W. A. THIELBAR.

CYLINDER BAR FOR THRESHING MACHINES.

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1,010,201. Patented Nov. 28, 1911.

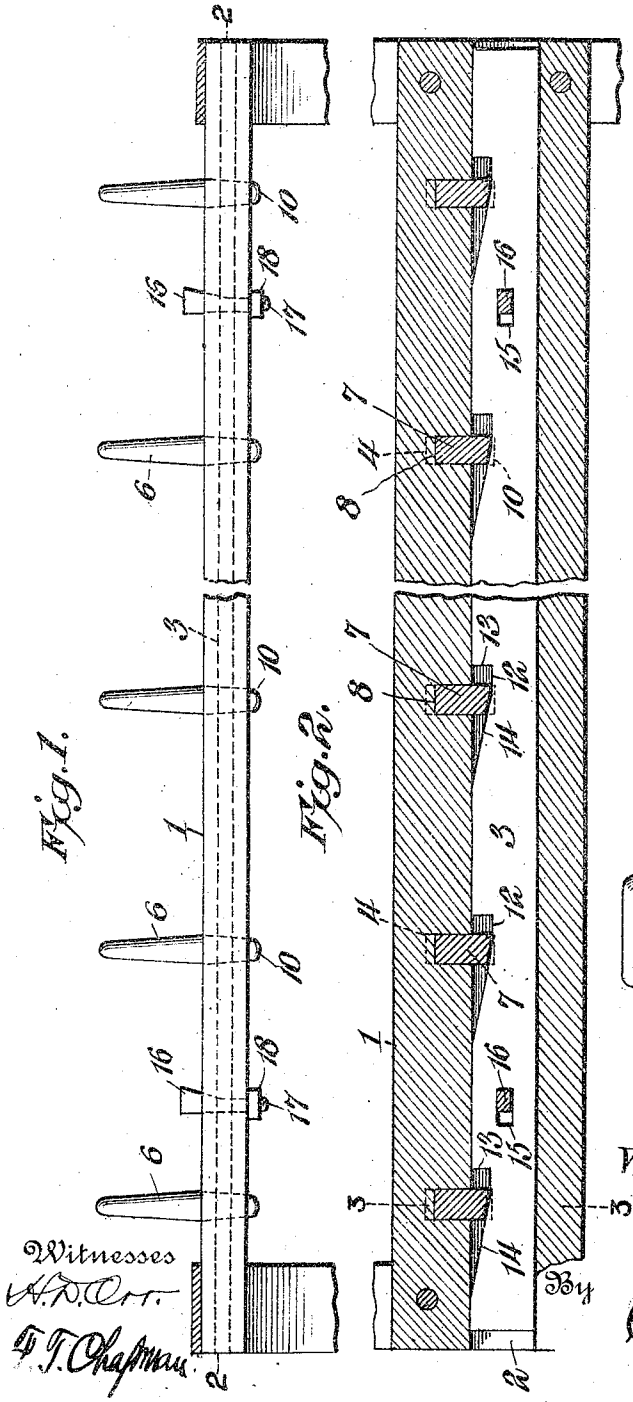


Fig. 1.

Fig. 2.

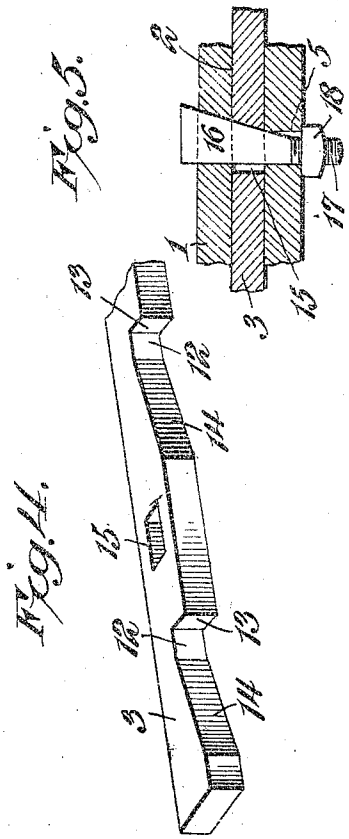


Fig. 4.

Fig. 5.

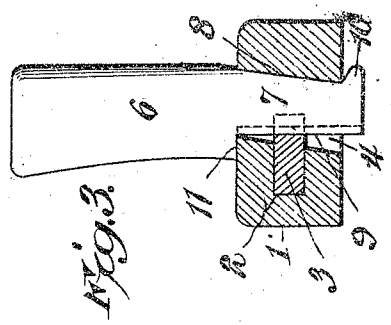


Fig. 3.

Witnesses

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CYLINDER-BAR FOR THRESHING-MACHINES.

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To all whom it may concern:

Be it known that I, WILLIAM A. THIELBAR, a citizen of the United States, residing at Morton, in the county of Tazewell and State of Illinois, have invented a new and useful Cylinder-Bar for Threshing-Machines, of which the following is a specification.

This invention has reference to improvements in cylinder bars for threshing machines, and its object is to provide a means whereby the threshing teeth may be held in position against liability of becoming loosened and thrown out from the cylinder.

The invention comprises a cylinder bar wherein teeth provided with anchoring toes may be locked in the cylinder bar against possibility of accidental release therefrom, and the locking means are held with a minimum number of fastening devices, whereby the liability of the teeth becoming loosened and thrown from the cylinder by centrifugal force is reduced to a negligible minimum. Each bar has passages therethrough for the respective teeth carried by the bar and the bar is also provided with a channel in which may be seated a locking member engaging all the teeth simultaneously in a manner to hold them against the possibility of escape, while fastening means for the locking member are provided which will permit the removal of the locking member when desirable, but which are not at all liable to become accidentally loosened.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that while the drawings show an operative form of the invention it may be embodied in other forms, wherefore the invention is not confined to the exact showing of the drawings.

In the drawings:—Figure 1 is an elevation of a cylinder bar constructed in accordance with the present invention. Fig. 2 is a section on the line 2—2 of Fig. 1 but drawn to a larger scale. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of a portion of the locking bar. Fig. 5 is a longitudinal section of a portion of the cylinder bar through one of the locking bolt passages, the bolt being shown in elevation.

Referring to the drawings, there is shown a cylinder bar 1 which is designed to be placed in the cylinder in the usual manner, and through this cylinder bar there is a longitudinal channel 2, substantially rectangular in cross section and designed to receive a locking bar 3 snugly yet freely.

The cylinder bar adjacent the channel 2 is provided with a suitable number of passages 4 extending through the bar from the outer face to the inner face and opening through both faces. These passages are slightly inclined to the corresponding faces through which they pass, and are likewise inclined to the passage 2. Near each end the cylinder bar is provided with another passage 5, which may be perpendicular to the outer and inner faces of the bar, and each passage 5 opens into the passage or channel 2 about midway of the width thereof.

There are provided cylinder teeth or spikes 6, the main bodies of which may be shaped as is customary, and at one end each spike is formed with a shank 7 having one edge 8 inclined and the other edge 9 substantially parallel with the longitudinal axis of the tooth or spike. The edge 8, therefore, approaches the edge 9 toward the end of the shank remote from the body portion of the tooth or spike, and at the termination of the edge 8 the shank is formed with a projecting toe 10. The edge 9 meets the body portion of the tooth or spike at a short distance from the corresponding edge of the body portion, thereby forming a shoulder 11.

The passage 4 is of such width transversely of the bar 1 as to permit the introduction of the shank 7 with its projecting toe 10 when the tooth or spike 6 is tilted with relation to its final position, and the tooth 10 is tapered so that it may be engaged under the inner face of the bar 1, considering the outer face as uppermost, with the shoulder 11 in engagement with such outer or upper face, in which position of the parts the edge 8 is in engagement with the corresponding portion of the passage 4, while the edge 9 is a short distance

from the adjacent portion of the passage 4.

The bar 3 is formed with a series of notches 12, each with an abrupt shoulder 13 at one end, and gradually tapering at the other end, as shown at 14, until merging into the corresponding edge of the bar 3. These notches 12 are in position and number corresponding with the passages 4. The bar 3 has passages 15 therethrough, which may be brought into coincidence with the passages 5 and these passages 15 are somewhat elongated in the direction of the length of the bar 3.

When the bar 3, which constitutes the locking bar or member, is introduced into the passage 2, the shoulders 13 may be brought into coincidence with the corresponding sides of the passages 4, and then there is ample room for the introduction of the shank ends 7 of the teeth or spikes 6. When, however, these several teeth or spikes are in place, the bar 3 is moved in the direction of its length to bring the inclined portions 14 of the notches 12 against the edges 9 of the shanks, thus forcing the edges 8 against the corresponding end walls of the passages 4 with the toes 10 in underriding relation to the inner faces of the bars 1. Under these conditions the passages 15 are in coincidence with the passages 5, and these passages 15 as well as the portion of the passages 5 opening at the outer face of the bars 1, may have one end wall inclined or tapered for the reception of a tapered or wedge shaped bolt 16, the small end of which terminates in a threaded shank 17 designed to receive a nut 18, whereby the taper or wedge portion of the bolt 16 will engage the bar 3 and force the same lengthwise to bring the inclined portions 14 of the several notches 12 into firm engagement with the edges 9 of the several teeth or spikes 6 carried by the respective bar 1. The lock bar 3 positively engages the several spikes or teeth 6 and the toes 10 of the latter positively prevent any movement of the teeth or spikes away from the bar 1, so that there is no possibility of the teeth or spikes flying out from the threshing cylinder during the operation of the latter, this throwing out of the teeth by the action of centrifugal force, as sometimes happens when the fastening devices become loosened, being the cause of injury to the operatives feeding threshing machines.

The wedge bolts 16, of which only two are employed in each bar, are located near the ends of the respective bars 1, and the shape of these wedge bolts causes them to jam tightly in place against liability of accidental displacement, even though the nuts 18 should become loose, but since there are only two such nuts in each bar, it is an easy matter to so arrange these devices that the nuts are not liable to loosen. Because there are but two bolts to remove in each bar, the entire set of teeth in a bar are readily inserted or removed in a minimum space of time, and these bolts being close to the respective heads of the cylinder are readily manipulated, and do not require the operator to reach into the cylinder to any material extent, and are both readily visible and accessible, since they are located but a few inches from the heads of the cylinder. The teeth or spikes 6 are, of course, introducible and removable at the exterior of the cylinder, and hence are at all times readily accessible. Moreover, the locking bar passing through the channel in the cylinder bar is movable into and out of position with the greatest facility and does not have to be supported by hand or otherwise while the teeth or spikes are being introduced into or removed from the bar 1.

It is customary to provide the threshing machine with suitable doors coincident with the ends of the cylinder for the introduction or removal of the bars 3, and the latter being wholly confined within the bars 1 cannot escape therefrom.

What is claimed is:—

1. A cylinder bar for threshing machines having a longitudinal channel therethrough and provided with passages in traversing relation to the bar and in part to said channel, threshing teeth or spikes each provided with a shank of a length to extend through a corresponding passage through the bar and having a toe at the extremity of the shank for engaging the corresponding face of the bar, and a locking bar adapted to the channel through the cylinder bar, said locking bar having notches therein adapted to permit the free passage of the shanks of the threshing teeth and having inclined or wedge-shape portions each at one end of a respective notch and adapted to engage and lock the teeth with the toes of the latter in underriding relation to the inner faces of the cylinder bars.

2. A bar for threshing cylinders having a longitudinal channel therethrough wholly within the body of the bar, and also having passages extending through the outer and inner faces of the bar in inclined relation to said faces and in part traversing the channel through the bar, spikes or teeth each formed with a shank having a laterally extending toe at the free end and adapted to pass through the corresponding passage in the cylinder bar, a locking slide or bar adapted to the channel through the cylinder bar, said locking slide or bar having notches in one edge matching the inclined passages through the cylinder bar, each notch having an extension with one

wall inclined longitudinally of the slide, and locking means for the locking bar adapted to force the latter with the inclined portions of the notches thereof into engaging relation to the shanks of the teeth or spikes to lock the toes of said shanks in underriding relation to the inner face of the cylinder bar.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM A. THIELBAR.

Witnesses:
WILLIAM GRIMM,
ANDREW SEIDEL.