# United States Patent [19]

**Frigieri**

[11] **3,881,409**

[45] **May 6, 1975**


[54] **SILAGE COMPRESSION APPARATUS**


[75] Inventor: **Ugo Luciano Frigieri,** Modena, Italy

[73] Assignee: **Tulio C. Luisada,** Hinsdale, Ill.



[22] Filed: **Feb. 21, 1974**

[21] Appl. No.: **444,306**

[30] **Foreign Application Priority Data**

Mar. 29, 1973 Italy ..... 40026/73

[52] **U.S. Cl.** ..... **100/68;** 100/210

[51] **Int. Cl.** ..... **A01f 25/04;** B65g 3/04

[58] **Field of Search** ..... 100/68, 65–66, 100/67, 69, 83, 100, 210, 215, 221, 245



[56] **References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 452,213 | 5/1891 | Castanos et al. | 100/210 X |
| 1,171,783 | 2/1916 | Gray | 100/68 X |
| 1,217,957 | 3/1917 | Keys | 100/66 |
| 1,328,728 | 1/1920 | Dobson et al. | 100/68 |
| 1,353,724 | 9/1920 | Cobb | 100/68 |
| 1,394,580 | 10/1921 | Ranger | 100/67 |
| 2,740,350 | 4/1956 | Frigieri et al. | 100/68 |
| 3,818,824 | 6/1974 | Kloda et al. | 100/210 X |



*Primary Examiner*—Billy J. Wilhite
*Assistant Examiner*—Arthur O. Henderson
*Attorney, Agent, or Firm*—Kinzer, Plyer, Dorn & McEachran



[57] **ABSTRACT**

A compression apparatus for single-use silage stack construction, comprising a central vertical support pole, a stack confining ring around the pole, a power-driven compression roller and an idler compression roller mounted on radial arms of a yoke rotatably mounted on the pole, the yoke also being vertically movable and tiltable relative to the pole, and an auger system, preferably comprising two counterrotating augers, for distributing forage evenly across the top of a silage stack formed within the confining ring.


**9 Claims, 8 Drawing Figures**

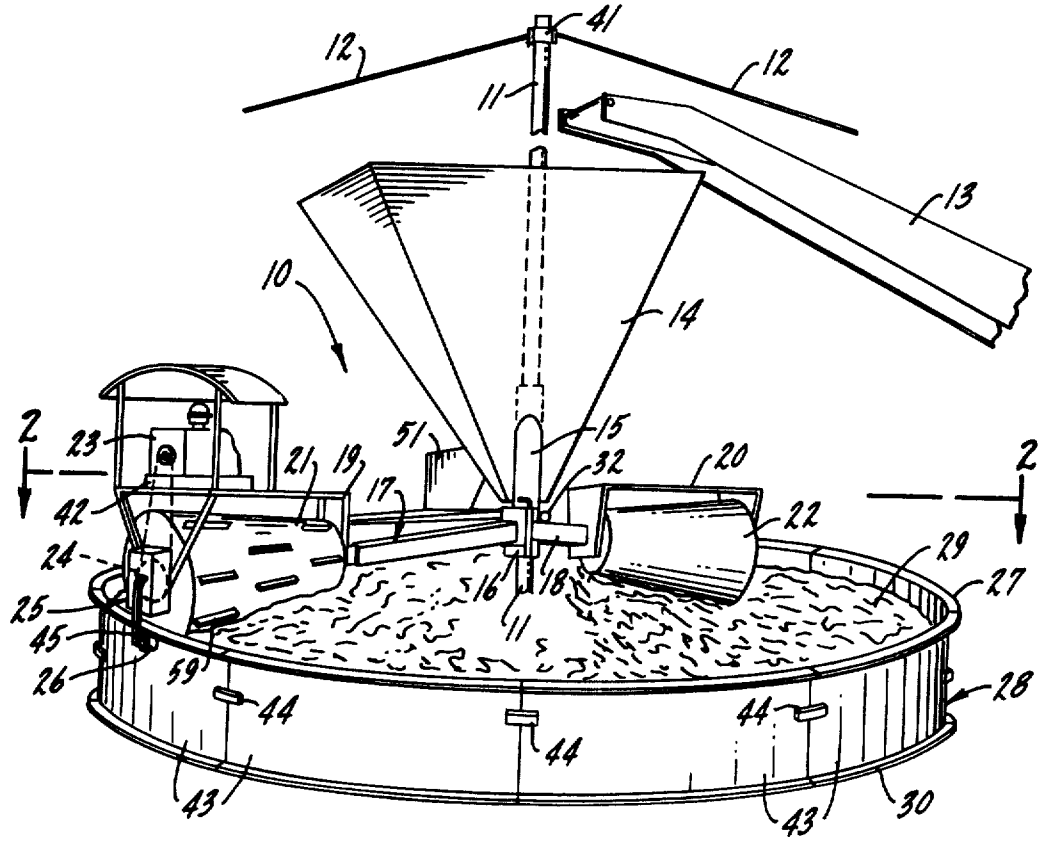
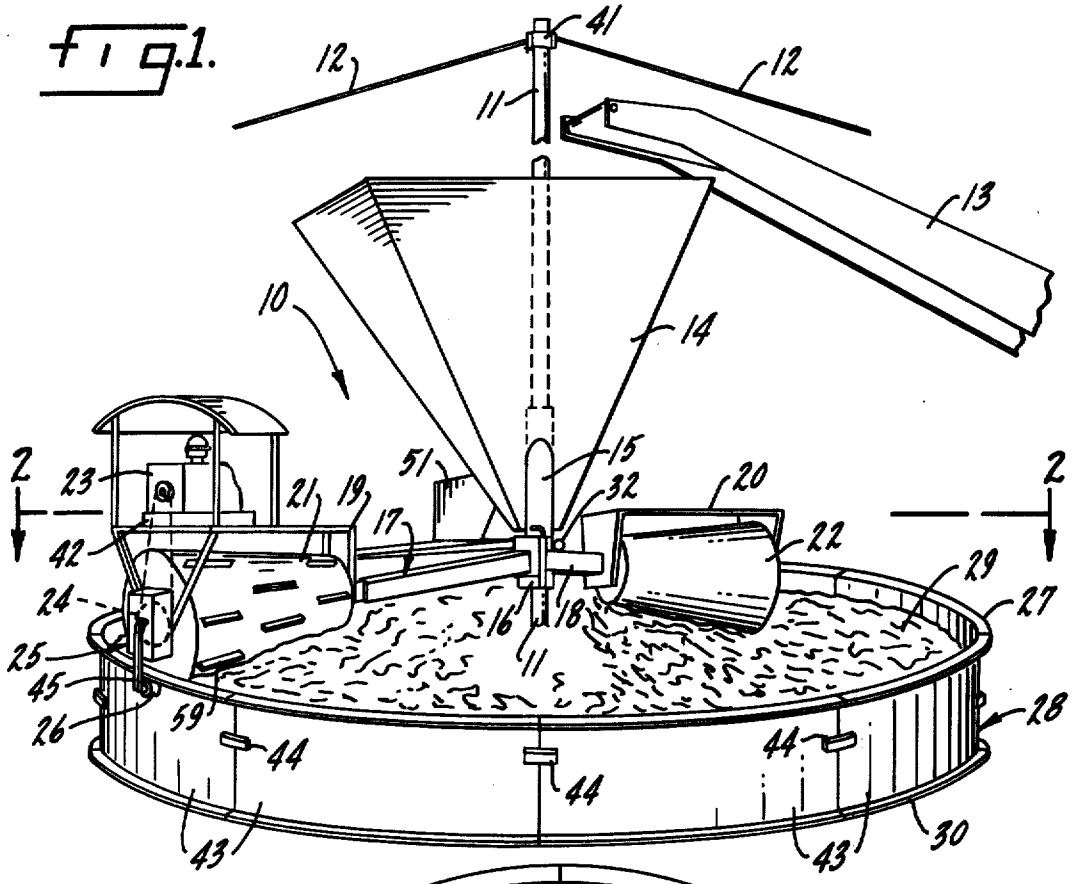


Fig.1.


41
12
12
11
13
10
14
15
2
2
23
21
19
51
17
32
20
42
22
29
24
16
18
27
25
11
45
26
59
28
44
44
44
43
43
30

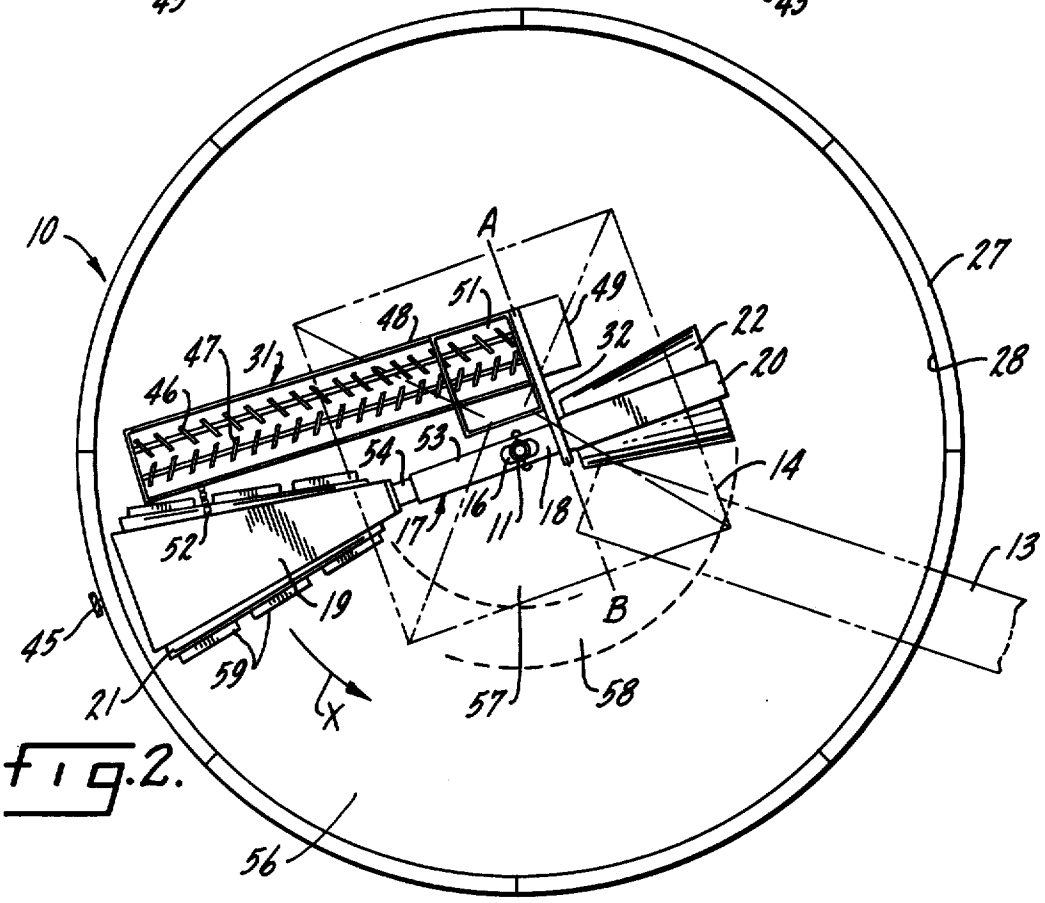

10
A
27
51
49
48
22
47
31
32
28
20
46
54
53
14
16
18
17
11
52
13
19
B
45
59
57
58
21
X
56

Fig.2.

fig.3.

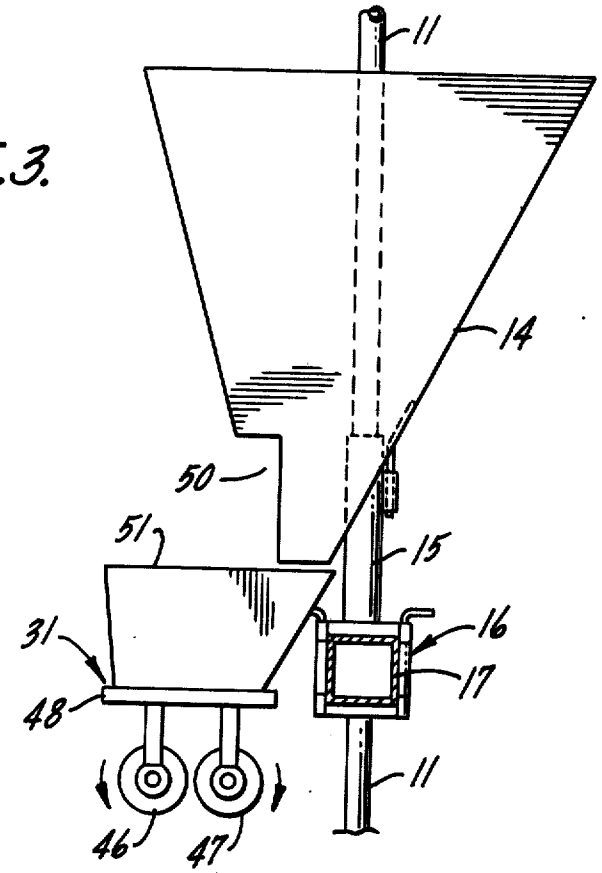



fig.4.

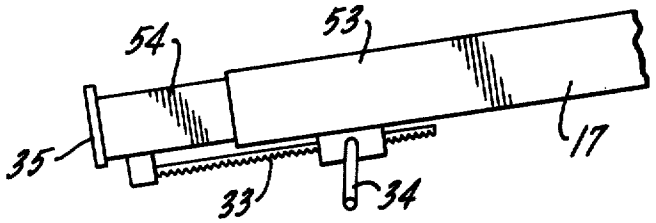



fig.5.

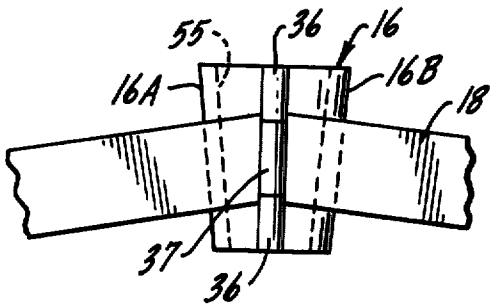
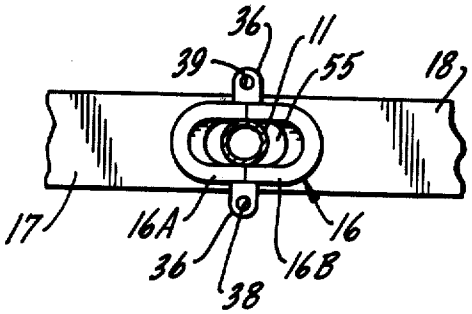



fig.6.



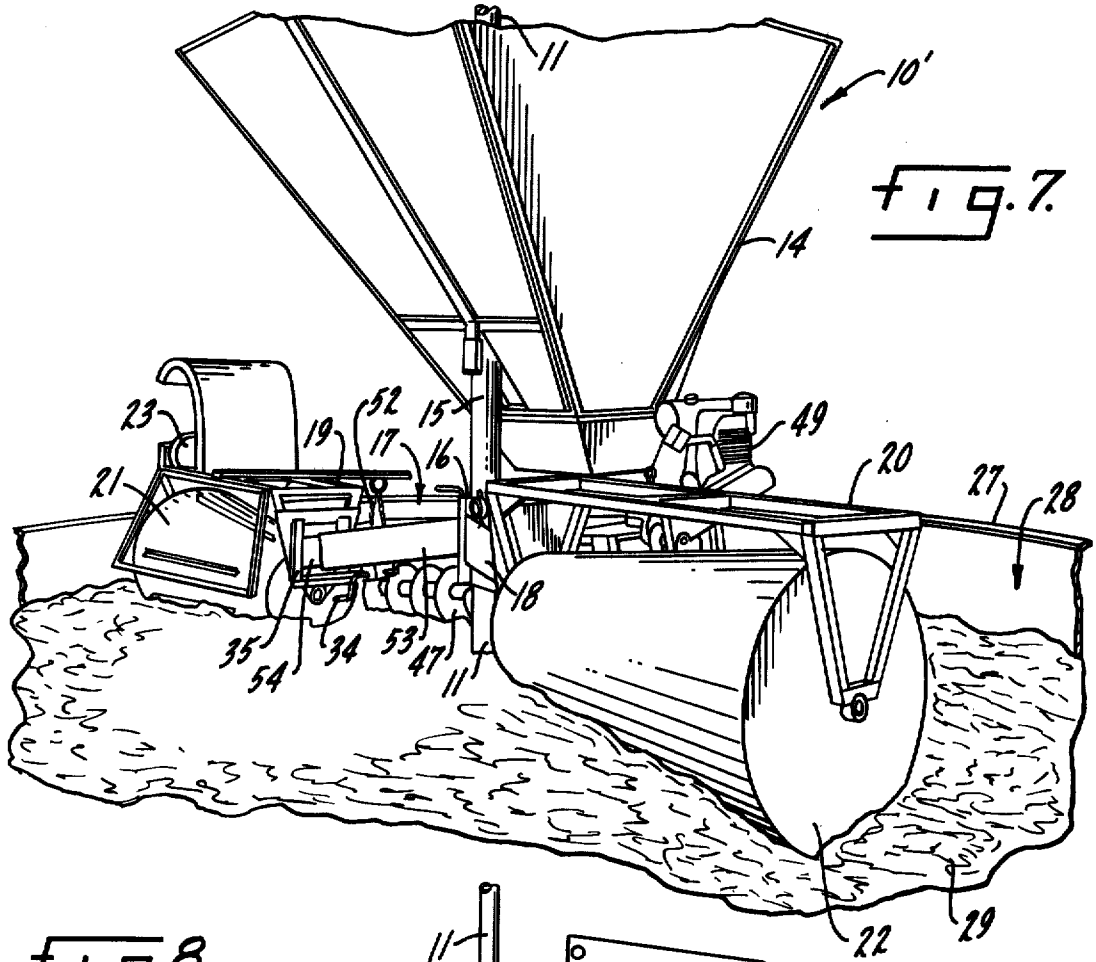
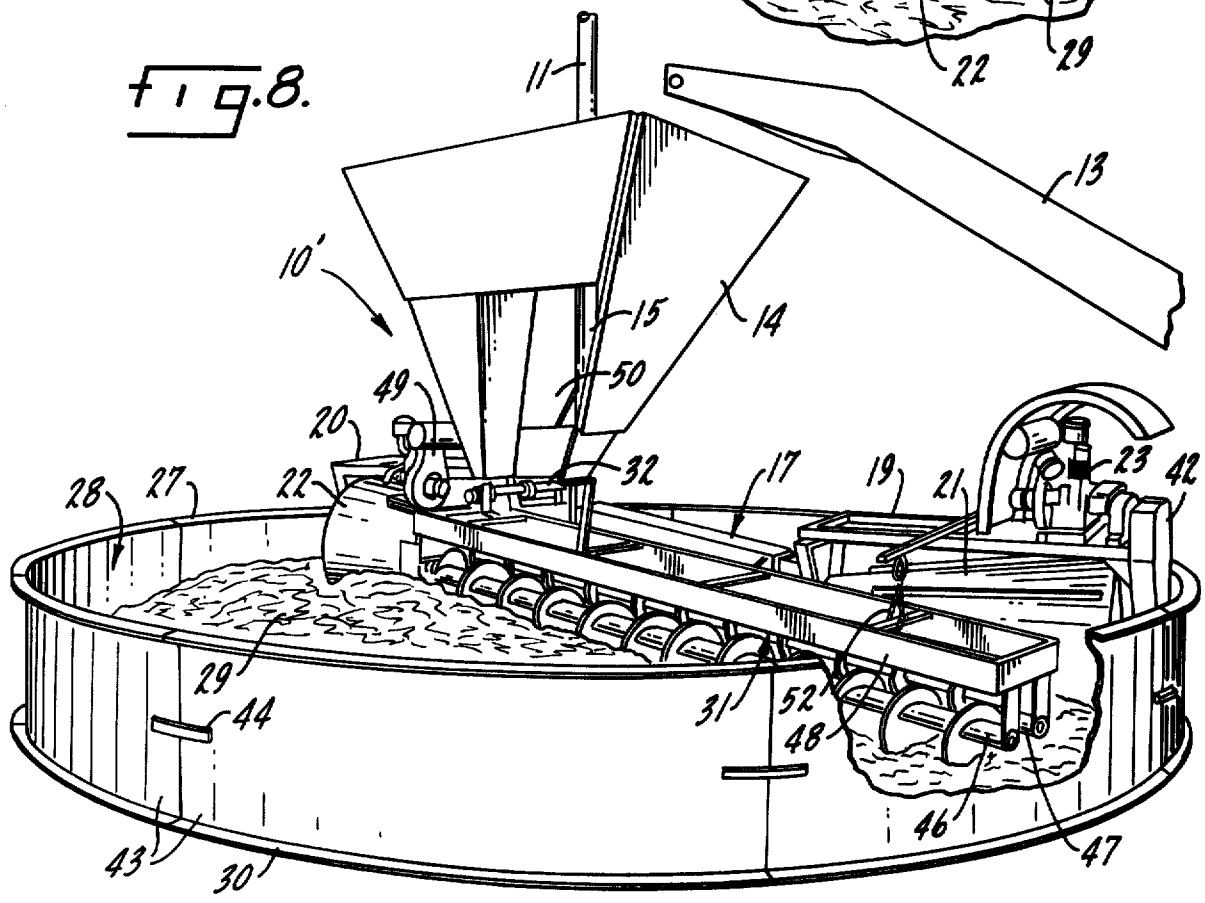

11
10'
14
23
19
52
15
17
16
49
20
27
28
21
18
35
54
34
53
47
11
22
29

fig. 7.

fig. 8.


11
13
10'
15
14
50
49
20
32
17
19
21
23
42
28
27
22
29
44
31
52
48
46
47
43
30

# SILAGE COMPRESSION APPARATUS

## BACKGROUND OF THE INVENTION

For a number of years, mechanical devices have been available for compressing green forage into compact cylindrical silage stacks, either in a farmyard or in a field. When a stack is completed, it is usually covered with a larger plastic cover, affording what amounts to a complete single-use silo. The compacting apparatus can be erected at virtually any relatively level location and is readily transportable. Moreover, rigging of the compacting apparatus for operation is quick and convenient, and the same is true of disassembly of the compacting apparatus when one silo stack is completed and it is necessary to move to a new location to form another stack. The compaction apparatus performs in a manner rather like a merry-go-round, with compacting rollers rotating around a vertical support pole that is driven into the ground at the center of the stack location.

One quite successful compacting apparatus of this kind is disclosed in U.S. Pat. No. 2,740,350 to A. G. Frigieri et al., issued Apr. 3, 1956. The compactor apparatus shown in that Frigieri patent comprises a series of rollers that rotate around the inside of a cylindrical sheet metal confining ring; the confining ring starts from a position resting on the ground and is aligned coaxially with the center support pole for the apparatus. The confining ring is slowly raised, in a helicoidal fashion, in response to the continuing addition of forage to the center of the ring and the compaction of the forage by the compacting rollers. The compacting apparatus makes it possible to build as many silage stacks as are needed in a given farming operation and permits the erection of those stacks where they are most convenient, anywhere in a farmyard or even individual fields. When disassembled, the compacting apparatus can be carried in a relatively small truck and hence may be utilized in a plurality of different farming operations. Each stack or single-use silo is effective to protect and maintain the forage for a period of a year or even longer, eliminating any need for conventional permanent silo structures of concrete or metal.

One difficulty encountered in the use of the compaction apparatus of Frigieri U.S. Pat. No. 2,740,350 pertains to the distribution of the forage material as it is fed into the compacting apparatus. Distribution of the forage presents a number of difficult problems and usually requires the utilization of one or more farm laborers, working within the confining ring, to achieve a relatively uniform stack. Even with efficient utilization of such labor, it is difficult to maintain a continuous compacting operation and to assure substantially uniform compression conditions throughout the stack. Furthermore, the particular compression roller arrangements utilized in the previously known compacting apparatus have not always afforded the desired degree of compaction and uniform compression.

## SUMMARY OF THE INVENTION

It is a principal object of the present invention, therefore, to provide a new and improved silage compression apparatus for compressing forage into a compact cylindrical stack, utilizing simplified compression means that assures substantially uniform compaction of the forage throughout the stack. A feature of the present invention is the provision of two large conical rollers, one a self-propelled roller and the other an idler roller, operating in overlapping circular areas to compress the forage within a confining ring.



A further object of the invention is to provide a new and improved forage distribution system for a silage compression apparatus utilized to compress forage into a compact cylindrical silo stack. A feature of the present invention is the provision of one or more distribution augers that receive forage material at a location adjacent the center of the stack and that distribute the forage radially outwardly toward the periphery of the stack; the augers are permitted to ride up and down on the stack, at their free ends, to afford an automatic levelling and distribution operation. In the preferred construction, the augers are fed from a large funnel that is mounted on the central vertical pole of the apparatus and that rotates synchronously with the augers and the compacting rollers.

Accordingly, the invention is directed to a silage compression apparatus for compressing forage into a compact cylindrical stack. The compression apparatus comprises a central upright support, a confining ring, disposed in encompassing relation to the central support, for confining compressed forage, and compression means, rotatably mounted on and vertically movable on the central support, for compressing forage deposited within the confining ring. Compression drive means are provided for rotating the compression means about the central support, together with ring elevation means for raising the confining ring to accommodate added increments of compressed forage within the ring. The compression apparatus further comprises forage distribution means for distributing forage across a stack area encompassed by the ring. The forage distribution means includes at least one distribution auger having an input end rotatably mounted on the central support and extending substantially radially outwardly thereof; preferably, two parallel counter-rotating augers are employed. Auger travel connection means interconnects the distribution auger and the compression means to rotate the auger about the central support synchronously with rotation of the compression means, the auger travel connection means allowing limited vertical movement of the free end of the auger relative to the compression means. Funnel means, mounted on the central support, feeds forage to the input end of the auger; the auger conveys the forage outwardly from the center toward the periphery of the ring and continuously levels the stack formed within the ring.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a silage compression apparatus, constructed in accordance with one embodiment of the invention, at an initial stage of the compaction operation;

FIG. 2 is a sectional plan view of the silage compression apparatus of FIG. 1, taken approximately on line 2—2 in FIG. 1, with a part of the upper portion of the compression apparatus shown in phantom lines;

FIG. 3 is a schematic elevation view of forage distribution means incorporated in the silage compression apparatus of FIGS. 1 and 2;

FIG. 4 is a detail illustration of a telescoping support for one of the compression rollers of the apparatus of FIGS. 1 and 2;

FIG. 5 is a detail elevation view of a support yoke for the compression rollers of the apparatus of FIGS. 1 and 2;

FIG. 6 is a detail plan view of the yoke illustrated in FIG. 5;

FIG. 7 is a perspective view of a slightly modified form of the silage compression apparatus, similar to FIG. 1 but taken from a somewhat different viewpoint; and

FIG. 8 is a perspective view of the silage compression apparatus of FIG. 7 taken from another viewpoint to show the forage distribution means incorporated in the silage compression apparatus.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The silage compression apparatus **10** illustrated in FIGS. 1 and 2, and the slightly modified apparatus **10** shown in FIGS. 7 and 8, comprises a central upright support **11** constituting a relatively tall support pole anchored in the ground. A ring **41** is affixed to the top of the pole **11**, as shown in FIG. 1, and a plurality of guy wires, chains, or cables **12** are connected from the ring **41** to suitable stakes or other anchors (not shown) to provide a stable central upright support for the apparatus **10**.

The silage compression apparatus **10** (and **10'**) is utilized in conjunction with an elevator **13** that discharges chopped green forage into the upper end of a large funnel **14**. The funnel **14** is shaped as an inverted four-sided pyramid; a conical configuration or other funnel shape can be used. The lower end of the funnel **14** is supported upon a sleeve **15** (FIGS. 1, 3 and 7) which encompasses the central support pole **11** and rests upon a yoke **16** mounted on the pole.

The yoke **16** encompasses the lower end of the central support pole **11** and is vertically movable along the pole. A first tubular steel arm **17**, preferably of rectangular cross-sectional configuration, is affixed to the yoke **16** and extends radially outwardly from the yoke (FIGS. 1, 2). A frame **19** is mounted on the outer portion of arm **17**. A large conical steel compression roller **21** is connected to arm **17**, being located below frame **19**.

A second tubular steel arm **18**, also preferably of rectangular cross-sectional configuration, is affixed to the yoke **16** and projects radially outwardly of the yoke in essentially colinear alignment with but radially opposite to the arm **17**. A frame **20** is mounted on arm **18** and a second conical compression roller **22** is mounted in the frame **20**. As best shown in FIGS. 1 and 2, arm **18** is substantially shorter than arm **17** and the lengths of the two compression rollers **21** and **22**, together with the arm lengths, are such that the two compression rollers cover overlapping circular areas around pole **11** during a compaction operation, as described hereinafter. The first compression roller **21** is a traction roller, preferably provided with a series of projections **59**; the other roller **22** is an idler roller and requires no traction projections.

The inner end of each of the tubular arms **17** and **18** is welded to the yoke **16**. The outer end of arm **17** inserted into the frame **19**, acting as a taper lock, and a similar construction is used to join the outer end of arm **18** to frame **20**. Each of the two frames **19** and **20** is of inverted U-shaped configuration, so that the two frames afford bearing brackets for the two conical compression rollers **21** and **22**.

In each of the illustrated forms of the apparatus **10** and **10'**, an internal combustion engine **23** is mounted on frame **19** near the outer end of the frame. A conventional gasoline engine is preferred, but other types of engine, motor, or other prime mover can be utilized if desired. The engine **23** is connected in driving relation to the outer compression roller **21** by suitable power transmission means **42**. The power transmission means **42** may comprise a conventional speed reducer and chain drive, and should include a suitable clutch to facilitate starting of engine **23**.

A confining ring **28** is incorporated in the silage compression apparatus and is disposed in concentric encompassing relation to the central support pole **11**. The confining ring **28** may be constructed from sheet steel and preferably comprises a plurality of arcuate modular ring members **43** connected to each other by appropriate fastening means **44** (FIG. 1). Each of the modular ring members **43** is provided with an uppr rim element and a lower rim element, thus affording a continuous rim **27** around the top of the confining ring **28** and a continuous rim **30** around the bottom of the confining ring **28**. The rim elements that form the rims **27** and **30** may comprise channels or other structural shapes welded to the sheet metal constituting the sides for the individual modular ring members **43**.

The silage compression apparatus **10** (and **10'**) includes ring elevation means for raising the confining ring **28** to accommodate added increments of compressed forage within the ring. In the construction illustrated in FIG. 1, this elevation means comprises an elevator device **25** that engages the upper rim **27** of the confining ring **28**. The elevator **25** is mounted on the outer end of the frame **19** and includes a downwardly extending bracket **45**; the bracket **45** supports a roller **26** which engages the lower surface of the projecting upper rim **27** of the confining ring.

Forage distribution means are incorporated in the silage compression apparatus **10** to distribute forage across the area enclosed by the confining ring **28**. This forage distribution means **31**, in the two illustrated forms of the apparatus, includes two elongated augers **46** and **47**. The auger **46** may comprise a spiral flight mounted upon a supporting pipe or shaft; the auger **47** is of substantially similar construction. However, the directions of the two spiral flights or blades for the augers **46** and **47** are preferably opposite to each other, one being counterclockwise and the other being clockwise as viewed from either end of the forage distribution device **31**.

The two augers or feed screws **46** and **47** are supported in an elongated frame **48** that extends generally parallel to arm **17** and hence substantially radially outwardly from the center of the compacting apparatus. At the inner end of the frame **48**, the end nearest the center of the compression apparatus **10**, a small engine or other prime mover **49** is mounted on the frame and is connected to the augers **46** and **47** by a suitable drive connection (not shown). The drive connection selected is preferably one that can be quickly and readily disconnected from the augers to facilitate separation of the forage distribution device **31** from the remainder of the apparatus when it is necessary to move the apparatus to a new location. Preferably, a small gasoline motor is used as the prime mover **49**, and the drive con-

nection to the augers 46 and 47 should include a suitable clutch and an appropriate speed-reduction linkage.

The inner ends of the two augers 46 and 47 are aligned with an outlet opening 50 at the bottom of the funnel 14. An inlet spout or chut 51 may be mounted on the frame 48 to guide forage from the funnel outlet 50 into the inner input end of the distribution apparatus 31, as shown in FIGS. 2 and 3. On the other hand, the chute 51 is not essential and can be eliminated if the funnel opening 50 extends well over the input end of the distribution device 31, as shown in FIG. 8.

The inner end of the distribution frame 48 is pivotally connected to a support bar 32 that is affixed to and extends from the arm 18 (see FIGS. 2 and 8)). In this manner, the input end of the distribution device 31 is rotatably mounted to the support pole 11. The outer end of the frame 48 is linked to the frame 19 on support arm 17 by auger travel connection means comprising a chain or other flexible connecting member 52. This leaves the outer end of the distribution device 31 free for substantial vertical movement relative to other major components of the compression apparatus 10.

FIG. 4 illustrates a preferred construction for the arm 17 on which the compression roller 21 (FIG. 2) is mounted. As shown in FIG. 4, arm 17 preferably comprises a first steel tube 53 which extends outwardly from the center of the compression apparatus. At the outer end of tube 53, an extension tube 54 is fitted into tube 53. The length of the projection of the tube 54 from the tube 53 can be adjusted by means of a rack and pinion mechanism 33 interconnecting the tubes 53 and 54 and operated by a crank 34. This allows compensation for confining rings 28 of somewhat different diameters. The tubes 53 and 54 forming arm 17 are preferably of rectangular cross sectional configuration or of other configuration that will preclude rotation of the extension tube 54 relative to the main tube 53.

At the outer end of tube 54, there is a heavy gauge iron collar 35 which is inserted in a housing hub forming a part of the frame 19. This linkage should be constructed to allow for some vertical shifting of the compression roller 21 with respect to its support arm 17.

FIGS. 5 and 6 illustrate a preferred construction for the yoke 16 and its connection to the two arms 17 and 18 that support the compression rollers. As shown therein, the yoke 16 is formed in two halves 16A and 16B; the yoke section 16A is affixed to the inner end of arm 17 and the yoke section 16B is affixed to the inner end of arm 18. The center of the yoke, when assembled, affords an elongated central vertical opening 55 through which the center support pole 11 extends. (FIG. 6).

Yoke section 16A has mounting lugs 36 extending outwardly from its opposite sides and yoke section 16B is provided with complimentary mounting lugs 37 that interfit with the lugs 36 on section 16A in the manner shown in FIG. 5. The mounting lugs 36 and 37 afford two aligned vertical holes 38 and 39 on the opposite sides of the yoke. Mounting pins are inserted in these holes to assemble the yoke 16 on the pole 11. This construction allows for ready disassembly of yoke 16, and hence of arms 17 and 18, when it is necessary to move the compression apparatus 10 (or 10') to a new location. The same construction permits convenient and rapid re-assembly of the apparatus at the new location. It should be noted that when compression apparatus is fully assembled, the yoke 16 is secured to the sleeve 15 so that rotation of the yoke 16 causes a corresponding rotation of the sleeve 15 and the input funnel 14.

In setting up the silage compression apparatus 10 of FIGs. 1–6, or the slightly modified apparatus 10' of FIGS. 7 and 8, the first step is to anchor the center support pole 11 firmly in the ground and to brace the support pole in an erect vertical position by means of the guy wires or cables 12 (FIG. 1). The two halves 16A and 16B of the yoke 16 (FIGS. 5 and 6) are then brought together, with pole 11 located in the central yoke opening 55 as shown in FIG. 6, and the two halves of the yoke are locked together by pins inserted in the openings 38 and 39. In this manner, the two arms 17 and 18 are joined together at the assembled yoke 16. The compression roller 21 is then inserted into its frame 19 and connected to its drive and the other compression roller 22 is mounted in its support frame 20.

With the yoke 16 assembled and the compression rollers mounted in place, the funnel 14 and its support sleeve 15 are mounted on the support pole 11. To facilitate this operation, it is preferable to form sleeve 15 in two halves interconnected with bolts or other suitable fasteners. Sleeve 15 is then secured to yoke 16 by suitable fastening means such as a series of bolts. At this stage, the confining ring 28 is assembled. Each of the ring modules 43 is placed in a circle around the central support pole 11. The modules are then fastened to each other to form the completed confining ring.

At this point it is convenient and desirable to deposit a think layer of forage 29 into the interior of the confining rin 28. The forage distribution apparatus 31 is then mounted in the apparatus, one end being pivotally connected to the support bar 32 and the other end connected to the frame 19 by the auger travel connection means comprising the flexible connecting chain or similar member 52 (FIG. 2). By placing a "floor" of forage in the ring 28 before the distribution apparatus 31 is assembled to the remainder of the apparatus, accidental damage to the augers 46 and 47 is effectively prevented. At this stage, the silage compression apparatus 10 (or 10') is fully assembled.

Engine 23 is now started in operation and its clutch is engaged. Engine 23 rotates compression roller 21 and drives the compression roller 21 around the periphery of the space enclosed by confining ring 28 in the direction indicated by the arrow X in FIG. 2. Because the two arms 17 and 18 are connected together at yoke 16, the inner compression roller 22 is compelled to follow the rotary movement of the outer roller 21 around the interior of the confining ring. Moreover, the auger travel connection 52 pulls the distribution device 31, with its augers 46 and 47, around the ring behind the roller 21. Roller 21 compresses the forage in the outer portion 56 of the confining ring, roller 22 compresses the forage in the inner area 51 of the ring, and the two rollers overlap in a limited annular area 58.

With engine 23 running and engaged, and the two rollers 21 and 22 rotating around the central support pole 11 in manner of a merry-go-round, the elevator 13 is placed in operation to discharge chopped green forage into the input funnel 14 of the silage compression apparatus. The forage is discharged from opening 50 in funnel into the inner end of the distribution apparatus 31. In the embodiment of FIGS. 1–3, the forage 29 is initially discharged into the chute 51 on the distribution apparatus frame 48. In the apparatus 10' of FIGS. 7

and 8, the chute 51 is eliminated and the funnel 14 is offset to an extent sufficient to discharge the forage directly from the funnel opening 50 into the area immediately above the input ends of the two augers 46 and 47. In each of the illustrated forms of the apparatus, the two augers distribute the forage 29 across and around the surface of the space within the ring 28 for continuous compression by the rollers 21 and 22.

In operation of the silage compression apparatus 10 (or 10') some variations in the height of the forage 29 may occur, particularly if the elevator 13 does not feed forage into the device at a relatively constant rate. The distribution apparatus 31 tends to minimize these variations. Moreover, the two compression rollers 21 and 22 can rock within a vertical plane corresponding to the plane formed by the center lines of the arms 17 and 18 and the support pole 11, assuring effective compression at all times.

Whenever the level of the forage 29 within the confining ring 28 is below the upper rin 27 of the confining ring, the compression roller 21 passes over forage foeage with no effect on the position of the ring 28. With continuing discharge of forage 29 into the compression apparatus, however, the forage level ultimately reaches the top of the confining ring 28. Indeed, at the center of the apparatus the forage level may be substantially above the rim 27, since the compression rollers, due to their conical shape, tend to form a domed configuration on the top of the forage. Whenever the forage level adjacent the ring 28 approaches the rim 27, the consequent upward movement of the traction compression roller 21 riding on the forage causes the ring elevation device 25 to pull upwardly on the rim 27 of the compression ring 28. That is, the arm 45 moves upwardly with the roller 21, causing the roller 26 to exert a substantial upward force against the underside of the rim 27. This slowly elevates the confining ring 28, in a spiral or helicoidal movement, and maintains the confining ring at the top of the stack of compressed forage 29. In this manner, it is possible to form a tightly compressed forage stack of twenty feet or more in height, with a confining ring 28 of as little as two feet in height.

Throughout the compression operation, the two augers 46 and 47 of the forage distribution means 31 impart a smooth and positive motion to the forage 29 and distribute the forage evenly around the interior of the confining ring 28. A self-levelling operation is effected, particularly because the outer end 53 of the distribution device 31 is free to move in a vertical direction, affording a pivotal movement centered on the axis A–B (FIG. 2). This freedom of vertical movement for the distribution apparatus 31 is of substantial assistance in maintaining an effective, even distribution of the forage 29 within the confining ring 28.

As noted above, when the silage compression apparatus is first placed in operation, it is desirable to provide a thin "floor" of forage 39 before the distribution device 31 is placed in operation in order to avoid damage to the augers 46 and 47 that might result from direct engagement of the augers with the ground at the bottom of the confining ring 28. The ring elevation device 25 may be left disengaged from the ring 28 until the level of the forage 29 approaches it top rin 27, at which time the roller 26 is engage with the rim 27. Roller 26 may be fitted into a groove in rim 27 (not shown) to assure continued engagement of the elevator device 25 with the ring 28.

Most of the operations described above are a part of the start-up period for the compression described apparatus 10 (or 10'). Once the assembly is completed and the apparatus is in operation, it rotates automatically like a merry-go-round around the pole 11, continuously compacting the forage distributed inside the ring member 28 through the funnel 14 and the distribution apparatus 31. The ring gradually rises up the outside of the stack in response to the vertical force applied thereto by the roller 26 of the ring elevation device 25. A large cylindrical stack of forage is thus produced, the walls of which are well compacted and do not allow passage of air therethrough, thus assuring good preservation of the ensilage. As soon as the silo has reached the desired height, the apparatus can be readily and quickly disassembled and is ready for re-assembly at another location to repeat the silo-forming operations.

I claim:

1. A silage compression apparatus for compressing forage into a compact cylindrical stack, comprising:
- a central upright support;
- a confining ring, disposed in encompassing relation to the central support, for confining compressed forage;
- compression means, rotatably mounted on and vertically movable on the central support, for compressing forage deposited within the confining ring;
- compression drive means for rotating the compression means about the central support;
- ring elevation means for raising the confining ring to accommodate added increments of compressed forage within the ring;
- and forage distribution means for distributing forage across a stack area encompassed by the ring, the forage distribution means comprising;
- at least one distribution auger having an input end rotatably mounted on the central support and extending substantially radially outwardly thereof;
- auger travel connection means interconnecting the distribution auger and the compression means to rotate the auger about the central support synchronously with rotation of the compression means, the auger travel connection means allowing limited vertical movement of the free end of the auger relative to the compression means;
- and funnel means, mounted on the central support, for feeding forage to the input end of the auger, the auger conveying the forage outwardly from the center toward the periphery of the ring and continuously levelling the stack formed within the ring.

2. A silage compression apparatus according to claim 1 in which the compression means comprises:
- a yoke rotatably mounted on the central support; two arms extending radially outwardly of the yoke;
- a first compression roller mounted on the outer end of a first one of the arms and extending radially inwardly from a point closely adjacent the confining ring;
- and a second compression roller mounted on the outer end of the other yoke arm and extending radially outwardly from a point closely adjacent the central support, the inner end of the first compression roller being closer to the central support than the outer end of the second compression roller to provide overlapping compression of an intermediate annular area within the confining ring.

3. A silage compression apparatus according to claim 2 in which the compression drive means is a prime mover connected in driving relation to one of the compression rollers, the other compression roller constituting an idler roller, and in which each roller is of conical configuration with the large end of the cone at the outer peripheral end of the roller.

4. A silage compression apparatus according to claim 3 in which the yoke arms are aligned on a common diameter extending through the axis of the central support and the yoke includes an elongated central opening through which the central support extends so that the yoke can oscillate angularly relative to a horizontal axis while rotating around the central support, thereby compensating for differences in the level of forage beneath the two compression rollers.

5. A silage compression apparatus according to claim 4 in which the input end of the auger is pivotally mounted upon a horizontal support member affixed to the yoke, allowing limited vertical oscillation of the outer end of the auger.

6. A silage compression apparatus according to claim 2 in which the first compression roller is telescopically mounted on the first yoke arm, for adjustment radially on the central support to accommodate confining rings of varying size.

7. A silage compression apparatus according to claim 2 in which the distribution means comprises two counter-rotating augers mounted in an open frame.

8. A silage compression apparatus according to claim 2 in which the auger travel connection means comprises a chain or like flexible connection element linking the free end of the auger to one of the yoke arms so that the auger is pulled around the stack area behind one of the compression rollers.

9. A silage compression apparatus according to claim 2 in which the funnel means comprises a funnel mounted on the yoke for rotation therewith and having a side opening at the bottom of the funnel.

* * * * *