Sept. 20, 1966 R. O. BALOGH ETAL 3,273,466

SINGLE BOOM DERRICK UNITS

Original Filed Sept. 4, 1962 4 Sheets-Sheet 1

FIG. 1

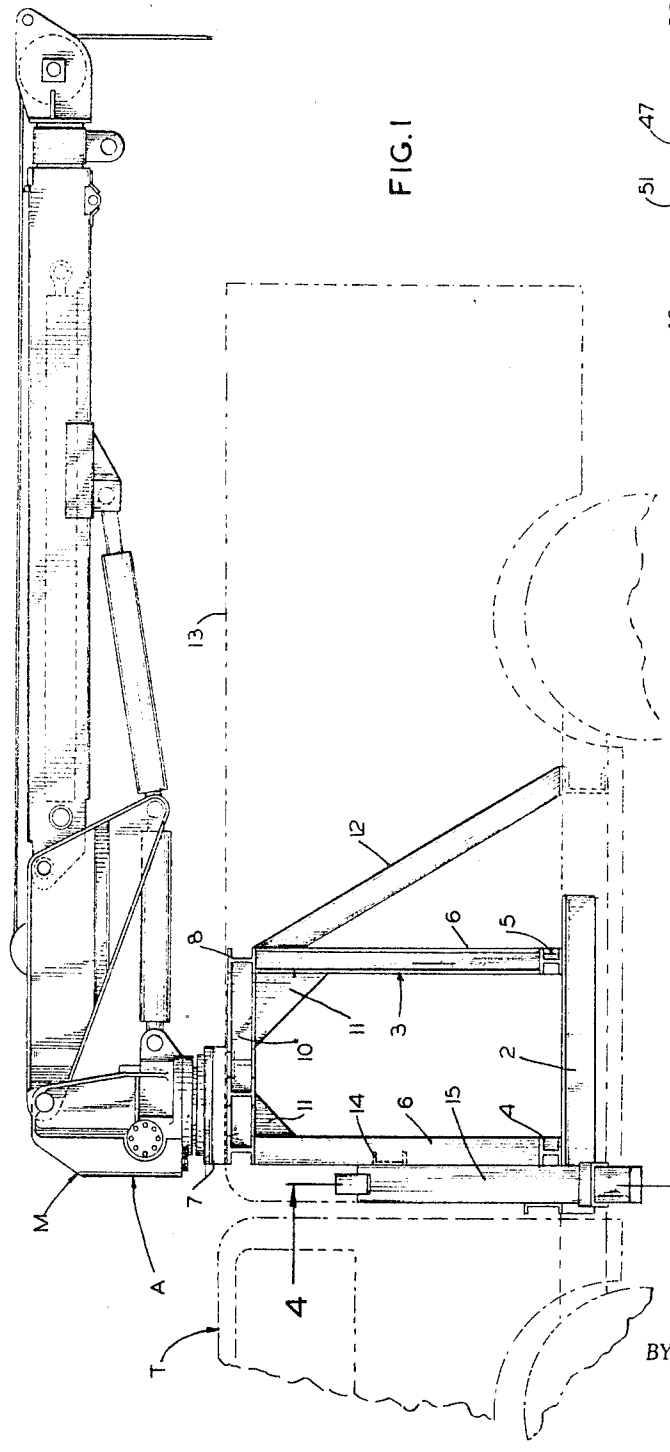
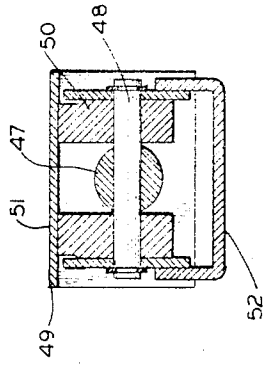


FIG. 9



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SINGLE BOOM DERRICK UNITS

Original Filed Sept. 4, 1962 4 Sheets-Sheet 2

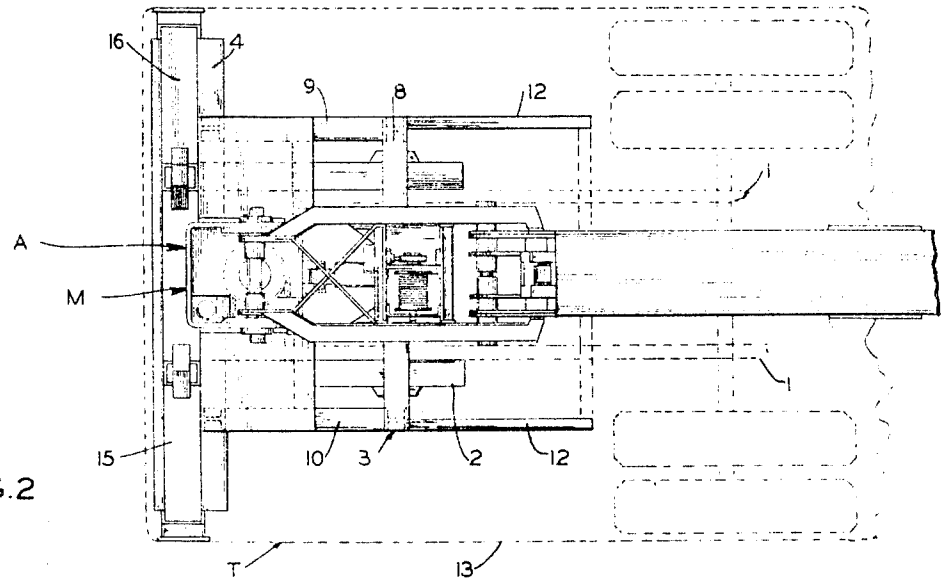

FIG.2

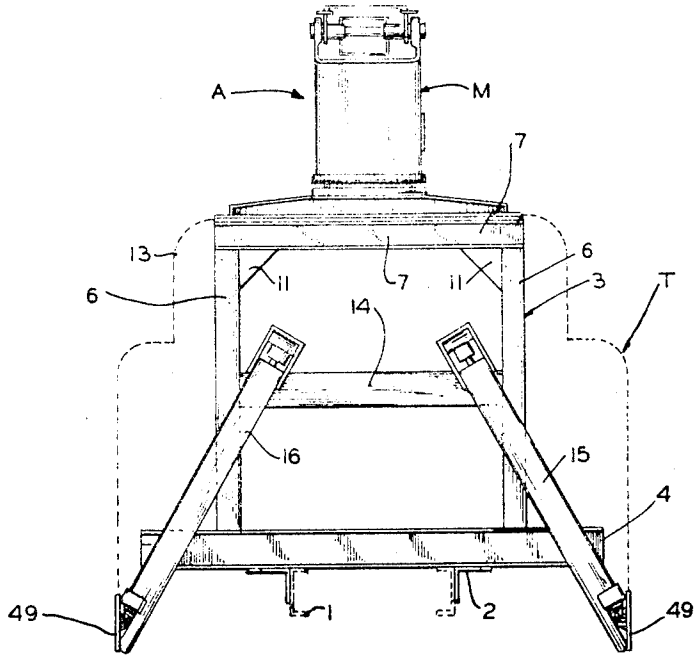

FIG.3

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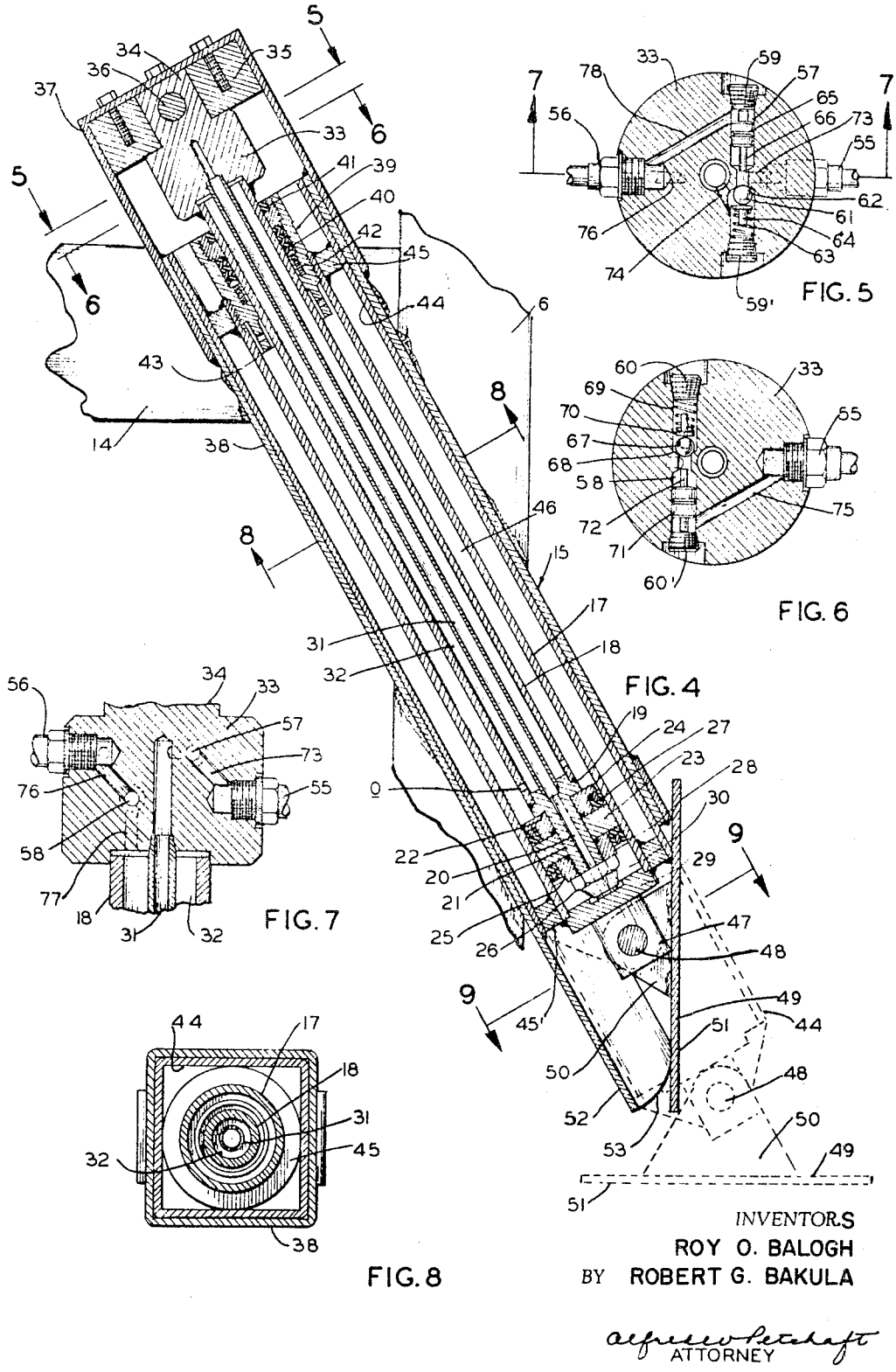

FIG. 5

FIG. 6

FIG. 4

FIG. 7

FIG. 8

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SINGLE BOOM DERRICK UNITS

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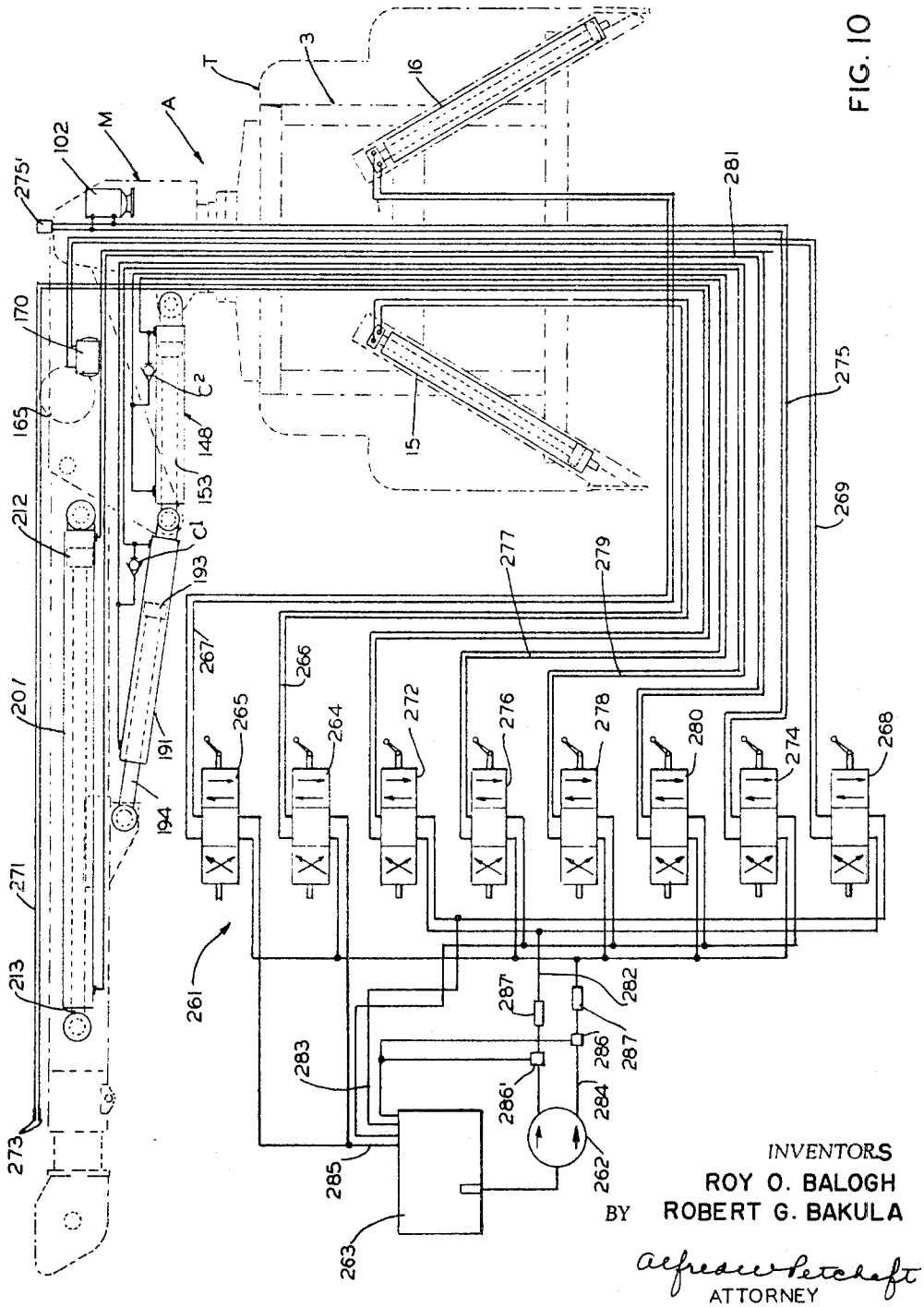

FIG. 10

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SINGLE BOOM DERRICK UNITS

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Original application Sept. 4, 1962, Ser. No. 221,225, now Patent No. 3,154,199, dated Oct. 27, 1964. Divided and this application July 16, 1964, Ser. No. 383,043
8 Claims. (Cl. 91—420)

This invention relates in general to certain new and useful improvements in outriggers for stabilizing trucks mounting rotatable derricks and the like. This present application is a division of our co-pending application Serial No. 221,225, filed September 4, 1962, and issued as United States Patent No. 3,154,199 on October 27, 1964.

Many industrial organizations, such as public utilities, often use service maintenance trucks which are provided with some type of rotatable derrick. These derricks are usually provided with accessory devices for digging holes, setting poles into the ground, and for lifting various loads. Since these accessories are generally located at the end of a boom or on some other canti-levered supporting structure which extends beyond the frame of the truck, a moment is created about the truck which, unless counteracted, will tilt the truck, and possibly overturn it, unless some means is provided to stabilize the vehicle and prevent overturning.

It is, therefore, the primary object of the present invention to prove hydraulic outriggers for vehicles of the type stated which outriggers generally extend outwardly and downwardly to bear against the ground and thereby stabilize the vehicle.

It is a further object of the present invention to provide outriggers of the type stated in which the ground engaging pads are automatically retracted to a storage position when the outriggers are retracted.

It is another object of the present invention to provide an outrigger of the type stated which is simple and rugged in construction and economical to manufacture.

With the above and other objects in view, our invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings:

FIG. 1 is a side elevational view of a rotatable derrick having outriggers constructed in accordance with and embodying the present invention, the derrick being suitably mounted on a truck body;

FIG. 2 is a top plan view of the rotatable derrick and outriggers of FIG. 1;

FIG. 3 is a left end elevational view of the rotatable derrick and outriggers;

FIG. 4 is a fragmentary sectional view taken along line 4—4 of FIG. 1;

FIGS. 5 and 6 are fragmentary sectional views taken along lines 5—5 and 6—6, respectively, of FIG. 4;

FIG. 7 is a sectional view taken along line 7—7 of FIG. 5;

FIGS. 8 and 9 are fragmentary sectional views taken along lines 8—8 and 9—9, respectively, of FIG. 4;

FIG. 10 is a schematic view of the control system and hydraulic circuitry forming part of the present invention.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, A designates a single boom derrick unit including a mast assembly M, the derrick unit A being suitably mounted on a conventional truck T, as shown in dotted lines in FIG. 1. The truck T is generally provided with a pair of lengthwise extending frame members 1 and welded to the exterior vertical

walls thereof are support channels 2 and welded to the upper faces thereof is a derrick support frame 3, the latter including a pair of spaced transversely extending cross-bars 4, 5, and welded to the transverse ends thereof are four uprights 6. Welded to the upper ends of each of the two forward uprights 6 and extending transversely thereacross is an upper cross-bar 7 and welded to the upper ends of each of the two rearward uprights 6 and extending transversely thereacross is an upper cross-bar 8. Interconnecting each of the cross-bars 7, 8, at their transverse margins is a pair of lengthwise extending support members 9, 10, which are, in turn, supported by gusset plates 11, the latter being welded to the underside of the support members 9, 10, and to the uprights 6. The pair of rearward uprights 6 can further be supported by a pair of rearwardly and downwadly extending braces 12 which are bolted or otherwise secured at their lower ends to the frame members 1 forming part of the truck T. The cross-bars 4, 5, 7 and 8, and the uprights 6 are preferably formed from any standard H-shaped rolled steel. As shown in FIGS. 1 and 3, the support frame 3 can be suitably enclosed within a truck body 13 forming part of the truck T.

Welded to and extending transversely between each of the forward uprights 6, somewhat centrally of their upper and lower ends, is a U-shaped intermediate cross-bar 14 and welded to the cross-bar 14 and each of the forward uprights 6 is a pair of outwardly and downwardly diverging outriggers 15, 16, both of which are substantially identical and, therefore, only the outrigger 15 will be illustrated and described in detail herein.

The outrigger 15 comprises a movable hydraulic cylinder 17 which is internally bored to accommodate a stationary tubular piston rod 18 and welded or otherwise rigidly secured to the lower end of the piston rod 18 is a cylindrical plug 19 having an axial fluid duct 20. The plug 19 is turned down at its lower end to form a diametrally reduced portion 21 and an annular shoulder 22. Mounted on the diametrally reduced portion 21 is a cylindrical piston 23 which is interposed between a pair of retaining plates 24, 25, the former of which abuts the annular shoulder 22 and is retained in a locked position by means of a nut 26. The retaining plates 24, 25, are annularly grooved to accommodate annular neoprene rubber sealing rings 27, 28, which form a tight wiping seal against the wall of the cylinder 17. Welded to the lower end of the hydraulic cylinder 17 is a backing plate 29 which is spaced from the retaining plate 25 forming a fluid chamber 30. Disposed within and extending axially through the tubular piston rod 18 is a fluid supply line 31 which is secured at its lower end to the plug 19 and communicates with the chamber 30 through the fluid duct 20. The supply line 31 is spaced from the inner annular wall of the piston rod 18 forming an annular fluid channel 32. The upper end of the tubular piston rod 18 is welded to the underside of a valve block 33 which is integrally provided with an upstanding reduced head 34, the head 34 being fitted within the bore of a retaining block 35 and removably secured thereto by means of a removable pin 36. The retaining block 35 is bolted to a U-shaped link 37 which extends along a portion of the exterior surface of, and is welded to, an outrigger housing 38 which is, in turn, welded to one of the forward uprights 6 and the cross-bar 14.

Rigidly secured to the upper end of the movable hydraulic cylinder 17 is a cylinder head 39 which is annularly grooved to accommodate a pressure seal 40 and a wiping seal 41, both of which engage the exterior surface of the stationary piston rod 18 as the cylinder 17 moves therealong. The cylinder head 39 is grooved to accommodate compression springs 42 for urging each of the

seals 40, 41, into engagement with the exterior annular surface of the piston rod 18, thereby forming a wiping seal contact. The cylinder head 39 is integrally formed with a depending annular bumper flange 43 which serves as a limiting means for the extension of the hydraulic cylinder 17 when the bumper flange 43 abuts the upwardly presented surface of the retaining plate 24.

When the outriggers 15, 16 are in an extended position, a rather severe strain would be imposed upon the hydraulic cylinder 17, and cause a serious lateral deflection or buckling. In order to prevent this rather severe stress upon the hydraulic cylinder 17, an outer support sleeve 44 is concentrically spaced from and secured to the hydraulic cylinder 17 by means of a pair of spacer rings 45, 45'. By reference to FIG. 4, it can be seen that the piston rod 18 is also concentrically spaced from the internal wall of the cylinder 17, thereby forming an annular fluid chamber 46 which communicates with the fluid channel 32 through apertures *o* formed in the lower end of the piston rod 18. The support sleeve 44 is axially disposed within the outrigger housing 38 and is sized for slidably engaging the internal wall of the housing 38 when the cylinder 17 is extended. The backing plate 29 is integrally formed with a depending boss 47 and pivotally secured thereto by means of a pin 48 is an outrigger base 49 having an upstanding clevis 50 and a flat undersurface 51 which is adapted to contact the ground when the outrigger 15 is in the extended position, that is the position as shown in the dotted lines of FIG. 4. The outrigger housing 38 is integrally formed with a depending tongue 52 having a lower arcuate edge 53 and when the hydraulic cylinder 17 is in the retracted position, the upper surface of the outrigger base 49 is adapted to contact the arcuate edge 53 and will pivot to the position as shown in the solid lines of FIG. 4. By means of this construction, it can be seen that when fluid is pumped through the fluid supply line 31 and into the chamber 30, the fluid under pressure will bear against the backing plate 29 which will cause the removable hydraulic cylinder 17 to extend with respect to the stationary piston rod 18. As this occurs, the weight of the outrigger base 49 will cause the same to pivot to the position as shown in the dotted lines of FIG. 4. When it is desired to retract the outrigger 15 to the position as shown in the solid lines of FIG. 4, fluid is pumped through the annular fluid channel 32 and out through the set of apertures *o* and into the annular fluid chamber 46. This fluid under pressure will bear against the undersurface of the cylinder head 39, causing the cylinder 17 to retract within the outrigger housing 38.

In order to prevent the collapsing of the outriggers 15, 16, in the event that any of the hydraulic fluid lines should break, the outriggers 15, 16, are provided with a fluid safety lock system which is mounted within the valve block 33 and can best be seen in FIGS. 5–7. Mounted within the valve block 33 is a pair of fluid couplings 55, 56, and formed in the valve block 33 is a pair of radial passageways 57, 58, each of which is plugged at both ends by fluid plugs 59, 59', and 60, 60'. Disposed within the radial passageway 57 is a ball check 61 which is normally biased into engagement with a valve seat 62 formed within the radial passageway 57, by means of a compression spring 63 which bears against a pin 64, the latter, in turn, bearing against the ball check 61, all as best seen in FIG. 5. Also operatively disposed within the radial passageway 57 is a piston 65 having a plunger element 66 which is adapted to bear against the ball check 61 for urging the same way from its seated position against the valve seat 62. Similarly disposed within the radial passageway 58 is a ball check 67 which is normally biased into engagement with a valve seat 68 formed within the radial passageway 58 by means of a compression spring 69 which is interposed between the plug and a pin 70, the latter bearing against the ball check 67. Also disposed within the radial passageway 58 is a piston 71 which is provided with an axially extending plunger 72, the latter being adapted to bear against the ball check 67 for urging the same away from its seated position against the valve seat 68. A fluid duct 73 connects the fluid coupling 55 with the radial passageway 57 and through an auxiliary duct 74 with the fluid supply line 31. At the same time, fluid will pass through a bypass duct 75 into the radial passageway 58 thereby forcing the piston 71 inwardly within the passageway 58 causing the plunger element 72 to force the ball check 67 away from the valve seat 68. In like manner, fluid can be supplied from the fluid coupling 56 to the fluid channel 32 through a fluid duct 76 into the radial passageway 58 and through an auxiliary duct 77 into the fluid channel 32. A bypass duct 78 also connects the fluid coupling 56 to the radial passageway 57 for biasing the ball check 61 away from the valve seat 62.

Thus, if it is desired to extend the hydraulic cylinder 17 of the outrigger 15, fluid is pumped into the coupling 55, through the fluid duct 73, forcing the ball check 61 away from the valve seat 62 where the fluid will then pass through the auxiliary duct 74 and into the fluid supply line 31. As the fluid chamber 30 is filled with fluid, the movable hydraulic cylinder 17 will extend in the manner as previously described. At the same time, fluid will pass through the bypass duct 75 into the radial passageway 58, causing the piston 71 and plunger 72 to bias the ball check 67 away from the valve seat 68. This will, in turn, permit fluid within the fluid chamber 46 and the fluid channel 32 to pass through the auxiliary duct 77, through the radial passageway 58, out through the fluid duct 76 and the coupling 56. In this connection, it is to be noted that when the outrigger 15 reaches its fully extended position, fluid under pressure will no longer be supplied to the fluid couplings 55, 56, and both of the ball checks 61, 67, will be seated against the valve seats 62, 68, respectively, causing the outrigger 15 to be maintained in a rigid extended position. When it is desired to retract the cylinder 17 in the outrigger housing 38, fluid is supplied to the fluid coupling 56 through the fluid duct 76 forcing the ball check 67 away from the valve seat 68, past the valve seat 68, through the auxiliary duct 77 and into the fluid channel 32. This will cause the hydraulic cylinder 17 to retract to the position as shown in the solid lines of FIG. 4 in the manner as previously described. At the same time that the fluid is supplied to the channel 32 and hence chamber 46, fluid will pass from the coupling 56 through the bypass duct 78 and into the radial passageway 57, causing the piston 65 and plunger 66 to urge the ball check 61 away from the valve seat 62, against the action of the compression spring 63. This will permit the fluid within the fluid supply line 31 to pass through the auxiliary duct 74, through the radial passageway 57, and out through the fluid duct 73 and coupling 55. It is to be noted in this connection that after the cylinder 17 has reached its fully retracted position, there will be no fluid pressure maintained at either of the fluid couplings 55, 56, thereby permitting each of the ball checks 61, 67, to be biased into engagement with the valve seats 62, 68, respectively. By means of the above-outlined construction, it can be seen that the outrigger 15 will always maintain its rigid position after the fluid under pressure is cut off from either of the couplings 55, 56. Thus, if one of the fluid lines within the hydraulic system, to be hereinafter described, should break, the outrigger 15 would not collapse, because each of the ball checks 61, 67, is biased against the valve seats 62, 68, respectively, thereby closing each of the chambers 30, 46, to the fluid source. As the outrigger 16 on the left side of the truck is substantially identical to the outrigger 15 on the right side thereof and operates in like manner, it is neither illustrated nor described in detail herein.

It should be noted that outriggers 15, 16 may also be mounted to project angularly beyond the rear of the truck as well as the side of the truck.

The single boom derrick unit A is suitably provided with a control system **261** conveniently mounted on the derrick support frame **3** for easy access thereto, and comprises a fluid pump motor combination **262** which is connected to a reservoir **263** as schematically shown in FIG. 10. The outriggers **15**, **16**, are operated through a pair of two-way three-position control valves **264**, **265**, respectively, and which are connected to the fluid couplings **55**, **56**, of the outriggers **15**, **16**, through pairs of hydraulic lines **266**, **267**, respectively. The pump motor combination is connected to the control valves **264**, **265** by a high pressure line **384** while the reservoir **263** is connected to the valves **264**, **265** by a return line **285**. Interposed in the high pressure line **284** is a high pressure relief valve **286** and a filter **287**, the former of which discharges into the reservoir **263** when subjected to excessive pressures.

When it is desired to use the derrick unit A, the outriggers **15**, **16**, are lowered to their extended position where the outrigger bases **49** contact the ground. This is accomplished by actuating the control valves **264**, **265**, and pumping fluid through the hydraulic lines **266**, **267**, into the fluid supply lines **31** of each of the outriggers **15**, **16**. The fluid will then be drawn into the chamber **30** and will bear against the backing plate **29** which will cause the hydraulic cylinder **17** to extend outwardly of the outrigger housing **38**. If either of the hydraulic lines **266**, **267**, should break, or if the outrigger valves **264**, **265**, should suffer a failure, the outriggers **15**, **16**, will still be maintained in their extended positions, this is the position as shown in the dotted lines of FIG. 1, by means of the fluid safety lock system previously described.

It is to be noted that the pressure relief valve **286** will open when the aforementioned control valves **264**, **265** are biased to their "closed" position. This will enable the pump to continually operate and as the pressure builds up in the hydraulic system, the valve **286** will open causing a recycling of hydraulic fluid from the pump **262** to the reservoir **263**. It should also be obvious that the pressure to open the relief valve **286**, will have to be substantially greater than the pressure required to actuate the outriggers **15**, **16**.

It should be understood that changes and modifications in the form, construction, arrangement and combination of the several parts of the outriggers may be made and substituted for those herein shown and described without departing from the nature and principle of our invention.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. An outrigger for use with trucks and other mobile platforms having portable derricks and the like, said outrigger comprising an outer housing of non-circular cross section having an open end, a double acting hydraulic cylinder disposed within said housing and being adapted for extensible movement through the open end thereof, a piston operatively disposed within said cylinder, a tubular cylindrical piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, a cylindrical pipe disposed concentrically within said piston rod in the formation of first and second fluid conduits, a sleeve of non-circular cross section disposed about and encircling said hydraulic cylinder for its entire length and being rigidly secured thereto, said sleeve being in slidable engagement with the interior walls of said tubular housing for supporting said cylinder during the latter's extensible movement, base means pivotally mounted on the outer end of said cylinder, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for accommodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, said first and second fluid conduits being in communication with said first and second fluid chambers, respectively, first supply means for supplying fluid through said second conduit to said second chamber to cause extension of said hydraulic cylinder, second supply means for supplying fluid through said first conduit to said first chamber to cause retraction of said hydraulic cylinder, and valve means carried by said piston rod and operatively associated with said first and second supply means for regulating the amount of fluid to each of said first and second chambers, said valve means being adapted to hold said hydraulic cylinder in a rigid position if the pressure at either of said first or second supply means should fail.

2. An outrigger for use with trucks and other mobile platforms having portable derricks and the like, said outrigger comprising an outer tubular housing of non-circular cross section having an open end provided with an outwardly projecting camming surface, a double acting hydraulic cylinder disposed within said housing and being adapted for extensible movement from a retracted position to extended positions through the open end of said housing, a piston operatively disposed within said cylinder, a tubular piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, a sleeve of non-circular cross section disposed about and encircling said hydraulic cylinder for its entire length and being rigidly secured thereto, said sleeve being in slidable engagement with the interior walls of said tubular housing for supporting said cylinder during the latter's extensible movement, a base plate pivotally mounted on the outer end of said cylinder, said base plate being sized and positioned for engaging said camming surface during the cylinder's final increment of movement into the retracted position whereby to cam said base plate into a preselected storage position, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for accommodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, first supply means for supplying fluid to said second chamber to cause extension of said hydraulic cylinder, second supply means for supplying fluid to said first chamber to cause retraction of said hydraulic cylinder, a first fluid line operatively connected to said first fluid chamber for supplying fluid under pressure thereto, a second fluid line operatively connected to said second fluid chamber for supplying fluid under pressure thereto, first locking means carried by said piston rod and disposed within said first fluid line for preventing escape of fluid through said first fluid line if the fluid pressure in said first line should suddenly decrease, whereby to lock the fluid in said first and second fluid chambers, and second locking means carried by said piston rod and disposed within said second fluid line for preventing escape of fluid through said second fluid line if the fluid pressure in said second fluid line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers.

3. A hydraulic ram comprising an outer housing having an open end, a hydraulic cylinder disposed within said housing and being adapted for extensible movement through the open end thereof, a piston operatively disposed within said cylinder, a tubular piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for ac-

commodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, a tubular conduit disposed within said piston rod in the formation of first and second fluid supply channels, said first supply channel being in communication with said second chamber, and said second supply channel being in communication with said first chamber, a first fluid line operatively connected to said first fluid chamber through said second supply channel for supplying fluid under pressure thereto, a second fluid line operatively connected to said second fluid chamber through said first supply channel for supplying fluid under pressure thereto, first locking means carried by said piston rod and disposed within said first fluid line for preventing escape of fluid through said first fluid line if the fluid pressure in said first line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers, and second locking means carried by said piston rod and disposed within said second fluid line for preventing escape of fluid through said second fluid line if the fluid pressure in said second fluid line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers.

4. A hydraulic ram comprising an outer tubular housing of rectangular cross-section having an open end, a hydraulic cylinder disposed within said housing and being adapted for extensible movement through the open end thereof, a piston operatively disposed within said cylinder, a tubular cylindrical piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, a sleeve of rectangular cross-section disposed about and encircling said hydraulic cylinder for its entire length and being rigidly secured thereto, said sleeve being in slidable engagement with the interior walls of said tubular housing for supporting said cylinder during the latter's extensible movement, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for accommodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, a tubular conduit disposed within said piston rod in the formation of first and second fluid supply channels, said first supply channel being in communication with said second supply channel being in communication with said first chamber, a first fluid line operatively connected to said first fluid chamber through said second supply channel for supplying fluid under pressure thereto, a second fluid line operatively connected to said second fluid chamber through said first supply channel for supplying fluid under pressure thereto, first locking means carried by said piston rod and disposed within said first fluid line for preventing escape of fluid through said first fluid line if the fluid pressure in said first line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers, and second locking means carried by said piston rod and disposed within said second fluid line for preventing escape of fluid through said second fluid line if the fluid pressure in said second fluid line should suddenly decrease.

5. A hydraulic ram comprising an outer housing having an open end, a hydraulic cylinder disposed within said housing and being adapted for extensible movement through the open end thereof, a piston operatively disposed within said cylinder, a piston rod disposed within said cylinder, said piston rod being secured to said piston at its lower end and being rigidly secured to said housing at its upper end, a sleeve disposed about and encircling said hydraulic cylinder for its entire length, said sleeve being rigidly secured to and movable with said cylinder for support thereof during its extensible movement, base means pivotally mounted on the outer end of said cylinder, first closure means mounted on the upper end of said cylinder and being movable therewith, said first closure means having an aperture for accommodation of said piston rod, the space between said piston and said first closure means being enclosed by said cylinder forming a first fluid chamber, second closure means mounted at the lower end of said hydraulic cylinder, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, first supply means for supplying fluid to said second chamber to cause extension of said hydraulic cylinder, second supply means for supplying fluid to said first chamber to cause retraction of said hydraulic cylinder, a first fluid line operatively connected to said first fluid chamber for supplying fluid under pressure thereto, a second fluid line operatively connected to said second fluid chamber for supplying fluid under pressure thereto, first normally closed valve means carried by said piston rod and disposed within said first fluid line for preventing escape of fluid from said first fluid line if the fluid pressure in said first line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers, means connecting said first normally closed valve means and said second fluid supply for opening said first normally closed valve means responsive to fluid pressure in said second fluid supply line, second normally closed valve means carried by said piston rod and disposed within said second fluid line for preventing escape of fluid through said second fluid line if the fluid pressure in said second fluid line should suddenly decrease whereby to lock the fluid in said first and second fluid chambers, and means connecting said second normally closed valve means and said first fluid supply line for opening said second normally closed valve responsive to fluid pressure in said first fluid supply line.

6. A hydraulic ram comprising an elongated housing provided at one end with a valve block, a tubular piston rod rigidly secured at one end to said valve block and extending longitudinally within said housing, said piston rod being provided at its other end with piston, a hydraulic cylinder slidably fitted over said piston for movement from a retracted position to extended positions beyond the opposite end of said housing, said hydraulic cylinder being provided at one end with first closure means having an aperture for accommodating said piston rod, said hydraulic cylinder being provided at its other end with second closure means, the space between said first closure means and said piston being enclosed by said hydraulic cylinder forming a first fluid chamber, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, a tubular sleeve slidably fitted within said housing and rigidly secured to said hydraulic cylinder for movement therewith whereby to lend support to said hydraulic cylinder during its extensible movement, a fluid supply line disposed within said piston rod and extending between said piston and valve block, said piston being provided with axially extending duct for providing communication between said fluid supply line and said second fluid chamber, the volume defined by the outer wall of said fluid supply line and the inner wall of said piston rod forming a fluid supply channel, said piston rod being provided with apertures for providing communication between said fluid supply channel and said first fluid chamber, first and second external coupler means carried by said valve block and adapted for connection to a controlled source of pressurized hydraulic fluid, said valve block being provided with a first fluid passageway for providing communication between said first coupler means and fluid supply line, said valve block being provided with a second fluid passageway for providing communication between said second external coupler means and said fluid supply channel, first

locking means within said first fluid passageway for locking the fluid in said first and second fluid chambers if the fluid pressure at said first coupler element should suddenly decrease, and second locking means within said second fluid passageway for locking the fluid with said first and second fluid chambers if the fluid pressure at said second coupler element should suddenly decrease.

7. An outrigger for use with trucks and other mobile platforms having portable derricks and the like; said outrigger comprising an elongated tubular outer housing of non-circular cross section provided at one end with a valve block, a tubular piston rod rigidly secured at one end to said valve block and extending longitudinally within said housing, said piston rod being provided at its other end with piston, a hydraulic cylinder slidably fitted over said piston for movement from a retracted position to extended positions beyond the opposite end of said housing, said hydraulic cylinder being provided at one end with first closure means having an aperture for accommodating said piston rod, said hydraulic cylinder being provided at its other end with second closure means, the space between said first closure means and said piston being enclosed by said hydraulic cylinder forming a first fluid chamber, the space between said second closure means and piston being enclosed by said hydraulic cylinder forming a second fluid chamber, a tubular sleeve in slidable engagement with the interior walls of said housing and rigidly secured to said hydraulic cylinder for movement therewith whereby to lend support to said hydraulic cylinder during its extensible movement, a base plate pivotally mounted on the end of said hydraulic cylinder beyond said housing, a fluid supply line disposed with said piston rod and extending between said piston and valve block, said piston being provided with an axially extending duct for providing communication between said fluid supply line and said second fluid chamber, the volume defined by the outer wall of said fluid supply line and the inner wall of said piston rod forming a fluid supply channel, said piston rod being provided with apertures for providing communication between said fluid supply channel and said first fluid chamber, first and second external coupler means

carried by said valve block and adapted for connection to a controlled source of pressurized hydraulic fluid, said valve block being provided with a first fluid passageway for providing communication between said first coupler means and fluid supply line, said valve block being provided with a second fluid passageway for providing communication between said second external coupler means and said fluid supply channel, first locking means within said first fluid passageway for locking the fluid in said first and second fluid chambers if the fluid pressure at said first coupler element should suddenly decrease, and second locking means within said second fluid passageway for locking the fluid with said first and second fluid chambers if the fluid pressure at said second coupler element should suddenly decrease.

8. An outrigger according to claim 7 in which said housing is provided with a camming surface for camming said base plate into a preselected poistion when said cylinder is retracted to its fullest extent.

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