

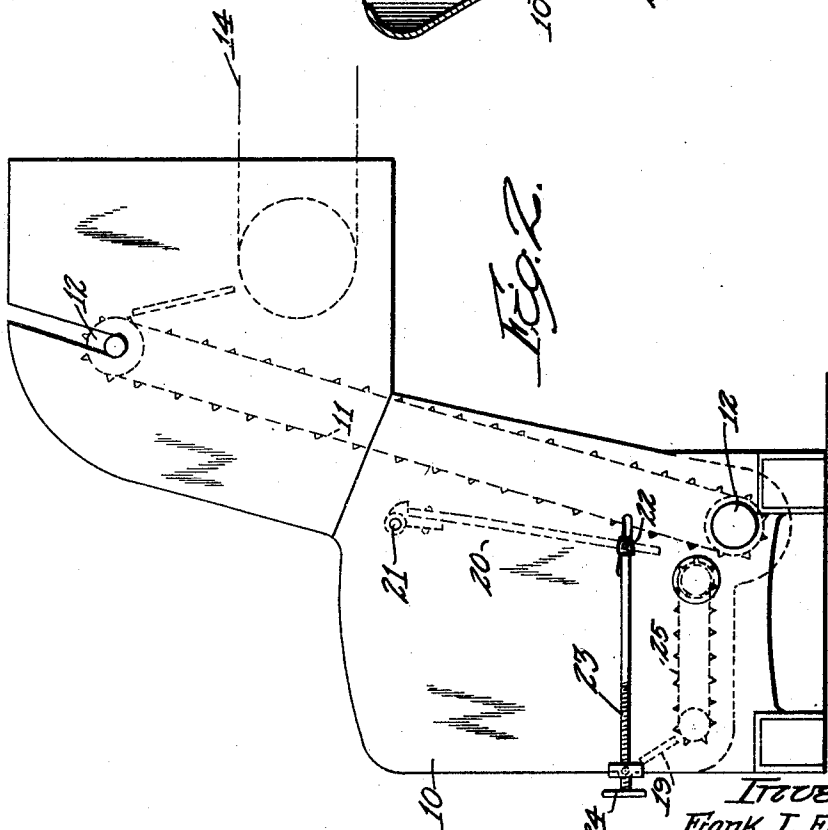
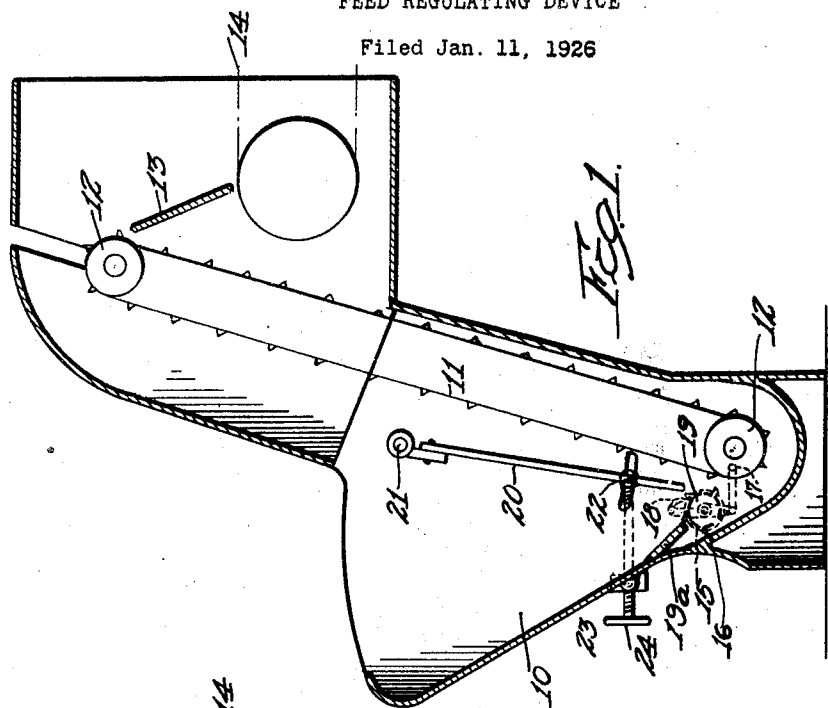
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1,702,432

F. L. FURBUSH

FEED REGULATING DEVICE

Filed Jan. 11, 1926



IN WITNESS WHEREOF:
Frank L. Furbush
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UNITED STATES PATENT OFFICE.

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FEED-REGULATING DEVICE.

Application filed January 11, 1926. Serial No. 80,481.

This invention relates to a device for regulating the feed to a conveyor or feed apron of a mass of granulated material, or material in small pieces. It is particularly applicable to the feeding of granulated rubber, grain, or other material in small particles by means of an upwardly inclined feed apron into a machine for performing further operations upon it. Material of this kind usually is held in a hopper in which the upwardly inclined elevating apron is located so that the conveying strand of that apron practically constitutes one side of the hopper. Means is provided in the hopper at the bottom for constantly or intermittently advancing the material from the bottom of the hopper against this elevating apron. These feeding devices were perhaps originally designed for comparatively light material but now they are in use for heavier material which is piled up in the hopper to a considerable height above the bottom of the elevating apron. Consequently the weight of this material is exerted against the face of the apron at points remote from the points of support of the apron. It not only creates a very material strain upon the apron but diverts it out of its course and also strains the bearings of the rollers at the top and bottom of the apron or even sometimes bends the rollers or their shafts. This invention is designed to avoid these difficulties.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a side view with the front wall removed of an ordinary type of hopper feeding device with a preferred embodiment of this invention applied thereto; and

Fig. 2 is a side view of another form of these feeders and showing the application of this invention thereto.

As stated, the invention is shown as applied to a construction in which there is a hopper 10 which is usually of V-shaped construction to help concentrate the material at the bottom. The elevating apron or conveyor 11 is of a flexible nature and runs over a pair of rollers 12 and delivers the material from the upper or inner strand over the upper roll 12 to an inclined shelf 13 down which it slides on a conveyor 14 or any other device for directing it to the machinery which is to operate upon it further. In the form shown

in Fig. 1 there is a feed roll 15 at the bottom close to the lower edge of the upwardly slanting inner strand of the elevating apron 11. This is provided with angle bars 16 extending the length of it and is shown here as operated by an eccentric pin 17 on the shaft of the bottom apron guide roller 12 which, through links, operates intermittently a ratchet pawl 18 engaged with a ratchet wheel 19 on the shaft of the feed roll 15. This feeds the material toward the bottom of the apron 11 from a more remote position at the bottom of the hopper. An inclined shelf 19^a ordinarily is used to insure that the material will come into engagement with the feed roll.

I use all the above described features of the ordinary machines for feeding this class of material, but to avoid the pressure of the material against the inner and active strand of the elevating apron 11 I provide a plate 20 located in the hopper to protect this strand of the apron. It is pivoted on a rod 21 near the top of the hopper so that the material will not be fed over it to any great extent and is inclined downwardly along the apron to a point closely adjacent to the feed roll 15. At the end this plate or partition 20 which extends throughout the width of the hopper is provided with studs 22 with which are connected a pair of regulating screws 23, each having a hand wheel 24 at the rear of the machine. By turning these the angle of the plate or partition 20 in the hopper is changed in accordance with the amount of feed desired and the character of the material which is being acted upon. This constitutes an effective means with comparatively little expense for avoiding this unnecessary strain that is usually put on the elevating apron.

In the form shown in Fig. 2 the conditions are just the same and the same reference characters are employed to designate the same parts. The only difference is that in this case it is applied to another type of feed hopper in which, instead of the feed roll 15, a feed apron 25 is employed. It works in the same way and no further description of details is necessary.

It will be seen therefore that this principle can be applied to different types of feeders and that it will have the same function and effect irrespective of the way in which the material is fed to the inclined feeding apron.

Although I have illustrated and described

only two forms of the invention, I am aware of the fact that modifications can be made therein without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to the details herein disclosed, but what I do claim is:—

1. In a feeding device for material in small pieces, the combination with a hopper in which the material is located, an elevating apron within the hopper having its feeding strand inclined near one wall of the hopper for feeding the material upwardly therefrom, an inclined shelf at the top of the apron for receiving the material therefrom and means in the bottom of the hopper for feeding the material at the bottom into contact with this apron, of a partition extending across the hopper from a point adjacent to the last named feeding means to a point near the top of the hopper and near the active strand of the elevating apron.

2. In a feeding device for material in small pieces, the combination with a V-shaped hopper in which the material is located, an elevating apron within the hopper having its feeding strand inclined along one inclined wall of the hopper for feeding the material upwardly therealong, and a roller in the bottom

of the hopper for feeding the material at the bottom into contact with this apron, of a partition extending across the hopper from a point adjacent to the roller to a point near the top of the hopper and near the active strand of the elevating apron, means for pivoting said partition at its upper end so that its lower end can swing toward and from the elevating apron, and screws at the sides of the hopper for adjusting the angle of said partition.

3. In a feeding device for material in small pieces, the combination with a V-shaped hopper in which the material is located, an elevating apron within the hopper having its feeding strand inclined along one inclined wall of the hopper for feeding the material upwardly therealong, and means in the bottom of the hopper for feeding the material at the bottom into contact with this apron, of a partition extending across the hopper to a point near the top of the hopper and near the active strand of the elevating apron, and means for pivoting said partition at its upper end so that its lower end can swing toward and from the elevating apron.

In testimony whereof I have hereunto affixed my signature.

FRANK L. FURBUSH.