

No. 670,109.

Patented Mar. 19, 1901.

T. V. PAYNE.  
SELF FEEDING APRON.

(Application filed Nov. 24, 1900.)

(No Model.)

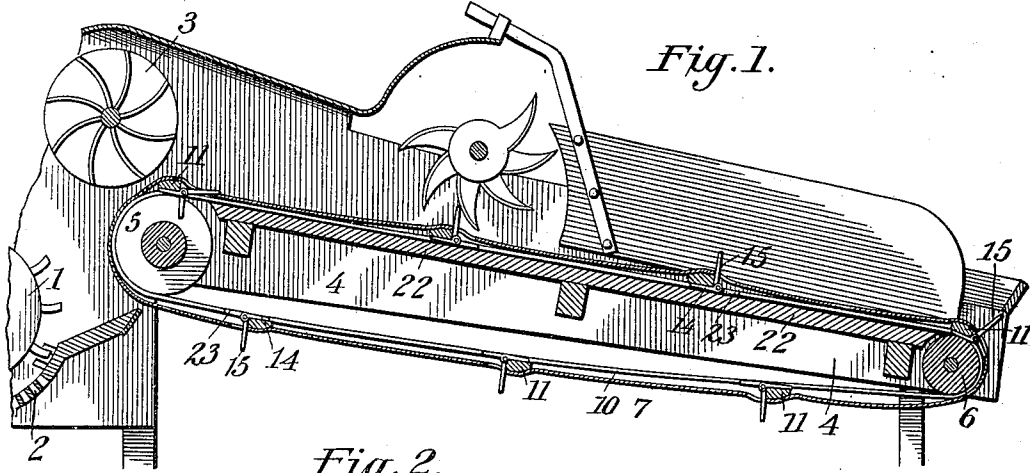


Fig. 1.

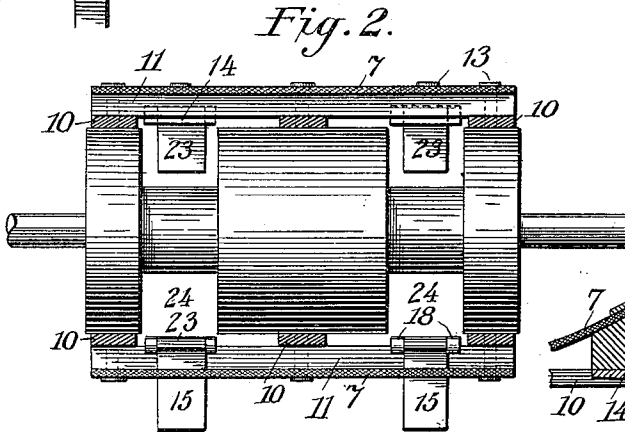


Fig. 2.

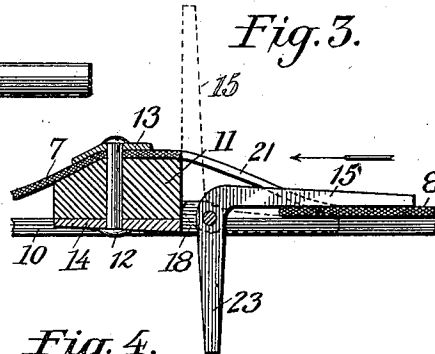


Fig. 3.

Fig. 4.

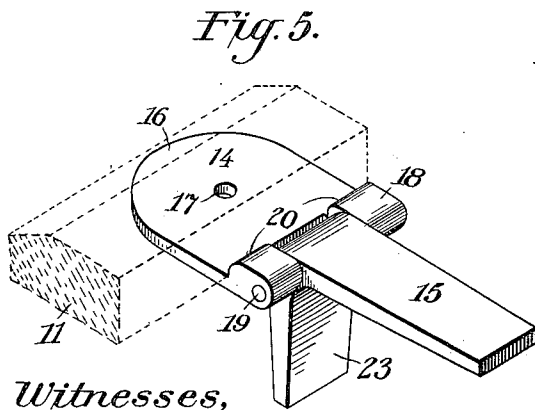
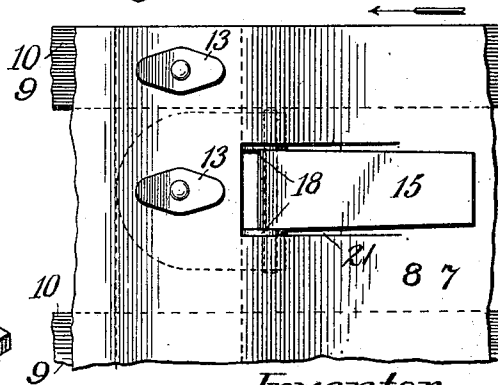


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## SELF-FEEDING APRON.

SPECIFICATION forming part of Letters Patent No. 670,109, dated March 19, 1901.

Application filed November 24, 1900. Serial No. 37,631. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS V. PAYNE, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented a certain new and useful Self-Feeding Apron, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to self-feeding aprons, the object in view being to provide an endless apron equipped with auxiliary devices in the form of hooks or fingers adapted to assist in propelling or moving grain or bundles thereof toward a given point.

The improved apron hereinafter described is especially designed for use in connection with threshing-machines for delivering the grain to the beater, cylinder, and concave.

The ordinary apron designed for the purpose above referred to performs its work imperfectly, especially when operating upon loose grain, it frequently happening that the grain lies loosely upon the apron and fails to be carried forward and delivered to the cutting-knives. It has been attempted to overcome this difficulty by employing hooks of various kinds, but in many instances they carry a considerable part of the loose grain over the inner end of the feeder, causing much waste and litter.

The present invention involves the use of a number of folding hooks or fingers which are carried by cross-slats secured to the apron, and the slats and fingers are so arranged relatively to each other that the slats form limiting stop-shoulders for the fingers or hooks and enable the fingers to resist the inward drag of the grain when it is acted upon by the beater or cylinder. These and other objects of the invention will be fully pointed out in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claim.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a feeder, showing the improved self-feeding apron. Fig. 2 is an enlarged vertical cross-section through the same, taken adjacent to

the inner driving-roller. Fig. 3 is a detail vertical section taken through and adjacent to one of the cross-slats, showing one of the fingers or hooks in its two positions. Fig. 4 is a fragmentary plan view showing a portion of the apron and one of the hooks or fingers. Fig. 5 is a detail perspective view of one of the hooks or fingers, showing the bracket or hanger therefor.

Similar numerals of reference designate corresponding parts in all the figures of the drawings.

The improved self-feeding apron forming the subject-matter of this invention is shown for the purpose of illustration in Fig. 1 as associated with a threshing-machine, in which 1 designates the threshing-cylinder, 2 the concave, 3 the beater, and 4 the frame of the feeder, upon which the grain, either loose or in bundles, is placed preparatory to delivering the same into the threshing-machine.

In carrying out the present invention two rollers are employed, one a grooved roller 5, arranged at the machine end of the apron, and the other, 6, a plain roller which is arranged at the outer end of the apron, the apron being designated at 7 and shown as passing around both of the rollers referred to.

The apron as a whole comprises an outer member 8, which is transversely continuous and constructed of any suitable flexible material and an inner member 9, which is also composed of flexible material and which comprises a plurality of bands or belts 10, as clearly illustrated in Figs. 2 and 4. Cross slats or cleats 11 are interposed between the outer and inner apron members and are firmly and rigidly secured thereto by means of bolts 12 and washers 13, the said bolts 12 also serving as means for rigidly attaching to the slats 11 brackets or hangers 14, in which fingers or hooks 15 are pivotally mounted. Each bracket 14 comprises a base or plate portion 16, having a hole 17 for the bolt 12, and rearwardly-projecting ears 18, spaced apart and adapted to receive the L-shaped finger 15 between them, said finger being pivotally supported by a pin or bolt 19, as best illustrated in Fig. 5. In order to properly position the hanger or bracket 14, the latter is provided with shoulders 20, which are brought to bear

against the cross-slat or cleat 11. The bracket  
 or hanger 14 rests against the inner side of  
 the cross-slat 11, thus bringing the fulcrum  
 19 of each finger approximately in line with  
 5 the inner surface of said slat and immedi-  
 ately adjacent to the inner apron member 9.  
 The outer apron member 8 is slotted, as indi-  
 cated at 21, to allow the projecting portion of  
 the L-shaped finger to swing through a quar-  
 10 ter-circle or from the full-line position of Fig.  
 3 to the dotted-line position of the same fig-  
 ure, and vice versa. In order to sustain the  
 fingers in working position and enable them  
 to propel the grain inward to the machine, a  
 15 platform or guide-board 22 extends between  
 the rollers 5 and 6 and in line with their up-  
 per surface, as shown in Fig. 1, the L-shaped  
 foot portions 23 of the fingers bearing and  
 riding against said board, while the project-  
 20 ing portions of the fingers bear against the ad-  
 jacent edges of the cross-slats, as shown in  
 Fig. 1, and illustrated by the dotted lines in  
 Fig. 3. In this way the fingers are sustained  
 or braced in both directions as they propel  
 25 the grain inward—a feature of great impor-  
 tance when it is taken into consideration that  
 as the grain is acted upon by the cutting-  
 knives there is a strong tendency to forcibly  
 drag the grain inward faster than the move-  
 30 ment of the apron. These hooks or fingers  
 should therefore be able to resist this inward  
 jerk upon the grain or else the efficiency of  
 the fingers would be seriously impaired. By  
 the construction described the cross-slats take

the strain directly and the foot portion 23 of 35  
 each finger is prevented from pressing up-  
 ward against the outer apron member and  
 buckling or bending the same out of shape.

The inner roller 5 is provided with grooves  
 24 sufficiently deep to receive the foot por- 40  
 tions 23 of the hooks or fingers, so that after  
 the portions 23 pass out of engagement with  
 the board 22 the fingers may readily fold, as  
 shown in Figs. 1, 2, 3, and 4, thus allowing  
 the grain to escape from the apron and avoid- 45  
 ing waste and litter. As the fingers pass  
 around the outer roller 6 they are swung out-  
 ward and upward to their operative positions,  
 so as to project and engage the grain and carry  
 the latter forward in a manner which will be 50  
 readily understood.

Having thus described the invention, what  
 is claimed as new, and desired to be secured  
 by Letters Patent, is—

An endless belt composed of two flexible 55  
 members, and cross-slats secured between  
 the said members, in combination with  
 brackets secured to the slats, and L-shaped  
 fingers pivotally connected to the brackets  
 substantially in line with the inner surfaces 60  
 of the slats whereby the rear faces of the lat-  
 ter act as stop-shoulders for the fingers.

In testimony whereof I affix my signature  
 in presence of two witnesses.

THOMAS V. PAYNE.

Witnesses:

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