cutting edge 18 of the slitter, and the profile of the groove in the reconditioning roller being the correct profile of the slitter, it will be seen that the continued engagement of the reconditioning roller with cutting edge 18 of slitter 11 will roll the edge on the slitter back to its correct shape, overcoming to a major extent the deformation of the

slitter profile caused by its rolling engagement with the platen roll. Roller 17 is mounted by anti-friction means (not shown) on a carrier here in the form of a lever 19 pivoted at 20 on the slitter holder. The free end of lever 19 carries an adjustable screw 21 against which bears an expansion spring 22 anchored on bracket 23 of the slitter holder. It will now be seen that, as slitting takes place, the slitter engages the grooved roller and has its cutting edge simultaneously reconditioned. It will be apparent that the reconditioning device need not be the only means that supports the slitter to keep it against the backing member, and therefore that the tension of spring 22 need not be depended upon to exert cutting pressure as between the slitter and the backing member. In the present instance, however, it is preferred to have the reconditioning device as the sole supporting means for the slitter and said spring is therefore of such character as to exert cutting pressure. The advantage of having the spring exercise this double function will be understood when the remaining elements of the slitter mounting are considered. As here shown, slitter holder 13 is carried on a rail or support 24 having inclined faces as shown to which said holder is clamped by means of bolt 25 and on which it can be adjusted lengthwise. Rail 24 usually carries a number of slitter holders and is supported by one or more arms 26 mounted loosely on shaft 27, that is mounted in eccentric bearings 27a. 28 indicates a pair of toggles pivoted at 29 on the framework and connected at 29a to the slitter holder. 30 indicates a positive stop on the framework and 31 is a handle for operating the toggles. Shaft 27 carries a handle 27b and also a ratchet 27c with which engages a pawl 27d. To cause the slitter to engage the backing member, the toggles are first straightened and brought against stop 30, this part of the operation causing the slitter to be moved adjacent to or barely touching the backing member. Handle 27b is now operated to turn shaft 27 in its eccentric bearings thereby rotating ratchet 27b after which the pawl is placed in engagement with the ratchet. This brings the slitter into cutting engagement with the backing member. As a rule several slitting elements are associated with backing member 10 being all mounted on rail 24 and in order to compensate for unequal wear of the slitters, so as to obtain uniform cutting pressure of all the slitters, springs 22 of the different slitters will be unequally adjusted. If it is now necessary to disengage the slitters with backing member 10, handle 31 is operated in a direction

- reverse to that previously described, and it will be observed that when thereafter restoring the slitters to engagement with the backing member exactly the same cutting pressure as before will be obtained without requiring any adjustment of springs 22 because the position of shaft 27 has not been disturbed and the toggles will always be brought back until they strike stop 30. The ease with which the slitter can be removed will also be noted for, after breaking the toggles, it is only necessary to move the slitter down to enlarged portion 15 of slot 14 when the shoulder stud 16 can be pushed sidewise thereby releasing the slitter.
- It is not necessary in all cases to employ roller 17 as a reconditioning member; thus, in Fig. 3, roller 17a is shown smooth faced and acts merely as a supporting member to engage the periphery of the slitter.
- In Fig. 4 is found a modification of the invention. In this case a plurality of rollers 17b are employed forming a cradle for the support of the slitter, and it will be noted that, when this construction is employed, it is no longer necessary to employ a slot like 14 or a shouldered stud as 16 of Figs. 1 and 2 because the two rollers 17b together with side cheeks 12b form adequate supporting and guiding means. Rollers 17b can be either grooved as in Fig. 2 or smooth faced as in Fig. 3.

I claim:

1. Slitting means including: a backing member; a rotatable score-cut slitter to rotatively engage said backing member; and a reconditioning device to engage the cutting edge of the slitter when the latter engages the backing member whereby when the slitter is rotated against the backing member to slit material its cutting edge is simultaneously reconditioned.
2. Slitting means including: a backing member; a rotatable score-cut slitter to rotatively engage said backing member; and rotatable pressure-exerting means to engage the periphery of the slitter to hold said slitter under cutting pressure against said backing member.
3. Slitting means including: a backing member; a rotatable score-cut slitter to rotatively engage said backing member; and a rotatable reconditioning device having a circumferential groove for the reception of the cutting edge of the slitter when the latter engages the backing member whereby when the slitter is rotated against the backing member to slit material its cutting edge is simultaneously reconditioned.
4. Slitting means including: a backing member; a rotatable score-cut slitter to rotatively engage said backing member; and a combined pressure-exerting and reconditioning device, rotatably mounted, to engage the cutting edge of the slitter to hold said slitter under cutting pressure against said backing member.
5. Slitting means including: a backing member; a slitter holder; a score-cut slitter, to engage the backing member, slidably and rotatively carried by the slitter holder; and rotatable pressure-exerting means to engage the periphery of the slitter to hold said slitter under cutting pressure against the backing member.
6. Slitting means including: a backing mem-

ber; a slitter holder; a score-cut slitter, to engage the backing member, slidably and rotatively carried by the slitter holder; and a combined pressure-exerting and reconditioning device, rotatively mounted, to engage the cutting edge of the slitter to hold said slitter under cutting pressure against the backing member.

7. Slitting means including: a backing member; a slitter holder; a score-cut slitter, to engage the backing member, slidably and rotatively carried by the slitter holder; a plurality of rotatable rollers forming a cradle to support the slitter against the backing member by engaging the periphery of the slitter; and a pressure-exerting carrier for the rollers to hold, through the rollers, the slitter with cutting pressure against the backing member.

8. Slitting means including: a backing member; a slitter holder; a score-cut slitter, to engage the backing member, slidably and rotatively carried by the slitter holder; a plurality of rotatable reconditioning rollers forming a cradle to support the slitter against the backing member by engaging the cutting edge of the slitter; and a pressure-exerting carrier for the rollers to hold, through the rollers, the slitter with cutting pressure against the backing member, whereby the slitter is also reconditioned by the rollers when slitting against the backing member.

9. Slitting means including: a backing member; a slitter holder; a score-cut slitter rotatably carried by the slitter holder; adjustable pressure-exerting means for the slitter; an eccentrically and adjustably mounted shaft carrying the slitter holder; and means to turn the slitter holder on the eccentrically mounted shaft.

10. Slitting means including: a backing member; a slitter holder; a score-cut slitter rotatably carried by the slitter holder; adjustable pressure-exerting means for the slitter; an eccentrically and adjustably mounted shaft carrying the slitter holder; and a pair of toggles to turn the slitter holder on the eccentrically mounted shaft.

11. Slitting means including: a backing member; a support; a slitter holder adjustable lengthwise on the support; a score-cut slitter rotatably carried by the slitter holder; adjustable pressure-exerting means for the slitter; adjustable means to move the support, and thereby the slitter holder, toward and away from the backing member; and a second means to move the support, and thereby the slitter holder, toward and away from the backing member, without disturbing the adjustment of the first means for moving the support.

12. Slitting means including: a backing member; a support; a plurality of slitter holders carried by the support; a score-cut slitter rotatably carried by each slitter holder; adjustable pressure-exerting means for each slitter; adjustable means to move the support, and thereby the plurality of slitter holders, toward and away from the backing member; and a second means to move the support, and thereby the plurality of slitter holders, toward and away from the backing member, without disturbing the adjustment of the first means for moving the support.

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