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DEVICE FOR FEEDING RAGS AND THE LIKE.

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1,258,222. Patented Mar. 5, 1918.

Fig. 1.

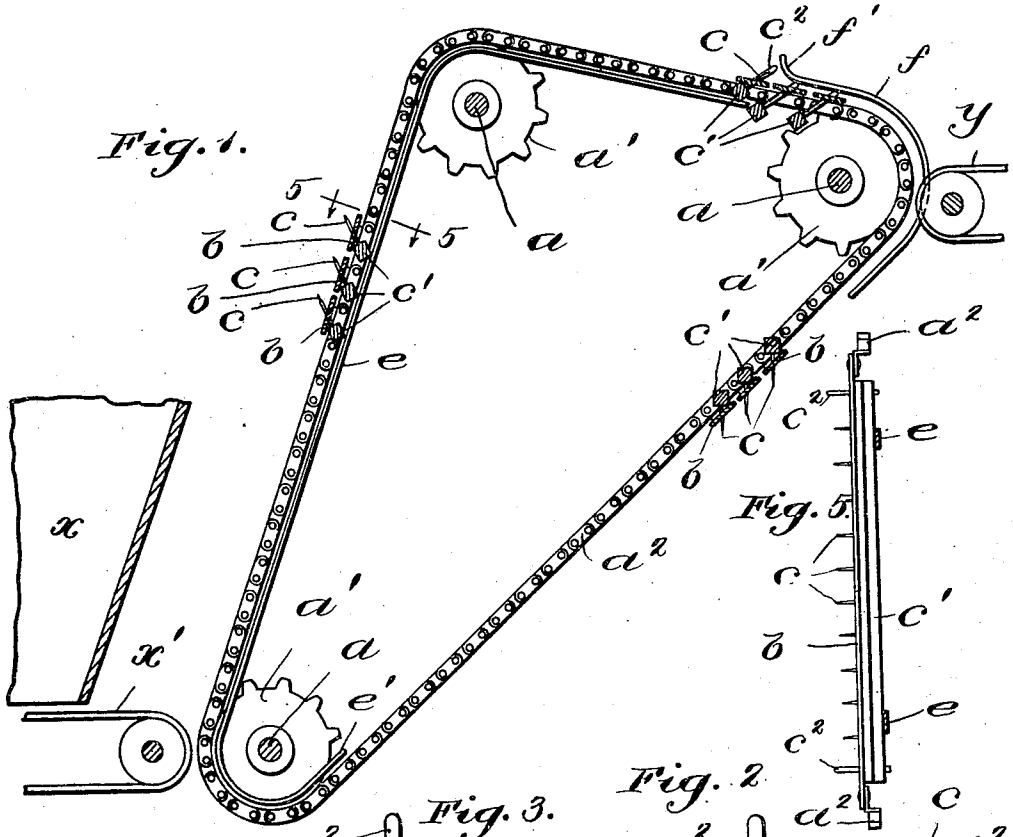


Fig. 5.

Fig. 3.

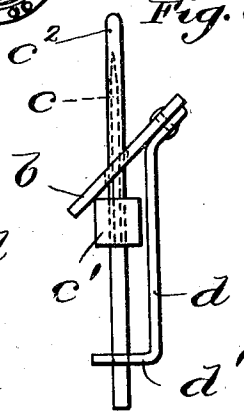


Fig. 4.

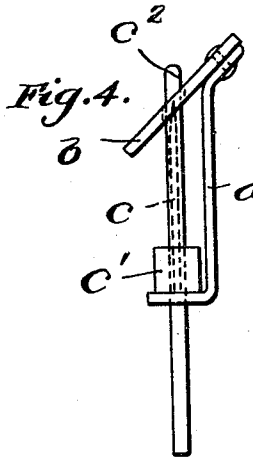
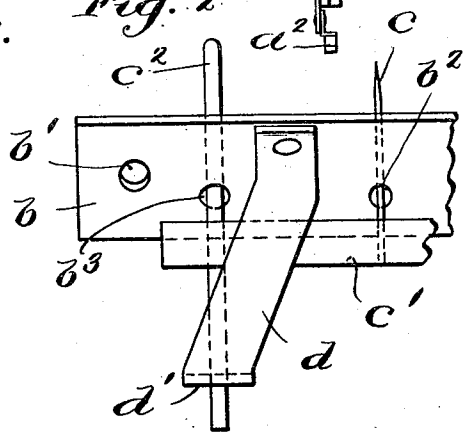


Fig. 2



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DEVICE FOR FEEDING RAGS AND THE LIKE.

1,258,222. Specification of Letters Patent. Patented Mar. 5, 1918.

Application filed February 26, 1917. Serial No. 151,076.

To all whom it may concern:

Be it known that we, JULIAN S. JACOBS and JOHN RAYMOND, Jr., citizens of the United States, and residents of Springfield, Vermont, have invented certain new and useful Improvements in Devices for Feeding Rags and the like, of which the following is a specification.

This invention relates to a device for feeding rags or the like to pickers or other machines for disintegrating the rags or other materials used in the manufacture of shoddy and also in the manufacture of paper.

Heretofore it has been the practice in paper mills or shoddy mills to require the practically continuous attendance of an operator in feeding rags to the feeding apron or table of the picker in order to prevent the rags from being fed into the machine in a rolled up or bunched condition. It has been suggested that a feed apron provided with spikes or projecting steel points for engaging the rags be employed for this purpose but attempts of this kind have not been satisfactory or practical because of the fact that the means adopted for releasing or disengaging the rags from the spikes have been uncertain and unreliable in their action.

The present invention deals with this problem and comprises, generally speaking, the combination of an endless carrier device or conveyer embracing a series of transverse slats provided with rows of automatically controlled points or spikes which during the feeding part of the travel, project a sufficient distance beyond the face of the conveyer to engage and retain the rags, and which are automatically withdrawn or disengaged from the rags at a predetermined point, with means for effecting the appropriate movement of the spikes or points so coördinated as to avoid the deflecting or thrusting of the conveyer away from the normal line of its travel as will be hereinafter explained.

The invention consists in the combination with an endless conveyer of the transverse slats and coöperating spikes with their engaging and controlling elements. It also consists in the details of construction of the transverse conveyer slats and the automatically movable rows of spikes arranged to act in the manner described.

In the accompanying drawings we have illustrated the preferred arrangement embodying the principles of this invention in which—

Figure 1 is a side elevation of a feed device or conveyer provided with a sufficient number of the slats and spikes to illustrate the arrangement hereinafter described.

Fig. 2 is an enlarged detail view of an individual slat combined with the spike-holding member or bar.

Figs. 3 and 4 are end elevations of a single slat and its spike-supporting element with the spikes in their protruding and their retracted positions, respectively.

Fig. 5 is a plan view of one of the transverse spikes in operative relation to the spike-protruding members or tracks.

In the practice of our invention as illustrated in the drawings there are provided a plurality of sprocket shafts a on which are mounted sprocket wheels a' over which pass parallel endless sprocket chains a^2 which are suitably spaced apart according to the desired width of the feeding device.

To these sprocket chains a^2 are secured a series of transverse slats b arranged as close together as practicable. At each end, each slat b is provided with a perforation b' for riveting or bolting the slat to the opposite links of the sprocket chains a^2. Between the perforated end portions each slat is provided with a series of holes b^2 through which project a series of sharpened points or spikes c that, according to the form of the invention illustrated in the drawings, are secured to a bar or supporting member c' which bar or supporting member is provided at each end with a long guide pin or finger c^2 which passes through a guide hole b^3 in the slat and also through a hole in the guide bracket or hook d which is secured to and supported by the slat b.

It will be observed that when the slat is in a horizontal or even an approximately horizontal plane the weight of the supporting bar c' will normally cause the spikes or points to drop through their respective openings b^2. If the spike-supporting bar c' is beneath the slat then the spikes c are retracted or withdrawn from the holes b^2 while if the spike-supporting bar is above the slat its drop or fall causes the spikes to protrude or project a considerable distance beyond the normal plane or surface of the conveyer. The brackets or guide members

d serve in connection with the guide pins c^2 to keep the spikes in position to reënter their appropriate holes after they have been withdrawn therefrom.

The hopper x into which the rags are dumped is provided with a feed belt x' at the point where the upward travel of the conveyer begins. It is necessary therefore that the spikes should protrude at this point and any convenient means may be provided for this purpose. We have shown in the drawings a pair of parallel track members e arranged intermediate of the ends of the slats in close juxtaposition to the plane of upward travel of the sprocket chains so as to engage the spike-supporting bars c' in such a manner as to thrust the spikes to their full extent up through the holes in the transverse slats of the conveyer. These tracks or spike-protruding members e extend around the uppermost shaft a between the sprocket wheels thereon and are continued along in an approximately horizontal plane nearly to the next pair of sprocket wheels which are adjacent to the picker intake member y. Around the periphery of the sprocket chains where they pass around the sprocket wheels adjacent to the picker feed are placed two guard members or guides f arranged in the path of the upwardly projecting pins c^2 so as to engage said pins and force them downwardly after their spike bars c' have passed beyond the end of the track members e. These pin engaging members or guides f are carried beyond and below the plane of the feeding in member y so as to make certain the withdrawal or retraction of the sharpened pins or spikes c to the inner side of or below the surface of their coöperating slats b.

As soon as each successive pair of pins has passed below the lower ends of the guides f the weight of the spike bar c' will act through the drop of the spike bar to return the individual row of spikes to their outward or protruding position in which position they remain during the downward travel of the slat to the lowest point of its travel. The track or guide member e has its lower end turned back inside the line of travel of the slats around and beneath the lowermost shaft a so as to maintain the successively approaching rows of pins in their outward or projecting position ready to engage the rags fed to them by the feeding belt x'.

The laterally bent foot portion d' of the bracket d serves as retaining stops for the spike bars when the spikes are completely withdrawn below the outer surface of their respective slats.

The guide members f are preferably formed at their upper ends with upturned or sloping deflecting tongues f' so as to provide means for positively forcing down the spike bars in case there is any tendency for them to remain in raised or projecting position through their frictional engagement with their respective slats.

It will be observed that the slats are arranged quite closely together so as to form a nearly continuous supporting surface for the rags while the spikes themselves are set close enough to each other in the transverse rows to afford the proper engagement with the rags at all parts of the conveyer. The arrangement of the guide members which engage the spike-carrying bar c' in relation to the conveyer is such that the outward thrust against the spike bars does not act to deflect the conveyer itself bodily outward, hence the spikes project their full normal length throughout the full range of their feeding traverse and could not possibly be withdrawn or the rags which they engage. The details of arrangement are not essential so long as the spikes are maintained in their outward or projecting position with relation to the slats during the feeding part of their traverse and are retracted with certainty at the predetermined point necessary to completely release the rags in order that they may drop on to the feed member y of the picker.

What we claim is:

1. A rag feeding device embracing in its construction a conveyer comprising parallel side chains and connecting cross slats whose ends are secured thereto, a series of loosely mounted spike-bars each having a row of spikes projecting through corresponding holes in said slats, guide pins secured in said spike-bars to project above and below the same and beyond the points of the spikes, arms secured to the slats below their opposite ends, said guide pins being arranged to project through an alined opening in each slat and guide arm, and means arranged above the slats in position to engage the guide pins to depress the respective guide pins and their spike-bars at a predetermined point in the travel of the spike-bars, substantially as described.

2. A rag feeding device embracing a conveyer comprising parallel side chains and cross-connecting slats secured thereto, a series of loosely mounted spike-bars each having a row of spikes projecting therefrom, corresponding holes in said slats, the arms secured to the under side of said slats near their ends, guide pins secured to the spike-bars and projecting upwardly and downwardly therefrom through alined openings in their respective slats and guide arms, and projecting beyond the ends of said spikes, means arranged inside the upwardly moving section of the conveyer in order to maintain the spike bars in operative position during their upward travel until they approach the point of delivery,

means arranged outside of the conveyer in position to engage the guide pins in order to depress the successive rows of spikes as they approach the point of delivery, substantially as described.

3. A rag feeding device, the combination of the endless conveyer comprising parallel carrying chains and cross connecting perforated slats, a series of loosely mounted spike-bars carrying rows of spikes projecting through said slats to engage the rag stock, guide arms secured to each slat near its ends, guide pins secured to the spike-bars to project through said slats and also through said guide arms, projecting guides arranged inside the vertically moving portion of the conveyer to engage the spike bars and maintain them in operative feeding position, exteriorly arranged guide members located beyond the upwardly moving portion of the conveyer near the point of delivery of the rags to positively depress the spike-bars in order to release the rag stock, substantially as described.

4. A rag feeding device embracing an endless conveyer having parallel cross slats and a series of loosely mounted spike bars provided with rows of spikes arranged to project outwardly beyond said conveyer when in normal operative position, the spike depressing means arranged adjacent to the delivery point of the conveyer and means secured to the respective spike-bars arranged to project outwardly beyond the conveyer in position to engage said spike depressing means and thereby withdraw the spikes from engagement with the rags, substantially as described.

In witness whereof, we have subscribed the above specification.

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JOHN RAYMOND, JR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."