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Improvement In Waste Handling System

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Abstract: - *Large Square of baling is currently recognized in industry of wasted paper in a proper form so as during transportation the waste material is decreased and quantity of transportation will increase. Baling machine is used to bale collecting and storing at an industry (Jash Packaging Co.) Factors to be affect of this method are large square of bale production and handling logistics were quantified. Performance material capacities of machines used in this system to be determined based on field measurements. It means to increase system efficiency or reduce transportation cost and waste paper material were discussed.*

Keywords- *Baler Machine, Bale, Waste Handling, Agricultural Baler, Horizontal Baler Machine, Square bale, Round Bale.*

I. INTRODUCTION

A **baler**, most often called a **hay baler** is a piece of farm machinery used to compress a cut and raked crop (such as hay, cotton, flax straw, salt marsh hay, or silage) into compact bales that are easy to handle, transport, and store. Often bales are configured to dry and preserve some intrinsic (e.g. the nutritional) value of the plants bundled. Several different types of balers are commonly used, each producing a different type of bale – rectangular or cylindrical, of various sizes, bound with twine, strapping, netting, or wire.

By making bale of large amount of scrap it will be easy to transport it and store it in the company. However the square shape of bale makes handling of scrap, transporting, and storage of bale will be efficient compared to the current method of waste handling in the company.

Field equipment, transportation, and storage facilities for large square bales in agricultural markets already exist. Large square balers that currently accommodate forage crop harvest can be readily utilized in bio- mass harvest. Therefore by implementing this method in waste handling in company we can overcome the problem of transportation cost of the company.

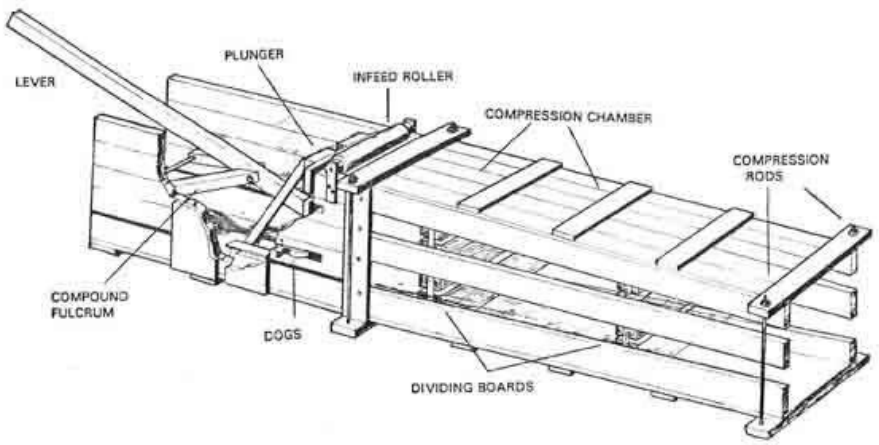


Figure: - 1 Horizontal manual baler

II. BRIEF LITERATURE REVIEW

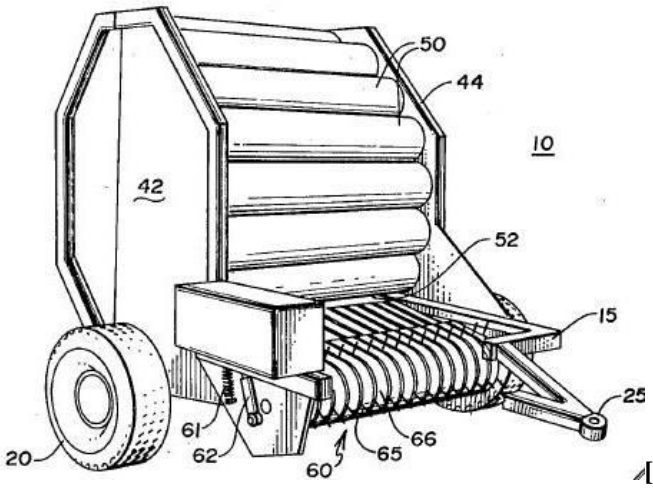
Agricultural Baler (Arsene Roth) This research relates to an agricultural baler which includes substantially a pickup element, a conveyor which transports a harvested product stream picked up from a field, and a transferring device which conveys the collected product stream in direction toward a bailing chamber. In the known balers the transferring device is composed of several profiled disks Which are fixedly mounted on a cylinder, the baler has sensors Which are

formed as pilotable sensing brackets located between the pressing chamber for detecting the harvested product stream over the Width, an evaluating device connected With the sensors, and adjusting means connected With the evaluating device. Basically this kind of device can only be used in making bales in agricultural field. **[1]**

Baler Machine and Method of Baling (Roman Schmaltz, Robert J. Wolf, and Enrich E. Salzmann) they carried out that that baler machine including a charging chamber for receiving material to be baled. The charging chamber has a charging passage through which material is forced into a baling compression chamber by a compression ram to thereby form a bale in the compression chamber. An ejection ram is provided for forcing the compressed material out of the baling compression chamber through an exit passageway. A movable decompression wall functions as one wall of the baling compression chamber. Such wall is located opposite and spaced from the charging passage through which material is forced from the charging chamber. A power cylinder is provided to move the decompression wall in a horizontal direction to effectively increase the volume of the baling compression chamber which, at the same time, increases the size of the exit passageway to thereby permit ejection of an oversized bale from the compression chamber. **[2]**

Horizontal baling apparatus (Wright Colin S.) Baling apparatus for scrap materials, such as paper, cardboard and the like which is of the so-called high capacity" type capable of producing relatively large, high-density bales, and baling a large tonnage in a given time period are usually of two types, vertical or horizontal. Vertical baling equipment employs a compression chamber which is vertically disposed, and the horizontal type balers use a compression chamber horizontally disposed. Large vertical chamber balers receive the material to be baled within the compression chamber and a ram, either hydraulic or mechanical, is moved vertically, usually upwardly, to compress the material at an end region of the chamber. After several compression strokes, with additional material being introduced into the chamber between strokes, a bale is formed in the end portion of the chamber and strapping of the bale occurs while it is located within the compression chamber. This arrangement has the disadvantage of rendering the baler inactive while strapping of the bale occurs. Additionally, vertical chamber baling devices have relatively small compression chamber loading openings due to the constructional limitations of this type of baler. **[3]**

Round baler machine (Werner Konekamp, Horst Harig, Heinrich Isfort) Round baler for windrowed fibrous agricultural materials in which the bales are formed by a two-part frame having a generally cylindrical baling zone therein defined by side wall members on the frame and roller members extending between the side wall members and distributed around the frame. The frame includes a conventional pickup and conveying apparatus to move the agricultural materials from the ground into the entrance of the cylindrical baling zone. The baler includes an improvement of hollow roller members formed of sheet metal rolled into a cylindrical form with intermediate supporting discs distributed across the interior of the cylindrical form and seal plates at the ends of the cylinder which mount stub shafts for journaling the roller members. Seal members are mounted on the side walls and these seal members project into the ends of the roller members to coach with the seal plates to insure that the materials in the baling zone do not enter the area between the roller members and the side walls. In an alternate embodiment of the invention, the baler is modified by a special conveying means having oscillating tines driven with the roller members to advance materials from the pickup into the baling zone.



[4]

Figure: - 2 Round baler

Wind guard for round baler (Kevin M Smith and **Levi Taylor)** Pickup for an agricultural implement, the pickup including dual floating wind guards that pivot and float causing the tines to maintain contact with the crop at all times as it moves over the pickup and across the stuffer. The present invention relates generally to hay balers, and more particularly to an improved wind guard system for the crop pickup and feeder assembly of a round baler. For many years

agricultural balers have been used to consolidate and package crop material so as to facilitate the storage and handling of the crop material for later use therefore wind guard in installed in the baler machine. **[5]**

Method for compacting material using a horizontal baler with movable bottom support ejector (James K. Robbins) Horizontal baler has a longitudinally extending generally rectangular frame assembly defining a receiving chamber and an adjacent aligned compaction chamber. Each of the chambers has a top, a bottom, and sides. A ram is mounted for reciprocation within the receiving chamber so that material therein may be transferred to the compaction chamber and compacted therein by reciprocation thereof. A first cylinder and piston assembly is longitudinally disposed within the frame assembly and is operably associated with the ram for causing reciprocation thereof. A door defines one of the sides of the compaction chamber. The door is selectively securable and movable relative to an opening communicating with the compaction chamber. **[6]**

Baler machine with a bale transfer conveyor (Wilbur Van Ryswyk) Here cylindrical bale forming machine has a bale transfer unit yieldable maintained in a transport or rest horizontal position located below the bale discharge gate to receive a bale discharged from the machine for transfer to a ground location rearward clear of the discharge gate. The transfer unit is operated in response to the movement of the discharge gate into its open or bale discharge position and is returned to its rest position in response to movement of the discharge gate out of the open position therefor. **[7]**

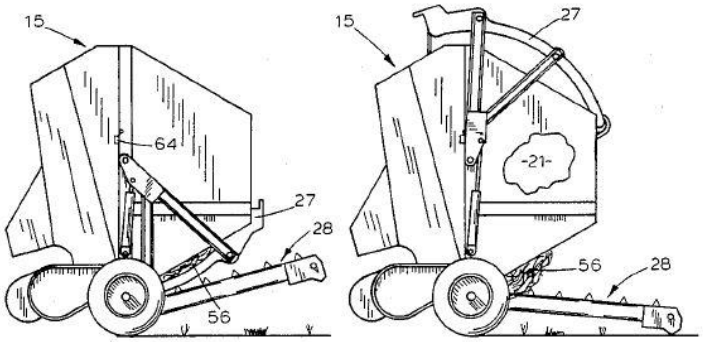


Figure: - 3 Baler machine with a bale transfer conveyor

III. CONCLUSION

For many years agricultural balers have been used to consolidate and package crop material so as to facilitate the storage and handling of the crop material for later use. Using baler machine in this industry waste handling will become very efficient and their transportation cost will also be reduced. From study we can say that large or small square bales are easy for handling and requires less space as compared to current method. Currently this method is used more in agricultural field but by implementing this method in industries will be more convenient than any other waste handling system. This system can be used in paper recycling industries, packaging industries, plastics and glass industries, etc.

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