July 31, 1956 E. S. DIEHL ET AL 2,756,554

FORAGE GATHERER AND DRIER

Filed March 4, 1954 5 Sheets-Sheet 1

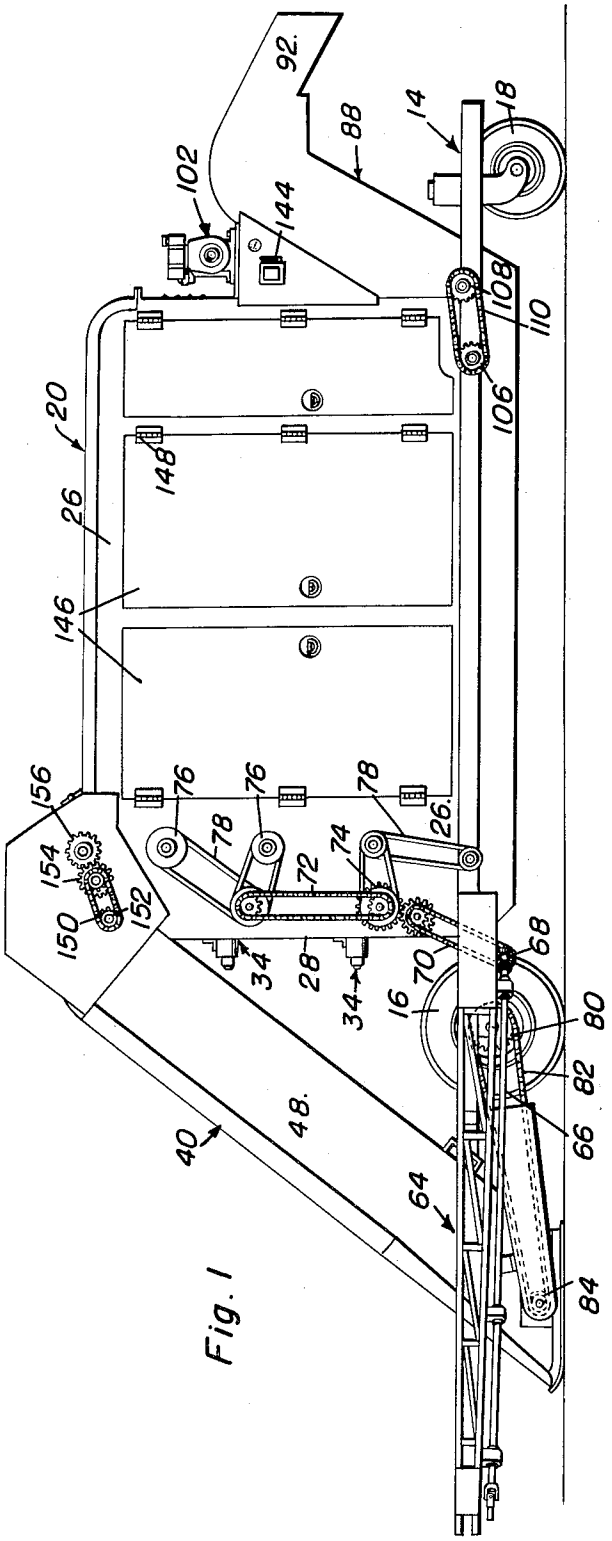


Fig. 1

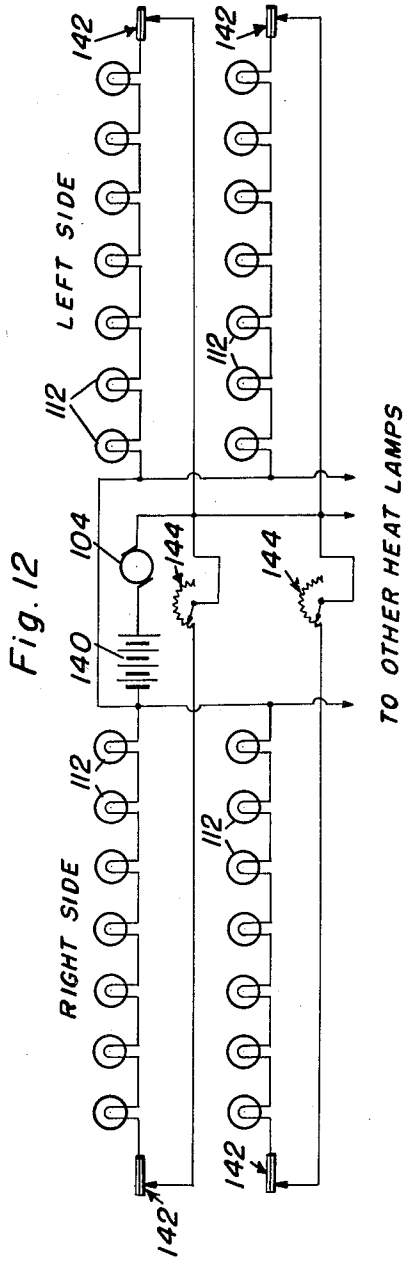


Fig. 12

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FORAGE GATHERER AND DRIER

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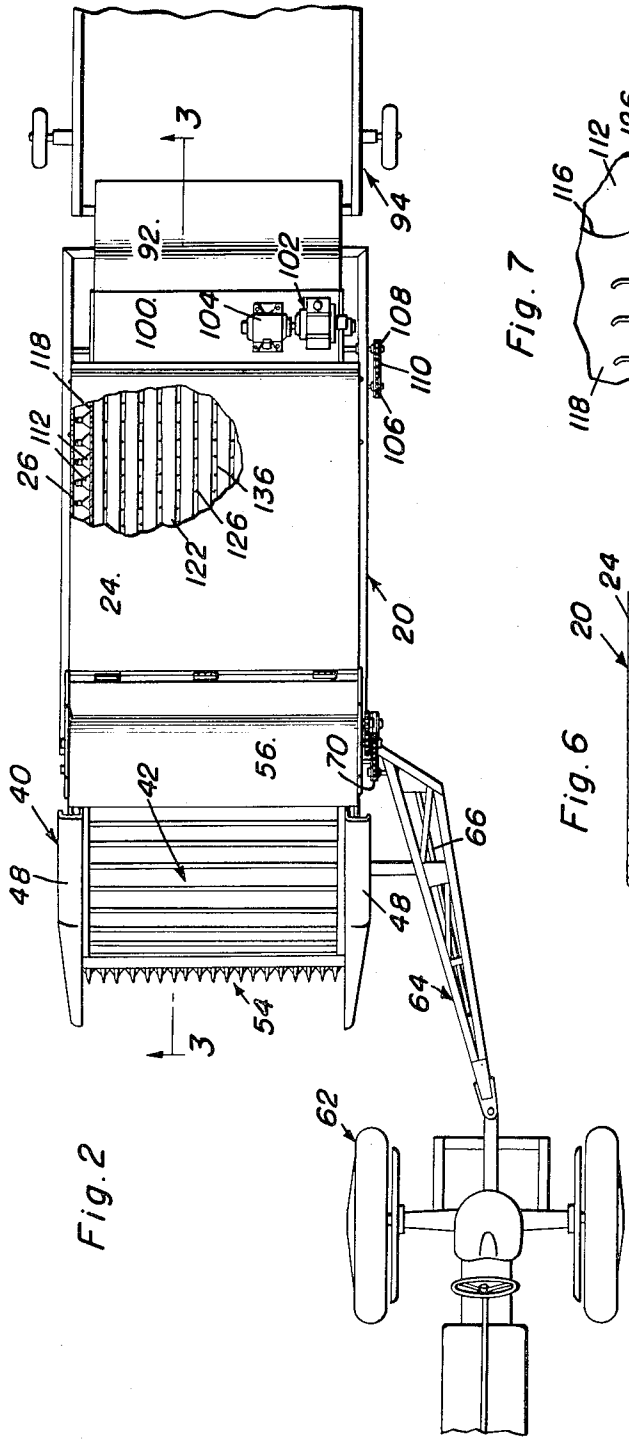


Fig. 2

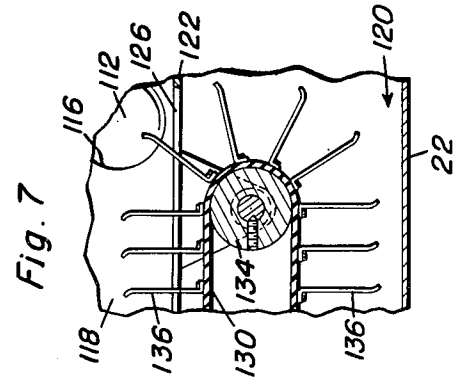


Fig. 7

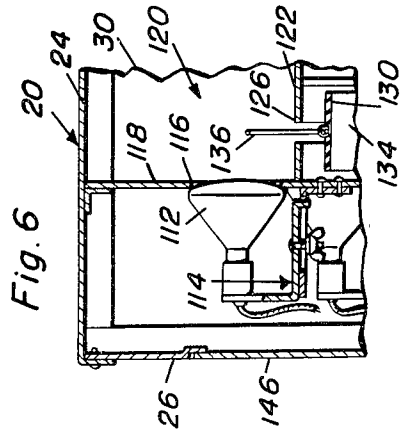


Fig. 6

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FORAGE GATHERER AND DRIER

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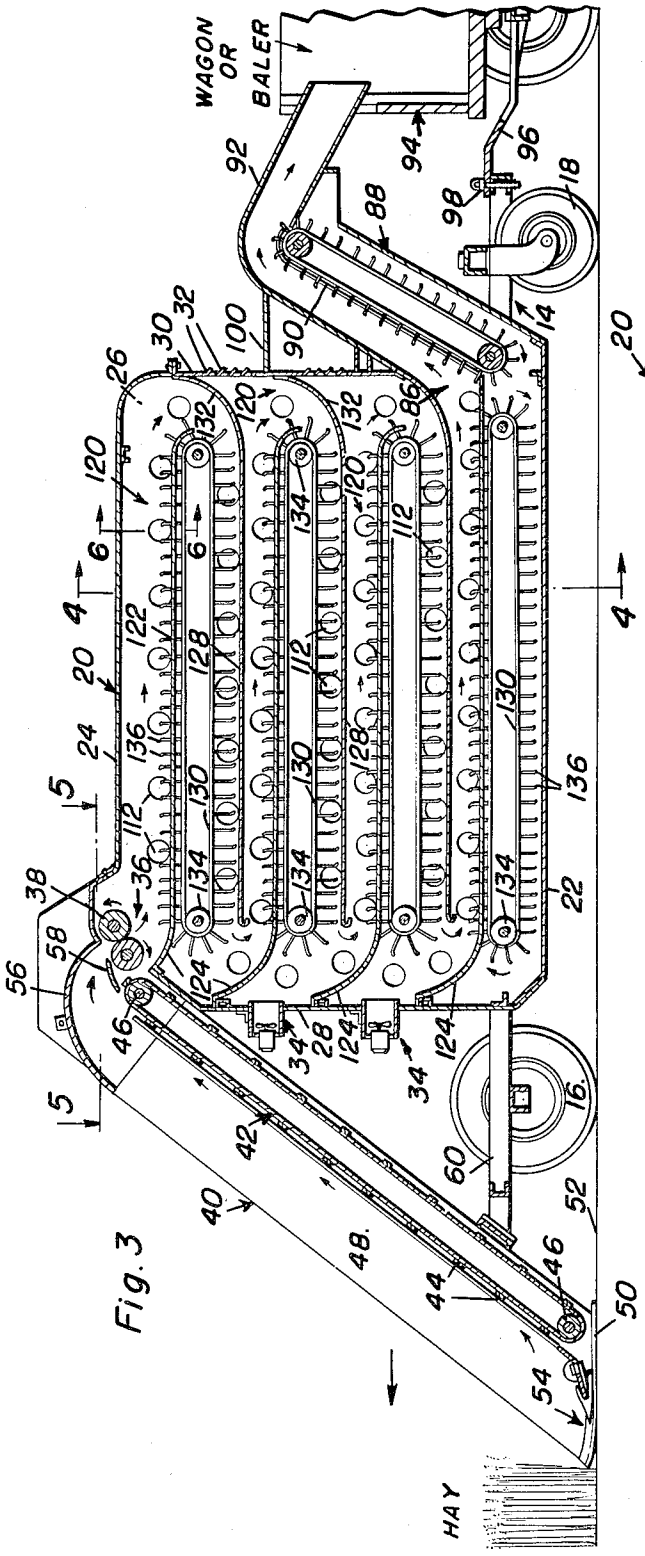


Fig. 3

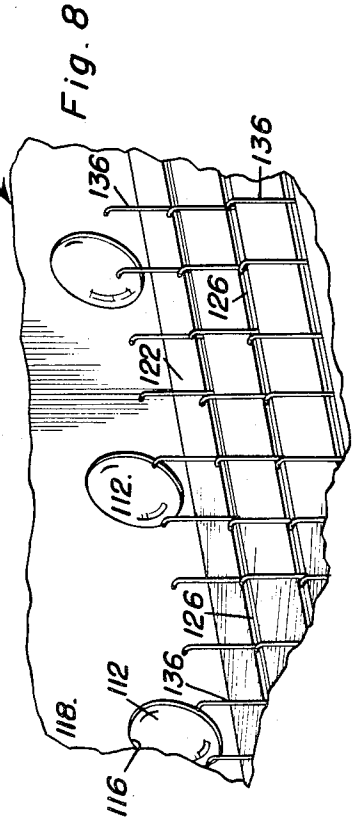


Fig. 8

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FORAGE GATHERER AND DRIER

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Fig. 4

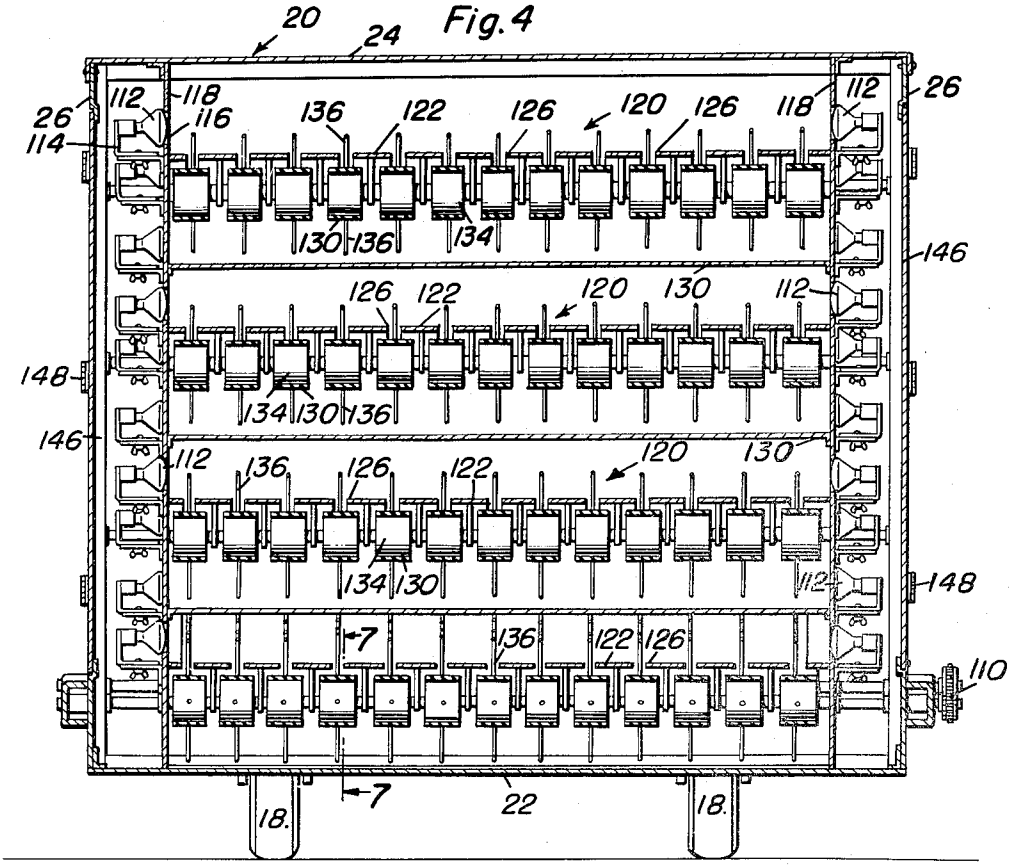


Fig. 5

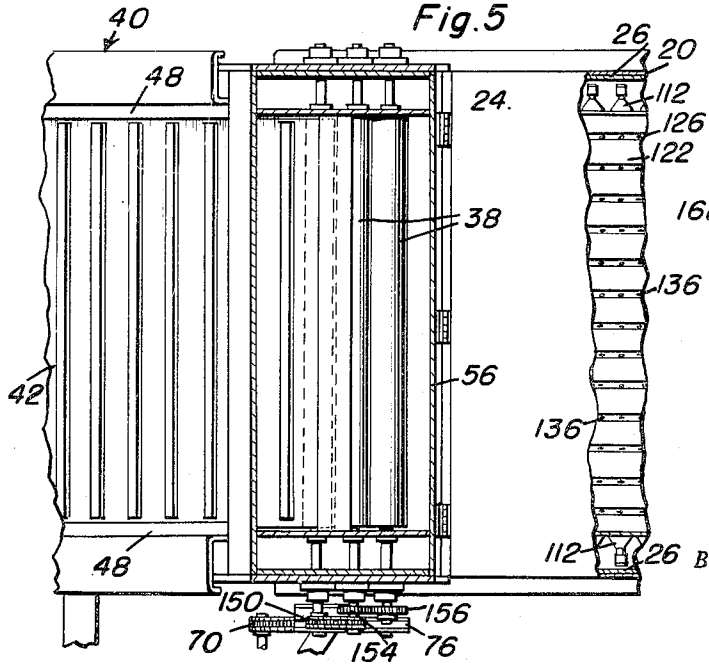
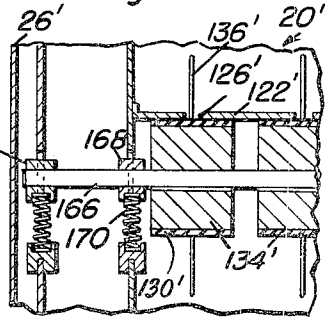


Fig. 13



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Fig. 9

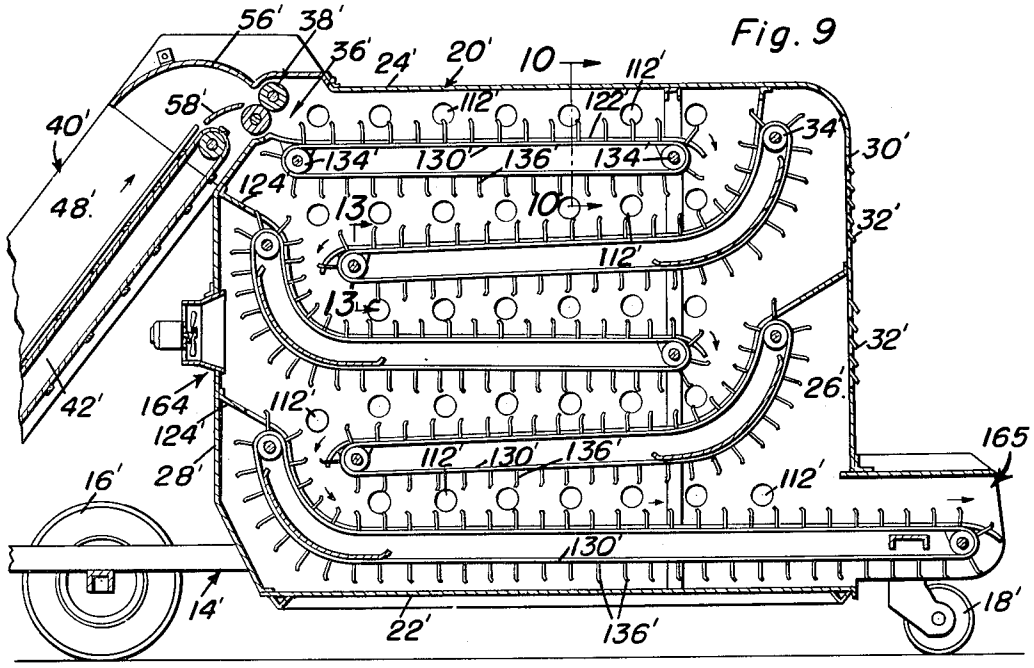


Fig. 11

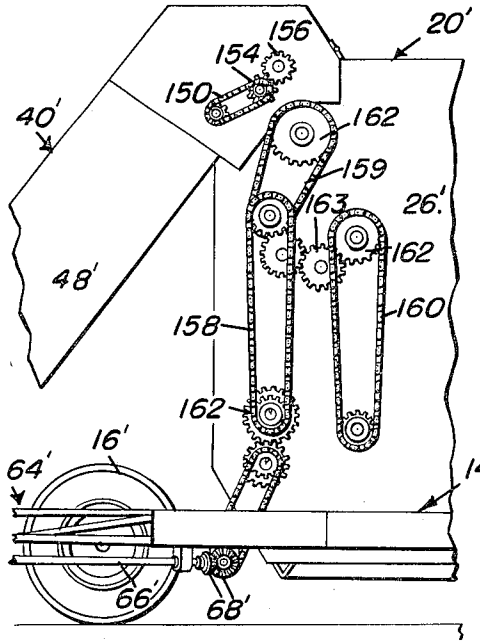
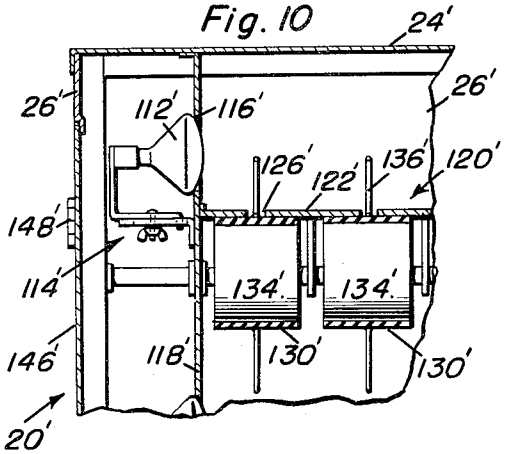


Fig. 10



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United States Patent Office 2,756,554 Patented July 31, 1956

2,756,554

FORAGE GATHERER AND DRIER

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Application March 4, 1954, Serial No. 414,138

12 Claims. (Cl. 56—1)

This invention relates to farming machines, generally speaking, and has reference, more particularly, to a multi-purpose construction through the medium of which a user thereof is enabled to harvest hay, roughage and the like and to expeditiously condition and prepare the same in a manner to obtain better and desirably nutritious feed for livestock, particularly horses and cattle.

It is a matter of common knowledge that when hay has been cut and is left in the field to dry in the sun, certain difficulties are encountered despite the fact that it is gathered and transported to a stationary barn drier for further drying and before it is stored in the loft or elsewhere for subsequent use. For example, while lying on the ground for a time, it may become rain-soaked. Then, when the sun comes out and dries it again, it will almost invariably turn out to be a poor grade of cattle feed. Even if it does not get wet before it is sun-dried, the sun itself may play havoc therewith in that desirable nutrients will be lost. Confronted with this problem, we seek to solve the same by cutting and drying the hay, grass or the like, during a single operation and gathering it and storing it promptly, whereupon a genuinely good and highly valuable product is had, much to the needs of all concerned.

In accordance with the present invention, no sun-drying is either required, desired, or for that matter, permitted. Instead, our drier is carried right into the field, said drier having all needed facilities to process the hay, with the result that an efficacious and highly nutritious feed is had. This mode of harvesting and handling is thought to be an advance in the art and, what is important, too, the machine which we utilize promotes the ever important saving of time and money, much to the advantage of the hard pressed farmer.

Another objective is to provide a highly practicable and comparatively simple farming machine bearing structural and functional resemblance to a combine, but which is expressly designed so that, through the proper coordination of appropriately united structural adaptations, it is possible to move the machine into the field with a tractor or the like and to mow a stand of usable hay or the like precisely when the latter is properly aged and to mow it down and deliver it into a portable drier so that it is pre-conditioned for subsequent storage, while in transit, said drier being constructed at the trailing or rear end so that the dried hay is emptied into a farm wagon or baler which is hitched to the drier, and so that said wagon, when loaded, may be detached and transported to a silo or barn, as the case may be.

Briefly summarized, a preferred embodiment of the invention has to do with a wheel-supported or equivalent mobile chassis constructed to be maneuvered and moved over the field surface by a tractor, similarly to the practice of handling of a combine, a covered vehicle body carried by said chassis, said body having cooperating horizontal and vertical walls defining a chamber which is closed on all sides, means confined and operable in said chamber for moving freshly cut incoming hay from a

place of entrance to a place of exit, suitable means in said chamber for properly heating and drying the hay whereby the latter, during its course of movement through said chamber, is amply dried for subsequent handling and storage as it leaves the chamber by way of said exit, and means situated at the front entrance for mechanically squeezing and crushing the stems of the hay preparatory to its movement through said chamber from the place of entrance to the place of exit.

More specifically, the invention is characterized by the above mentioned wheel-supported or equivalent covered body, said body having interconnected horizontal and vertical walls defining a chamber which is closed on all sides, one vertical wall being a front wall and the latter having a hay intake opening adjacent to a horizontal top wall, two of said vertical walls being side walls, the remaining vertical wall being a rear wall and the latter having an exit opening and a duct communicatively joined thereto and extending rearwardly and upwardly and terminating in a downturned discharge nozzle, an endless emptying conveyor operatively confined in said duct, a pair of cooperating crushing rollers operatively supported between said side walls in line with said intake opening between which the incoming hay passes into the chamber portion of said body, a rearwardly and upwardly inclined feeder trough having a shielded upper end joined to said front wall in registry with said intake opening, an endless type hay elevating conveyor operatively mounted in said trough, a mower operatively mounted in the lower end of said trough in a manner to cut the hay and deliver it into said trough for handling by said elevating conveyor, means in said chamber for moving the hay from the intake opening to the exit by way of the chamber, and other means in said chamber for heating the chamber and drying the hay thoroughly while en route through said chamber.

Then, too, novelty is predicated on the provision in said chamber of a series of horizontal vertically spaced partitions which function as spreading and drying decks and which partitions cooperate with each other and said chamber in transforming the latter into superposed compartments, the compartments communicating with one another at respective opposite ends so that the incoming hay is progressively fed from the end of one compartment into the adjacent end of the latter and is then carried in a reverse direction, etc., for thorough drying, and certain of said decks being slotted and provided therebeneath with conveyor belts, and said belts having fingers operating in the slots for catching hold of the hay and feeding it uninterruptedly from the intake or entrance at the top of the front wall to the discharge or exit at the bottom of the rear wall, and the heating means being preferably rows of thermostatically controlled lamps in the various compartments, said lamps being positioned to project heat rays in the direction of the grain feeding surfaces of the adjacent deck.

What is more, novelty is predicated on a self-contained portable drier construction of the nature so far comprehended and which is further characterized by a prime mover or equivalent power plant, such as a gasoline engine, for example, the latter serving to drive a generator which, through the medium of a storage battery or the like, supplies the needed electrical power to the radiant heating lamps, circulating blower fans and other electrical equipment.

Objects, features and advantages in addition to those set forth will become more readily apparent from the following description and the accompanying sheet of illustrative drawings.

In the drawings:

Figure 1 is a side elevational view of a portable hay drier constructed in accordance with the principles of the present invention;

Figure 2 is a top plan view, drawn on a smaller scale, of the same including the offside tractor and the trailer type farm wagon, a portion of the top wall of the body being broken away to disclose structural details in the aforementioned chamber;

Figure 3 is an enlarged central vertical section taken approximately on the plane of the line 3—3 of Figure 2, looking in the direction of the arrows;

Figure 4 is a vertical transverse section taken on the vertical line 4—4 of Figure 3, looking in the direction of the arrows;

Figure 5 is an enlarged fragmentary view in section and elevation taken on the plane of the horizontal line 5—5 of Figure 3, looking in the direction of the arrows;

Figure 6 is an enlarged detailed sectional view taken on the line 6—6 of Figure 3, looking in the direction of the arrows;

Figure 7 is an enlarged fragmentary sectional view on the line 7—7 of Figure 4, looking in the direction of the arrows;

Figure 8 is a fragmentary perspective view on an enlarged scale showing a portion of the deck or platform and the associated marginally arranged heat lamps;

Figure 9 is a view similar to Figure 3, showing a slight modification in construction;

Figure 10 is an enlarged fragmentary view on the line 10—10 of Figure 9, looking in the direction of the arrows;

Figure 11 is a fragmentary elevational view showing a variation in the power transmitting means used, for example, in the form of the invention appearing in Figure 9;

Figure 12 is a fragmentary schematic view of the wiring diagram; and

Figure 13 is an enlarged fragmentary sectional view on the plane of the line 13—13 of Figure 9 showing a modification in construction.

Attention is first directed to the form of the invention covered in Figures 1 to 8, inclusive. With reference to Figures 1 and 2, the aforementioned mobile chassis is denoted by the numeral 14 and this is a suitable horizontally elongated framework with ground engaging and supporting wheels 16 at the forward end and swivelly mounted caster wheels 18 at the rear or trailing end. The hollow covered body, which may be constructed of appropriate sheet material, is denoted generally by the numeral 20. It is characterized primarily by horizontal and vertical walls, for example, a bottom wall 22, top wall 24, side walls 26—26, a front wall 28 and rear wall 30. The rear wall is provided with vents or suitable louvers 32 which serve in a manner to be later described. The front wall is provided with one or more motor driven blower fans 34 which circulate the air within the confines of the drier chamber, that is, the over-all chamber. The upper end portion of the front wall 28 is provided with a suitable hay entrance, this being in the form of an appropriate slot or opening and being generally denoted by the numeral 36 (see Figure 3). Mounted for rotation between the side walls and in line with this entrance opening are smooth surfaced oppositely rotating wringer-like rollers 38 which subject the incoming hay to squeezing, whereby excess moisture is expressed and the stems are crushed before they are heat-treated. Any appropriate means (not shown) may be utilized for purposes of disposing of the expressed moisture.

Before entering the interior of the chamber, it is to be pointed out that means is attached to and extends upwardly from the ground and is connected with the entrance opening for gathering the hay which is to be dried. The means is preferably that which is denoted generally by the numeral 40 in Figure 3. Broadly, this is an inclined elevating conveyor 42 which is of any appropriate endless belt type with appropriate flights 44 thereon. The conveyor is appropriately mounted

on rollers 46—46 between spaced parallel side walls 48 which define an open-ended trough. At the bottom of the trough, there is a ground engaging shoe or the like 50 which slides over the ground 52 and also mounted in line therewith is an appropriately constructed and driven sickle bar or mower 54 of a reciprocating type. The idea is to drive this cutting and elevating device 40 into the stand of hay and to cut it while it is at its ready-to-cut stage. The hay is then carried up the conveyor and is diverted by the appropriately constructed curvate shield 56 and guide 58 into the opening means where it first passes through the cooperating crushing rollers 38. Any appropriate brace means 60, as shown in Figure 3, is provided for the elevating conveyor 40. While considering the forward end of the structure, attention is called to Figure 2 wherein the numeral 62 designates an offside tractor or equivalent device for hauling the machine and operating it by advancing the same into the stand of hay. The hitching means 64 for the tractor is of any suitable construction and joined with one side of the drier. There is a power take-off shaft 66 (see Figure 1) and this operates intermeshing gears 68 which, in turn, transmit motion to the sprocket chains 70 and 72, the sprocket wheels and gears 74, pulleys 76 and associated endless belts 78, all of which are properly coordinated, as shown in Figure 1, for motion transmitting purposes to the associated parts. It may be stated in this connection that the means for taking power from the tractor and delivering it to the devices in the drier may be of any suitable construction and is here shown somewhat incidentally and for purposes of completeness. That is to say, no claim is made to the power transmitting means. The same is true of the gear 80 which, as shown in Figure 1, is driven by the ground engaging wheel 16 and operates a sprocket chain 82 and a sprocket 84 which, in turn, serves to operate the endless conveyor 42. Any suitable means (not detailed) is utilized to operate the mower or the cutter bar 54.

Attention is now directed to the rear or discharge end of the drier in Figure 3 where the exit is denoted at 86. Here we provide an upwardly and rearwardly inclined suitably constructed duct 88 having an appropriate elevating type endless conveyor 90 mounted therein. The upper end of this is preferably provided with a downwardly deflected nozzle 92 which, in practice, empties the then dried hay into a farm wagon or baler 94. The baler or wagon is provided with an appropriate draft tongue 96 which is hitched removably in place at 98. The idea, as before stated, is to load up the wagon (when the latter is used) and to detach it and to move it to the barn or elsewhere for quick and ready storage of the dried hay.

Numeral 100 designates a platform interposed between the rear wall 30 and duct 88. This is of any appropriate construction and it is horizontally arranged and serves as a base for a prime mover, such as, for example, the gasoline engine 102 seen in Figure 1. This engine is operatively joined to an appropriate generator 104 which is also supported on the platform. Here, then, is the means for supplying the electricity needed. The numerals 106 and 108 designate suitably driven sprockets (not detailed) and a cooperating sprocket chain 110, this being the means for transmitting motion, in any suitable manner, to the emptying elevator or conveyor 90.

Taking up now the interior construction in the chamber of the drier, it is to be stated that suitable means is provided in this chamber for picking up the incoming hay, spreading it out, and subjecting it to a tortuous course of movement in a suitable progressive manner so that it may be thoroughly dried between the point of entry and the point of discharge. Appropriate heating means is provided in the chamber to accomplish the drying result expeditiously and effectually. It is believed, however, that the expression "heating means" will cover any devices

that may be needed in this category to effectively dry the grain while it is en route through the stated tortuous path of movement. It is preferred to utilize the simple devices herein shown. That is to say, heat radiating lamps are thought to be satisfactory. One such lamp is shown, for example, at **112** in Figure 6, and this is of any suitable construction and mounted on adjustable bracket means **114** where it registers with an opening **116** provided therefor in the vertical chamber wall **118**. The lamps are preferably supported in the vertical side walls of the body and in horizontal longitudinally spaced relationship. That is to say, they are in horizontal rows as brought out, for example, in Figure 3. These lamps are preferably thermostatically controlled, and they are arranged in vertically spaced rows and are confined in what are herein designated as individual compartments **120** which are in communicating relation, as shown in Figure 3. In each compartment, there is a horizontal partition **122** which has one end terminating short of the rear wall and has the other curvate apron-like end **124** connected to the front wall. These partitions constitute decks, and they have longitudinal slots therein, the slots being denoted by the numerals **126**, as best shown, for example, in Figure 8. There are other imperforate or non-slotted partitions **128** and between these partitions are the endless belts **130**. The right hand end of the dividers or decks **128** are also curved, as at **132**, and provide suitable chutes which assist in guiding or diverting the hay from one deck or platform to the next, causing it to traverse in the aforementioned tortuous path. The endless belts are driven by rollers **134** on appropriate and suitably driven shafts, and these belts are provided with outstanding appropriately shaped fingers **136** which move along in the slot and pick up and move the hay along in an obvious manner through each compartment during which time the hay is subjected to the heat waves and heat rays from the aforementioned lamps. The groups or batteries of lamps are preferably positioned along the margins of the respective decks so as to effectually dry out the hay, in an obvious manner. By causing the hay to move from left to right and right to left in the aforementioned tortuous manner, it is thoroughly dried, and by the time it leaves the exit **86**, it is ready to be conveyed by the conveyor **90** into the wagon, baler or other receiver. In practice, the lamps on the right and left sides of the structure are wired, as shown, for instance, in Figure 12, wherein the current from the generator **104** is delivered into a storage battery **140**, appropriate thermostatic means being provided in the circuit, as at **142**, and a suitable switch being provided at **144**. The vertical side walls are provided with doors **146** hingedly mounted at **148**, and these doors are arranged to permit access to be had to the lamp compartments for inserting and removing the lamps in an obvious manner.

With further reference to Figure 1, the numeral **150** designates a sprocket chain cooperating with sprockets **152** and meshing gears **154** and **156** for operating the aforementioned stem crushing rollers **38**. It is to be mentioned again that the means for transmitting motion to the parts is, of course, incidental here. Take, for example, in Figure 11, based on the modification seen in Figure 9, we have a slightly different driving arrangement characterized by sprocket chains **158**, **159** and **160** and appropriate sprocket wheels **162** and intermeshing gears **163**. These serve to operate the shafts which turn the rollers which, in turn, operate the belts which control the conveying fingers on the various decks.

In the modification shown in Figure 10, the parts already described are somewhat duplicated, and as a matter of fact, there is very little change in the construction. Here, for example, in Figure 9, a single blower fan is illustrated at **164** and the rear wall is provided with a discharge **165** which is close to the ground, just in case it is desired to dump or empty the hay on the ground, to be picked up later. Consequently, the hitching means for the wagon is eliminated here and is, of course, an optional phase of the over-all invention. In Figure 13, a slight change is shown, wherein the shaft **166**, or the various shafts, for that matter, are mounted in floating bearings **168** which are provided with accommodation springs **170**.

The wall structure of the body in Figure 9 is the same as that described, basically speaking, and here, too, we have the tiers of compartments arranged one above the other and in alternating relationship. In this arrangement the coacting end portions of the partitions or decks are inter-related so that the fingers on the adjacent conveyors come into cooperating pickup relationship for more effectively moving the hay from one deck to the next deck. Other than this, there are no outstanding differences, and therefore, the same basic reference numerals distinguishably primed (**16'**, **18'** and so on) are employed here (also in Figs. 10, 11 and 13) to designate corresponding parts.

Reverting to certain aspects of the preceding description, it is to be pointed out that the essential result attained has to do, of course, with a portable combine-like structure for handling coarse roughages used as feed for livestock, as hay, and various grasses known as legumes, timothy and the like. There may be instances, however, when so-called grain is handled and dried, this being done when it is used for hay purposes, usually in cases where the grain is cut prior to having reached the ripened stage. The expression "feed" has been used in connection with a satisfactory food product for livestock and, in some instances, dried hay for such purposes is, of course, treated as fodder. The machine may also be said to include the forward elevator or conveyor for harvesting the crop, but also conveying it from place of cutting to the place of deposit which can be directly on the ground, or into the aforementioned wagon or baler, all as is understood. In using a farm wagon, it could be collected and moved directly to the barn loft or elsewhere. When the baler is used to follow a portable hay drier, a continuous baler operation is had. The dried material can go directly from the drier to the baler.

It is also to be understood that the expression "heating means" or similar phraseology used herein is not be be construed as limited in any sense of the word to the lamps herein referred to specifically. It can include steam pipes or hot water coils interwoven throughout the conveyor or infra-red units enclosed by means of metal covers. Nor is the invention to be confined or restricted to electrical heating means only. This is so because of the fact that it is within the purview of the over-all concept to use heat which is fired by or rendered operative by other fuels, such as gas, fuel oil, coal, etc. In heating inter-woven stem coils or hot water coils, these can be properly distributed throughout the conveyor chamber.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A farm machine for gathering newly cut hay and temporarily confining, drying and processing it, while in transit, for use as feed comprising, in combination, a mobile chassis constructed to be maneuvered and moved over the intended hay field surface by a tractor, similarly to the practice of handling of a combine, a covered vehicle body carried by said chassis, said body having cooperating horizontal and vertical walls defining a chamber closed on all sides, conveyor means confined and operatively mounted in said chamber for distributively spreading and progressively conveying incoming cut hay from a place of entrance to a place of exit regardless of whether said chassis is moving over level or unlevel terrain, heating means in said chamber for uniformly

heating and drying the hay whereby the latter, during its course of movement through said chamber, is subjected to heat throughout its course of travel and is uniformly and amply dried for adequate curing and subsequent storage as it leaves the chamber by way of said exit, and wringer-type roller means situated and operatively mounted at the hay entrance for squeezing and effectually crushing the stems of the hay preparatory to movement through said conveying and heated drying chamber from the place of entrance to the place of exit

2. The structure defined in claim 1, and wherein said heating means is thermostatically controlled and is systemmatically arranged in said chamber to distributively radiate heat waves in a manner which gradually subjects the moving hay to effectual drying while en route through said chamber.

3. The structure defined in claim 2, and wherein said hay entrance is located in the front wall adjacent to the top wall and said treated hay exit is located in the rear wall adjacent to the bottom wall.

4. The structure defined in claim 3 and the combination therewith of hay elevating means suspended from and projecting beyond the front wall for picking up and elevating the cut hay as the machine advances into said stand of hay, and shielded guide means for feeding said hay through said entrance for crushing preparatory to timely progressive drying.

5. The structure defined in claim 4, and the combination therewith of a conveyor-equipped duct communicating with said exit, said duct being attached to and extending upwardly from said rear wall and terminating in a downwardly deflected discharge nozzle designed and functioning to empty the dried hay into a baler, farm wagon or a similar transporting conveyance.

6. A farm machine for gathering and processing a stand of cut hay and promptly and progressively crushing, drying and otherwise conditioning it, while in transit, for use as fodder comprising a mobile chassis constructed to be maneuvered and moved over the field surface by a tractor, similarly to the practice of handling of a combine, a covered vehicle body carried by said chassis, said body having cooperating horizontal and vertical walls defining a hay curing chamber closed on all sides, hay spreading and conveying means confined in said chamber for moving incoming cut hay from a given place of entrance to a place of exit, variable and controllable heating means in said chamber for properly heating and drying the hay whereby the latter, during its course of movement through said chamber, is amply dried for ready transportation and subsequent storage as it leaves the chamber by way of said exit, and driven roller means operatively mounted in said body at the hay entrance for mechanically crushing and squeezing moisture from the hay preparatory to its movement through said chamber from place of entrance to place of exit, said first named means comprising a series of horizontal vertically spaced partitions fixedly mounted in said chamber and providing spreading decks, the latter also defining communicating compartments through which the drying hay is progressively fed, and each deck having independent driven conveyor means provided with hay moving fingers which actually catch hold of and slowly drag the hay across the complemental deck in a direction toward said place of exit.

7. The structure defined in claim 6 wherein certain of said partitions have spaced lengthwise slots through which said fingers extend and operate and also have curved end portions secured to an adjacent wall, said curved portions defining chutes which assist in shunting the hay from one compartment to the next succeeding compartment, whereby the hay is caused to take an alternating back and forth course for effectual drying.

8. The structure defined in claim 6 and wherein certain of said decks have curved end portions secured to an adjacent cooperating wall, said curved portions defining hay reversing and descending chutes which assist in shunting the hay from one compartment to the next succeeding compartment, whereby the hay is caused to take an alternating back and forth course for effectual drying, said heating means comprising rows of thermostatically controlled lamps in each compartment, said lamps being positioned along opposite lengthwise margins of the deck to project and flood heat rays in the direction of the hay feeding surfaces of the adjacent deck, and a controllable electric blower fan for said chamber, said fan arranged to circulate the heated air throughout the area of said chamber.

9. A farm machine for gathering and processing a stand of cut hay and progressively crushing, drying and otherwise curing it promptly after cutting and, while in transit, conditioning it for use as fodder comprising a mobile chassis constructed to be maneuvered and moved over the field surface by a tractor, said body having cooperating horizontal and vertical walls defining a hay receiving, confining and curing chamber and said chamber being closed on all sides, one wall being a front wall and the latter having a hay intake opening adjacent to a horizontal platform, two of said vertical walls being side walls, the remaining vertical wall being a rear wall and having an exit opening for the dried and thus cured hay, a pair of cooperating crushing rollers operatively supported between said side walls in line with said intake opening and between which the incoming hay is forced to pass before it is allowed to enter the chamber, said rollers serving to squeeze and express moisture from the incoming hay preparatory to its movement through said chamber, a plurality of horizontal fixedly mounted decks vertically spaced and arranged one above the other and defining communicating compartments between themselves through which the moving hay is progressively fed, said decks having flat top surfaces over which the moving hay is thinly and uniformly spread out for drying purposes and also having lengthwise slots, endless conveyors cooperable with said decks and embodying conveyor belts provided with hay raking and dragging fingers and said fingers operating in said slots and serving to move the hay from one deck to the next deck and thus through a communicating tortuous passage provided by the cooperating decks.

10. A farm machine for mowing a stand of hay or the like and promptly conditioning it, while in transit, for use as feed comprising a mobile chassis constructed to be maneuvered and moved over the field surface by a tractor, similarly to the practice of handling of a combine, a covered vehicle body carried by said chassis, said body having cooperating horizontal and vertical walls defining a chamber closed on all sides, one vertical wall being a front wall and the latter having a hay intake opening adjacent to a horizontal top wall, two of said vertical walls being side walls, the remaining vertical wall being a rear wall and the latter having an exit opening, a duct communicatively joined thereto and extending rearwardly and upwardly and terminating in a downturned discharge nozzle, an endless emptying conveyor operatively confined in said duct, a pair of cooperating crushing rollers operatively supported between said side walls in line with said intake opening between which the incoming hay passes into the chamber, conveyor means embodying a rearwardly and upwardly inclined feeder trough having a shielded upper end joined to said front wall in registry with said intake opening, an endless type hay elevating conveyor operatively mounted in said trough, means in said chamber for moving the hay from the intake opening to the exit by way of the chamber, and other means in said chamber for heating the chamber and drying the hay thoroughly while en route through said chamber, said second named means comprising a series of horizontal vertically spaced decks defining communicating compartments through which the drying hay is progressively fed, and each deck having

conveyor belts therebeneath and said belts having fingers operating in slots provided therefor in said decks.

11. The structure defined in claim 10 and wherein certain of said decks have curved end portions secured to an adjacent wall, said curved end portions defining chutes which assist in shunting the hay from one compartment to the next succeeding compartment, whereby the hay is caused to take an alternating back and forth course for effectual drying.

12. The structure defined in claim 11, said heating means comprising rows of thermostatically controlled lamps in each compartment, said lamps being positioned to project heat rays in the direction of the hay feeding

surfaces of the adjacent deck, and a controllable electric blower fan for said chamber, said fan arranged to circulate the heated air throughout the area of said chamber.

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