Dec. 26, 1967 J. O. BLOXSOM ET AL 3,360,145

ROOF BUGGY

Filed Sept. 16, 1965 2 Sheets-Sheet 1

Fig. 1

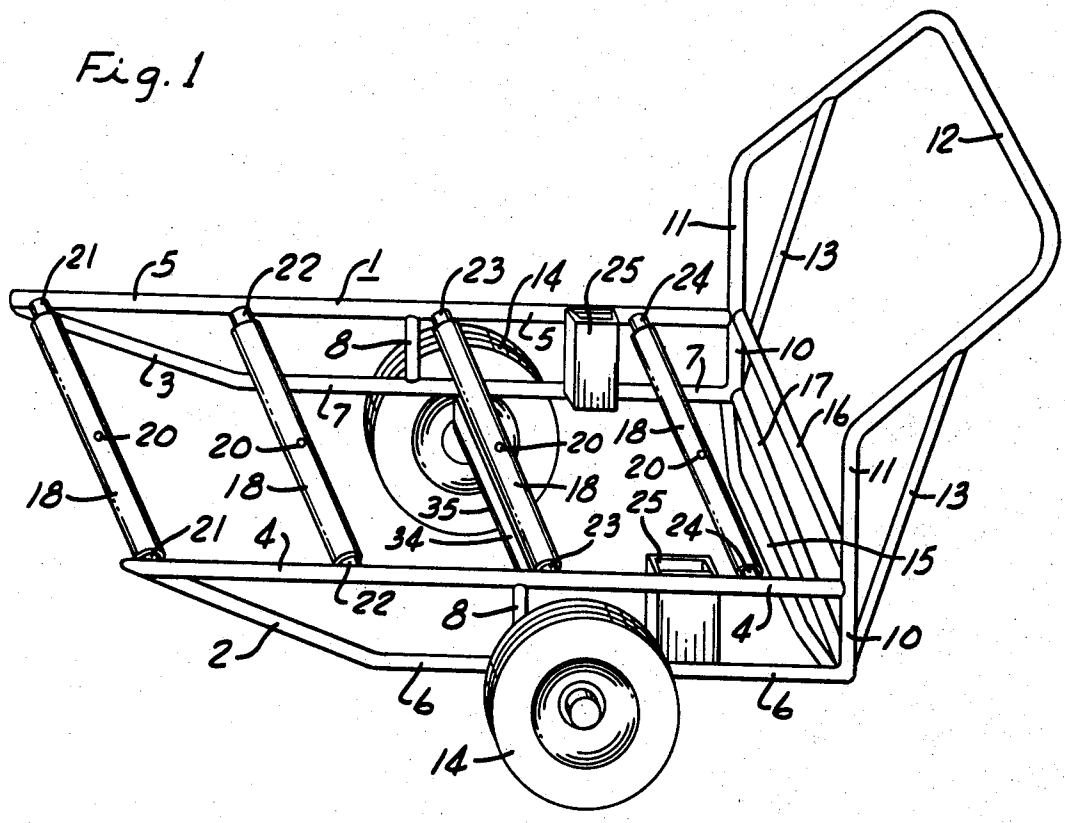
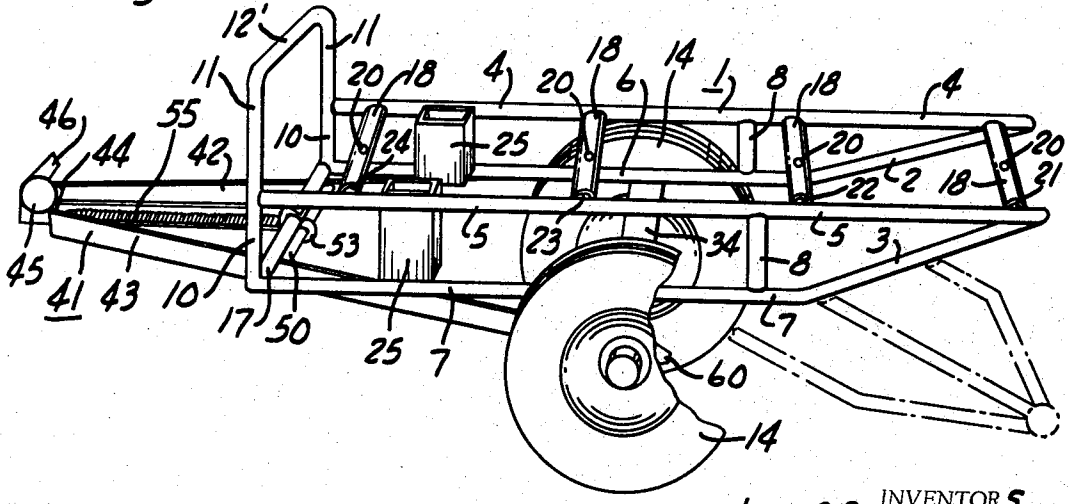


Fig. 2



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Fig. 4

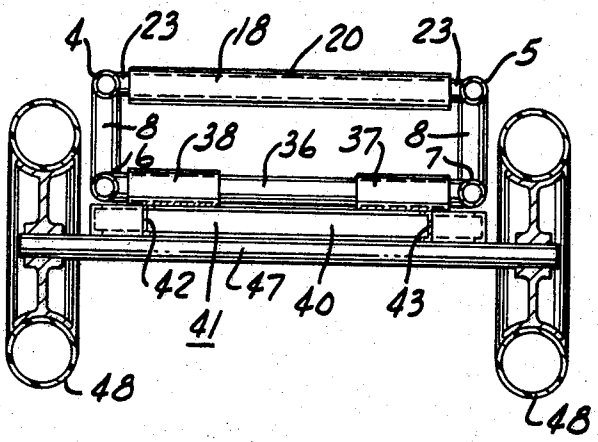


Fig. 5

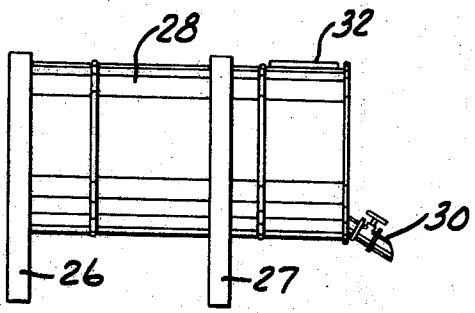
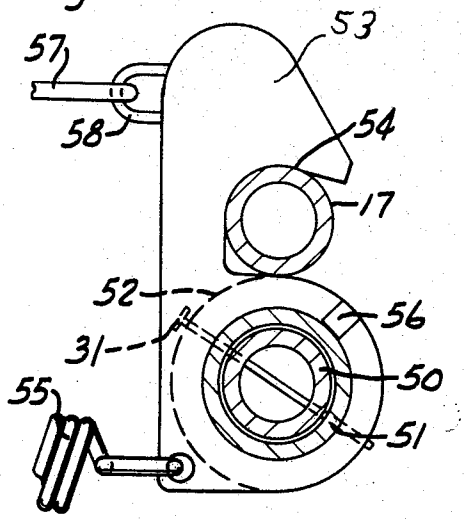


Fig. 3



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ROOF BUGGY

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4 Claims. (Cl. 214—506)

ABSTRACT OF THE DISCLOSURE

A buggy for distributing materials including a mobile unit carried by wheels and tiltably supporting a frame comprising parallel pipe side rails integrally connected with pipe transverse stringers the latter having thereon pipe rollers shorter in length than the stringer and each with a bore of sufficient size to slide over and rotate on each transverse pipe stringer together with an integral pipe structure providing a cross connected foot and handle extending from one end of the rails of the frame and integral therewith. A tongue frame carrying the wheels of the mobile unit and tiltably supporting the frame and having a detachable spring latch means to allow the frame to tilt to a limited position.

This invention relates generally to buggies for hauling material and more particularly to a roof buggy for hauling roofing materials to different positions on a roof where it is being applied.

Large flat and gentle sloping roofs that are to be covered by several layers of red rosin paper and felt papers require considerable time and effort to merely distribute the paper and the insulation and the hot tar to different positions over the very large roofs covering buildings being made today. Trailers, hand carts and wheel barrows being employed are inadequate because they have to be hand loaded and unloaded. These trailers or buggies cannot stand the rough hauling or the machine loading by ladder type hoists or cranes that carry a load of paper, insulation, tar and other products up an incline track to the roof deck and tip it over slamming it onto the buggy. Again, the present buggies have to be hand loaded and unloaded and are not constructed to resist this forcible deposit of the full load from a ladder type hoist. The present buggies have only two rails with no cross members to form a deck which limits their use.

Most of the present smaller roof jobs are carried on by hand labor. The paper rolls and insulation are hoisted by hand and carried on the shoulders to the particular position of the roof and deposited by hand. The same is true of the buckets of hot tar.

The roof buggy comprising this invention is simple in construction ad sufficiently rugged to withstand the force of receiving a full load slammed from a ladder type hoist that flops a full load over the top of the ladder type hoist down onto the deck of the buggy. The force of depositing the load on the buggy is greater than the load itself.

The principal object of this invention is the provision of a roof buggy that is rugged and may be loaded directly from a hoist for distribution on the roof. Another object is a roof buggy that is capable of being tilted to shift the load as a unit to the roof without handling. These objects are supported by the construction of one form of this invention wherein the dump frame is provided with a deck that is one integral welded frame made from pipe.

The pipe may be made from one inch pipe and the roller sleeves made from one and one quarter inch pipe placed on the transverse stringers before they are welded in place to form the deck of the buggy. These rollers actually reinforce the stringers. Thus, a simple concentric pipe functions as a roller means and, since the outer or free pipe roller extends for substantially the full width of the stringer, increases the strength of the frame and in fact the whole buggy, made from pipe parts, provides an important advancement of this invention.

Another and important object of this invention is the provision of a roof buggy having a tiltable dump frame. This permits the load carried by the buggy to be slid off the buggy onto the roof without handling, and without disbursing the load as a unit as it is deposited on the roof. If the load consists of a stack of insulation, it will remain as a stacked unit on the roof when the dump frame is tilted. If a load is a stack of twenty or more rolls of roofing paper transversely disposed, they will move off unaided but remain as a close group on the roof with some remaining double stacked. This improved object of this invention is obtained by the construction of the dumping frame. It is made strong, rugged and sufficiently deep so that the roller means positions the buggy deck just above the pneumatic wheels which permit the use of sled type side frame members that places the front and unloading end of the load deck close to or even engaging the roof. This allows the dumping deck frame to slope at a relatively low angle of approximately fifteen degrees and permit the load to gently slide to the roof. The packages of insulation need not overhang the front of the buggy deck to engage the deck when being dumped and the packages approach the roof as the buggy is withdrawn. The insulation may be stacked on the buggy dock so that it does not overhang the front of the deck. When the load engages the roof it produces enough friction to draw the load off the dumped deck roller means onto the roof without disturbing the load as a unit. This is important to this invention not only because the load need not be handled when shifting as a unit to the roof while remaining as a stack.

Another object of this invention is the provision of a spring loaded latch means to retain the dumping deck in its load carrying position and when released will dump the frame and allow the load to slide therefrom to the roof.

Another object of this invention is the provision of a roof buggy having a roller means dumping deck and supported on wheels which provide mobility for the buggy and permit the dumping deck to slip its load to the roof when pivoted on the wheels. This roof buggy has a handle extending upwardly from the rear of the deck and a foot to engage the roof when being loaded by the ladder hoist. The load preferably balances this two wheeled buggy to bias the weight to the rear so that one must raise the handle to balance the load on the wheels and move it to the place on the roof where the load is to be deposited.

Another object of this invention is the provision of a roof buggy having a tongue frame with a transverse axle means to receive the wheels and a pair of tube sleeves spaced on a transverse axis and secured to the frame to receive a transverse pivot tube secured as by welding to the lower side rails below the deck. This pivot tube member is integral with the dump frame and pivotally supports the same on the tongue frame. Thus, the pivot

tube is welded between the bottom rails on one of the transverse stringers of the frame and functions as well as the pivot member. A second transverse stringer extends across the tongue frame adjacent the trailer hitch to the rear of the dumping frame. A dumping frame stringer connects the bottom rails of the dumping frame and in the same plane as the pivot member. This stringer lies just above the tongue frame stringer. A spring biased hook latch is pivoted on the tongue frame stringer with the hook latching over the dump frame stringer to hold it in its load carrying position on the tongue frame.

Other objects and advantages appear hereinafter in the following description and claims.

The accompanying drawings show for the purpose of exemplification without limiting the invention or claims thereto, certain practical embodiments illustrating the principles of this invention wherein:

FIG. 1 is a perspective view of the hand roof buggy comprising this invention.

FIG. 2 is a perspective view of a trailer roof buggy comprising this invention.

FIG. 3 is an enlarged view in cross section showing the spring biased latch of FIG. 2.

FIG. 4 is a view in vertical section showing the pivot support of the dump frame for the structure shown in FIG. 2.

FIG. 5 is a view in side elevation showing a tar barrel for removable mounting on the buggy.

Referring to FIG. 1 the roof buggy shown is a hand type and comprises the dump frame **1** which had sled shaped parallel side members **2** and **3**, each with an upper rail **4** and **5** and a lower rail **6** and **7** connected by vertical posts **8** and **10**. The vertical post **10** is at the rear of the buggy and that extends upwardly past the upper rails **4** and **5** and from a stop **11** after which they are bent rearwardly to produce a handle **12**. An angular brace **13** connects both sides of the handle to the rear end of the bottom rails **6** and **7**.

As shown, the lower rails **6** and **7** slope upwardly as indicated at **2** and **3** to meet the front ends of the upper rails **4** and **5**. This sled side frame structure permits the dump frame to be pivoted on the wheels **14** allowing the same to rest on the roof deck and slope the buggy forwardly and downwardly. As shown in FIG. 1, the roof buggy is in loading position and is provided with a downwardly extending bracket **15** connected to the rear ends of the lower rails **6** and **7** and at the bottom of the vertical posts **10**. The bracket **15** may be made of channel iron and functions as a foot to support the roof buggy as shown. The rear of the buggy being heavier owing to the frame construction and the handle with its associated parts biases the roof buggy to always rest on the foot bracket **15**.

Stringers **16** and **17** connect the rear ends of the upper rails **4** and **5** and lower rails **6** and **7** respectively, thus completing the frame at the rear of the buggy.

A series of four stringers **21**, **22**, **23** and **24** are connected to the parallel top rails **4** and **5** to complete the frame of the buggy. This whole frame structure is preferably made with pipe. This pipe is welded where each pipe member or section is connected to each of the other interrelated parts. The pipe section forming the vertical pipe sections **10** and **11** on each side of the frame together with the handle **12** may be made in one single section bent to form the structure as shown with the brace members **13** welded to reinforce the same.

When the stringers **21** to **24** are welded in place the next larger size of pipe such as illustrated at **18** is placed over each stringer **21** to **24** before welded to both of the top rails **4** and **5**. Thus, the larger pipe **18** functions as a roller means. Although an actual roller could be employed for this purpose, the roller pipe sleeve means **18** functions not only as a roller but as a reinforcing member to the stringers. The front stringers may be placed

one quarter of an inch lower than the other stringers so that its roller **18** will readily pass the load to the roof.

The first stringer **21** is set in from the front and off the top rails **4** and **5** so that when it rests on the roof the first roller **18** thereon is free to roll and is raised above the roof surface. Holes **20** may be drilled in the roller sleeve members **19** for the purpose of adding oil to lubricate these sleeves on their fairly close fitting pipe stringers. As would be expected, tar often gets spilt or thrown on these rollers but it does not make them immobile because the tar is readily dissolved by the application of a small amount of oil on the holes **20** and in the sleeves **18**. Since the stringers and the whole frame are made of pipe welded together the rollers **18** and the stringers **21** to **24** may be made of galvanized pipe to prevent rust.

Steel box channel members **25** are welded to the inner face of the upper and lower rails **4** and **5** and **6** and **7**, respectively. These do not extend above the frame or deck formed by the rollers **18**, however, they are upwardly open to receive the vertical posts **26** and **27** as shown in FIG. 5, and are secured to the drum **28** which in turn is provided with a valve control spout **30**. When the posts **26** and **27** are placed in the sockets formed by the channel members **25**, spout **30** of the drum **28** extends outward of the buggy while the drum rests on the frame engaging the upper rails **4** and **5** at the sockets **25**. The drum **28** is provided with the top opening as shown at **32** for the purpose of filling the same. The posts **26** and **27** are dropped into the sockets to anchor the drum in place. The hot tar is pumped into the barrel through a hose and is transported by the buggy across the roof to the tar bucket or felt layers which pours the tar as the felt is payed out on the roof surface.

A channel member **34** is turned on edge and welded to the underside of the bottom rail **6** and **7**. This channel member is provided with an axle **35** to receive the wheels **14**. The position of this axle along the frame is selected so that when the buggy is unloaded, very little energy is required to lift the rear end of the buggy to balance the load on the wheels to move it forwardly.

When the buggy is loaded, the insulating packages will extend beyond the wheels on each side of the buggy and then the rear of the insulating packages engages the stop **11**. One may arrange the axle to produce a balanced weight when the full load of insulating packages are applied thereto in the structure of FIG. 2. Thus, the hand buggy may be made to always require some force to raise the foot bracket from the roof when loaded and retain the same when wheeling the buggy. In actual practice the load is found not to shift or otherwise leave the dumping deck unless it is tilted and the front ends of the upper rails **4** and **5** engage the roof and then the load will not come off the rollers forming the deck. By retracting the buggy in its dump position, the load is slid by the rollers off the deck on the roof as a unit or an assembly stack.

Tar paper rolls may be likewise loaded by crane, ladder hoist, and the like onto this buggy. These rolls of paper extend materially on each side of the buggy and any number of rolls such as 20 or more rolls may be stacked on the buggy and still maintain the proper balance while wheeling. However, when one wishes to remove this load, the dump frame of FIG. 1 is actuated by merely raising the handle **12** which allows the rolls of paper to roll off the deck being aided by the rollers **18** and the rolls will, at times, stay in a stack of 2 or possibly 3 high when the stack was originally 5 high. However, the rolls are not found to leave each other as a unit unless, of course, the dump frame is operated on a sloping roof in the direction of the slope.

This roof buggy is very rugged, and when the ends of the pipe are secured to form this frame by welding, the strength of this buggy is phenomenal when it is considered normal operation to receive the force of a 500

to 800 pound load dropped from the latter conveyor. There have been times when the buggy has been pushed off the roof and is sufficiently strong to retain its shape and prevent any damage.

It should be noted that there is nothing securing any part of this carriage or roof buggy other than the welded joint with the fastening of the wheels in place on the axle **35** which is believed to be an important object of this invention.

In the structure shown in FIG. 2, roof buggy dumping frame **1** is substantially the same as shown in FIG. 1 with the exception that the stop sections **11** are connected by a shorter handle section **12'** and this portion of the frame in conjunction with the bottom stringer **17** forms a rectangular frame with the top being **12'** and the bottom being the stringer **17** and each of the sides being formed by the pipe section indicated as the vertical pipe members **10** and their counterpart stop members **11**. Otherwise the frame is the same and is provided with the same type of rollers **18** in the same upwardly open sockets **25**. In place of having the handle and foot, the frame **1** is provided with an extra stringer **36** as shown in FIG. 4 which connects the bottom rails **6** and **7**. This stringer before being welded in place, has posts thereon on the sleeves, **37** and **38**. When these sleeves are moved toward their respective lower side rails **6** and **7** with some clearance, the sleeves are welded to the top of the channel member **40** which forms the under cross member of the tongue frame **41** as shown in FIGS. 2 and 4. This tongue frame has its side channel members **42** and **43** extending forwardly to an apex block **44** which contains a ball and socket joint **45** with a release latch **46** for the purpose of attaching the tongue frame to a power unit for pulling the tongue frame over the surface of the roof.

The bottom of the transverse tongue frame member **40** has secured thereto the axle **47** for supporting the wheels **48**.

It will be seen in FIG. 4 that the deck formed by the sleeve roller **18** lies well above the wheels and one of the stringers that forms the intermediate part of this frame as indicated at **36** is an integral and rigid part of the frame yet it functions as the pivot for the dump frame.

The transverse stringers **17** at the rear of the dump frame connects the lower side rails **6** and **7** of the structure shown in FIG. 3 and which has its counterpart of the transverse member **50** that is parallel to the stringer **17** and is welded at its ends to the tongue frame side members **42** and **43**. The transverse member **50** is also provided with a sleeve as the same size of the sleeve **51** which is the same size as the other sleeves and which is retained between the spaced washers **52** so as to retain the sleeve **51** in the center of the transverse member **50**. The sleeve **51** is provided with a hook member **53** having its bite **54** extending over the stringers **17** to lock the dumping deck **1** in its load carrying position as shown in FIG. 2. Owing to the spring member **55** which is secured at the apex block **44** at one end and to the hook member **53** at the other end to bias the bite **54** of the hook into its locking position over the stringer **17**. In its position as shown in FIG. 3, the hook **53** is provided with a stop **56** connected to one or both of the washers **52** welded on the transverse member **50** for the purposes of limiting the further movement of the hook beyond that which it would have a normal and proper bite on the stringer **17** as shown in FIG. 3.

A release cord **57** is connected to an eye **58** on the hook **53** which may be pulled by the person driving the power unit to draw this trailer tongue frame with its dumping deck to the proper position on the roof before pulling the release cord **57** to permit the dump frame to dump and allow the load to smoothly roll across the deck of rollers **18** and onto the roof without stopping the movement of the power unit and the roller. As indicated in FIG. 2, the rear of channel members **42** and **43** of the tongue frame provide a stop as indicated at **60** for engaging the underside of the bottom rails **6** and **7** to position the front end of the dump frame with the sled sections **2** and **3** being raised above the roof surface as indicated in dotted lines. Thus, the trailer of FIG. 2 when in its dumping position will not engage or otherwise drag on the surface of the roof.

As shown in FIG. 3, a removable pin **31** is passed through aligned holes in the traverse member **50** and the sleeve **51** that is rotatably mounted thereon. This loading pin **31** is provided to insure the locking position of the hook member **53** when the tar barrel **28** is carried on the buggy of FIG. 2. This prevents any accidental release by the release cord **57**.

The roof buggy of FIG. 2 is pivoted and may be biased to return to its loading position or it may be balanced to remain in any position when unloaded. Usually the load on this buggy will always be sufficiently heavier on the forward or dumping end of the frame to automatically cause it to dump when the release cord is pulled. In this way the operator of the power unit in trailing the tongue frame and the dump deck over the roof does not have to leave the power unit when the buggy is loaded or unloaded. Thus, no manual effort is required to lift the load and deposit the same on the buggy or lift the load to remove the same on the buggy.

We claim:

1. A roof buggy for distributing roofing materials including a mobile unit carried by wheels and tiltably supporting a frame including sled-shaped parallel side members each having an upper rail connected by vertical posts to a lower rail that slopes upwardly at the front to meet the upper rail and is secured thereto, a transverse stringer connecting the rear ends of said bottom and said top rails, a plurality of stringers parallel to said end stringers connecting said top rails with one stringer adjacent the front end to form a deck, roller means on said deck stringers, said vertical posts at the rear of each side member and extending above said deck to form a stop, said roller means extending above said top rails to allow a load supported on said deck of said frame to slide as a unit load over said roller means to the roof and be removed from said deck of said mobile unit by withdrawing the wheeled buggy when said frame is tilted, a tongue frame extending to an apex behind said deck, trailer hitch means on said apex, axle means secured transverse of the front of said tongue frame to receive said wheels, sleeve means fastened transversely on said tongue frame above said axle means, transverse pivot means secured to said bottom rails operating in said sleeve means and tiltably supporting said dump frame and positioned to bias said dump frame to dump the same when unloaded, delatchable spring latch means to releasably retain said dump frame in load carrying position, and a stop on said tongue frame to limit the dumping movement of said dump frame and prevent said sled shaped side members from striking the roof when in dumping position to slide the unit load from said rollers on said deck.

2. A buggy for distributing materials including a mobile unit carried by wheels and tiltably supporting a frame of parallel rails tapered at one end and connected by transverse stringers and having roller means above said parallel rails to allow the load to move off said one end of said mobile unit when said frame is tilted, characterized by integrally joined pipe forming both said parallel side rails and said transverse stringers of said frame with one pipe stringer adjacent said tapered end of said side rails, a pipe roller shorter in length than and having a bore of sufficient size to slide over and rotate on each of said transverse pipe stringers to provide said roller means and an integral frame.

3. The buggy of claim **2** characterized by an integral pipe structure providing a cross connected foot and a

handle extending from said other end of said rails of said frame and integral therewith.

4. The buggy of claim 2 characterized in that said stringers are in spaced parallel relation to each other to employ the side rails as supporting means for transverse loads of a dimension less than the distance between said parallel rollers.

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