

Aug. 11, 1942.

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2,292,723

WEB SEVERING MECHANISM

Filed Dec. 10, 1941

2 Sheets-Sheet 1

Fig. 1

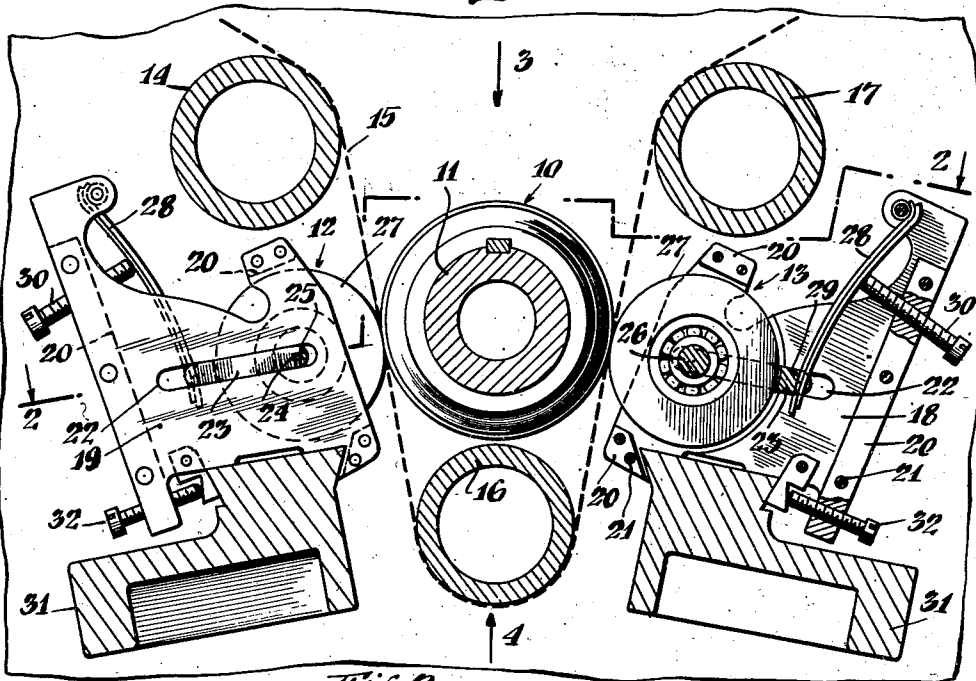
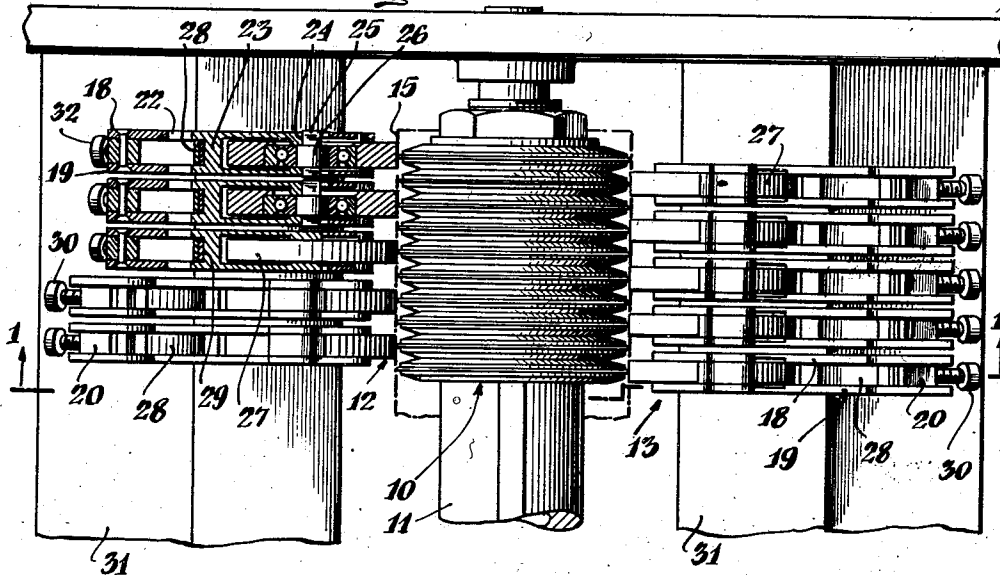


Fig. 2



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Fig. 3

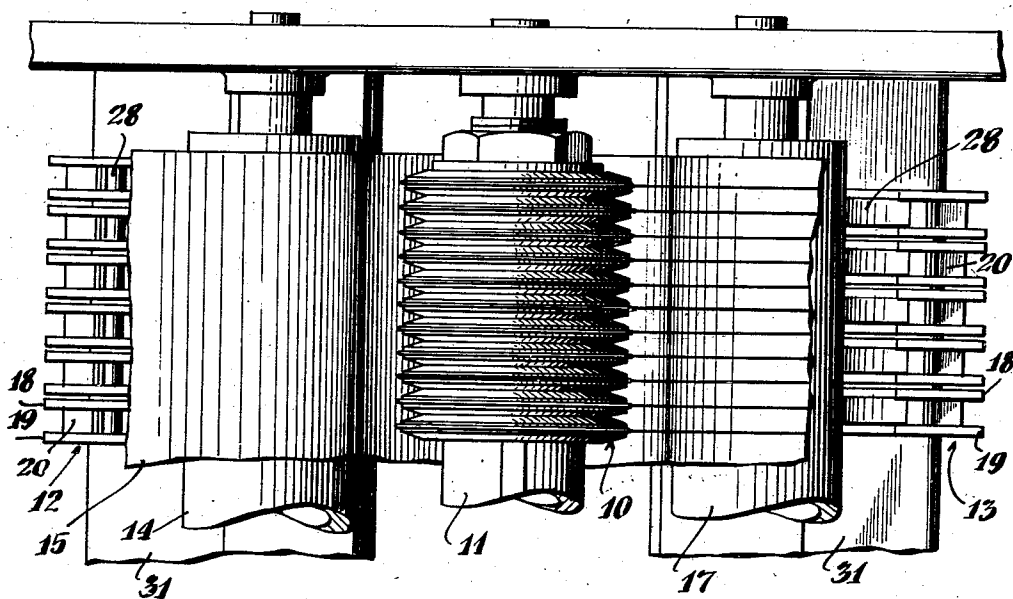
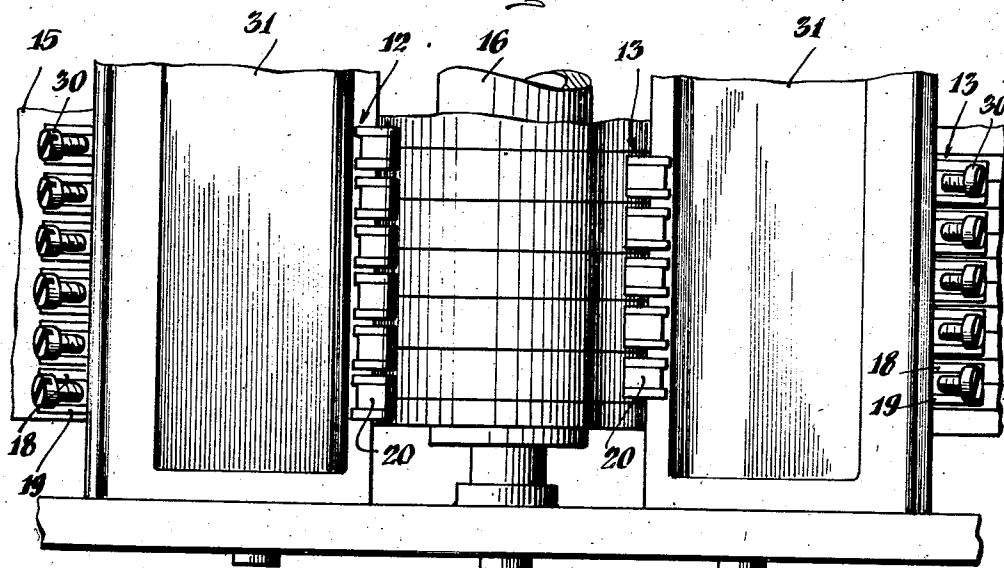


Fig. 4



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WEB SEVERING MECHANISM

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Application December 10, 1941, Serial No. 422,307

1 Claim. (Cl. 164—61)

The present invention relates generally to severing devices for webs of flexible material.

The so-called score-cut slitting device consists essentially of a smooth-face roller and a somewhat blunt severing member that is in knife-edge engagement with the smooth-face roller. One form of score-cut slitting device consists of a plurality of rotatable circular severing members coaxially mounted, and a plurality of smooth-face rollers to engage the severing members under spring or weight pressure. In order to obtain uniform slitting it is highly desirable to compensate for variations in diameter of the severing members with respect to one another by individually adjusting the pressure of the smooth-face rollers. To do this it is necessary to mount each roller in a separate holder or lever and, when the sections or ribbons to be produced are very narrow in width, say $\frac{1}{4}$ of an inch or less, it is difficult to obtain sufficiently sturdy holders or levers to go into the small space available, for it has been found that, to adequately support a roller, a holder approximately $\frac{1}{2}$ inch in width is desirable.

The main object and feature of this invention is to overcome the above difficulty.

In the accompanying drawings the invention is embodied in one concrete and preferred form, in which:

Fig. 1 is a vertical sectional view, substantially on the plane of line 1—1 of Fig. 2, of a device embodying the invention;

Fig. 2 is a horizontal sectional view substantially on the plane of line 2—2 of Fig. 1;

Fig. 3 is a top plan view, looking in the direction of arrow 3 of Fig. 1; and

Fig. 4 is a bottom plan view, looking in the direction of arrow 4 of Fig. 1.

10 indicates a plurality of rotatable circular severing members of the score-cut type, said members being coaxially mounted on driven shaft 11. Said severing members can be pinked rollers with a scalloped severing edge if desired. 12 and 13 indicate two spaced-apart sets of rotatable smooth-face rollers to engage the severing members under pressure and to be rotated by frictional engagement therewith. Each set contains one-half the number of rollers required to coact with the severing members, the rollers of the two sets being staggered with respect to each other so that the rollers of one set will engage alternate severing members and the rollers of the other set will engage the other alternate severing members. Suitable means are provided to guide the web between the sev-

ering members and the two sets of rollers, which means take the following form: 14 indicates a guide roll over which web 15 is led to pass in a substantially tangential path between the severing members and the first set 12 of smooth-face rollers. Then the slitted web sections pass away from said severing member and first set of rollers 12 to the undersurface of guide roll 16, located intermediate the two sets of rollers 12 and 13, and upward in a substantially tangential path between the severing members and the other set, 13, of the smooth-face rollers. The twice slitted web sections then pass over guide roll 17 to a winding or other receiving device. By the foregoing means the web is not carried around the periphery of the severing members when passing from the first to the second set of smooth-face rollers so that deleterious effect of said severing members upon said slitted sections, due to displacement of the slitted sections out of their own plane or otherwise, is avoided. It will further be seen that ample space is provided for the location of holders (to be presently described) to adequately support the smooth-face rollers.

The holders or supporting means for the smooth-face rollers may, of course, vary widely in form and construction, but are, in the present instance, constructed as follows:

18 and 19 denote two cheek members that are secured together in spaced relation by means of spacing blocks 20 and screws 21. Said cheek members are provided with guide slots 22 in which is slidably mounted a two-armed yoke 23 having recesses 24 at the upper ends of its arms for the reception of squared ends 25 of pintle 26 so that said pintle is non-rotatable. Rotatably mounted on said pintle, as by means of ball bearings, is a smooth-face roller 27. 28 indicates a spring anchored on the holder and bearing against the lower slotted portion 29 of the yoke to thereby press said roller 27 against a severing member 10, and the pressure of said spring 28 can be regulated by means of screw 30. The holder is clamped to a supporting bar 31, common to all the smooth-face rollers of a set, by means of screw 32, and said supporting bar 31 can be moved toward and away from severing members 10 in a well-understood manner.

I claim:

In a severing mechanism for webs of flexible material, a plurality of rotatable circular severing members coaxially mounted, two spaced-apart sets of rotatable smooth-face rollers to engage the severing members under pressure,

each set containing one-half the number of rollers required to coast with the severing members, the rollers of the two sets being staggered with respect to each other so that the rollers of one set will engage alternate severing members and the rollers of the other set will engage the other alternate severing members, and means to guide a web between said severing members and

said two sets of rollers, including a guide roll intermediate said two sets of rollers to guide the slitted sections away from said severing members and said first set of rollers and then back again between said severing members and said second set of rollers.

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