

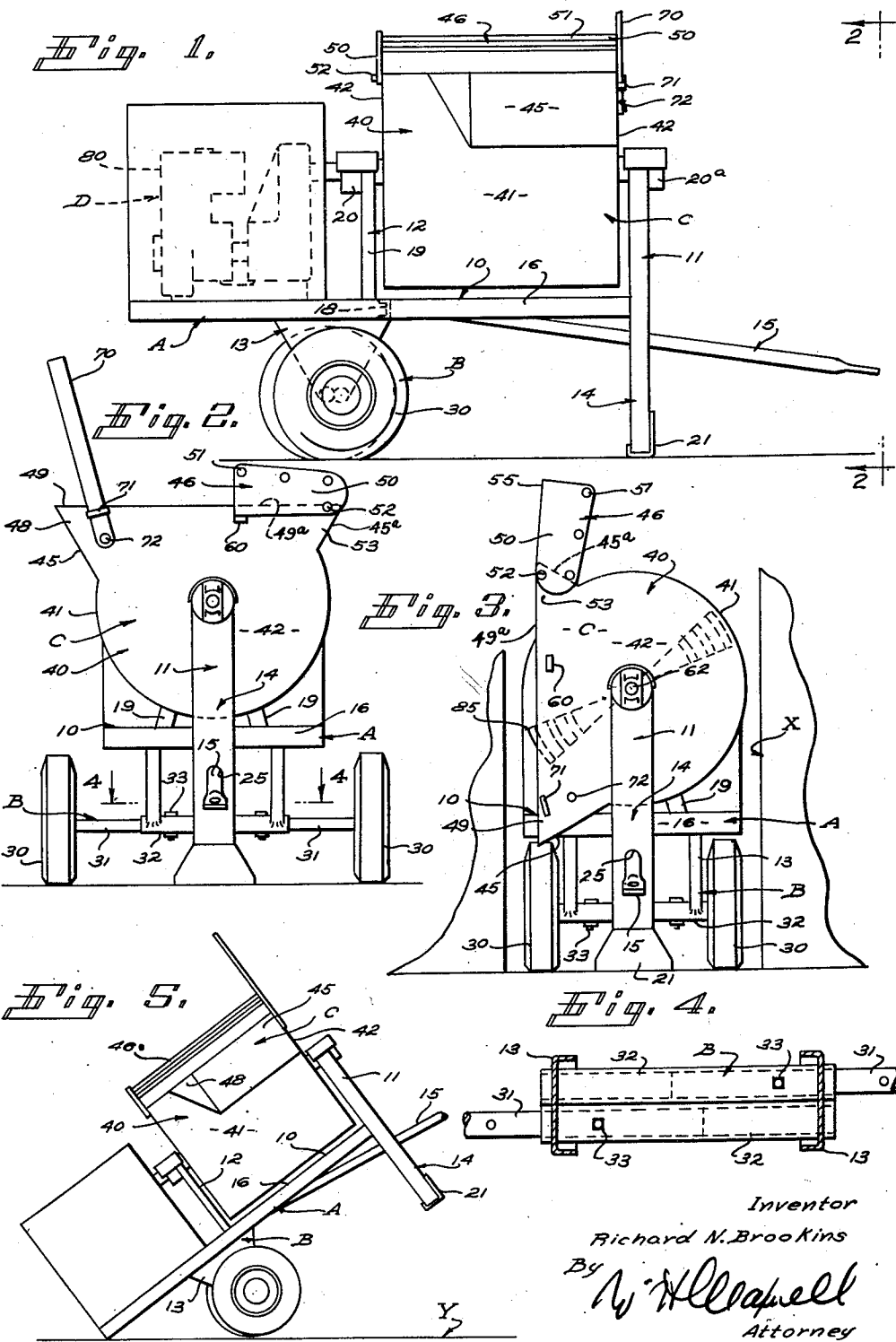
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PORTABLE MIXER

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PORTABLE MIXER

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This invention has to do with a portable mixer and it is a general object of the invention to provide a portable mixer particularly useful for handling plaster, cement, and like products, and which can be used to advantage in buildings of various kinds and is such that it can be advantageously moved from one location to another by means of a motor vehicle, or the like.

Portable mixers are in general use and it is common to transport such devices from one location to another by means of motor vehicles. When a mixer is transported by means of an automobile the speeds at which it may be moved require that the supporting structure have a wide tread or a wide engagement with the pavement. Otherwise the structure is unstable.

Mixers such as are ordinarily employed in connection with building construction are moved from one building to another and because of the spread of the supporting wheels and the general features of construction required for satisfactory operation, such devices are limited to being worked at the exteriors of such structures or where unusually large access openings occur. The usual mixer, such for example as is used for the mixing of plaster, cement, or the like, cannot be operated through an ordinary doorway and consequently the use of portable mixers is generally limited and they are not commonly used in localities where rains are frequent, since it is generally impractical to operate such a device in the rain.

It is a general object of this invention to provide a mixer in which the mixer, per se, is contractible or subject to being folded so that it will pass through a narrow opening and in which the wheeled support provided for the mixer is collapsible or contractible, enabling it to pass through a narrow opening.

A general object of the invention is to provide a structure of the character referred to in which the mixer per se is characterized by a tiltable body with a projecting discharge chute and a projecting sack support, one of which is subject to being folded relative to the body. Through the construction provided by the present invention the folding projection is such as to project a substantial distance from the body when the mixer is in use and it may be folded into position where it does not add to the width of the mixer when the body is positioned to be passed through a narrow opening.

Another object of this invention is to provide a structure of the general character referred to wherein a mixer of the type referred to is com-

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5 bined with a wheeled support which is operable between a position where the supporting wheels are wide apart and project a substantial distance from the sides of the main structure and a position where the wheels are in or relatively close together and are within the confines of the main structure.

A further object of this invention is to provide a mixer or structure of the general character referred to involving few inexpensive parts and in which the working elements are all such that they can be operated easily and quickly.

The various objects and features of my invention will be fully understood from the following detailed description of a typical preferred form and application of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a side elevation of the mixer provided by the present invention showing it from the side equipped with the sack support and showing it in position for operation as a mixer. Fig. 2 is a front end elevation of the structure, being a view taken as indicated by line 2—2 on Fig. 1, the structure being shown in position to operate with the body in the upright position and with the supporting wheels spread so that the structure is stable and effectively supported. Fig. 3 is a view showing the supporting structure contracted and the body of the mixer tilted with its parts in position enabling the whole structure to be passed through a narrow opening such as a doorway. Fig. 4 is an enlarged plan section taken as indicated by line 4—4 on Fig. 2, and Fig. 5 is a reduced side elevation of the mixer similar to Fig. 1, showing the structure tilted in a manner to lift the supporting wheels from the ground so that they can be readily adjusted either in or out.

The structure provided by the present invention involves, generally, a frame A, an adjustable wheel support B for the frame, a mixer C carried by the frame and power means D supported by the frame and driving the mixer.

The frame A may, in practice, vary widely in form and construction and it is provided, primarily, as a structure or element to which the other principal elements of the apparatus are joined. In the particular form of the invention illustrated the frame A involves, generally, a base or platform 10, front and rear standards 11 and 12 projecting upwardly from the base, laterally spaced legs 13 depending from the base, and a draft tongue 15.

The particular base 10 illustrated in the drawings is formed or made up of side rails or beams

16 that extend longitudinally of the structure and in practice the beams may be angularly related, for instance, they may have their forward ends joined to the front standard 11 or to the point where the standard 11 joins the rest 14, in which case the beams preferably extend rearwardly and diverge to be wide apart at the rear of the structure where they support the power means D. It will be apparent that one or more lateral frame members or spreaders 18 may be provided in the base construction to stabilize the beams as circumstances may require. In the preferred arrangement the beams 16 are inwardly faced channel-shaped members and they are such as to be horizontally disposed in order to form a horizontal base or platform 10 when the structure is in the positions shown in Figs. 1 to 3 of the drawings.

The front standard 11 is located at the forward end of the base and it is preferably integrally joined to the beams of the base to project upwardly therefrom in the manner clearly shown throughout the drawings.

The rear standard 12 is located rearward of the front standard 11 and has spaced legs 19 joined to the beams 16 and extending upwardly to a bearing 20 which carries the mixer as will be hereinafter described.

The stabilizing base or rest 14 depends from the forward end of the base 10 and it may, as shown in the drawing, be an integral extension or continuation of the front standard 11. In the preferred construction the lower end of the rest is provided with an enlargement or foot 21 suitable for resting on the ground, or the like.

The draft tongue 15 extends longitudinally of the structure and is preferably located centrally thereof. In the preferred arrangement the tongue is suitably anchored to the parts just described. For instance, its rear end may be secured to a transverse frame member 18 or the like while its forward end portion extends through a suitable opening 25 in the rest 14 and projects a substantial distance forward of the rest, as clearly shown in Fig. 1 of the drawings. In practice it is desirable that the draft tongue extends forward and somewhat downward as shown in the drawings, so that when it is elevated to a substantially horizontal position the rest 14 is lifted clear of the ground while the base 10, although tilted somewhat from the horizontal position, is clear of the ground.

The adjustable wheeled support B is located somewhat to the rear of the center of gravity of the other parts of the structure as a whole and cooperates with the support 14 to hold the structure in an upright or working position, such as is shown in Fig. 1 of the drawings.

The support A involves, generally, a pair of supporting wheels 30, axles 31 carrying the wheels, guides 32 carried by the legs 13 of the frame and slidably supporting the axles, and means or holders 33 releasably holding the axles against movement in the guides.

The wheels 30 are preferably alike and are suitably mounted on the outer ends of the axles 31, the inner ends of the axles being slidably carried in the guides 32, one axle being carried in one guide and the other axle being carried in the other guide. The guides 32 preferably simple tubular parts fixed to the lower ends of the legs 13 and disposed transversely of the frame. The guides are preferably located in a common horizontal plane and they terminate at points well within the sides of the frame so that

the axles can be slid in the guides to positions where the wheels are within the confines of the frame, as shown in Fig. 3 of the drawings. It is also to be observed that the axles and guides are so related and proportioned as to allow the axles to be extended from the guides so that the wheels 30 are supported in positions where they are outward of or laterally removed from the frame substantial distances, with the result that the wheels are wide or far apart, providing stable support for the structure as shown in Fig. 2 of the drawings.

The holders 33 serving to releasably hold the axles against sliding movement in the guides may be simple bolts or bolt-like fasteners engaged through openings in the guides and axles, which openings register when the wheels are in the desired positions either retracted, as shown in Fig. 3, or extended, as shown in Fig. 2.

The mixer proper, C, is shown as involving a drum or body 40 formed of a curved shell 41 with a side opening and ends 42 closing both ends of the shell. The mixer further includes a laterally projecting discharge lip 45 adjoining and projecting outward from one edge of the shell opening and a sack support or rack 46 pivotally connected to the shell to be located adjacent or in the vicinity of the opposite edge of the shell opening. In the preferred construction a lip 45^a projects from the edge of the shell opening opposite that from which the lip 45 projects and flanges 53 on the ends 42 of the shell engage and support the ends of lip 45^a. The rack 46 is pivotally mounted adjacent lip 45^a.

The discharge lip 45 is preferably fixed to or integrally connected with the shell and flanges 48 project from the shell and join to the ends of the lip 45. Flanges 48 have edges 49 disposed tangential to the shell or to a circle somewhat smaller than and concentric with the shell and the edges 49 are in line with like edges 49^a on the flanges 53.

The sack holder or rack 46 is shown as involving spaced side plates 50 having supporting bars 51 extending between the plates and a pivot bar 52 pivotally connects the rack to flanges 53 adjacent the outer edge of lip 45^a. When the rack is in operating position, as shown in Fig. 3, the plates 46 project outward from the shell and the bars 51 are located to effectively support the sack or sacks in the course of their being emptied into the shell between the lips that project at the shell opening. The mounting of the rack through the pivot bar 52 allows the rack to be moved to an inoperative position as shown in Fig. 3, where edges 55 of the plates are substantially flush with one side of the structure and are substantially parallel with the edges 49 and 49^a of flanges 48 and 53, respectively when the shell is tilted to a position where its opening faces one side of the structure, all as clearly shown in Fig. 3 of the drawings. In the preferred arrangement of parts stops 60 are provided to support the rack in the operating position shown in Fig. 2, the stops being projections on the ends 42 of the mixer body which projections are located to be engaged by the plates 46 of the rack. One of the bars 51 is so located as to stop the rack in the other position, as shown in Fig. 3, the side bar 51 being located to engage or stop against the flanges 53.

An operating handle 70 is provided for tilting or rocking the body 40 between positions such as are shown in Figs. 2 and 3, and in accordance with the preferred form of the invention the

handle 70 is releasably coupled to the body 40 by means of a stirrup-like guide 71 and a pin 72 projecting from the body to enter a hole in the handle, as clearly shown in Fig. 2 of the drawings. The construction is such that the handle 70 projects from the body 40 forming an effective operator, whereas by tilting the handle it may be disengaged from the pin 72 following which it can be slid from the stirrup 71.

The power means D is mounted on the rear end portion of the frame A or on the base 10 rearward of the mixer C. It will be understood that in practice any suitable prime mover, as for instance, a motor or engine 80, may be employed as the driving unit of the means D and that any suitable drive may be provided between such engine or motor and a suitable agitator 85 provided in the body 40.

When the structure involving the present invention is in use the body 40 may be positioned so that the opening in the shell faces upwardly as shown in Fig. 2 and the sack rack 46 may be positioned to project upwardly from the shell of the body at the side of the opening removed from the discharge lip 45. Further, the wheels 30 may be set in the spread or extended position where they effectively support and stabilize the structure. After a change of material has been mixed the body may be tilted through operation of the handle 70 so that the material discharges over the lip 45.

When it is desired to transport the structure from one location to the other as by means of a draft vehicle, it is merely necessary to lift the forward end of the structure and attach the draft tongue 15 to the draft vehicle. The wheels in the spread position are far enough apart so that the structure is stable and can be operated over ordinary pavements at speeds commonly attained by motor vehicles.

When it is desired to pass the structure through a limited opening, as for instance, through a doorway X, as shown in Fig. 3, the wheels are moved to the contracted or collapsed position, the body is operated to the tilted position where the shell opening is at one side of the structure, and the sack rack is pivoted to an upwardly projecting position, all as shown in Fig. 3 of the drawings. To facilitate adjustment of the wheels either in or out, it is merely necessary to lift the forward end of the structure by means of the draft tongue, causing the rear end portion of the frame to engage and pivot on the ground Y on which the structure is located. Through this action, as shown in Fig. 5, the wheels may be lifted from the ground making it simple and easy to effect the desired adjustment.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claims.

Having described my invention, I claim:

1. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side

and extending substantially tangentially thereof to have a portion projecting outward from said wall, and a rack shiftably carried by the drum at the mouth thereof to shift from a working position outward of the mouth and a retracted position inward of the mouth, the drum being operable to a position where the mouth extends vertically and the rack is retracted, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall.

2. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, the mouth having a pouring lip at one end facing substantially circumferentially of the wall, and a rack pivotally carried by the drum at the other end of the mouth to shift from a working position overlying the mouth and projecting outward of said wall and a retracted position inward of the mouth and projecting from said other end thereof, the drum being operable to a position where the mouth opens at one side of the structure and extends vertically and carries the rack in the retracted position, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall.

3. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, the mouth having a pouring lip at one end facing around the drum in one direction, and a rack pivotally carried by the drum at the other end of the mouth to shift from a working position overlying the mouth and projecting outwardly of the wall and a retracted position inward of the mouth and projecting from said other end thereof, the drum being operable to a position where the mouth opens at one side of the structure and extends vertically with the rack retracted, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall, the rack including spaced plates with edges substantially aligned with the mouth when the rack is in the retracted position.

4. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a con-

tracted position, a mixing drum with a substantially cylindrical wall and flat ends and rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, the mouth having a pouring lip at one end facing one side of the structure, and a rack pivotally carried by the drum at the other end of the mouth to shift from a working position overlying the mouth and projecting from said wall and a retracted position inward of the mouth and projecting from said other end thereof, the drum being operable to a position where the mouth opens at one side of the structure and extends vertically while the rack is retracted, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall, the rack including spaced plates substantially parallel with the ends of the drum and having spaced bars extending between the plates, the plates having edges substantially aligned with the mouth when the rack is in the retracted position.

5. A structure of the character described including, a frame with spaced parallel sides, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position where their outer sides are substantially in line vertically with the sides of the frame, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the width of the frame and the space occupied by the wheels when contracted being substantially equal to the diameter of said wall, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, and a rack shiftably carried by the drum at the mouth thereof to shift from a working position outward of the mouth and a retracted position inward of the mouth, the drum being operable to a position where the mouth opens at one side of the structure and extends vertically while the drum supports the rack in a retracted position, the wheels being substantially aligned with the sides of the drum when the drum is in the last named position and the wheels are in the contracted position.

6. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, a handle carried by the drum and normally projecting outward of said wall, the handle being releasable from said position, and a rack shiftably carried by the drum at the mouth thereof to shift from a working position outward of the mouth and a retracted position inward of the

mouth, the drum being operable to a position where the mouth opens at one side of the structure and extends vertically, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall.

7. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, and a rack shiftably carried by the drum at the mouth thereof to shift from a working position outward of the mouth, the drum being operable to a position where the mouth extends vertically and the rack is retracted, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall, said means including axles carrying the wheels and axle guides carried by the frame and arranged side by side and parallel with each other and each carrying an axle.

8. A structure of the character described including, a frame, a support carrying the frame and including a pair of wheels and means coupling the wheels for movement transversely of the structure between a spread position and a contracted position, a mixing drum having a substantially cylindrical wall rotatably supported by the frame on a horizontal axis extending longitudinally of the structure, the drum having a normally upwardly opening mouth at one side and extending substantially tangentially thereof to have a portion projecting outward from said wall, and a rack shiftably carried by the drum at the mouth thereof to shift from a working position outward of the mouth and a retracted position inward of the mouth, the drum being operable to a position where the mouth extends vertically and the rack is retracted, and the wheels when in the contracted position having their outer sides substantially aligned with the sides of the drum so the structure has an overall width substantially equal to the diameter of said wall, the center of gravity of the structure being forward of the wheels and the frame having a rear end rearward of the wheels and movable into engagement with the ground to facilitate lifting the wheels from the ground.

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