

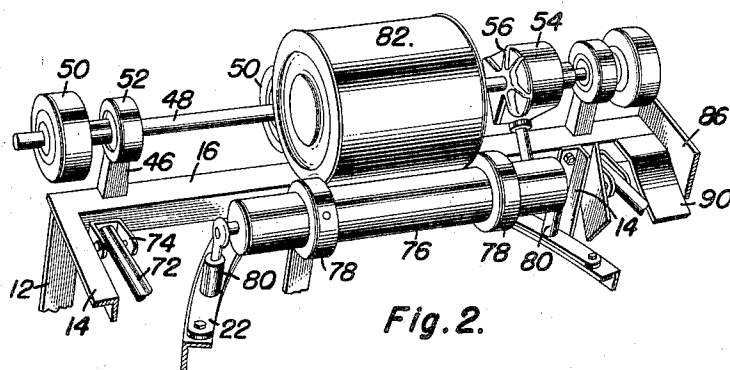
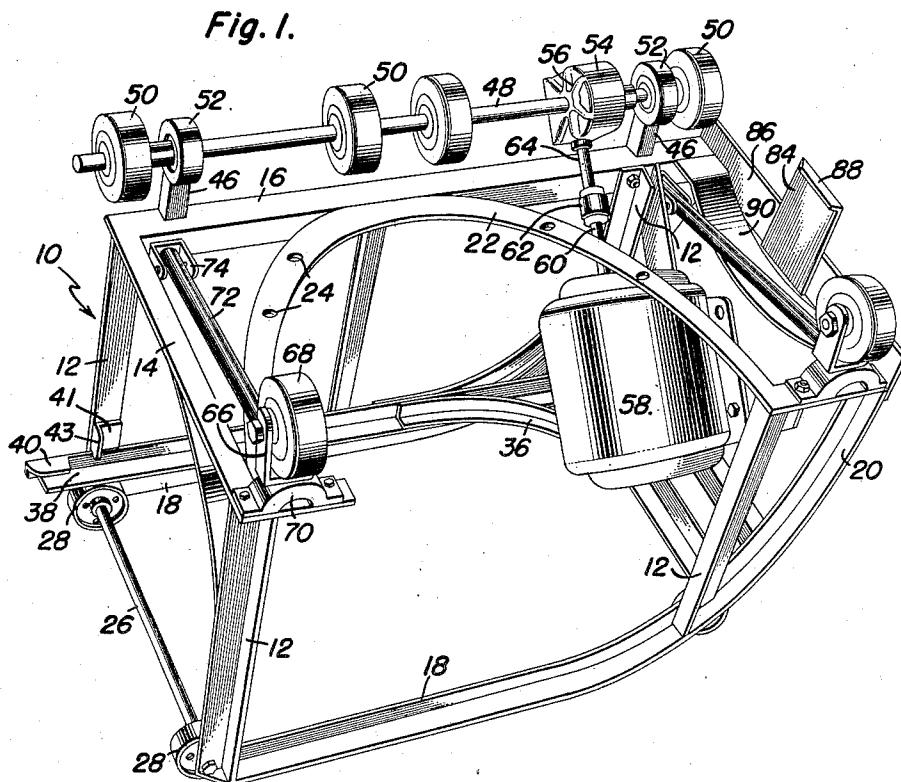
Sept. 22, 1953

R. ANDREWS
ROTATOR DRUM TRUCK

2,653,015

Filed July 18, 1949

3 Sheets-Sheet 1



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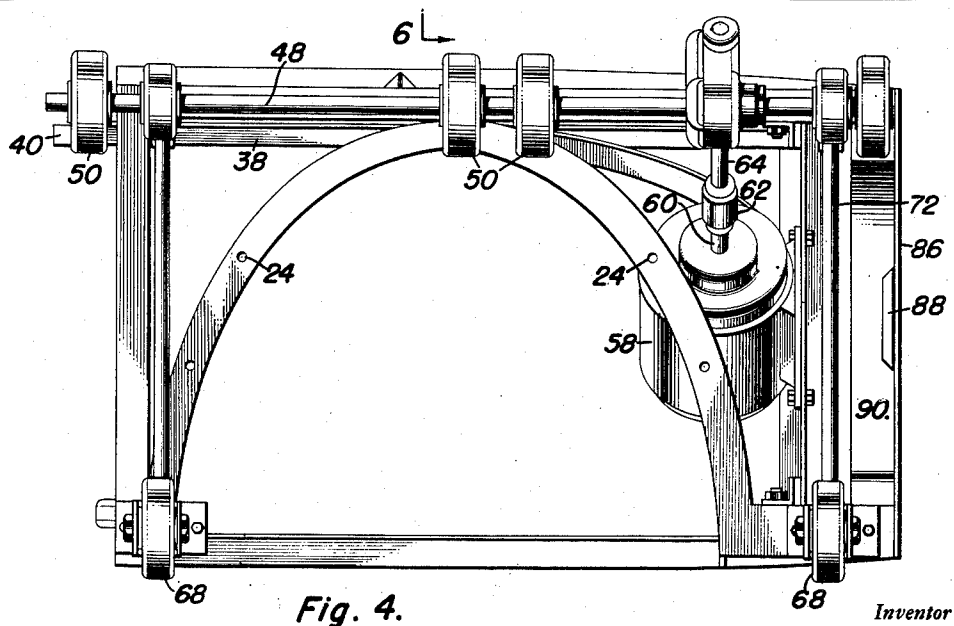
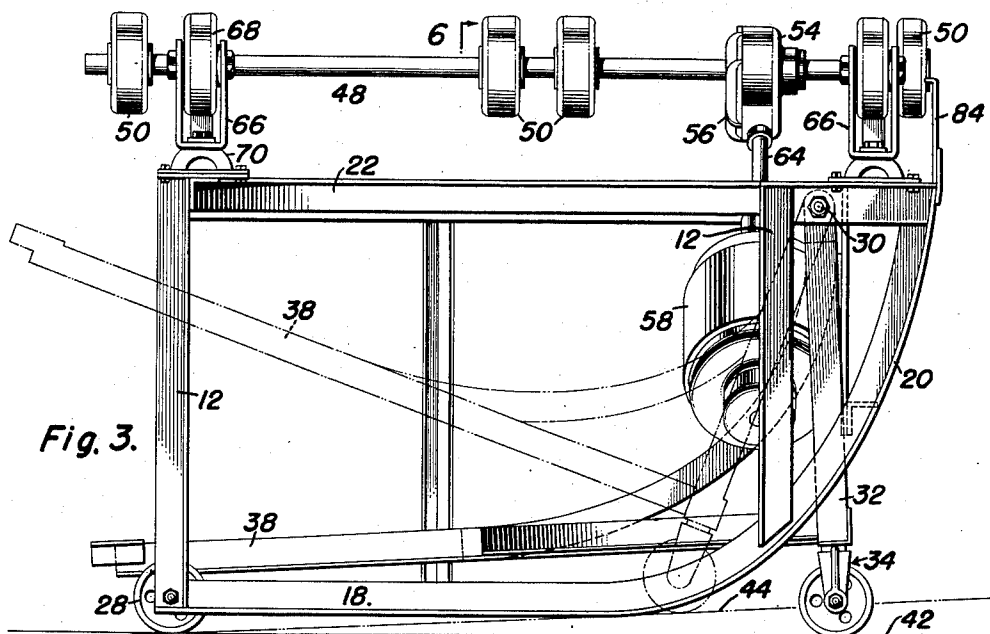
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3 Sheets-Sheet 2



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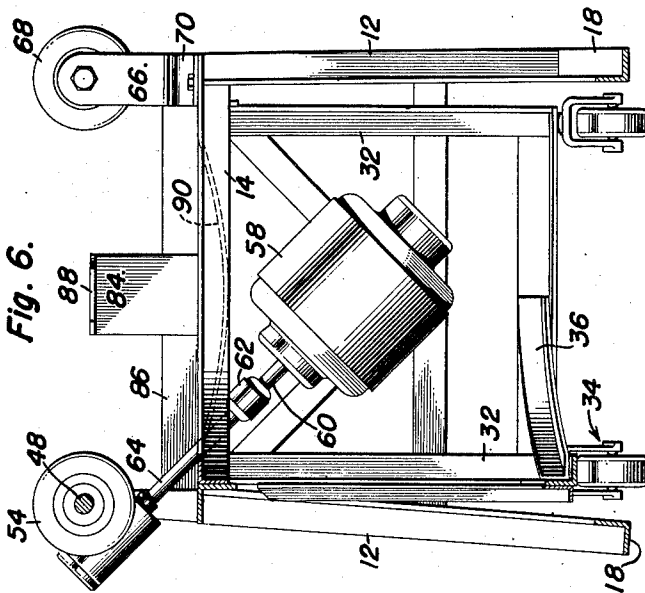
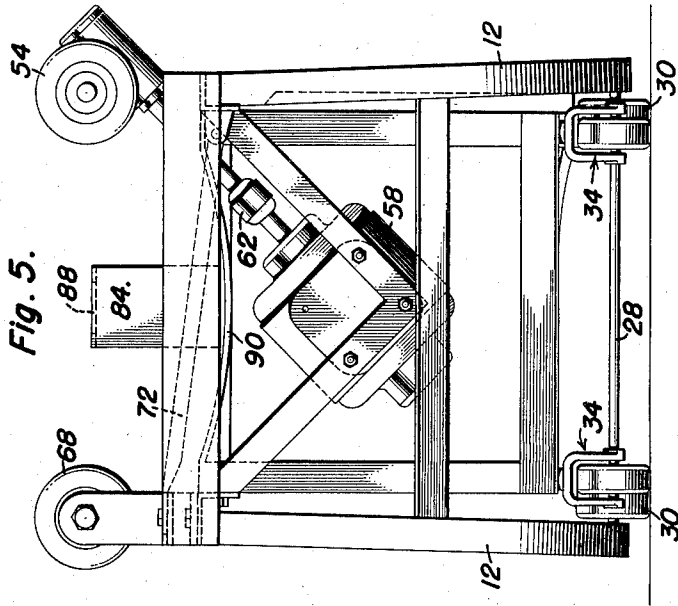
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UNITED STATES PATENT OFFICE

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ROTATOR DRUM TRUCK

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Application July 18, 1949, Serial No. 105,291

10 Claims. (Cl. 259—81)

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This invention comprises novel and useful improvements in a rotator drum truck and more specifically pertains to a portable stand for supporting and rotating cylindrical containers such as cans, barrels or the like, the apparatus comprising an improvement over Patent No. 1,901,878 to L. W. Schwenk issued on March 21, 1932.

The principal object of this invention is to provide an apparatus for conveniently and easily supporting and rotating cylindrical containers such as cans or drums and particularly for facilitating thereby the agitating or mixing of the contents of various cylindrical containers, for tumbling and agitating articles in drums such as tumbling barrels, for mixing concrete or the like in cylindrical containers, and for rotating containers for cleansing their interiors.

A further important object of the invention is to provide an apparatus in accordance with the preceding object which will facilitate the positioning of a barrel or drum upon the apparatus for support and rotation thereby, and with a minimum expenditure of time and labor by the operator.

A still further object of the invention is to provide an apparatus which is capable of handling, supporting and rotating cylindrical containers and drums from very small to very large sizes without difficulty.

Yet another object of the invention is to provide a portable apparatus for supporting and rotating cylindrical containers and the like by means of a source of power mounted within and supported by the apparatus and wherein the rotating torque to be applied to the cylindrical objects is delivered to the same driving shaft while various idler rollers, adjustable in accordance with the size and nature of the object being rotated, are adjustably positioned upon the apparatus.

And a final important object of the invention to be specifically enumerated herein, is to provide a portable apparatus in accordance with the aforesaid objects, which shall be of inexpensive and light weight construction, durable and dependable in its use, compact and highly efficient for the purposes intended.

These, together with various ancillary features and objects of the invention which will later become apparent as the following description proceeds, are attained by this device, a preferred embodiment of which has been illustrated by way of example only in the accompanying drawings:

Figure 1 is a perspective view showing an embodiment of apparatus in accordance with the principles of this invention;

Figure 2 is a fragmentary perspective view of a portion of Figure 1 and showing a guiding idler roller mounted upon the apparatus for rotatably

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supporting a small cylindrical container such as a can;

Figure 3 is a side elevational view of the apparatus shown in Figure 1, alternative positions of a pivotal caster assembly being indicated in dotted and full lines therein;

Figure 4 is a top plan view of the apparatus shown in Figure 1;

Figure 5 is an end elevational view of the apparatus of Figure 1 taken from the right end thereof; and

Figure 6 is a vertical transverse sectional view taken substantially upon the plane of section line 6—6 of Figure 3.

Reference is now made more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views. The numeral 10 designates generally the portable apparatus forming the subject of this invention, this apparatus conveniently comprising a framework which may economically be formed of standard structural angle iron and metal strip members, including vertical angle iron support members 12 disposed on what may be termed the corners of the framework, these corner members having rigidly mounted upon the upper end thereof top end plate members 14 and a side member 16 rigidly attached thereto in any suitable manner.

At their lower ends, the vertical corner supports 12 have rigidly attached thereto a pair of angle iron bottom rail members 18, which are curved upwardly at one end thereof as at 20 and secured to the side member 16 and to one of the end members 14 to provide a pair of arcuate supporting rails or rockers by means of which the apparatus may be tilted from the position shown in Figure 1 to a substantially vertical position for a purpose to be set forth hereinafter.

On the side opposite the side member 16, the frame is cut away at its upper portion and is provided with a support consisting of an arcuate plate or strip of metal 22, which is suitably secured to two of the corner posts 12 and to the side member 16. This plate or support is provided with suitable apertures 24 throughout its length for a purpose to be later set forth. At the end of the frame which is opposite the curved ends 20, there is journaled an axle 26 which is provided with supporting wheels 28 of any suitable construction. At its other end, the frame has pivoted thereto as by pivot pins 30, a pair of depending leg members 32 to which are swivelled at their lower extremities a pair of caster wheel assemblies indicated generally by the numeral 34 and of any desired construction.

Any suitable bracing is provided for rigidly attaching these leg members 32 to each other to form a sturdy and rigid assembly, such bracing including a curved angle iron member 36 to

which is secured a longitudinally extending angle iron member 38 constituting a lever and having a foot pedal 40 thereon. The lever 38, curved member 36 and the two leg members 32 form a rigid assembly which is thus pivotally mounted for oscillation about the pivot pins 30, whereby the assembly may be pivoted in a vertical plane by manipulation of the lever 38 to thus raise and lower the caster wheel assemblies 34.

As shown best in Figure 3, the arrangement is such that when the lever is pressed to its lower position, as shown in Figures 1 and 3, the leg assembly will be moved about the pivot pins 30 in a counter-clockwise direction to thus advance or extend the caster assemblies 34 beyond the curved portions 20 of the bottom rails of the frame so that the caster assembly constitutes a support for the front end of the frame, while the axle 26 and wheels 28 constitute a support for the rear end of the same. In this advance position of the caster assembly, it will thus be seen that the device is adapted for ready movement, so that the article carried thereby may be readily shifted as desired. A lever hold down bracket comprising a plate 41 having a lateral extension 43 is secured to the member 12 for locking lever 38 in its lowered position.

It should be noted as shown in Figure 3 that a vertical plane through the hinge pin 30 will lie inwardly of the frame from the plate at which the caster assemblies 34 engage the ground, the supporting surface being indicated at 42, so that the weight of the device will tend to maintain the caster wheels in their extended position, so that there is no danger of movement of the wheels to a retracted position once the operating lever 38 has been pushed to its lowermost position.

Alternatively, as shown in dotted lines in Figure 3, the lever 38 may be raised, thus causing a clockwise or inward pivotal movement of the legs 32 and the caster wheel assemblies 34 so that the latter are retracted into the frame whereby the bottom rails 18 will rest upon the ground as indicated at 44, so that there is now no hindrance to a tilting movement of the entire apparatus about the curved rails 20 which constitute rockers for this tilting movement.

Mounted upon the upper side rail 16 as by suitable brackets 46, is a driving shaft 48 having a plurality of driving rolls 50 mounted thereon and adjustable longitudinally thereof as desired, these rolls and their adjusting means being of any desired construction and in themselves forming no part of this invention. If desired, the standards or brackets 46 could be provided with self-aligning journal bearings indicated generally at 52. Loosely journaled upon the shaft 48 is a gear casing 54 of any desired construction which is preferably provided with ribs or vanes 56 to assist in air-cooling the gear casing and a gearing assembly contained therein.

Since this gearing assembly which is a reduction gearing of any predetermined and desired speed ratio, is of any known conventional design, the details of this gearing have not been illustrated as forming in themselves part of this invention. Mounted in any desired manner upon the interior of the open structure of the frame is a prime mover of any desired type such as an electric motor indicated at 58, this motor having a driving shaft 60 provided with a flexible coupling 62 of any desired character, which through a stub shaft 64 is connected with a gearing assembly in the interior of the gear casing 54.

It will thus be seen that by operation of the

motor 58, under any desired controls not shown, the driving shaft 48 and the driving and supporting drums 50 thereon are rotated at a speed determined by the speed ratio between the motor and the reduction gearing inside the gear casing 54.

On the opposite side of the frame from the member 16, the upper surface of the frame is provided with a pair of supports 66 of any desired character carrying idler rollers 68 journaled therein, these supports being mounted upon the frame as upon resilient or cushioning mountings 70 of any desired character, the roller supports 66 being braced as by laterally extending tie rods 72 which are pivoted to brackets 74 carried by the frame member 16. Thus, the idler rollers are disposed in substantially parallel relation to the driving rolls 50 on the drive shaft 48, and are resiliently mounted to accommodate jarring and shocks from the article rotated by the device and rigidly braced against lateral movement relative to the driving rolls.

In lieu of the idler rollers 68 there may be further provided a combined idler and guiding roll 76 having adjustable collars 78 thereon and being rotatably mounted upon supporting brackets 80 which may be mounted selectively in the apertures 24 on the support 22.

The operation of the apparatus is indicated in Figure 2 when the idler roll or drum is mounted upon the support 22. In this position, a small container such as a paint can or the like indicated at 82 is supported by a pair of the driving rolls 50 of the drive shaft 48, these rolls being suitably adjusted to properly support the can 82, and the collars 78 on the idler roll 76 are adjusted to snugly receive the ends of the can therebetween. When the shaft 48 is operated or rotated by the power means 58, the driving rolls 50 will cause the can 82 to rotate about its longitudinal axis, and the can is supported during this rotation by the idler roll 76. Thus, the contents of the can may be effectively agitated and mixed as desired. Obviously, the roll 76 and the collars 78 may be suitably adjusted to carry and rotatably support one or more cans 82 as desired, and further the rolls may be shaped to accommodate various other articles, such as those of a conical or frusto-conical nature if desired.

However, the primary utility and purpose of this invention is to support large containers such as barrels or drums thereon, and for that purpose the roll 76 is removed, the caster wheel assembly is retracted as above mentioned, and the apparatus is in a substantially vertical position with the two end plates 14 being a substantially vertical plane, so that a barrel or the like may have its lower end resting upon a supporting step 84 in the form of a plate secured to an end plate 86 of the frame, this supporting step being provided with an upturned flange 88 constituting a latch for preventing the lower end of the barrel or drum from sliding off of the step. With the barrel's lower end resting on the step 84, the convex side of the barrel may rest against arcuate shaped guard strip 90. With the barrel in this position, the device is tilted about its curved ends 20, thereby causing the barrel to rest its weight upon the two idler rolls 68 and the driving rolls 50. With the apparatus and barrel in a horizontal position, the foot lever 38 may now be pressed down causing the caster assembly to be extended and thereby support the barrel and the device upon the support wheels whereby the same may be readily moved as desired.

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It will be noted that the cut away portion of the frame which is bounded by the support 22 gives access to the idler roll 76, whereby the same may be installed or removed as desired, and whereby access may be had to the containers 82 supported and retained thereby, as well as to side openings in barrels for dispensing the contents therefrom.

From the foregoing, the construction and operation of the invention 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 after a consideration of the foregoing specification and accompanying drawings, 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.

Having described the invention, what is claimed as new is:

1. A rotator truck comprising a frame having support wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, laterally spaced driving and idler rolls journaled upon said frame, means for rotating said driving rolls, said frame being cut away on its upper surface at one side, an arcuate support forming a rim for said cut away and said arcuate support having spaced openings therein for detachably securing idler rolls on said support at adjustable distances from said driving rolls.

2. A rotator truck comprising a frame having support wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, laterally spaced driving and idler rolls journaled upon said frame, means for rotating said driving rolls, including resilient mountings for supporting said idler rolls, braces securing said idler rolls to said frame.

3. A rotator truck comprising a frame, laterally spaced driving and idler support rolls journaled upon said frame, means for rotating said driving rolls, said frame being cut away on its upper surface at one side, an arcuate support forming a rim for said cut away, means on said arcuate support for detachably securing idler rolls on said support at adjustable distances from said driving rolls, said frame having bottom rails with upwardly curving ends for tilting the frame between vertical and horizontal positions.

4. The combination of claim 3, wherein the means for rotating said driving rolls comprises a motor mounted in said frame, and a driving connection between said motor and driving shaft.

5. A rotator truck comprising a frame having support wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, said frame being cut away on its upper surface at one side, an arcuate support forming a rim for said cut away and means for detachably securing idler rolls on said support at adjustable distances from said driving rolls, said frame having bottom rails with upwardly curving ends for tilting the frame between vertical and horizontal positions.

6. A rotator truck comprising a frame having support wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, laterally spaced driving and idler rolls journaled upon said frame, means for rotating said driving

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rolls, and operating means for selectively moving said caster assembly into an extended frame supporting position and into a retracted non-supporting position, said frame being cut away on its upper surface at one side, an arcuate support forming a rim for said cut away and said arcuate support having spaced openings therein for detachably securing idler rolls on said support at adjustable distances from said driving rolls.

7. A rotator truck comprising a frame having wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, laterally spaced driving and idler rolls journaled upon said frame, means for rotating said driving rolls, said frame including top and bottom rails, a pair of vertical corner supports connecting adjacent ends of said rails, the other ends of said bottom rails being upwardly curved and being directly secured to said top rails, an axle extending between and secured to said corner supports and said wheels being journaled on said axle.

8. A rotator truck comprising a frame having wheels journaled therebeneath, a caster assembly pivoted to said frame therebeneath, laterally spaced driving and idler rolls journaled upon said frame, means for rotating said driving rolls, said frame including top and bottom rails, a pair of vertical corner supports connecting adjacent ends of said rails, the other ends of said bottom rails being upwardly curved and being directly secured to said top rails, said caster assembly comprising a pair of vertical legs pivotally secured to said top rails adjacent the upwardly curved ends of said bottom rails, a brace rigidly connecting said legs to each other, a lever connected to said brace and extending toward said corner supports for retracting said assembly into said frame whereby the frame may be selectively rocked and maintained against rocking.

9. The combination of claim 8, wherein said lever lies alongside one of said corner supports, a stop on said support engaging said lever and maintaining the caster assembly in its extended position.

10. A rotator truck comprising a tiltable frame having support wheels journaled beneath one end thereof, a caster assembly pivoted to the other end of said frame, laterally spaced driving and idler support rolls journaled on said frame, means for rotating said driving rolls and operating means for selectively moving said caster assembly into an extended frame supporting position and into a retracted non-supporting position, a drive shaft extending longitudinally along one side of said frame and being rotatably journaled on said frame, said driving rolls being mounted on said drive shaft, said frame being cut away on its upper surface at one side, an arcuate support forming a rim for said cut away, said arcuate support having spaced openings therein for detachably securing idler rolls on said support at adjustable distances from said driving rolls.

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