Feb. 12, 1929.

1,701,996

B. DANSBY ET AL

SUCTION CLEANING APPARATUS

Filed Aug. 19, 1927

4 Sheets-Sheet 1

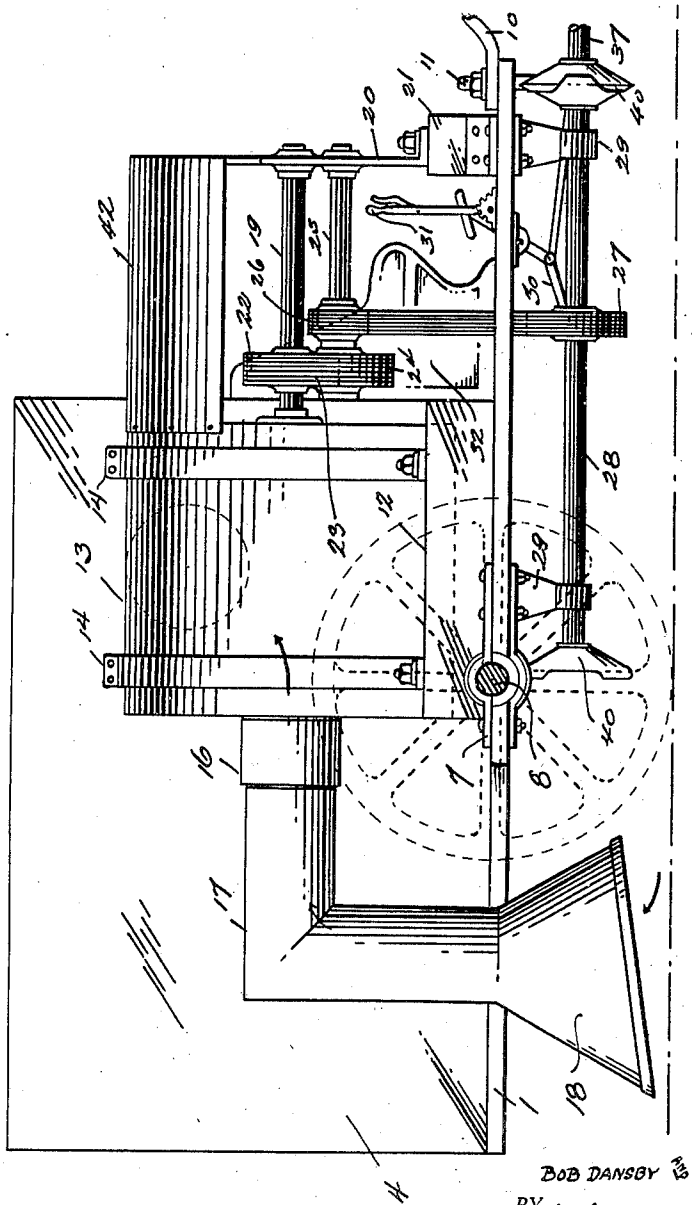


FIG-1

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SUCTION CLEANING APPARATUS

Filed Aug. 19, 1927 4 Sheets-Sheet 2

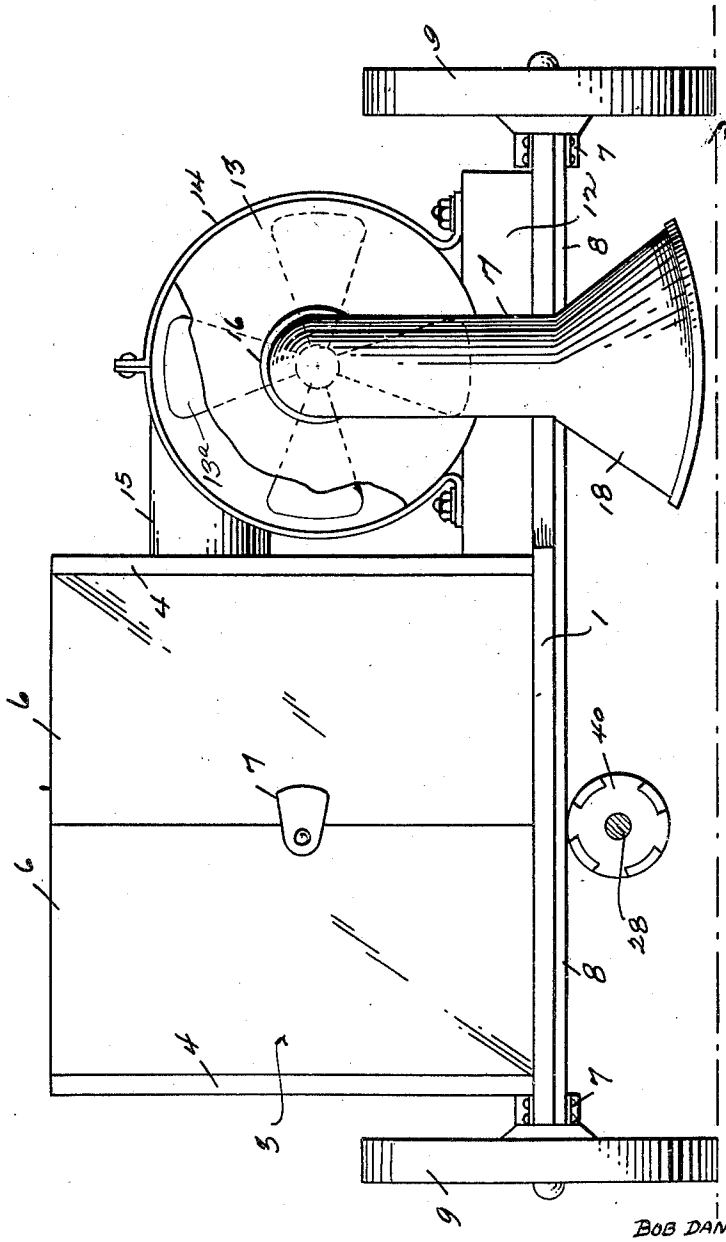


FIG-2-

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SUCTION CLEANING APPARATUS

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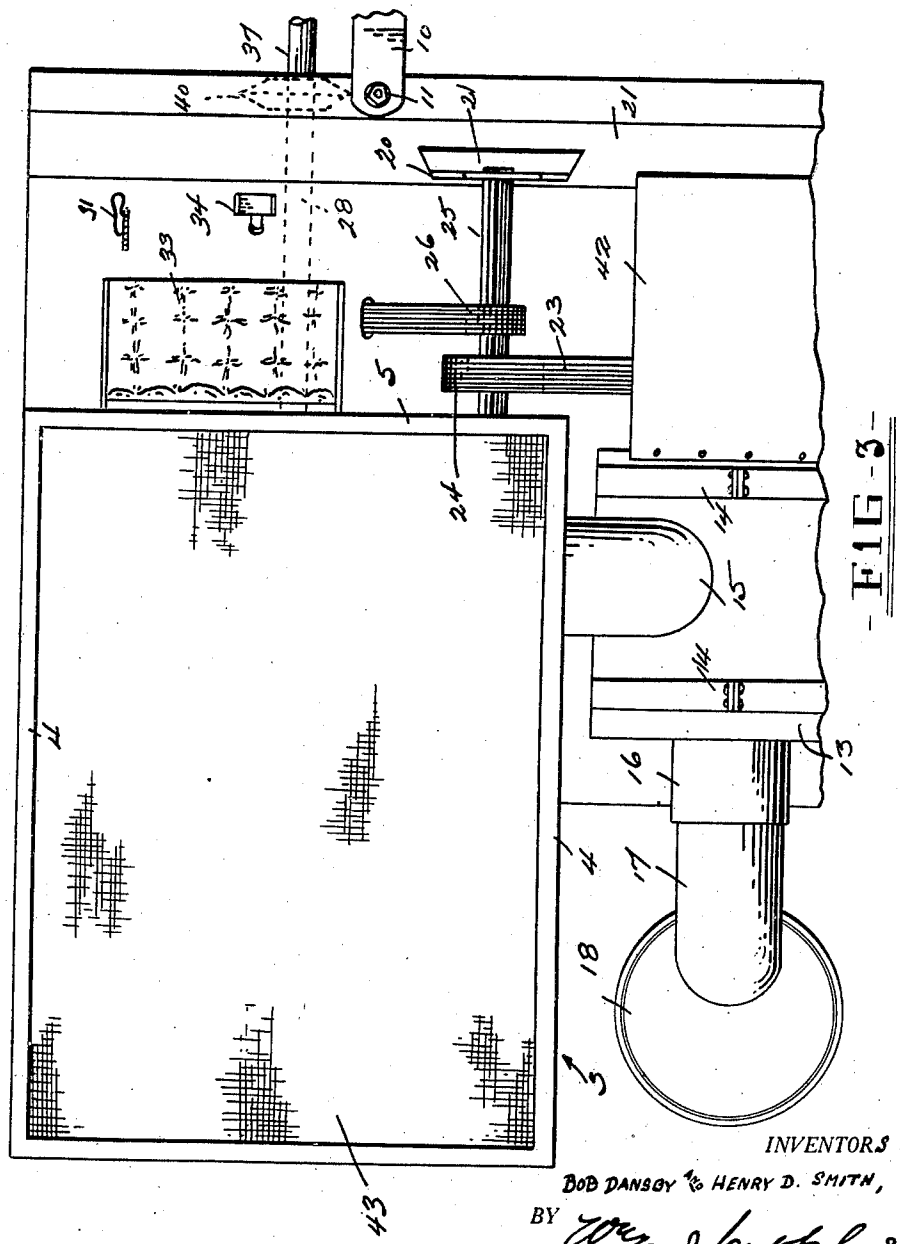


FIG. 3.

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SUCTION CLEANING APPARATUS

Filed Aug. 19, 1927

4 Sheets-Sheet 4

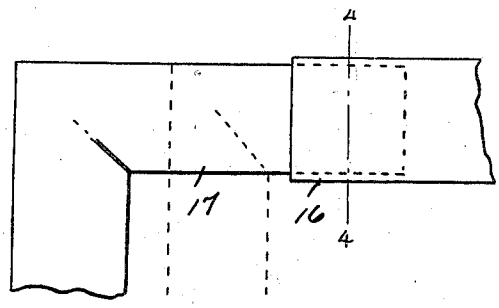


FIG-4-

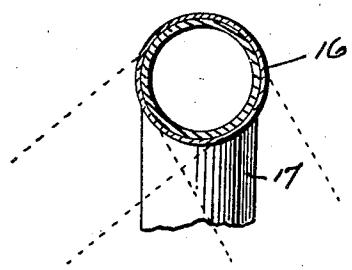


FIG-5-

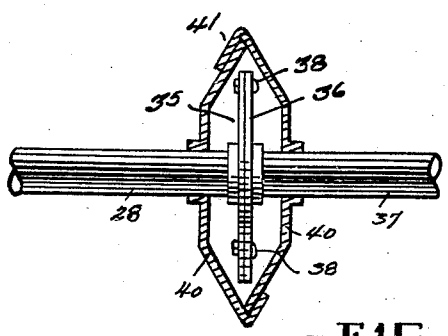


FIG-6-

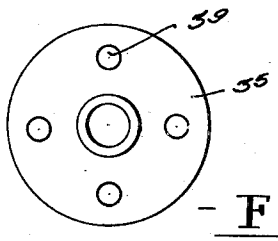


FIG-7-

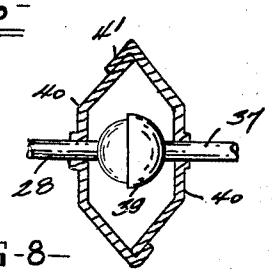


FIG-8-

INVENTORS

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Patented Feb. 12, 1929. 1,701,996

UNITED STATES PATENT OFFICE.

BOB DANSBY AND HENRY D. SMITH, OF LAKELAND, FLORIDA.

SUCTION CLEANING APPARATUS.

Application filed August 19, 1927. Serial No. 214,038.

Our present invention in its broad aspect has reference to improvements in suction cleaning apparatus of the type especially designed for use in cleaning streets, removing refuse from lawns and débris from fields and the like and otherwise for general application in cleaning and removing refuse and débris on a large scale. More particularly it is our purpose to provide a suction cleaner of this general type wherein means are provided for driving the suction apparatus from an ordinary tractor or power driven conveyance, and wherein the refuse, dust, débris and the like drawn up by the cleaning apparatus is collected in a receptacle from which it can be subsequently extracted or dumped when the cleaning operation has been completed.

Other and equally important objects of our invention may be briefly defined as follows: First, we provide a suction cleaning apparatus wherein the various types of intake devices may be employed as for instance a cowl intake, as illustrated in the drawings forming a part of this application, or a flexible hose and cowl connection such as would advantageously find employment in the gathering of débris from lawns, as for instance cut grass, waste paper, leaves or the like; second, we provide a novel form of universal connection from a power element to the driven element of our cleaner and house the same in an improved form of sectional housing thereby to prevent the universal connection from becoming clogged with dirt, dust or the like; third, we accomplish by means of screen covered means for the collection receptacle the proper venting of air therefrom from the blower or fan without redistributing dust and refuse from the receptacle, and means are provided whereby accumulations may be gathered to the receptacle for removing its contents; fourth, we provide means for adjusting the position of the intake of our apparatus; and fifth, our cleaning apparatus per se is so arranged with respect to the receptacle drive apparatus and the operator's seat that an especially compact and efficient device is attained.

Other and equally important objects and advantages will become apparent as the description of our invention proceeds, but while we have in the present instance defined for the sake of illustration an article of a certain specific form, it will be understood that we do not desire to limit ourselves except as may be indicated by the scope of the claims appended hereto and forming a part of this specification.

In the drawings wherein is illustrated an embodiment of our invention:—

Figure 1 is a side view of our invention, the wheel of the device being shown in dotted lines;

Figure 2 is a rear end view looking forward and shows to advantage the compact arrangement of the suction cleaning apparatus per se with respect to the receptacle into which it discharges;

Figure 3 is a top plan view partly broken away;

Figure 4 is a detail view of a portion of the intake apparatus of our suction device and shows in dotted lines an adjusted position of the same;

Figure 5 is a sectional view taken on the line 4—4 of Figure 4 and shows the intake means in dotted lines in its laterally adjusted position;

Figure 6 is a detail view of the housing element for the connections between the drive and driven shafts of our invention;

Figure 7 is a detail view of one of the plates used in connecting the ends of the shafts for operation as a unit;

Figure 8 is a detail view of our universal connection and housing.

In the drawings where like numerals are used to designate like or similar parts throughout the several views:

The numeral (1) designates the platform or base of our apparatus which is extended rearwardly as at (2) to form the floor of our collection receptacle (3). The collection receptacle is formed with side walls (4), a front wall (5) and the rear end is closed by swinging doors (6) normally held in closed position by a latch device (7) which if desired may be operated by a lever and link connection (not shown) from the operator's seat of our apparatus. Journaled on the platform by means of bearing members (7) is an axle (8) on which are mounted wheels (9) for supporting the platform so that it may be moved from place to place. Our apparatus is preferably of the two wheel type and is especially designed for use in conjunction with a tractor and to that end a draw bar (10) is pivotally connected as at (11) to the front end of the platform so that the same

is both supported and drawn along by the tractor (not shown). Mounted on a relatively solid base (12) on the platform (1) and adjacent to the collection receptacle (3) is a cylindrical fan blower housing (13), suitable strips (14) being provided to hold the same in place. The fan blower housing has a lateral connection (15) to the collection receptacle (3) and journaled within said housing is a fan blower (13a) of conventional type which is designed to suck in air from an intake (16) in the direction of the arrow in Fig. 1. The intake element (16) is a sleeve-like member into which is fixed either for adjustment laterally or longitudinally an elbow (17) having at its free end a funnel or cowl shaped intake member (18) which is designed to travel slightly above the surface of a street or the like. The fan blower is driven from a shaft (19) extending into the housing (13) and having one of its ends journaled in a vertical support (20) bolted to a cross stringer (21) on the front end of the platform (1). On the shaft (19) is a pulley (22) having a connection (23) to another pulley (24) on a shaft (25) also journaled in the vertical support (20). A driven pulley (26) has a band connection with a clutch drive pulley (27) on a shaft (28) journaled in hangers (29) beneath the platform (1). A suitable lever connection (30) from the operating lever (31) is provided for actuating the clutch pulley so that upon rotation of the shaft (28) the fan blower may be either actuated or allowed to remain idle by manipulating the clutch; the train of power transmission being from the pulley (27) to pulley (26) on shaft (25) thence from pulley (24) on shaft (25) to pulley (22) on shaft (19) to which is directly connected as has been heretofore stated, the fan blower. The operator's seat (32) is in front of the collection receptacle (3) and upon the platform (1) and adjacent the lever (31) for throwing the clutch pulley (27). A seat (33) is arranged in front of the receptacle in close proximity with which the foot controls may be located as indicated at (34).

Attention is now invited to Figures 1 and 6 particularly. It will be noted from Figure 6 that the end of the shaft (28) is provided with a plate (35) which may be shrunk or keyed onto the end of the shaft. A corresponding plate (36) is provided on the end of a shaft (37) leading from the power plant or tractor or other source of power. Any suitable power take-off means may be used in connection with the tractor and energize the shaft (37). The two plates (35) and (36) are journalled together at (38) as shown in Figure 6 through openings (39) provided in the plates. In order to prevent accumulations of dust, dirt and the like around the plates or universal joint we provide a housing formed of metal and consisting in a pair of circular concave disks (40) each of which has lips (41) formed thereon in spaced relation. These disks are mounted on shafts and the lips (41) of one disk are bent to overlap the other disk between its corresponding lips (41) which also are bent to overlap thus forming a very simple and compact closed housing. As seen in Figure 1 the remaining end of the shaft (28) is provided a disk or housing element (40) and either a male or female element of a connection member (not shown) so that a suitable power connection may also be taken from this end of the shaft (28) if desired. As shown in Figures 4 and 5 the connection element (16) from the fan blower is so formed that the elbow (17) may be moved in or out as shown by dotted lines in Figure 4, or swung laterally either at right or left as shown in dotted lines in Figure 5, thus giving the device a desirable degree of adjustability. Furthermore there is mounted above the power connections from the shaft (28) to the shaft (19) suitable covering element (42) which is attached to the vertical support (20) and to the housing (13) for the fan blower.

In operation our device is attached by means of the draw bar (10) to a tractor or the like and the connection is completed between the shaft (37) and the shaft (28) so that the power plant of tractor or the like is utilized to drive the shaft (28). The tractor is now driven forward over the roadway or ground and the clutch pulley (27) thrown in to actuate the fan blower which in turn sucks up dust, dirt, waste paper, leaves and other débris from the roadway or ground through the cowl or other connection such as a flexible housing and delivers the same to the collection receptacle which is covered by screening (43). When the receptacle is full the collected material may be removed through the door (6). It will thus be seen that our device is simple and that it effectively accomplishes the purposes for which it is intended.

While in the foregoing there has been illustrated in the drawings and described in the specification such combinations and arrangements of elements as constitute the preferred embodiments of our invention, it is nevertheless desired to emphasize the fact that interpretation of the invention should only be conclusive when made in the light of the subjoined claim.

We claim:

The combination in a suction cleaning apparatus, of a platform provided with wheels on opposite sides, said platform formed with one side portion extending rearwardly beyond the opposite side portion, a receptacle having a screened top mounted on the platform and spaced from the front edge of the platform, said receptacle having its rear portion carried by the rearward extension, an

air conduit extending outwardly from one side of said receptacle and then backwardly and then downwardly alongside the rearward extension, a nozzle at the lower end of said conduit, a supporting base on the platform to one side of the receptacle, and a suction fan interposed in said conduit and mounted on said base and arranged to draw air through said nozzle and deliver it to said receptacle.

In testimony whereof, we affix our signatures hereto.

BOB DANSBY.
HENRY D. SMITH.