April 17, 1956 A. COLLETTE 2,741,892

SWATH TURNING ASSEMBLIES

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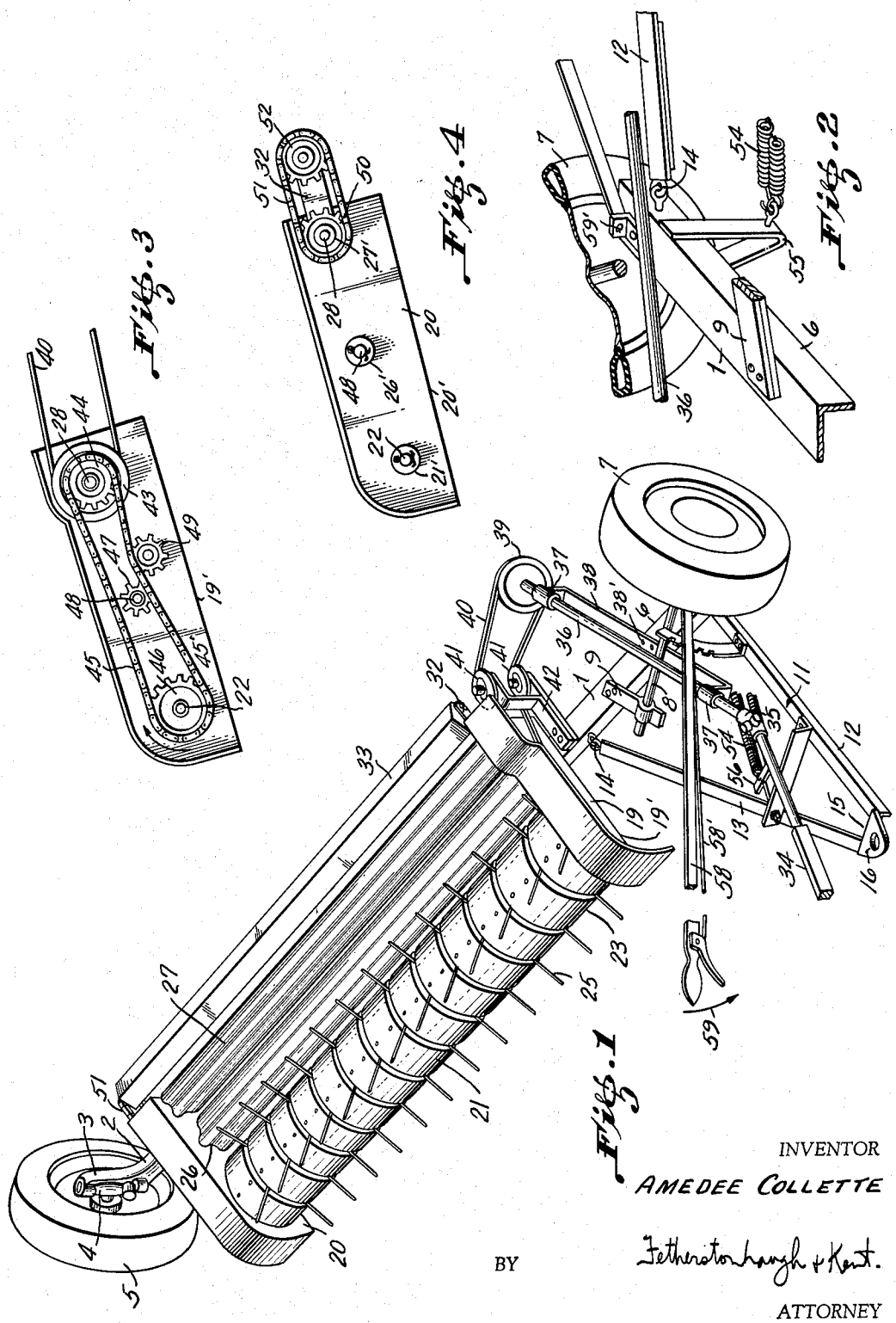


Fig. 1

Fig. 2

Fig. 3

Fig. 4

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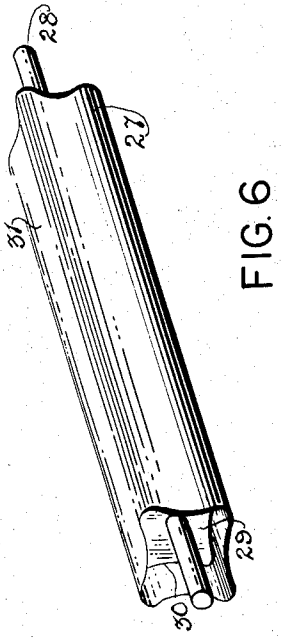


FIG. 6

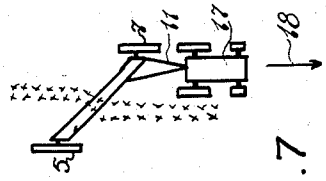


FIG. 7

FIG. 5

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SWATH TURNING ASSEMBLIES

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1 Claim. (Cl. 56—372)

My invention relates to new and useful improvements in swath turning assemblies, an object of my invention being to provide a device of the character herewithin described whereby the swath of grain lying in the field may be picked up, and relaid rearwardly of the device in a position to one side but parallel therewith the original swath.

A further object of my invention is to provide a device of the character herewithin described which, in conjunction with the foregoing object, permits the swath to be replaced at the side of the original path and therefore upon ground which has been exposed to the air previously and which therefore may be considered to be drier than the ground upon which the swath was originally laid.

Yet another object of my invention is to provide a device of the character herewithin described which, due to the obtuse angle of travel thereof, gives a more efficient pick-up as the stalks of the grain in the swath are usually aligned with the direction of travel.

Still another object of my invention is to provide a device of the character herewithin described which, during the pick-up and transferring of the swath, redistributes the grain therein, thereby leading to a more efficient air circulation and enabling the swath to be air cured more rapidly and efficiently.

Still another object of my invention is to provide a device of the character herewithin described which is simple in construction, economical in operation, and otherwise well suited for the purpose for which it is designed.

With the foreging objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a perspective view of my device.

Figure 2 is an enlarged perspective fragmentary view of one end of the main beam with parts broken away.

Figure 3 is an enlarged fragmentary view showing the drive means for the drum and roller at one end thereof.

Figure 4 is an enlarged fragmentary end view showing the drive means at the opposite end to that of Figure 3.

Figure 5 is an enlarged top plan view of one end of my device with parts broken away.

Figure 6 is a perspective enlarged view of one of the rollers thereof.

Figure 7 is a reduced schematic view of my device behind a tractor showing the sideways movement of the swath being turned.

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

Conventional swath turning devices normally attempt to pick up the swath from the field, pass it rearwardly of the machine, and then lay it down in a similar position upon the ground. These machines suffer from several disadvantages, some of the principal ones being that the

ground upon which the swath is laid originally, normally does not get an opportunity to dry, which means that the drying of the swath itself is retarded. Furthermore, the average swath, when laid down, has the stalks thereof in alignment which makes it extremely difficult for a swath turner to pick up a large percentage of the swath. My device overcomes these disadvantages by the fact that the swath pick up drum is angulated with respect to the direction of travel and therefore transfers the swath onto a path parallel to that upon which it was originally laid and, furthermore, due to the angle at which the pick up drum attacks the swath, a greater percentage thereof is thus elevated.

Proceeding now to describe my invention in detail it will be seen upon reference to the accompanying drawings that I have provided a main channel beam or frame member 1 extending transversely. The end 2 of the beam is provided with a forked bearing post 3 within which a wheel post 4 may pivot, a wheel assembly 5 being mounted for rotation upon this post in the conventional manner.

At the opposite end 6 of the beam 1, a further ground wheel 7 is mounted for rotation upon a stub axle 8 and it will be seen that this stub axle is mounted for rotation within a pair of bearings 9 and 10 which in turn are bolted or otherwise secured upon the beam 1. It will be seen that bearing 9 is offset with relation to the beam 1 and it will be appreciated that the distance of offset of this bearing controls the angle at which the axis of the wheel 7 makes with the axis of the beam.

A hitch assembly 11 comprising a pair of links 12 and 13 is pivotally secured adjacent to the end 6 of the beam by means of the eyes 14. The links 12 and 13 converge to a common apex 15 and terminate in a hitch plate 16 by which the device may be secured to a tractor 17 in the conventional manner. It will be observed that link 13 is longer than link 12 thus causing the beam 1 to lie at an obtuse angle to the longitudinal axis or direction of travel of the tractor 17 as exemplified by the arrow 18 in Figure 7. It will thus be seen that if the tractor proceeds in a direction of the arrow 18, the beam 1, mounted upon the wheels 5 and 7, trails rearwardly as clearly illustrated in Figure 7 of the accompanying drawings.

A pair of support plates 19 and 20 are secured at their lower edges 19′ and 20′ to the beam upon the upper surface thereof and extend forwardly as illustrated in Figure 1. These support plates contain bearings and in these bearings 21′ I have mounted for rotation a swath pick-up drum collectively designated 21. This drum is conventional in construction for example such as is shown in U. S. Patent No. 2,592,269, and includes an axle 22, cylindrical spacing drums 23, transverse ribs 24 secured to the drums 23, and a plurality of swath pick-up tines 25 which extend outwardly radially between adjacent pairs of drums 23.

Rearwardly of the pick-up drum 21, I have provided a pair of parallel rollers 26 and 27 also mounted for rotation within bearings 26′ and 27′ contained in the plates 19 and 20, each of these rollers taking the configuration best shown in Figure 6 of the accompanying drawings. It will be seen that these rollers include a shaft 28 having a core 29 of substantially square cross-sectional configuration, the sides 30 of the core being concave as clearly illustrated. This core is covered with a sheath 31 following the configuration of the core thus making a concave sided roller as shown.

Rearwardly of the rollers 26 and 27 and mounted for rotation between brackets, one of which is shown at 32, is a further roller 33 of square cross-sectional configuration which completes the swath moving portion of my assembly.

Means to rotate the drum 21, the rollers 26 and 27, and the roller 33, are provided in the form of a tele-

scopic drive shaft 34 which extends from the power take-off (not illustrated) of the tractor 17. The drive shaft connects through a universal joint 35 to a further drive shaft 36 mounted for rotation within a pair of bearings 37 which in turn are supported upon a bracket 38 secured by bolts 38' to the main beam 1. A belt pulley 39 is secured to the end of the shaft 36 and carries belt 40 which transfers power from the shaft 36, via a pair of parallel pulleys 41 mounted within bracket 42, to a further belt pulley 43 secured to the end of the shaft 28 of the rearmost of the two rollers 26 and 27.

Also secured to the end of the shaft 28 is a chain wheel 44 which carries a chain 45 extending around a corresponding sprocket 46 secured to the end of shaft 22 of the swath pick-up drum 21. The lower run 45' of the chain 45 engages with the underside of a further sprocket wheel 47 which is keyed to the end of the shaft 48 upon which is mounted the foremost roller 26 hereinabove described. A sprocket wheel 49, mounted within a slot (not illustrated) in plate 19, for movement towards and away from the chain 45 permits tension to be adjusted within chain 45 and ensures that the lower run 45' thereof engages the aforementioned sprocket 47.

Turning now to Figure 4 of the drawings, it will be seen that a sprocket wheel 50 is secured upon the opposite end of shaft 28 and that a sprocket chain 51 extends around this wheel and around a further sprocket wheel 52 which is secured to the shaft upon which the rearmost roller 33 is mounted.

From the foregoing it will be appreciated that rotation of the power take-off shaft 34 causes rotation of the pick-up drum 21 in the direction of arrow 53 due to the positioning of the belt 40 and the chain 45 and that the rollers 26, 27 and 33 also revolve in the same direction.

Due to the single beam construction of my device, it is relatively simple to vary the vertical distance between the pick-up drum 21 and the ground, and in this connection I have provided a pair of tension springs 54 extending between a bracket 55 depending from the main beam 1 and a bracket 56 secured by an adjusting screw 56' to a cross-member 57 spanning the links 12 and 13 of the hitch assembly 11. These springs, therefore, maintain normally the pick-up drum 21 at its highest point above the ground and the distance is selectively varied by the provision of a ratchet lever assembly 58. This lever assembly is secured by a pivot bolt 59' to the beam 1 at its lower end thereof, the ratchet lever 58' of the assembly being selectively engageable within a quadrant 59 upstanding from the links 12 of the hitch 11 so that movement of the lever 58 in the direction of the arrow 59, causes the pick-up drum 21 to be lowered towards the ground against tension within springs 54.

Reference should now be made to the schematic diagram in Figure 7 of the accompanying drawings from which it will be seen that the tractor 17, progressing in the direction of the arrow 18, draws the device therebehind and at an obtuse angle to the direction of travel. Rotation

of the pick-up drum 21 rearwardly or in the direction of arrow 53, causes the tines 24 to engage the swath and elevate same rearwardly over the drums and onto the rollers 26 and 27. These rollers in turn are revolving in the same direction and shake and move the swath rearwardly to be thrown off finally by roller 33 in a position to one side of and parallel to the existing swath path.

Since various modifications can be made in my invention as hereinabove described and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

A swath turning apparatus adapted to be drawn by a tractor and comprising in combination, an elongated frame member disposed obliquely to the direction of travel of the apparatus, a pair of travelling wheels mounted at the ends of said frame member for rotation in planes parallel to the direction of travel, a triangular hitch pivotally attached to and projecting forwardly from one end portion of said frame member, said hitch being swingable in a vertical plane and adapted at its forward end for attachment to a tractor whereby said frame member may rock about axles of said wheels relative to said hitch, a pair of spaced parallel plates secured to and projecting forwardly from said frame member, a pair of brackets secured to and projecting rearwardly from the respective plates, a swath pick-up drum and a first transfer roller rotatably mounted in said plates forwardly of said frame member, a second transfer roller rotatably mounted in said plates substantially above the frame member, a swath discharge roller rotatably mounted in said brackets rearwardly of the frame member, said rollers and said drum being parallel with each other and with said frame member, means for simultaneously rotating said drum and said rollers in the same direction whereby swath picked up by the drum may be shifted laterally by said transfer rollers and deposited by said discharge roller on ground previously uncovered by the swath, said transfer rollers being of a multi-sided cross-section and having concave lateral surfaces affording swath engaging and propelling ribs therebetween, coil spring means extending between said hitch and said frame member for urging the latter to a position wherein said pick-up drum is raised above the ground, and adjustable linkage operatively connected to said hitch and said frame member for sustaining the latter in a predetermined lowered position.

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