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(54) **STOVER CONVEYOR SYSTEM**

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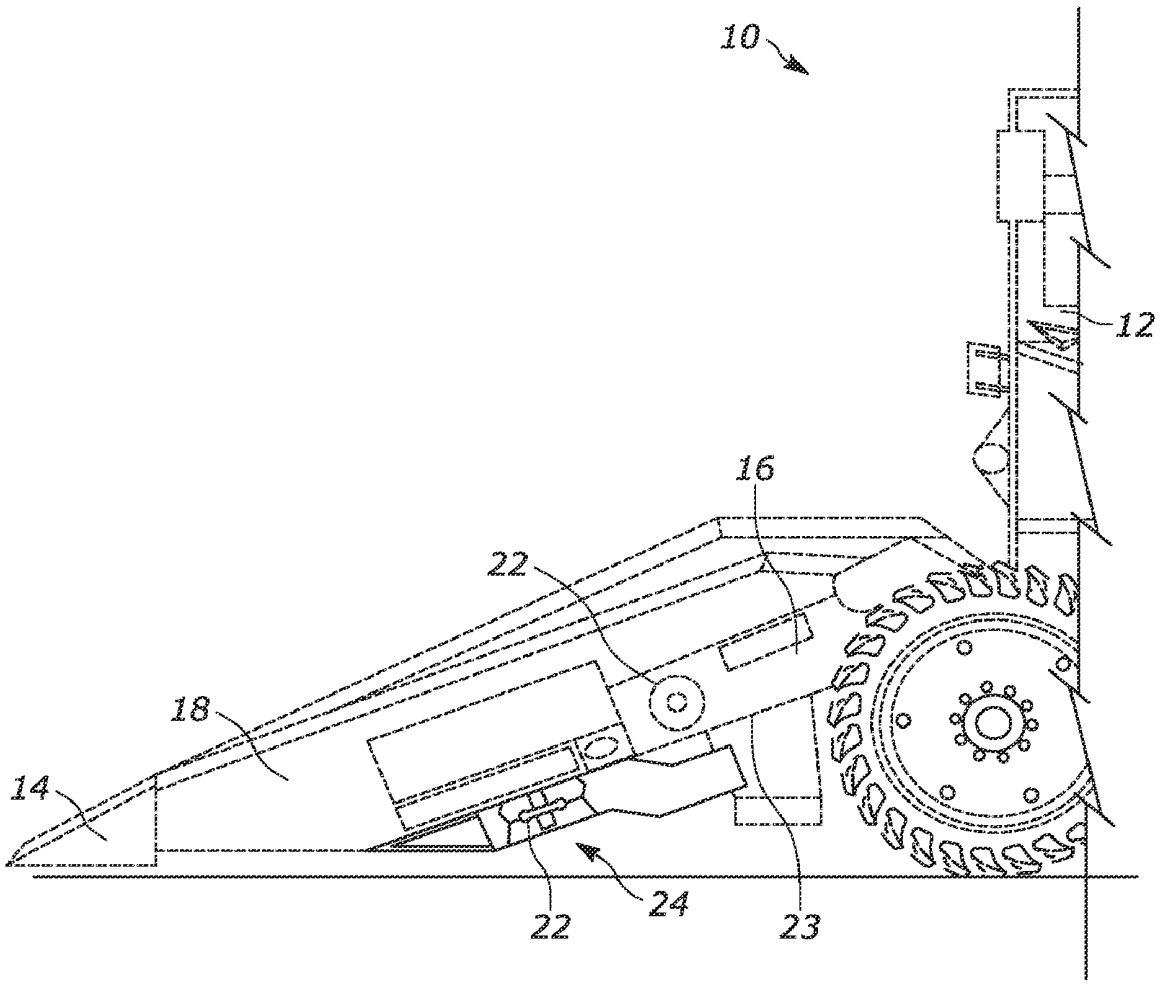
(57) **ABSTRACT**

A stover conveyor system that extends between a corn head and a stover chopper having a first end and a second end. The first end of the stover conveyor is connected to a lift cylinder with a first mounting member, the second end is connected to a frame of a combine with a second mounting member, and a third mounting member is connected to the frame and the stover chopper.



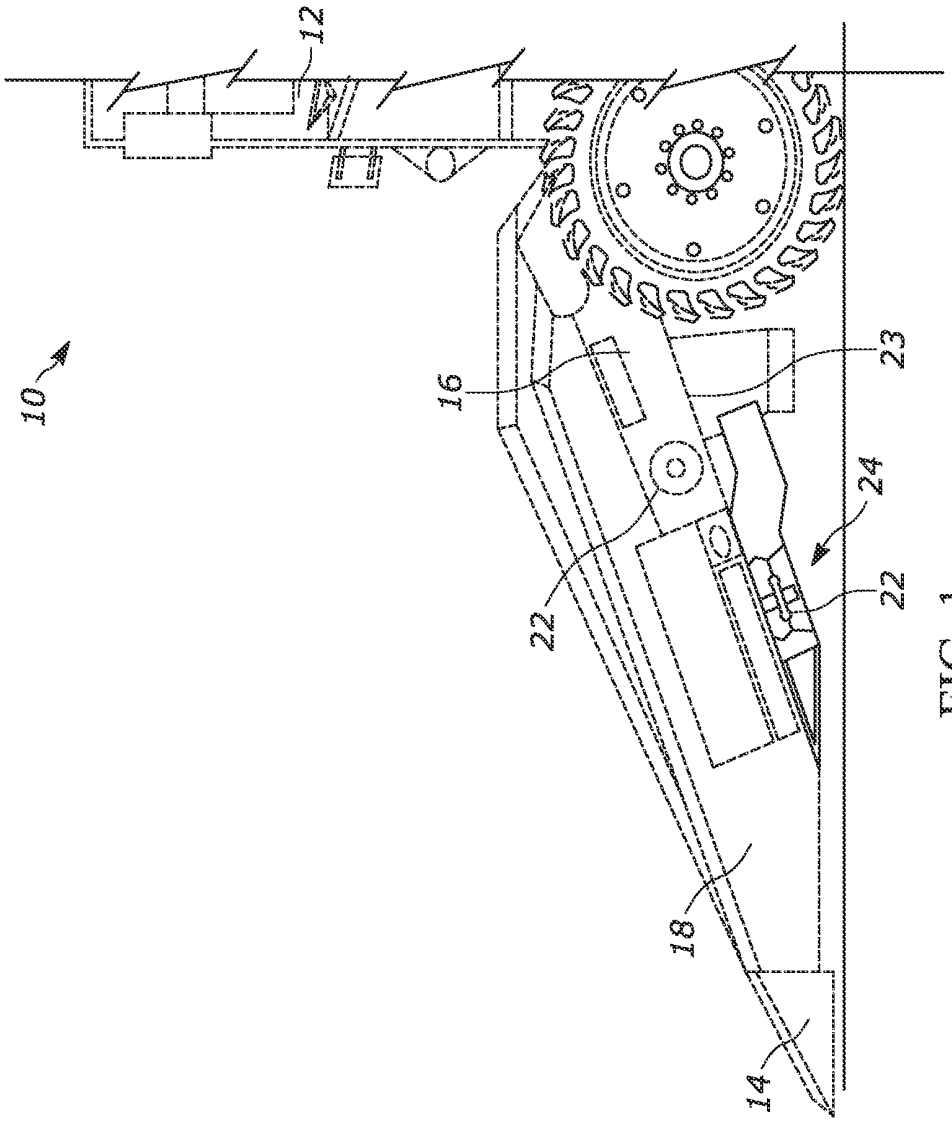


FIG. 1

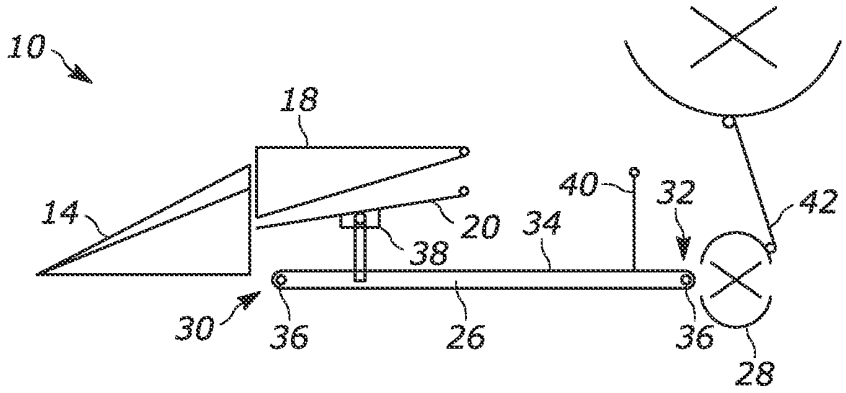

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FIG. 2

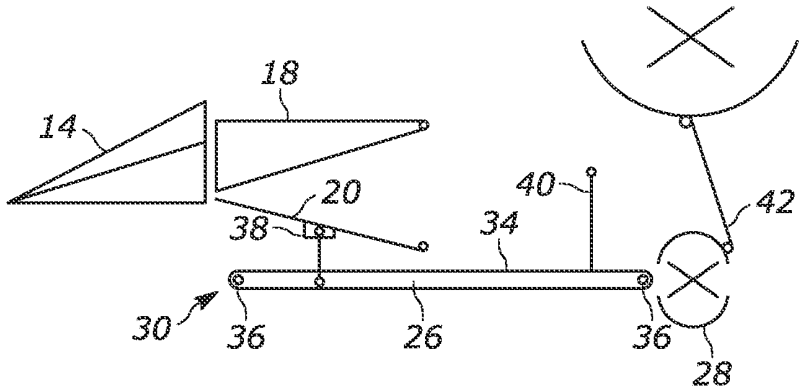
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FIG. 3

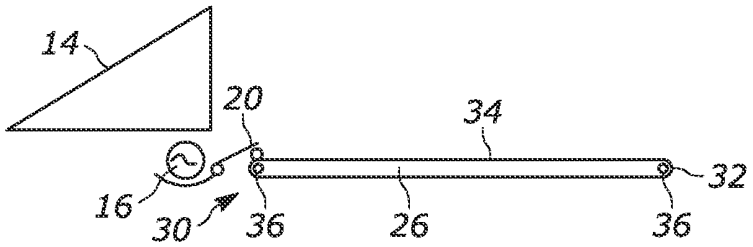

FIG. 4

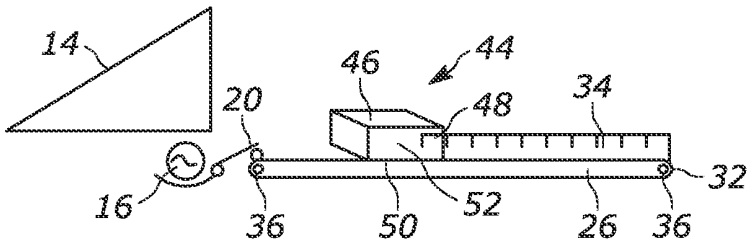

FIG. 5

STOVER CONVEYOR SYSTEM

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application Ser. No. 63/165,765 filed Mar. 25, 2021, the contents of this application is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] The present invention is directed to a stover conveyor system and more particularly to a mounting and guide system for a stover conveyor when the conveyor transports stover from the corn head to the rear of the combine.

[0003] When harvesting stover one challenge is to position the stover conveyor in the correct position to accept material from a corn head to be transported while respecting the limited vertical space which exists under a combine. An additional challenge occurs when the corn head is raised for transport and the conveyor also needs to be raised to avoid contact with the ground.

[0004] Another issue is that all corn heads have a lateral tilt where the outer ends of the corn head will remain close to the ground when the corn head and combine angle change due to ground level variations, plus it is difficult to keep the chopper drive on the rear of a conveyor relatively stable so that the drive mechanism driving the chopper doesn't require intricate drives, as there is limited space to add multiple components to overcome distance change.

[0005] Finally, there are issues with the placement of the stover at the point of entry on the conveyor as well as issues in managing the depth of the conveyor while transported. When stover is discharged from a combine auger it is relatively loose and essentially airborne as it travels in the same direction as the conveyor. This makes it difficult for proper placement of the stover on the conveyor, plus a cross wind can move material off the conveyor reducing yields. The depth of the stover is also a critical matter, as if the height of the stover is not correct it will contact the bottom of the combine and plug the conveyor.

[0006] An objective of the current invention is to provide a stover conveyor system that is positioned to accept material from a corn head in the limited space available under the combine. Another objective of the present invention is to provide a stover conveyor system which provides for proper placement of stover on the conveyor and protects against cross winds.

[0007] These and other objectives will be apparent of one having ordinary skill in the art based upon the following written description, drawings and claims.

SUMMARY OF THE INVENTION

[0008] A stover conveyor system includes a stover conveyor that extends from a corn head to a stover chopper and has a first end and a second end. The first end of the conveyor is connected to a lift cylinder component with a first mounting member. The second end of the stover conveyor is connected to a frame with a second mounting member. A third mounting member is connected to the frame and the stover chopper.

[0009] The first mounting member is pivotal, and the second and third mounting members are pivotal at both ends. In addition, a stover guide is positioned over at least a portion of the first end of the stover conveyor, the stover guide having an adjustable door.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a side view of a combine with corn head;

[0011] FIG. **2** is a side view of a stover conveyor;

[0012] FIG. **3** is a side view of a stover conveyor;

[0013] FIG. **4** is a side view of a stover conveyor; and

[0014] FIG. **5** is a side view of a stover conveyor.

DETAILED DESCRIPTION

[0015] Referring to the Figures, a stover conveyor system **10** is used with an agricultural implement **12** such as a combine. The combine **12** has a corn head **14** connected to an auger **16** and a feeder **18** having a feeder plate **20**. Adjacent the feeder **18** is a combine chopper **22**, wherein the corn head **14**, auger **16**, feeder **18**, and chopper **22** are all connected to a frame **23**. Connected to the corn head **14** is a lift cylinder **24** that is used to raise and lower the corn head **14** from a harvest position to a transport position.

[0016] Positioned below the combine is a stover conveyor **26** that is used to transport stover from the corn head **14** to a stover chopper **28**. The conveyor **26** has a first or front end **30** and a second or rear end **32** and also includes a continuous belt **34** mounted about a pair of pulleys **36**. The first end **30** of the conveyor **26** is connected to the lift cylinder **24** with a non-pivotal mounting member **38**. The rear or second end **32** of the conveyor is connected to the frame **23** of the combine **12** with a second mounting member **40** such as a link that is pivotally connected at both ends, and a third mounting member **42** is pivotally connected at both ends to the stover chopper **28** and the frame **23** of the combine **12**.

[0017] Positioned over at least a portion of the first end **30** of the conveyor **26** is a stover guide **44**. While the stover guide is of any size, shape and structure, in the example shown, the guide **44** has a top wall **46** that terminates into a pair of parallel spaced side walls **48** that are connected at their ends to a conveyor frame **50**. Pivotally connected to the top wall **46** and moveable toward the conveyor **26** is a door or gate **52**.

[0018] In operation, in a harvest position the separation between the auger **16** and the conveyor **12** is minimal and the feed plate **54** of the feeder **18** will come to rest on a conveyor bar **56** positioned just above the conveyor belt **34**. The feed plate **54** is hingedly connected to the auger housing so that when the corn head **14** tilts laterally the feeder plate **54** remains on the conveyor bar **56** to direct stover to the belt **34** in an ideal position.

[0019] The stover guide **44** works like a tent to prevent crosswinds from blowing the stover off the belt **34** and keeps the stover within the width of the belt **34** regardless of the wind. To prevent the stover from contacting the combine **12** and also to prevent plugging as it is transported along the length of the conveyor **26** the door **52** is moved away from the top wall **46** of the guide **44** toward the belt **34** and set at a desired height. As a result, the loose configuration of stover becomes a more compact, dense stream of stover instead of one with a lot of unused space between stover material particles. The stover is then transported to the stover chopper **28**.

[0020] When the corn head **14** is raised to a transport position the separation between the auger **16** and the conveyor **26** is increased and as the corn head **14** is well above

the harvest position, the conveyor **26** is raised as high as possible without contacting the combine **12**. The movement at the rear end **32** of the conveyor **26** is minimal because the second mounting member **40** connected to the frame **23** is close to the rear end **32** of the conveyor **26**. Still, there is some vertical space at the rear **32** of the conveyor **26**. In order to keep the belt drive relatively stable, the stover chopper **28** mounted at the rear end **32** of the conveyor **26** is pivotally connected to the frame **23** to minimize vertical movement as the idler on the belt manages the distance change.

[0021] From the above discussion and accompanying figures and claims it will be appreciated that the stover conveyor system **10** offers many advantages over the prior art. It will be appreciated further by those skilled in the art that other various modification could be made to the device without parting from the spirit and scope of this invention. All such modifications and changes fall within the scope of the claims and are intended to be covered thereby. It should be understood that the examples and embodiments described herein are for illustrative purposes only and that various modifications or changes in the light thereof will be suggested to persons skilled in the art and are to be included in the spirit and purview of this application.

What is claimed is:

1. A stover conveyor system, comprising:

a stover conveyor that extends from a corn head to a stover chopper and having a first end and a second end;

the first end of the conveyor connected to a lift cylinder with a first mounting member;

the second end of the conveyor is connected to a frame with a second mounting member; and

a third mounting member connected to the stover chopper and the frame.

2. The system of claim **1** wherein the first mounting member is pivotal.

3. The system of claim **1** wherein the second mounting member is pivotal at both ends.

4. The system of claim **1** wherein the third mounting member is pivotal at both ends.

5. The system of claim **1** further comprising a stover guide positioned over at least a portion of the first end of the stover conveyor.

6. The system of claim **5** wherein the stover guide has a door.

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