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(54) **LEAF BAILER**

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(57) **ABSTRACT**

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A very complete one person machine that combines five separate functions:

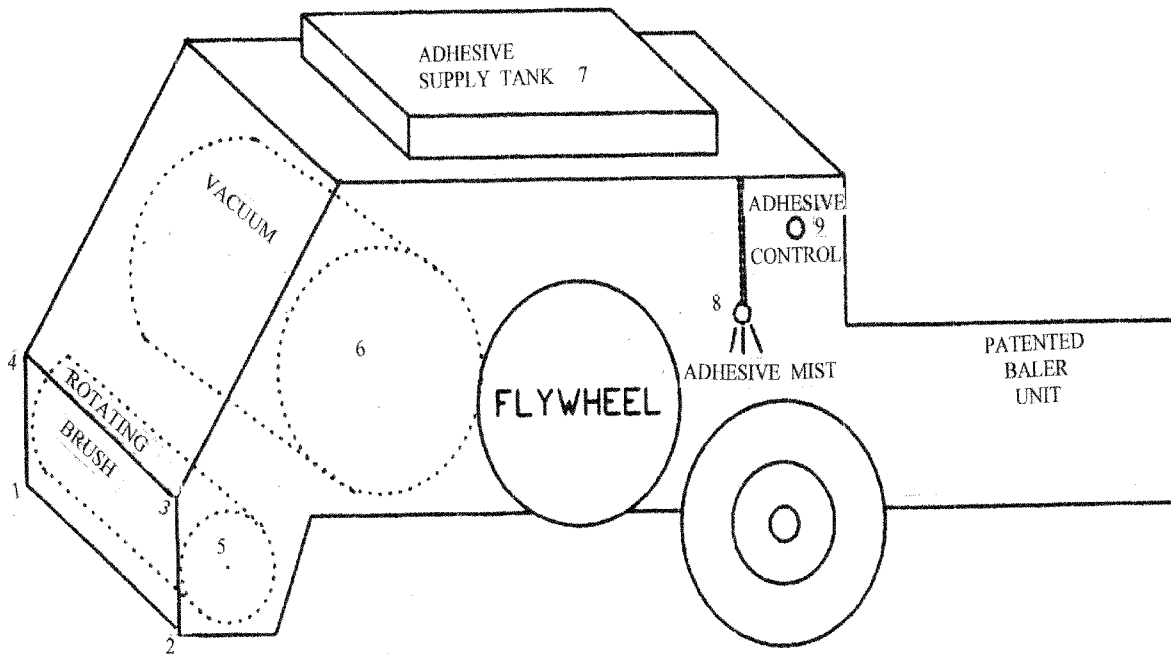
1. Mobility: The machine will function on any solid roadway or golf course.
2. The Leaf Baler will pick up the leaves making a clean environment.
3. The vacuum/blower will force the leaves into the baler chamber.
4. The adhesive sprayer will insure that the leaves are held together during and after the baling process is completed.
5. There is no need for additional labor to spray the bales after they are formed as taught by Davis, Truitt, and Mathews et al. Campbell's additional device for spraying an adhesive after the bales are formed makes the procedure additionally expensive.
6. The vacuum/blower will force the leaves and debris into the section of the baling machine that compresses the leaves into a programmed shape and size.
7. It will then eject the bales into an enclosed wagon for transport.

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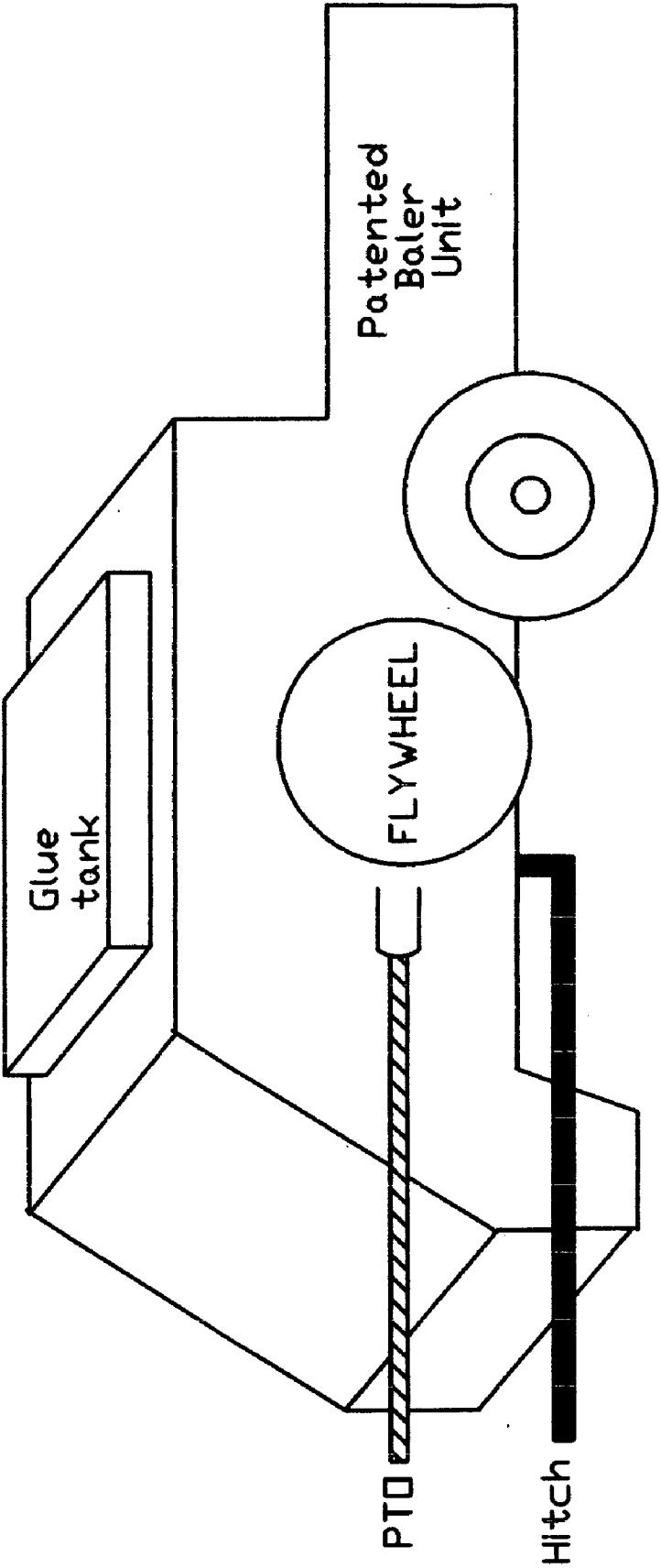


FIGURE 1
Exterior View

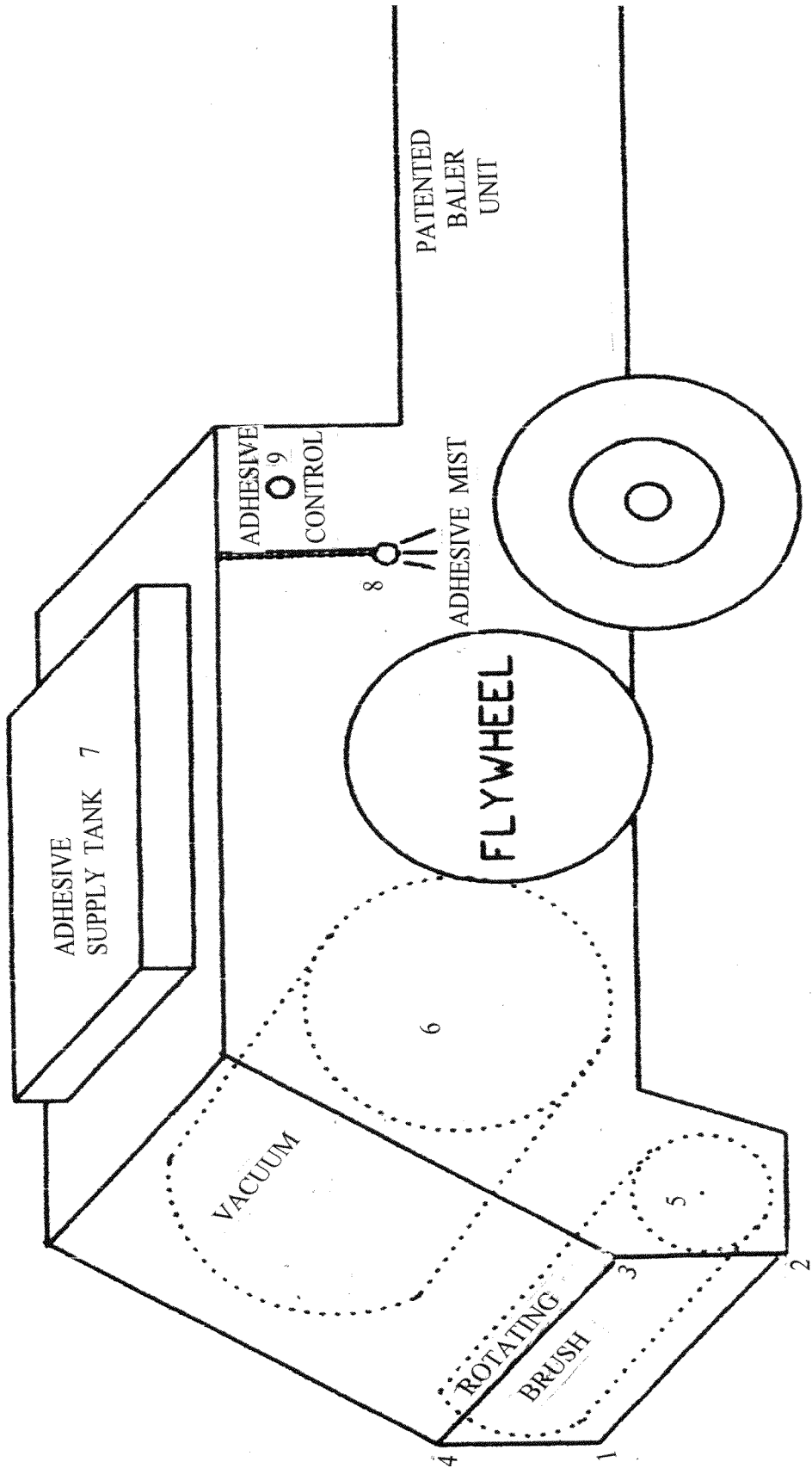


FIGURE 1-A

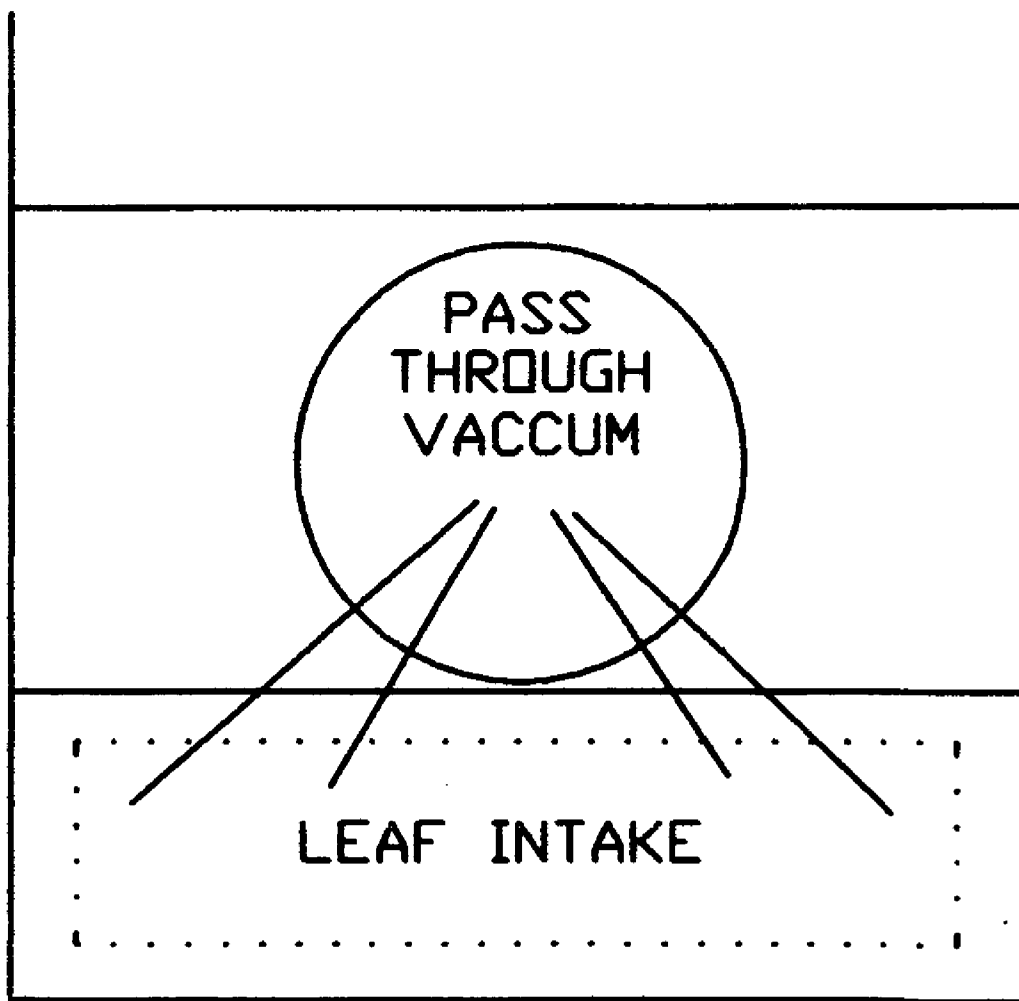
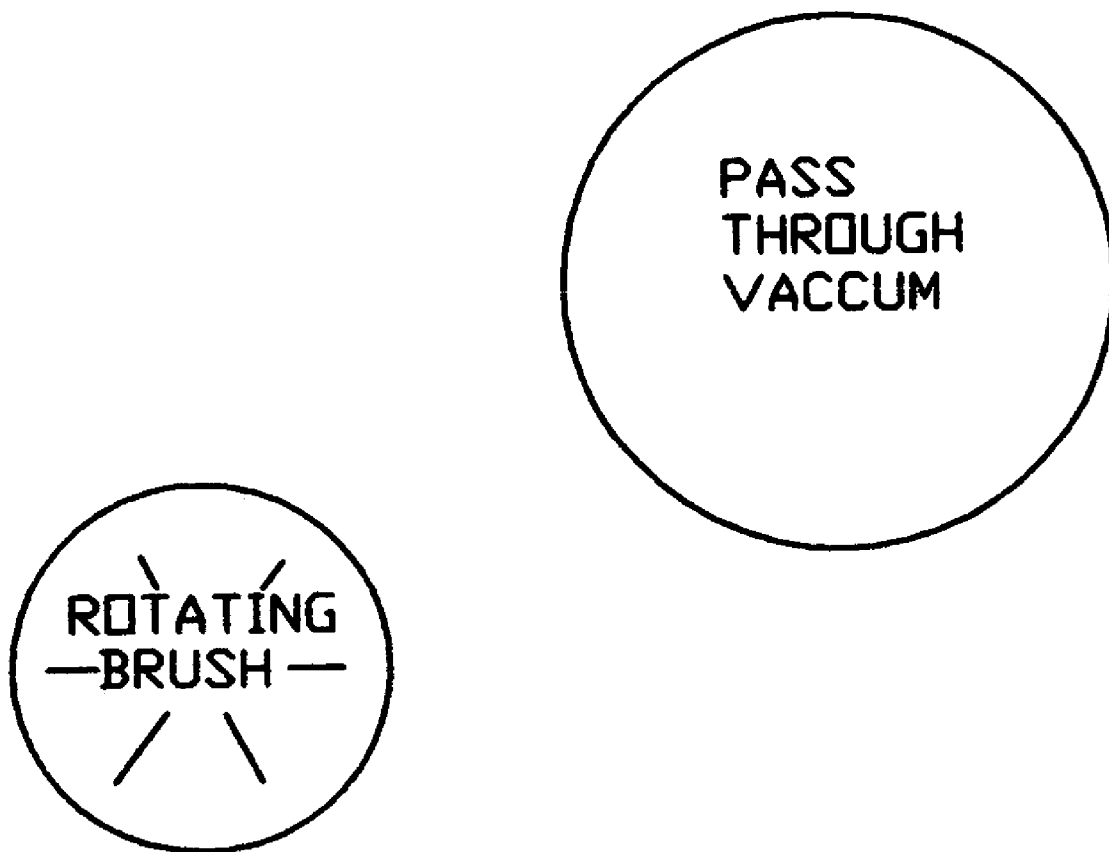


FIGURE 2



SIDE VIEW
FIGURE 3

LEAF BAILER

FIELD OF INVENTION

[0001] The invention is designed to be used where ever there is a need for the removal of leaves, i.e. on streets, golf courses, and any other locations deemed necessary.

BACKGROUND OF THE INVENTION

[0002] 1. While serving as a Village Trustee, the importance of leaf removal was emphasized when it became the single greatest service expenditure of the Village.
[0003] 2. The Leaf Baler, being a one person continuous operation, represents a tremendous cost saving to all municipalities.

DESCRIPTION OF PRIOR ART

[0004] The previous method has been one of loading the leaves on trucks either manually or with tractors with front end loaders.
[0005] More recently, there are vacuums mounted on the front of trucks with hoses about 12 feet in length approximately 18 inches in diameter that swing back and forth in front of the truck that blow the leaves onto an enclosed truck body.
[0006] This truck body has screening on the top and a small area on the sides of the panels to allow for excess air to escape.
[0007] Unfortunately, this is not a very environmentally clean method as the leaf particles are flying through the air all around the truck. This causes a considerable amount of leaf debris still left on the street even though the bulk of the leaves have been removed.
[0008] When the truck body is filled, it is hauled to a disposal site, thereby disrupting the operation of removing leaves since the entire operating mechanism is on the highway to the disposal site.
[0009] Although a brush and vacuum process is described in other applications, neither MATHEWS et al., DAVIS, TRUITT, or CAMPBELL combine the feature of spraying the leaves with an adhesive during the baling process.

SUMMARY OF THE INVENTION

[0010] The Leaf Baler looks like a hay baler and is similarly designed.
[0011] This application consists of combining five basic principles into one operation.
[0012] (1) Mobile pickup of leaves off the street,
[0013] (2) Movement of leaves through the use of a rotating street brush to
[0014] (a) Clean the street, and
[0015] (b) Make the leaves airborne,
[0016] (3) Use of a pass-through vacuum machine large enough to move the leaves from the front end to the back end of the baler machine which ultimately bales the leaves,
[0017] (4) Use of an inexpensive biodegradable strong adhesive substance sprayed on the leaves just prior to entering the baler chamber to hold the leaves together while in a bale, and
[0018] (5) Baling the leaves. Use of a self loading bale ejector is optional. There is no attempt in this application to

seek a patent for a rotating brush, vacuum machine, baler, or bale ejector. These have already been patented.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The Leaf Baler will appear similar to a hay baler with modifications to accommodate gathering and baling of leaves instead of long stemmed plants.
[0020] FIG. 1A—This figure best demonstrates the overall function of the Leaf Baler. The leaves and other debris would enter the opening in front of the clockwise rotating brush, be sucked up by the pass-through vacuum apparatus, and be sprayed with a strong adhesive substance on their way to the baler mechanism which would tie the bales as it produces them. Finally they would be ejected by the baler mechanism.

DETAILED DESCRIPTIONS OF THE DRAWINGS

None of which are Drawn to Scale

[0021] FIG. 1—It is an exterior view of the machine after it would be built. It is anticipated that it would be tractor pulled, power to the leaf baler supplied by the Power Take-Off on the back of the tractor. This would greatly reduce the price of the machine. vs. having a mounted power unit.
[0022] FIG. 1A—The solid lines represent the exterior outline of the entire leaf baler machine. The dotted lines represent certain features which are mounted inside the Leaf Baler machine.
[0023] Numbers 1 to 2 to 3 to 4 indicate the opening of the front of the machine. Number 5 will be a clockwise rotating brush to push the leaves forward and upward to maximize the suction power of the vacuum
[0024] Number 6 is the pass-through vacuum which will provide sufficient suction to pull the leaves into the compartment between the brush and the vacuum and also to send them into the baling chamber.
[0025] Number 7 is the glue tank which will contain a strong adhesive substance which may or may not be combined with water which will be forced to a nozzle,
[0026] Number 8, which will spray a mist onto the leaves on their way to the baler itself.
[0027] Number 9 simply indicates some type of control to adjust the amount of the adhesive substance passing through the nozzle.
[0028] FIG. 2—The dotted line shows the opening or leaf intake.
[0029] The solid lines indicate the passage of the leaves from the top of the clockwise rotating brush through the pass-through vacuum apparatus.
[0030] FIG. 3—It simply shows a side view of the rotating brush and the pass through vacuum apparatus. It indicates the relative difference in diameter of the two features.
1. The main reason for the proposal of the LEAF BALER is to present the most inexpensive and labor saving device for cleaning streets.
1. It is a complete operation done by one person.
2. It allows for continuous operation, thereby making it the best use of labor.
3. There are options as to disposal. Bales can be left on the street.
4. Bales can be ejected into a wagon for storage and hauling.
5. There is no reason for the Leaf Baler to leave the scene where the job of street cleaning is being done.

6. The Leaf Baler combines numerous operations that were previously performed as single procedures.
 - a. The Leaf Baler will sweep the streets.
 - b. The vacuum will force all debris into the baler's main chamber.
 - c. The adhesive device will spray the leaves so that they hold together in a bale.
 1. Spraying an adhesive to the bales after they are made, as taught by Davis, Truitt, and Mathews et al. makes the operation complex and prohibitively expensive due to additional labor and extensive handling involved.

- d. The baler will make bales as designed and programmed.
- e. The ejector will send the bales into an enclosed wagon for transport.
- f. The Leaf Baler will leave an environmentally clean street.
- g. The Leaf Baler will produce a product that can be easily handled in shipping.

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