A cylindrical pick up has a plurality of brushes mounted thereon having relatively long heavy bristles in the center and relatively short soft bristles on either side thereof, said bristles extending clear across the width of the pick up. This pick up is rotated and bends the stubble thus facilitating efficient pick up of the swath without the danger of picking up stones. Cleaning fingers are mounted across the frame to keep the bristles clean and a swath control device controls the compaction of the swath being picked up by the pick up assembly prior to transferring same to the conventional transverse auger.

2 Claims, 8 Drawing Figures
PICK UP DEVICES FOR AGRICULTURAL IMPLEMENTS

BACKGROUND OF THE INVENTION

Conventional pick up devices normally used on harvesters and the like, usually consist of a plurality of relatively stiff wire or plastic fingers extending radially from a drum which is rotated so that the fingers engage the stubble, pick up the swath and pass it rearwardly into the machine. Such devices suffer from several disadvantages, the principal one of which being that the pick up device often misses swaths when same is relatively thin and also often picks up stones and transmits them to the combine or threshing implement with subsequent damage occurring to the internal mechanism thereof.

SUMMARY OF THE INVENTION

The present invention overcomes all of these disadvantages inherent with conventional pick up by providing a transversely extending brush component which rotates, said brush component having alternate relatively long heavier bristles and relatively short softer bristles extending therefrom. This bends the stubble and enables the long bristles to penetrate and pick up all of the grain swath but at the same time prevents the pick up of stones or heavy objects which might damage the mechanism.

The principal object and essence of the invention is therefore to provide a device of the character herein described in which the brushing elements extend the full width of the pick up component and are closely spaced in the form of bristles rather than in the form of individually extending tines.

Another object of the invention is to provide a device of the character herein described which includes means to maintain the brush or bristles in a relatively clean condition.

A yet further object of the invention is to provide a device of the character herein described which includes a swath compacting component which can control the compaction of the swath being picked up by the rotating brush component.

A yet further object of the invention is to provide a device of the character herein described which can readily be attached to existing agricultural implements.

A still further object of the invention is to provide a device of the character herein described which is simple in construction, economical in manufacture, and otherwise well suited to the purpose for which it is designed.

With the foregoing objects in view, and such other or further purposes, advantages or novel features as may become apparent from consideration of this disclosure and specification, the present invention consists of the inventive concept which is comprised, embodied, embraced, or included in the means, method, process, product, construction, composition, arrangement of parts, or new use of any of the foregoing, herein exemplified in one or more specific embodiments of such concept, reference being had to the accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation partially schematic and partially sectioned of the front end of an agricultural implement with my device incorporated thereon.

FIG. 2 is a fragmentary partial top plan view of the pick up element and the like shown in FIG. 1.

FIG. 3 is a fragmentary side elevation showing one embodiment of the brush cleaning device.

FIG. 4 is a view similar to FIG. 3 but showing an alternative embodiment.

FIG. 5 is a partially schematic end elevation of the device without the supporting structure and the like showing the action of the brush upon stubble.

FIG. 6 is an enlarged isometric view of the cleaning device shown in FIG. 3.

FIG. 7 is a view similar to FIG. 6 but showing the device incorporated in FIG. 4.

FIG. 8 is an enlarged end elevation of one of the brush components per se.

In the drawings like characters of reference indicate corresponding parts in the different figures.

DETAILED DESCRIPTION

Proceeding therefore to describe the invention in detail, reference character 10 generally shows the front end of an agricultural implement, in this instance a swather or the like, which includes supporting framework 11 and a conventional transversely situated auger assembly 12 normally mounted within the framework which conveys the picked up swath to the interior of the machine (not illustrated).

My device collectively designated 13 forms part of the swath pick up assembly. It consists of a pulley 14 connected by means of belt 15 to a source of power (not illustrated), said pulley being concentrically engaged upon a shaft 16 which is supported in suitable bearings upon each side (not illustrated).

The transversely situated pick up component collectively designated 17, includes the aforementioned shaft 16 upon which is mounted a support frame. In this embodiment, the support frame is hexagonal when viewed in end elevation but, of course, it can be any shape desired and in the claims, it is defined as being polygonal when viewed in end elevation. This support frame 18 extends clear across the width of the device and upon each flattened surface 19 is secured a brush unit 20.

Any convenient means may be provided to secure these units to the frame 18 and in FIG. 8, nut and bolt assemblies 21 are shown. Each brush unit consists of a substantially rectangular base member 22 having a plurality of bristles extending outwardly therefrom. The bristles consist of a first set 23 which is in the form of relatively long heavy stiff bristles and these extend across the base 22 intermediate the side edges 24 thereof and are embedded within the base in the conventional manner.

Situated upon each side of the set of bristles 23 is a further set of bristles 25 one set upon each side thereof, and these bristles are relatively short soft bristles compared to the set of bristles 22.

It is to be understood that there is one brush unit secured to each flat surface 19 so that the bristles extend in radial array from the frame 18 as illustrated in FIGS. 1 and 5.

The belt 15 connected to the source of power rotates the entire brush component in the direction of arrow 26 and FIG. 5 shows the action relative to stubble illustrated by reference character 27. The relatively long sets of bristles 23 penetrate the stubble and bend it as clearly shown and the short bristles in conjunction with the long bristles pick up the swath 28 and pass it over
the top of the brush component towards the auger 12 and it will be observed that the resiliency of the bristles 23 and 25 prevents stones 29 from being picked up by the pick up component.

It is of course necessary to provide means to maintain the bristles or brush in a relatively clean condition and reference should be made to FIGS. 3 and 4 which show two embodiments.

Dealing first with FIG. 3, a length of angle iron 30 is provided with a curved mounting rod 31 upon the underside thereof which in turn is secured to a bracket 32 forming part of the general framework 11.

The end portion 33 of the angle iron is crimped or squeezed together and edge sharpened as at 34 and this angle iron lies in an upward and diagonal direction so that this end 34 engages the bristles 23 and 25 as the brush component rotates. Curving rearwardly and downwardly from the underside of the portion 33 is a brush cleaning rod 35 and this also is engaged by the bristles in trailing relationship as they rotate. The first portion 33 and 34 acts as an extractor rod for heavy straw and the portion 35 acts as a further cleaning element. It should of course be understood that there is a plurality of these elements in closely spaced parallel relationship extending clear across the frame so that the entire brush component is cleaned during rotation.

FIG. 4 shows an alternative embodiment in which the extractor rod 36 is made of round stock and is counter angulated at the end 37 thereof so that the curved portion 38 extends rearwardly and downwardly to be mounted by means of a clip 39 to a frame member 11A. Hereagain the extractor rod portion 36 and 37 lies at a diagonal angle and is engaged by the bristles as they rotate with the portion 38 acting in a manner similar to the portion 35 hereinbefore described.

It is desirable to provide some compaction to the swath 28 being picked up prior to entering the auger assembly 12 so that the capacity of the machine may be adjusted within limits depending upon the heaviness of the swath. In this connection I have provided a swath compaction or swath control assembly collectively designated 40 which consists of a mounting plate 41 extending across the width of the device and having a plurality of spaced and parallel fingers 42 secured by one end thereof to the mounting plate 41 and extending in a position to overlie the brush component.

A pivot bracket 43 is secured to each end of the mounting rod and one end of this pivot bracket is secured to the frame by means of pivot pins 44 as indicated in FIG. 1. A resilient spring loaded linkage assembly 45 extends between the other end 46 of the pivot bracket and an anchor point 47 provides it on the frame rearwardly of the auger assembly 12. This assembly includes a length of chain or cable 48 together with springs 49 in series therewith. The weight of the rods 42 normally biases the control assembly downwardly towards the brush component and the springs control the pressure of the rods upon the swath passing between the rods and the brush component thus controlling the compaction thereof.

The use of this device provides a pick up efficiency far in excess of conventional tines which are relatively far apart and this is particularly noticeable in relatively thin swaths. It also picks up loose grain heads from the ground between the stubble due to the action of the relatively stiff sets of bristles 23.

Various modifications may be constructed or performed within the scope of the inventive concept disclosed. Therefore what has been set forth is intended to illustrate such concept and is not for the purpose of limiting protection to any herein particularly described embodiment thereof.

What I claim as my invention is:

1. A swath pick up for an agricultural implement having a frame, said pick up comprising a transversely elongated member of a polygonal cross-section rotatably journaled in said frame, a plurality of brush units mounted on and projecting radially outwardly from the respective sides of said member, each brush unit extending longitudinally of the member and including a central region of relatively long and stiff bristles and lateral regions of relatively short and soft bristles disposed along the opposite sides of the central region, whereby during rotation of said member the long bristles may penetrate and bend the stubble and cooperate with the short bristles in picking up the swath.

2. The device as defined in claim 1 together with a transversely extending row of elongated cleaning elements mounted on said frame and projecting into the path of rotation of said brush units.

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