May 11, 1954

A. McNEW

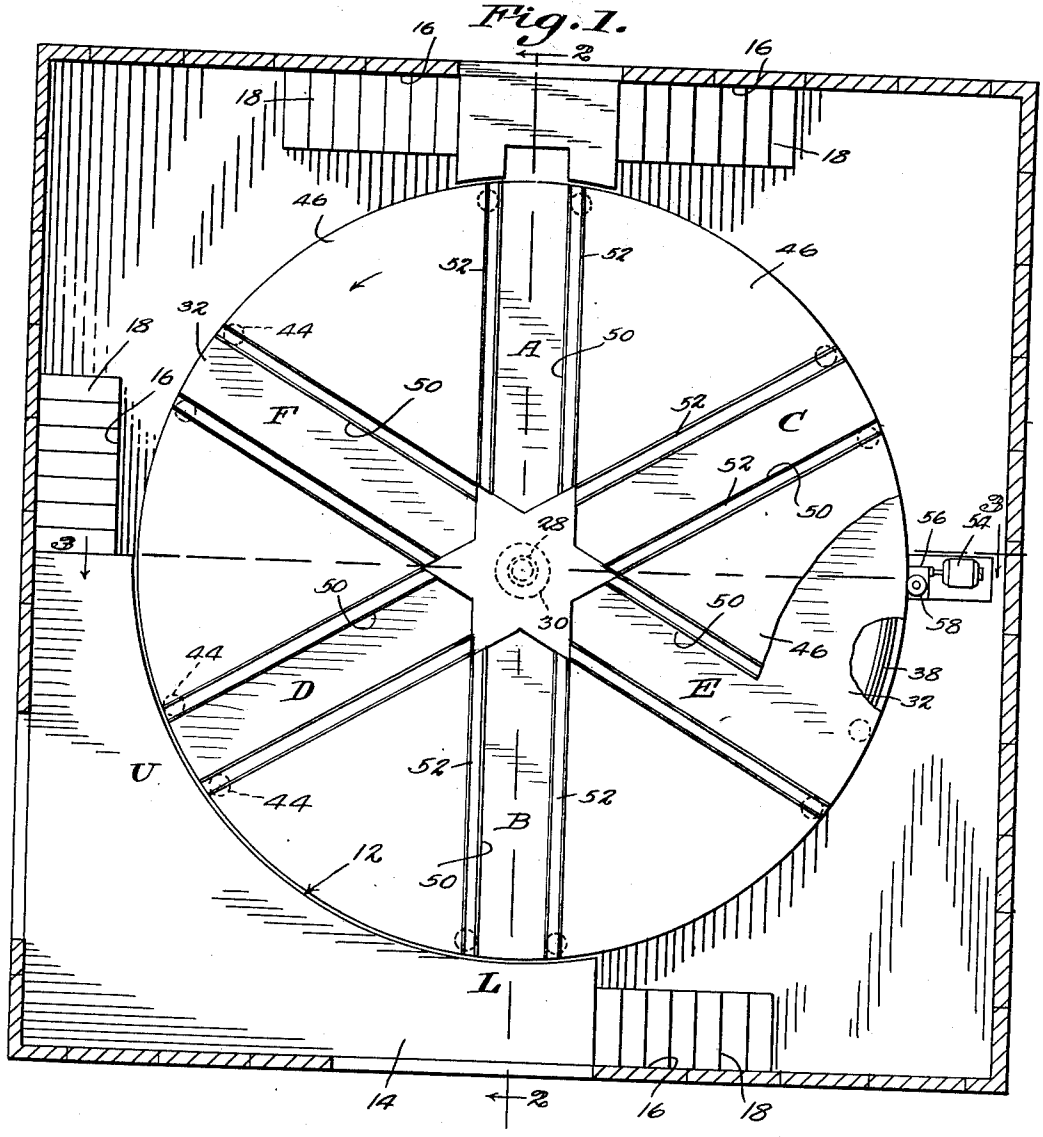
GREASE RACK

2,677,859

Filed Oct. 22, 1951

3 Sheets-Sheet 1

Fig. 1.



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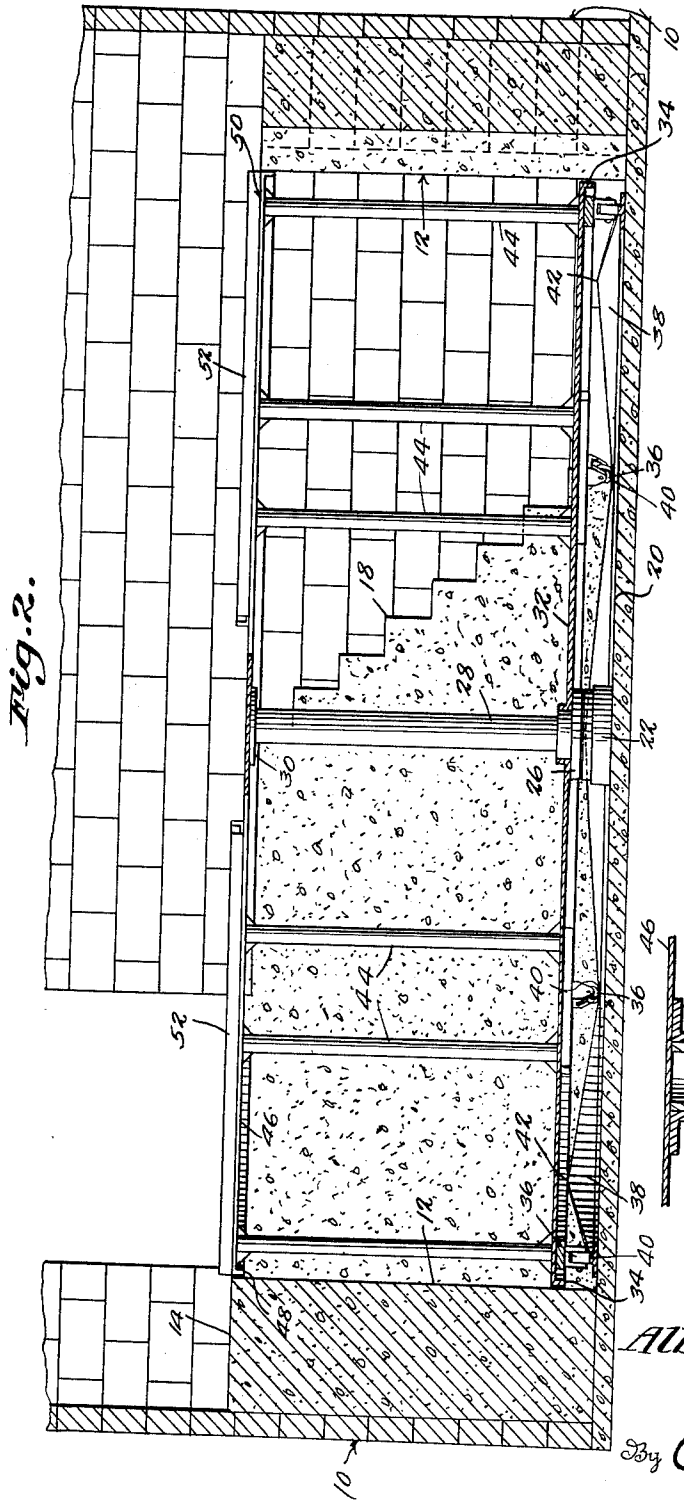


Fig. 2.

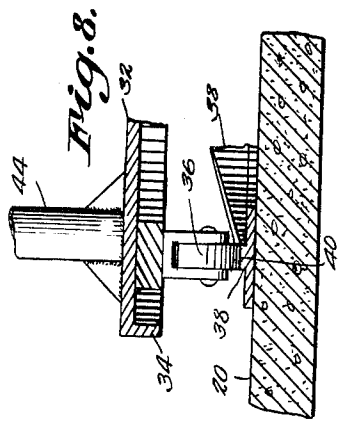


Fig. 8.

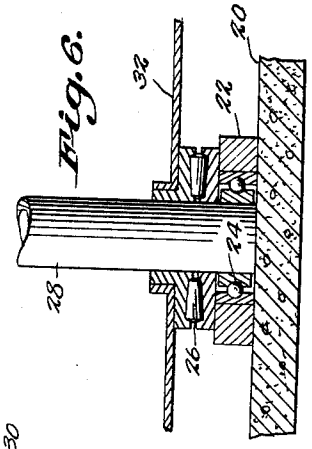


Fig. 6.

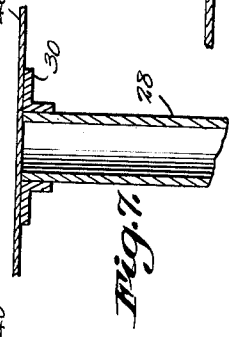


Fig. 7.

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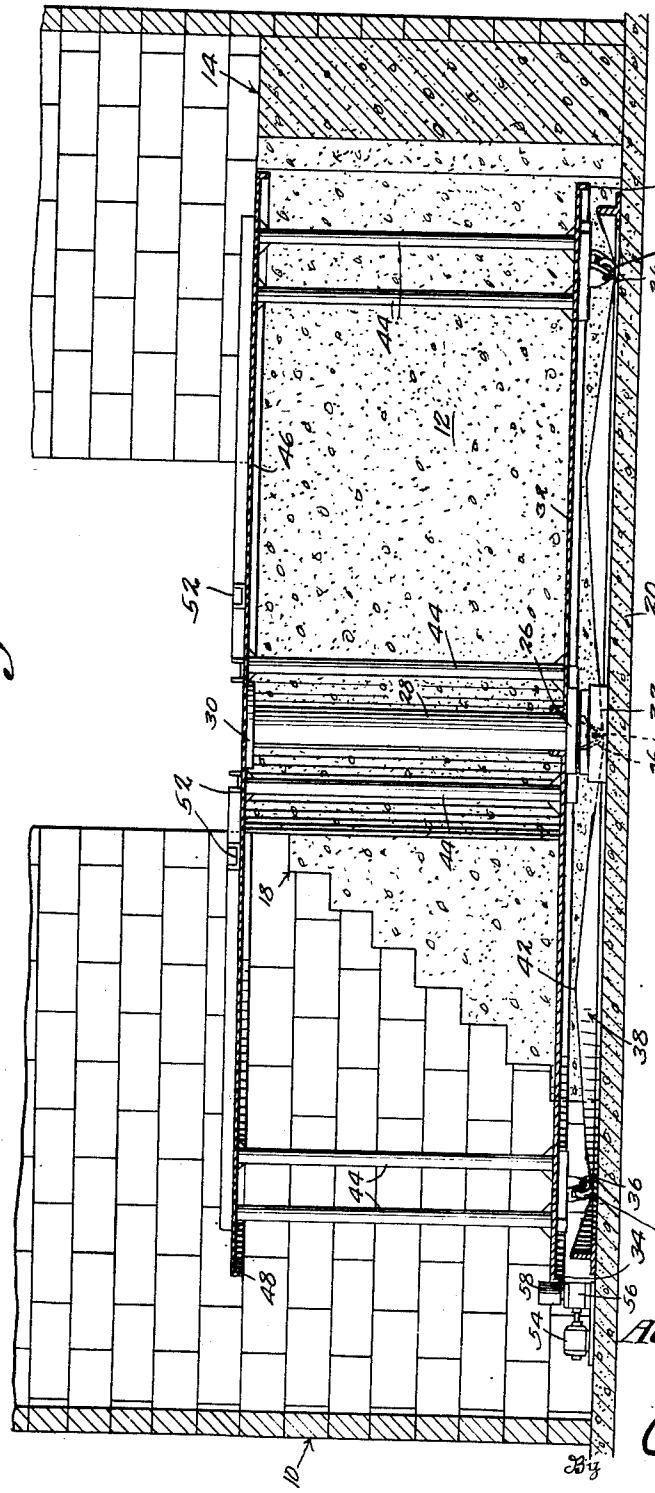


Fig. 3.

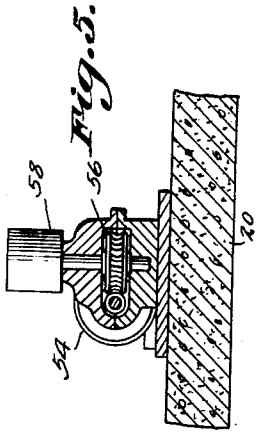


Fig. 5.

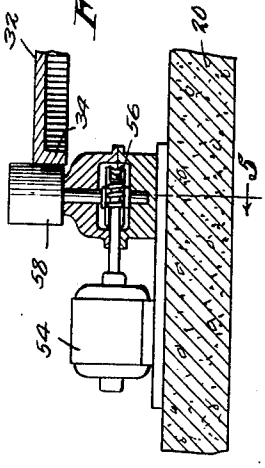


Fig. 4.

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Patented May 11, 1954

2,677,859

UNITED STATES PATENT OFFICE

2,677,859

GREASE RACK

Albert McNew, Wichita, Kans.

Application October 22, 1951, Serial No. 252,525

4 Claims. (Cl. 20—0.8)

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This invention relates to a grease rack of the general type commonly employed in greasing and lubricating motor driven vehicles.

The primary object of the invention is to support a multiplicity of motor driven vehicles in a position to be lubricated and greased simultaneously, and to thereby reduce to a minimum the time required to so service a large number of vehicles.

Another object is to move a group of vehicles in an arcuate path while the servicing is being accomplished from a loading station to an unloading station and to assure that the rotary movement of the vehicles will be arrested when the vehicles are in alignment with the proper station.

The above and other objects may be attained by employing this invention which embodies among its features a pair of vertically spaced horizontal platforms mounted to rotate in unison about a common vertical axis, means to rotate the platforms and gravity controlled means for periodically arresting rotation of the platforms.

Other features include a below grade structure having a pit extending thereinto from its upper side, and spaced loading and unloading stations at the grade level, a pair of vertically spaced platforms mounted in the pit for rotation in unison about a common vertical axis, the upper surface of the upper platform being located at grade, radially disposed pairs of guide channels carried by the upper platform on the upper surface thereof, means for rotating the platform and gravity controlled means for periodically arresting rotation of the platforms with the guide channels aligning with the loading and unloading stations.

Still other features include a horizontally disposed closed track mounted beneath one of the platforms, said track having shallow substantially V-shaped notches therein with their apices disposed downwardly, rollers carried by the platform beneath which the track is located and engaging the track, and means connected to the platforms for rotating them in unison.

Still other features include posts carried by the platforms adjacent opposite sides of the channel members and being directly disposed above the rollers to support vehicles on the upper platform and transmit the weight thereof directly to the track.

In the drawings,

Fig. 1 is a plane view of a grease rack embodying the features of this invention,

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Fig. 2 is a sectional view through the grease rack illustrated in Fig. 1 taken substantially along the line 2—2 of Fig. 1,

Fig. 3 is a view similar to Fig. 2 taken substantially along the line 3—3 of Fig. 1,

Fig. 4 is an enlarged detail view partly in section of the means for rotating the platforms,

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 4,

Fig. 6 is a fragmentary view of the lower end of the column showing the support for the centermost portion of the lower platform,

Fig. 7 is a fragmentary vertical sectional view through the upper end of the column showing the upper platform supported thereon, and

Fig. 8 is an enlarged fragmentary sectional view through a portion of the track and lower platform.

Referring to the drawings in detail a below ground structure designated generally 10 may be constructed of concrete or the like and is equipped wth a circular pit 12 which opens through the upper end of the structure 10. The upper face 14 of the below ground structure 10 lies substantially at ground level and is separated into loading and unloading stations L and U respectively. Certain portions of the structure 10 are provided with access passages 16 having stairways 18 extending downwardly thereinto through which access to the pit may be had by those engaged in the greasing operations to be performed.

The pit 12 is of circular formation, and mounted on the bottom 20 thereof and axially of said pit is a pedestal 22 in which is seated an anti friction radial bearing 24. An anti friction thrust bearing 26 is located on top of the pedestal 22, and mounted in said bearings for rotation is a vertically extending column 28 carrying at its upper end an attaching flange 30, the purpose of which will hereinafter appear. Mounted on the upper end of the thrust bearing 26 for rotation therewith and with the column 28 is a lower platform 32 which is of circular shape in plan and extends outwardly from the axis of the column 28 and terminates at its periphery adjacent the side of the pit 12 in a downturned flange 34. Mounted beneath the platform 32 in concentric spaced relation with the flange 34 is an annular row of peripherally spaced rollers 36. An endless circular track designated generally 38 is secured to the bottom 20 of the pit 12 directly beneath the rollers 36, and this track is horizontally disposed and provided in its upper side with relatively shallow V-shaped notches 40 forming between the rollers 36 high points

42 when the platform is stationary. These V-shaped notches provide continuous raised and depressed portions which permit the guide channels to align themselves with the loading and unloading stations by gravity automatically as the movement of the platform is periodically arrested.

Secured to and extending upwardly from the platform 32 on opposite sides of each roller 36 are posts 44 which support at their upper ends an upper circular platform 46, the periphery of which lies directly above the periphery of the platform 34, and like the platform 34 is provided with a downturned flange 48. The upper surface of the upper platform 46 lies substantially at grade level with the loading and unloading stations L and U respectively of the below ground structure 10, and the centermost portion of the upper platform 46 is supported on the flange 30 of the column 28. Formed in the upper platform 46 are elongated radial openings 50 which extend to the flange 48 in order to give access to vehicles supported on the platform 46. Carried by the upper side of the upper platform 46 adjacent opposite sides of the openings 50 are guide channels 52 which extend in spaced parallel relation from a point near the center of the platform 46 to the periphery thereof and directly above the posts 44. It will thus be seen that the weight of a vehicle standing on the platform with its wheels in the channels 52 will be transmitted directly by the posts 44 and the lower platform 32 to the track 38 while the center of the platform is supported on the upper end of the column 28 and the weight of the adjacent ends of vehicles having their wheels in the channels 52 will be supported on the column 28 and thrust bearing 26.

Mounted within one of the access passages to the pit and carried on the floor or bottom 20 thereof is a prime mover 54 which has driving connection with a conventional speed reduction gearing 56 to the output shaft of which is connected a friction wheel 58 which bears against the flange 34 of the platform 32 so that when the prime mover is set into operation, the platforms 32 and 46 will be driven in unison.

In operation with the platforms 32 and 46 standing in the position illustrated in Fig. 1, a vehicle to be serviced is driven from the loading zone L onto the platform 46 with its wheels entering the channels 52 to be guided thereby. The vehicle is advanced to rest over the opening 50 bearing the designation A and a second vehicle is then driven onto the platform in a similar manner so as to rest over the opening 50 designated B. The prime mover 54 is then set into operation so as to rotate the platforms in the direction of the arrows illustrated in Fig. 1 until the next opening 50 designated by the character D moves into alignment with the loading zone or platform L. With the alignment of the opening 50 represented by the character D with the loading area or station L, a vehicle is driven across the platform 46 to bridge the opening 50 therein designated C, and a second vehicle is then driven onto the platform 46 over the opening 50 bearing the designation D. During the time that the platforms are being rotated as above described the usual greasing operations and similar services are performed by servicemen on the platform 46 and on the platform 32. With the movement of the platforms so that the opening 50 designated by the character F moves into alignment with the loading zone or station L, the

opening 50 designated A will move into alignment with the unloading area or station U and the cars occupying the spaces designated C and D are then driven off of the platform and cars are then driven onto the platform to occupy the spaces E and F respectively. In this way a substantially continuous stream of vehicles may be serviced in a minimum amount of time owing to the fact that there is ample working space on the platforms 32 and 46 to service all of the vehicles supported on the platform 46. In order that a minimum amount of power may be employed in rotating the platforms, the energization of the prime mover 54 is required only during the period of time that the rollers 36 are riding upwardly on the inclined faces of the shallow substantially V-shaped notches 40 as just as soon as the rollers pass the high points 42 of the track 38, they will move by gravity downwardly toward the apices of the V-shaped notches 40 and come to rest substantially adjacent the lowermost points thereof. The lowermost point or apex of one of the V-shaped notches in the track 38 is located in alignment with the loading area or station L and an adjacent notch is so located that its lowermost portion or area aligns with the unloading area or station U. In this way gravity permits a rotary motion to the platforms, and also brings about the alignment of the spaces 50 with the loading and unloading stations. The rise of the inclined faces of the track 38 is so slight that no appreciable elevation of the platforms 32 and 46 relative to the column 28 is experienced.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be restored to without departing from the spirit and scope of the invention as claimed.

What is claimed is:

1. In a grease rack a below grade structure having a pit extending thereinto from its upper side, and spaced loading and unloading stations at the grade level, a pair of vertically spaced platforms mounted in said pit for rotation in unison about a common vertical axis, the upper surface of the upper platform being located in substantially the same plane as the top of the below grade structure, radially disposed pairs of spaced parallel guide channels carried by the upper platform on the upper surface thereof, means for rotating the platforms, and gravity controlled means to periodically arrest rotation of the platforms with the guide channels aligning with the loading and unloading stations, such gravity controlled means comprising continuous raised and depressed portions on said track and rollers carried by said platform and engaging such raised and depressed portions.

2. In a grease rack a below grade structure having a pit extending thereinto from its upper side, and spaced loading and unloading stations at the grade level, a pair of vertically spaced platforms mounted in said pit for rotation in unison about a common vertical axis, the upper surface of the upper platform being located in substantially the same plane as the top of the below grade structure, radially disposed pairs of spaced parallel guide channels carried by the upper platform on the upper surface thereof, means for rotating the platforms, a horizontally disposed endless track located beneath the lower platform adjacent the periphery thereof, said

track having alternate continuous raised and depressed portions and spaced pairs of rollers carried by said lower platform and engaging said raised and depressed portions of said track and permitting a slight rotary movement of said platforms relative to said track in either direction so as to permit said channels to be properly aligned with said loading and unloading stations automatically by gravity.

3. A grease rack comprising a circular platform having track sections extending diametrically thereof, a loading station and an unloading station located adjacent the periphery of said platform, a circular track supporting said platform and having a plurality of continuous alternate depressed and raised portions, a plurality of spaced pairs of rollers carried by said platform and supported on said track, the depressed and raised portions of said tracks serving to permit a slight rotary motion of said platform relative to said track whereby said track portions are automatically aligned with the loading and unloading stations by gravity and means for intermittently rotating said platform on said track.

4. A grease rack comprising a circular platform having a plurality of channel sections for guiding the vehicles upon said platform, a loading station and an unloading station disposed

adjacent the periphery of said platform, spaced openings in said platform permitting access to the underside of vehicles supported on said channel sections, a circular track supporting said platform and having alternate continuous raised portions and depressed portions, rollers carried by said platform and engaging the raised and depressed portions of said track so as to permit said platform to have a slight rotary movement relative to said track in either direction whereby said channel sections are brought into proper alignment with said loading and unloading stations by gravity and means for intermittently rotating said platform on said track so as to permit rapid loading and unloading of the grease rack.

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