Oct. 28, 1941. O. L. BERBY 2,261,013

BUILDER'S TOWER

Filed Aug. 4, 1940 3 Sheets-Sheet 1

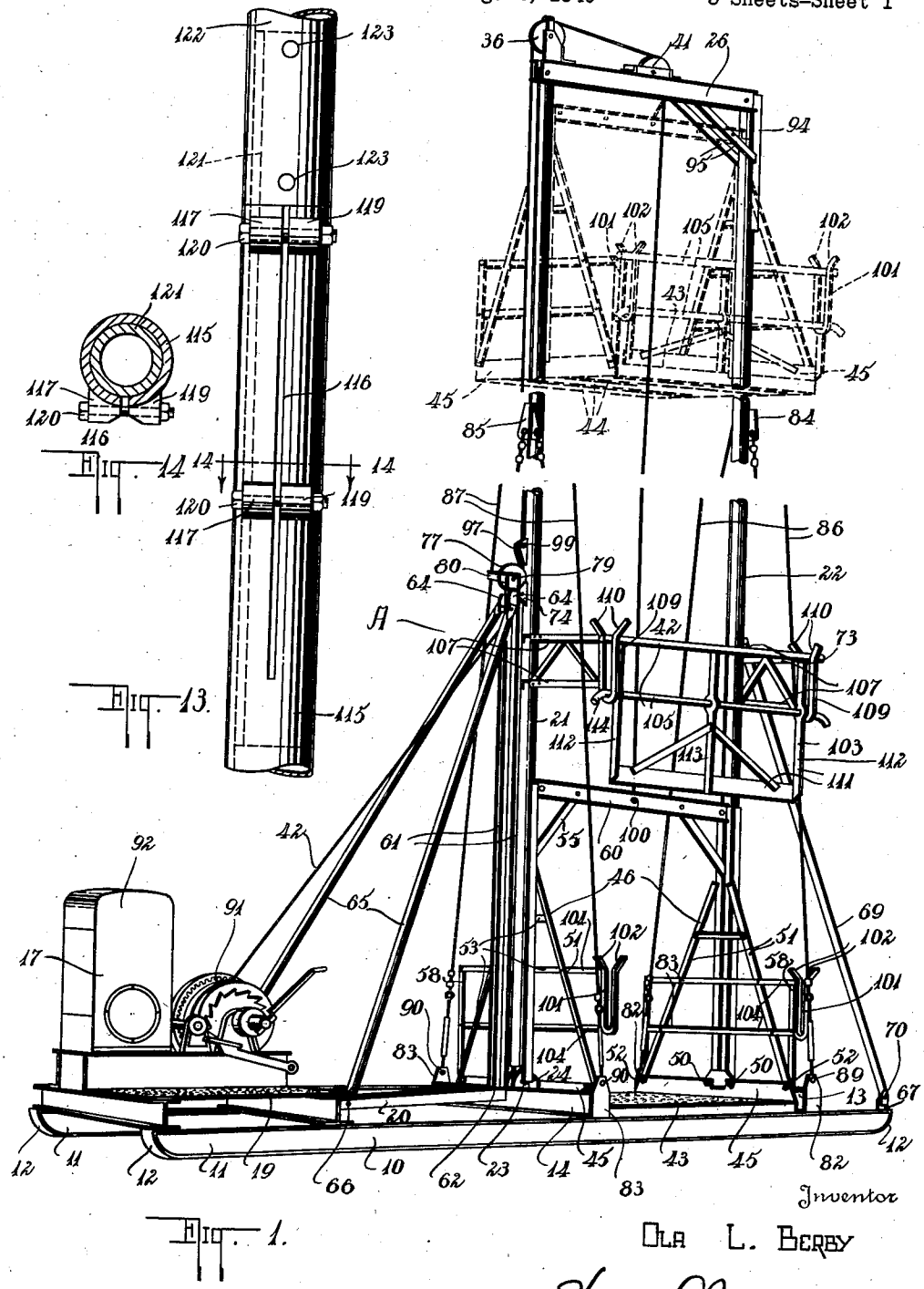

Fig. 1.

Inventor

Ola L. Berby

By Horace L. Fricke

Attorney

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BUILDER'S TOWER

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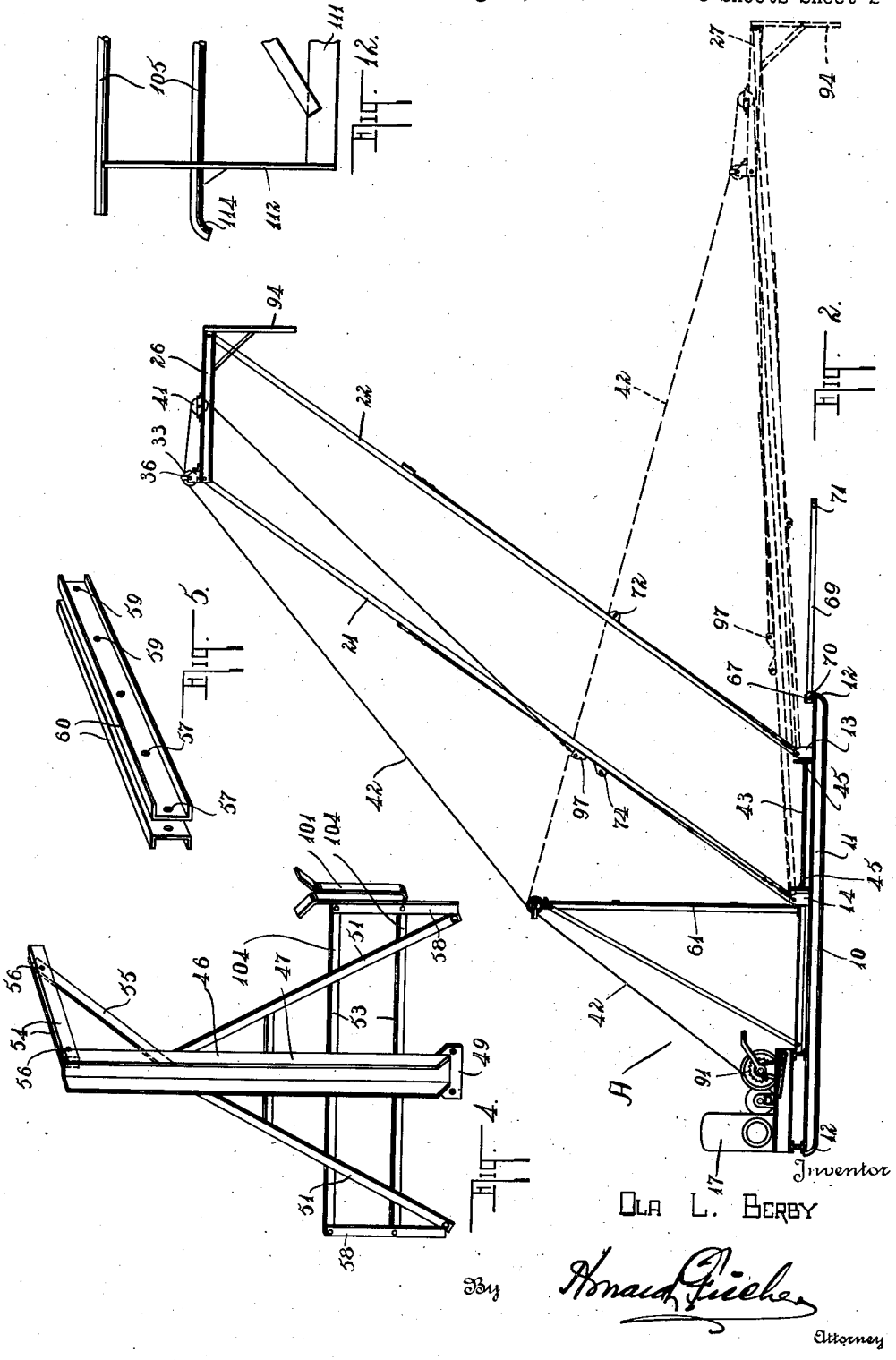

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BUILDER'S TOWER

Filed Aug. 4, 1940 3 Sheets-Sheet 3

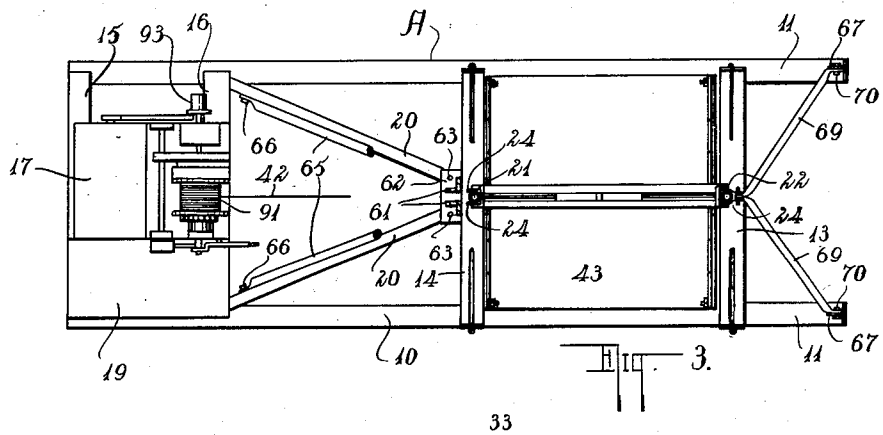

Fig. 3.

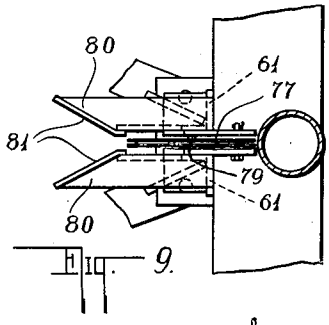

Fig. 9.

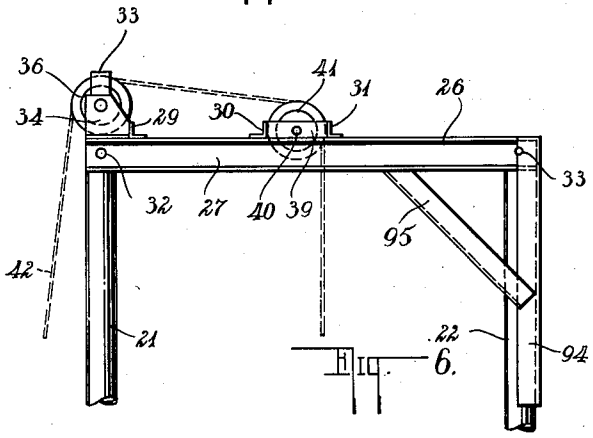

Fig. 6.

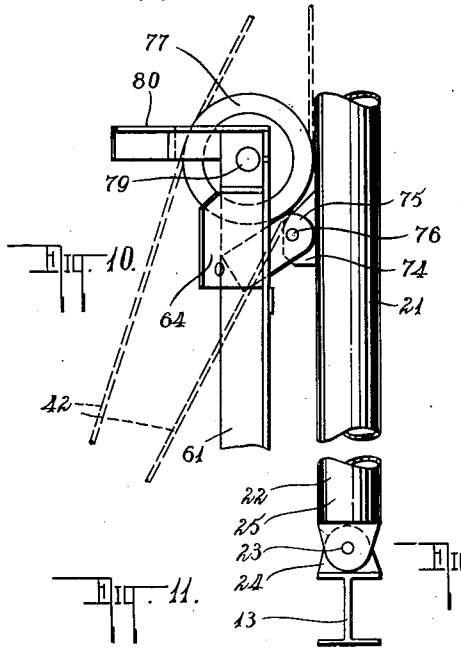

Fig. 10.

Fig. 11.

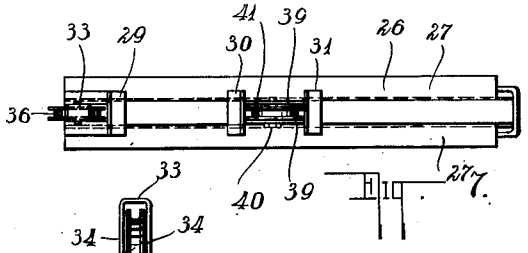

Fig. 7.

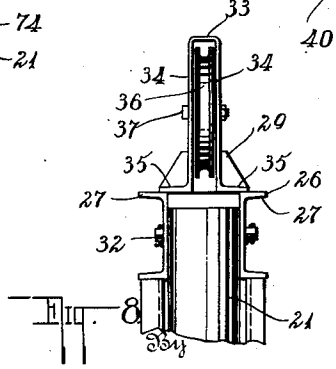

Fig. 8.

Inventor

Ola L. Berby

Attorney

Patented Oct. 28, 1941 2,261,013

UNITED STATES PATENT OFFICE

2,261,013

BUILDER'S TOWER

Ola L. Berby, Duluth, Minn., assignor to Clyde Iron Works, Duluth, Minn., a corporation of Maine

Application August 4, 1940, Serial No. 351,340

15 Claims. (Cl. 187—2)

My invention relates to an improvement in a builder's tower wherein it is desired to provide a simple and inexpensive tower which may be used by contractors and the like to lift material used in the erection of a building.

Various types of towers to accomplish the same purpose have previously been constructed. It is usual practice to erect an elevator frame of the desired height and to place in this vertical frame an elevator or lift on which material may be carried to the proper elevation. Such a tower must, however, be erected on every construction job and cannot be readily moved.

In order to provide a portable tower attempts have been made to provide constructions in which the tower is mounted upon a movable base supporting the hoisting apparatus. Most of these previous constructions have been of two general types. Certain of these towers have been provided with a cantilever platform mounted entirely to one side of the tower so that wheelbarrows, concrete carriages and the like, may be wheeled directly onto the platform from one side thereof and removed from the other side of the platform when elevated. This construction, however, necessitates an extremely rigid tower to support the eccentric loading. In order to simplify the construction and provide a more inexpensive tower, the base has been provided with a pair of transversely aligned guides between which a vertically slidable lift carriage is secured. With this type of construction, however, it has been necessary to position the supporting base at right angles to the building wall and it has been necessary to move the wheelbarrows or cement carriages onto the base to turn them at right angles and to force them onto the lift. This less expensive construction is obviously disadvantageous as the base must be turned at right angles before it can be moved along the wall and because of the awkward arrangement for loading the lift.

It is the purpose of the present invention to provide an extremely inexpensive lift which may be provided with a longitudinal frame and which is provided with a carriage which may be loaded directly from one side of the lift and unloaded from the other side of the same. In this construction a plane through the lift supporting guides extends parallel to the wall of the building being built and the lift is centered between these guides. Wheelbarrows or concrete carriages may be loaded directly onto the lift by moving the same inwardly at right angles to the building wall and in elevated position may be withdrawn from the lift. Thus my novel form of construction has the advantages of both of the former types of construction without the inherent disadvantages previously encountered.

It is a feature of my invention to provide a builder's tower embodying a pair of spaced lift guides which are mounted on a line parallel to the longitudinal axis of the supporting base. This construction provides the direct loading advantage previously related. This construction also permits quick erection and lowering of the tower through the use of the hoisting apparatus mounted upon the tower base.

It is a further feature of my invention to provide a builder's tower having a pair of spaced supports mounted on a plane through or parallel to the longitudinal axis of the base and to pivot these supports on transverse axes at right angles to the longitudinal axis of the base. Thus in order to lower the tower the supports may be pivoted downwardly remaining on a vertical plane through the longitudinal axis of the hoist and may be permitted to project forwardly from the base. As the hoisting apparatus is mounted at the rear of the base the weight of the hoisting apparatus balances the weight of the tower projected forwardly from the base, and in this lowered position the hoist may be moved from place to place with perfect balance. Such lowering of the tower is advantageous where guy wires or overhead wires or cables of any sort prevent the movement of the tower in erected condition.

It is a further feature of my invention to have the vertical guides spaced an equal distance apart throughout their height and to pivot a cross member between the upper ends of these guides on transverse pivots parallel to the pivots connecting the vertical guides to the base. Thus in erection or lowering of the tower the guides together with the top cross member or head and the base form a parallellogram which maintains all of the parts in proper relationship through the raising and lowering movement.

It is an object of my invention to form the vertical guides for the lift of tubular members and to suspend the weight centrally between these members. The tubular supports are capable of withstanding the weight upon the lift and my tower can be built to a considerable height without unduly straining these supporting members. Not only does the round shape of the supports act to better support the weight upon the lift, but also the supports provide efficient guides

for the lift and properly support the same without undue friction.

It is a further feature of my invention that my lift may be easily and quickly removed from its position between the vertical guides and that when in position between the guides acts to assist in preventing collapse of the tower. The vertical guides forming the tower are permitted to move in only one direction, that direction being in a vertical plane through or parallel to the longitudinal axis of the base. When the lift and platform are assembled between the guides they assist in holding the guides parallel and in properly spaced relation, thus actually assisting to prevent the collapse of the tower.

A further feature of my invention relates to the simple manner of supporting the tower in vertical position. The vertical guides are equipped with guy wires which are pivotally secured at points spaced laterally from the guides and on the pivotal axis of the tower supporting pivots. These guy wires therefore do not need to be disconnected before the tower is lowered and act to support the tower from lateral movement in both erected and lowered positions. The guides are further supported by brace means connected to the base which are connected to the guides in raised position. One of these brace means also forms a raising cable guide by means of which the tower may be pivoted upwardly by the hoisting mechanism.

It is a feature of my invention that the base of the lift which is normally formed of heavy material is permitted to drop below the level of the pivots supporting the vertical guides. Thus when the lift is disassembled prior to lowering the top portion of the tower the lift may be removed from the base, permitting the heavy base to remain in its normal position to facilitate the dismantling operation. The base is also provided with a notch therein into which one of the guides extends in lowered position to prevent transverse movement of the lift floor or base upon the base of the tower during moving operations.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of my tower in erected position.

Figure 2 is a side elevation view of my tower in partially lowered position, illustrating the tower in fully lowered position in dotted outline.

Figure 3 is a sectional view on a transverse plane through the tower, illustrating the base of the tower in plan view.

Figure 4 is a perspective view of one of the members forming the lift.

Figure 5 is a perspective view of the top cross members connecting the side members of the lift.

Figure 6 is a side elevation view of the top cross member of the lift, showing the construction thereof.

Figure 7 is a top plan view of the top cross member illustrated in Figure 6.

Figure 8 is an end view of the top cross member illustrated in Figures 6 and 7.

Figure 9 is a cross sectional view through one of the vertical guides, showing the cable guide pulley used in the erection of the tower.

Figure 10 is a side elevation view of the pulley disclosed in Figure 9, showing the position of the cable with respect to this pulley, both when the tower is erected and when it is partially erected.

Figure 11 is a section through the lower pivot of one of the vertical guides.

Figure 12 is a detail of the safety gate end.

Figure 13 is a detail of the mast splice.

Figure 14 is a section on the line 14—14 of Figure 13.

The builder's tower A includes a base 10, the formation of which is best illustrated in Figures 1 and 3 of the drawings. The base 10 includes a pair of longitudinally extending beams 11 having rounded ends to permit the tower to be moved longitudinally over the surface of the ground. A front cross member 13 extends between the runners 11 and is welded or otherwise affixed thereto. A parallel cross member 14 also connects the runners 11 at a point spaced from the cross member 13. Two parallel spaced I-beams 15 and 16 extend between the runners 11 near the rear ends thereof to support the hoisting unit indicated in general by the numeral 17. A platform 19 is mounted between the I-beams 15 and 16 adjacent the hoisting unit 17 on which the operator of the hoist may stand. A pair of diagonally extending braces 20 are provided between the I-beam 16 and the center of the cross member 14 to hold these elements in proper relationship and to further reinforce the base.

A pair of tubular standards 21 and 22 are pivoted by transverse pivots 23 between ears such as 24 extending upwardly from the cross members 13 and 14. The pivots 23 extend through the spaced ears 24 and through a plate 25 welded to the interior of the guides 21 and 22 and projecting beyond the ends thereof. The specific detail of this construction is best illustrated in Figure 11 of the drawings.

The tubular standards 21 and 22 are connected at their upper extremity by a cross support or head 26. This head 26 is best illustrated in Figures 6, 7 and 8 of the drawings. In the form illustrated the head includes a pair of spaced channels 27 held in spaced relation by short links of angle iron 29, 30 and 31. Pivots 32 and 33 extend through the channels 27 and through the upper extremities of the tubular guides 21 and 22 to pivotally secure the head to the guides.

An inverted U-shaped cable guide 33 having parallel sides 34 and flanged lower ends 35 is secured between the channels 27 at one end thereof adjacent the angle 29. A pulley 36 is pivoted on a transverse pivot 37 between the parallel sides 34. The cable extends over the pulley 36 and is guided thereby.

A pair of vertically extending plates 39 extend upwardly from the channels 27 between the angles 30 and 31 and support the pivot 40 for a pulley 41. The pulley 41 receives the cable 42 from the pulley 36 and this pulley 41 is arranged immediately above the vertically movable lift positioned between the guides 21 and 22.

The lift includes a base or platform 43 which is constructed of heavy metal sheet material and which is suitably braced by longitudinal braces 44 beneath the platform 43. Extending transversely of the platform 43 at either end thereof, I provide a vertical reinforcing plate 45. Side guides 46 best illustrated in Figure 4 of the drawings are attached to these end plates 45.

The side guides for the ends of the platform 43 include a vertical channel 47 formed of a pair of angle irons having an attaching plate 49 welded to the bottom end thereof. Bolts 50 extend through the end plates 45 and through the attaching plate 49 to hold the channels 47

to the platform 43. Braces 51 are welded to the base of the channel 47 at a point spaced from the bottom thereof and bolts 52 extend through the lower extremities of these braces and through the end plates 45 to hold the channels 47 in vertical alignment. Transversely extending braces 53 extend between the braces 51 connecting these braces at spaced intervals with the channel 47. The transverse braces 53 are spaced apart properly to form a ladder up which an operator may climb. Vertical end posts 58 support the ends of the transverse braces 53.

A pair of transversely extending arms 54 are secured in spaced relation extending in right angles from the channel 47. A brace 55 is connected at one end to the channel 47 and at the other end between the parallel arms 54 to support the arms 54. A pair of openings 56 are provided in spaced relation through the arms 54 and the spacing of the openings 56 matches the spacing of pairs of holes 57 or 59 in the channels 60. The cross member at the top of the lift is formed by the two channels 60 secured in opposed relationship and these channels may be readily lifted by the operator and bolts extended through the openings 57 and 59 and through the openings 56 on the transversely extending arms 54 of the two side guides 46.

A vertical support is provided adjacent the upright 21 by a pair of spaced angle irons 61. A plate 62, best illustrated in Figure 3 of the drawings is secured to the upper surface of the braces 20 of the base by means of bolts 63 or the like, and the angle members 61 extend vertically from this plate 62. A pair of brackets 64 are provided on the angle members 61 near the top end thereof and these brackets 64 are pin connected to a pair of braces 65 which are bolted to the lower extremity of the braces 20 at 66 in the manner illustrated in Figures 1 and 3 of the drawings.

As shown in Figures 1, 2 and 3 of the drawings, the ears 67 extend upwardly from the runners or longitudinal beams 11 to form pivotal supports for a pair of braces 69. These braces 69 are pivoted at one end at 70 to the ears 67 and are connected at the other end 71. In lowered position of the tower the braces 69 extend forwardly from the runners and may be used as a drawbar if it is so desired. In erected position of the tower the ends 71 of the braces 69 are connected to a bracket plate 72 on the guides 22 by means of a pin 73 or bolt to further support the vertical guides 21 and 22. A similar bracket plate 74 is provided on the guide 21. This bracket plate 74 extends between a pair of brackets 75 on the vertical support 61 and may be connected thereto by a pin or bolt 76. The vertical support 61 with the two legs 65 when connected to the upright 21, forms a tripod the ends of all of the members being connected together at the top of the tripod and all of the members being secured to the base. When the braces 69 are connected to the upright 22, a second tripod is formed, the members being connected together at the top of the tripod and the lower ends of all of the members being securely fastened to the base 10.

On the upper extremity of the upright 61 between the angles forming this upright, I provide a pulley 77 mounted upon a removable pin or bolt 79. Extending rearwardly from the upper ends of the angles 61, I provide plates 80 which terminate in converging guides 81 for guiding the cable 42 into engagement with the pulley 77. This construction is for a purpose which will later be described in detail in connection with the operation of raising and lowering the tower.

At opposite ends of the cross members 13 and 14, I provide upwardly extending plates 82 and 83, respectively. Plates 84 and 85 are secured to the outer surface of the guides 22 and 21 respectively. Guy cables or ropes 86 extend between the plates 82, and the plates 84 support the vertical guide 22 from side sway or movement. Guy ropes or cables 87 extend between the plates 83 and the plates 85 on the vertical guide 21 to support this guide from transverse movement. These guy ropes and cables 86 and 87 may remain connected even during the raising and lowering of the tower as the lower ends of the cables are pivoted at 89 and 90, respectively, in alignment with the pivots 23 of the respective vertical guides 22 and 21.

The hoisting unit 17 may be provided with a single drum 91 with suitable controls therefor, and may be driven by the engine 92. The hoisting unit also preferably includes a winch head 93 by means of which the tower may be moved along the ground. The line or cable 42 is used both to operate the lift and to raise and lower the tower. When the tower is in the folded form illustrated in dotted outline in Figure 2 of the drawings, a channel 94 secured to the top cross member channels 27 rests upon the surface of the ground and supports the top cross member or head in slightly raised position. The construction of the channel 94 is illustrated in Figures 1, 2, and 6 of the drawings, and is shown connected at its upper end to the channels 27 and also connected thereto by braces 95 which extend diagonally between the sides of the channels 94 and the channels 27. The braces 95 are spaced sufficiently and the channel 94 is of proper size to permit the vertical guide 22 to move freely within the same. This channel 94 limits the downward pivoting of the masts or uprights 21 and 22, preventing distortion or strain. This channel 94 thus provides protection for the masts and also for the pivots 23 connecting the masts to the base.

When the tower is in the lowered position shown in dotted outline in Figure 2, the cable 42 extends from the cable drum 91 over the top of the pulley 77, between the U-shaped bracket 33 and the pulley 36 on the head 26, over the pulley 41 and is dead-ended to a plate 97 on the outer surface of the vertical guide 21. In order to raise the tower, the hoisting unit 17 is operated to rotate the drum 91. This exerts an upward pull on the tower and tends to raise them into the partially erected position illustrated in full lines in Figure 2 of the drawings. As the tower becomes more and more erect, the cable 42 pulls away from the pulley 77, as it, of course, then assumes a straight line pull between the pulley 36 and the drum 91. The erection continues until the plate 74 is pulled between the fixed plates 75 on the upright standard 61, whereupon the tower is held in this position by means of the cable drum 91 or by a brake used in conjunction therewith.

The base 43 of the lift is already in place between the cross members 13 and 14. With the upright guides 21 and 22 held in position by the hoisting unit 17, the side guides 46 are secured to the platform 43. The side guides 46 are of such a weight that they may ordinarily be handled by a single man or by two men working in conjunction. The bolts 50 secure the channel 47 in upright position, and the braces 51 are secured

by the bolts 52 to the end plates 45 on the platform 43. When the eight necessary bolts have been secured, the channels 60 are lifted into place.

The channels 60 are spaced from the platform 43 such a distance that a workman can lift these channels into place while standing upon the platform 43. Bolts are then inserted through the holes 57 and 59 of the channel 60 and through the corresponding holes 56 in the arms 54 to secure the two channels in spaced relation between the channels 47 in the manner illustrated in Figures 1 and 3 of the drawings.

When the cross member formed by the channels 60 is in place, a workman can climb up upon this cross member and insert a pin connection between the plate 75 and the plate 74 on the vertical support 21. This pin 76 holds the upright guide 21 securely to the tripod formed by the vertical members 61 and the braces 65. The braces 69 may then be pivoted up into engagement with the plate 72 and a pin 73 may be inserted between the upper extremity of the braces 69 and the plate 72 to hold the upright 22 erect. The cable 42 may then be released by the hoisting unit 17 and the pin 99 may be removed which holds the cable 42 to the bracket plate 97. The end of the cable 42 is then inserted between the channels 60 and a pin 100 may be extended through the loop on the end of the cable 42 to secure the cable to the channel 60 and accordingly to the lift.

While the workman is standing upon the channel 60, the pin 79 holding the pulley 77 in place is removed and the cable 42 is placed between this pulley 77 and the vertical support 21. Thus the cable is directed beneath the pulley 77 up over the pulley 36 and over the pulley 41 before being connected to the lift.

When the tower has been fully erected and the lift assembled, the lift may be raised and lowered by means of the hoisting unit 17. As will be apparent from the drawings, the base 10 extends with its longitudinal axis parallel to the wall of the building being constructed and wheelbarrows or concrete carriages may be wheeled onto this platform. By wheeling the wheelbarrows or the like directly toward the building wall, they may be rolled onto the platform 43.

When the wheelbarrows are in place, the hoist may be lifted to the proper elevation, and the wheelbarrows may then be removed from the opposite side of the hoist which is adjacent the building wall. Obviously, there is no difficulty in moving the wheelbarrows and the like onto or off the lift, and the lift is centered between the vertical guides, making the construction extremely strong.

Under some circumstances, it is desirable to provide a guide railing which may be automatically engaged along the outer edge of the elevator cage to protect the workmen unloading the cage in elevated position. It is of course necessary to remove such a railing in lowered position of the cage in order to permit loading of the cage from the side away from the building. In order to accomplish the desired result, I provide a pair of substantially U-shaped brackets 101 having flared upper extremities 102 to support the railing indicated in general by the numeral 103. The brackets 101 are secured to the vertical end posts 58 connecting the cross braces 83 of the elevator cage side members 46. These U-shaped brackets 101 are designed to receive a pair of cross bars 105 forming a part of the railing 103 to support this railing in position to close the outer edge of the elevator cage. Obviously the brackets 101 may be secured at either end of the side guides 46 so that the railing 103 may be attached to either side of the elevator cage.

In order to automatically remove the protective railing 103 as the elevator cage moves toward its lowermost position, I provide a pair of braces 107 secured to the outer surfaces of the vertical masts 21 and 22. U-shaped brackets 109 having flared upper ends 110 are supported at the outer extremities of these braces 107. As the elevator cage moves upwardly, the brackets 101 engage the cross bars 105 inwardly of the brackets 109, and lift the railing 103 out of engagement with the brackets 109, the railing then being attached to the elevator cage to form a protective guard for the outer edge of the same. A sloping surface formed by the cams 108 acts to center the railing with the brackets 101. As the elevator cage lowers, however, the cross members 105 again engage in the brackets 109, and these brackets prevent the railing 103 from lowering further with the cage, thus holding the railing suspended in air to permit free loading of the elevator cage. A sloping surface formed by the bent ends 114 of the lower bar 105 centers the railing with the brackets 109.

The railing may be of any desired type and is illustrated with two cross bars 105 which are engagable in the brackets 101 and 109 and a parallel toeboard 111. The cross members 105 and the toeboard 111 are connected by side frame members 112 and a central frame member 113.

The masts may be spliced in the manner best illustrated in Figures 13 and 14 of the drawings. As shown in these figures, the lower section 115 of each mast or support such as 21 or 22 is slotted at 116 adjacent its upper end. Lugs 117 and 119 are welded to the section 115 on opposite sides of the slot 116, and bolts 120 extend through the lugs 117 and 119 to clamp the portion of the pipe on opposite sides of the slot 116 together.

A short length of pipe 121 is welded within the upper section 122 of the mast, to project downwardly therefrom. This welding is accomplished by cutting holes 123 in the pipe 122, and welding through these holes. The projecting portion of the pipe 121 extends into the upper end of the lower section 115, and is clamped in place by the bolts 120.

When the lift is in lowered position the hoist may be readily moved along the surface of the ground without pivoting the tower into folded position. I have found that my tower may be moved over ground which is quite rough without danger of tipping or tilting because of the low center of gravity of my device when the lift is in lowered position. If, however, it is necessary to avoid guy wires or overhead obstructions, the lift may be easily taken apart and the tower may be folded down into the dotted outline position of Figure 2 in an extremely short space of time. Tests have shown that my builder's tower may be completely erected or lowered in ten to fifteen minutes time.

In accordance with the patent statutes, I have described the principles of construction and operation of my builder's tower; and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that this is only illustrative of a means of carrying out my invention and that obvious changes may be made

within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A builder's tower comprising a base, a pair of spaced guides extending upwardly from said base, a cross member connecting the upper extremities of said guides, parallel pivots connecting said cross member to said guides and connecting said guides to said base to form a parallelogram, an elevator supported by said guides including a platform which may be lowered below the level of said guides and below the level of said pivots connecting said guides to said base, and removable engaging means on said platform.

2. A builder's tower comprising an elongated base, a pair of longitudinally spaced vertical guides pivotally secured to said base near one end thereof, a cross member connecting said vertical guides at the upper extremity thereof, parallel pivots connecting said cross member to said guides, and connecting said guides to said base to form a parallelogram, a platform mounted between said guides, guide engaging slides removably secured to said platform, a hoist on said base near the other end thereof, and means connecting said hoist to said elevator platform.

3. A builder's tower comprising an elongated base, a pair of vertical guides extending upwardly in longitudinally spaced relation from said base, a cross member connecting the upper extremities of said guides, parallel transversely extending pivots connecting said cross member to said guides and said guides to said base to form a parallelogram, a vertical support projecting upwardly from said base adjacent one of said vertical guides and detachably connected thereto, a hoisting mechanism on said base, a vertically reciprocable elevator between said guides, and cable means connecting said elevator to said hoisting mechanism by means of which said elevator may be raised and lowered.

4. A builder's tower comprising an elongated base, a pair of vertical guides extending upwardly in longitudinally spaced relation from said base, a cross member connecting the upper extremity of said vertical guides, parallel pivots connecting said cross member to said guides and connecting said guides to said base, a vertical support extending upwardly from said base adjacent one of said guides, a pulley on said vertical support, pulley means on said cross member, a hoist on said base, and cable means extending over said pulley on said vertical support over said pulleys on said cross member and extending between said guides, and a vertically movable elevator connected to said cable between said guides.

5. A builder's tower comprising an elongated base, a pair of vertical guides extending upwardly in longitudinally spaced relationship from said base, brace means connecting said base to said vertical guides at a point spaced from the bottom thereof, a hoisting unit on said base, a cross member connecting the upper extremities of said guides, an elevator vertically slidably supported between said guides, and means connecting said hoist to said elevator to raise and lower the elevator by said hoist.

6. A builder's tower comprising an elongated base, a pair of longitudinally spaced vertically extending guide members projecting upwardly from said base, transverse pivot means connecting said vertical guide members to said base, a cross member connecting the upper extremities of said vertical guide members, an elevator supported by and vertically slidable with respect to said guides, parallel pivots connecting said vertical guides to said base and to said cross member, and guy members secured to said vertical guides at a point spaced from the bottom thereof connected to said base coaxially with said pivots connecting said guides to said base.

7. A builder's tower comprising an elongated base, a pair of vertically extending longitudinally spaced guide members extending upwardly from said base, a cross member connecting the upper extremities of said guides, parallel pivots connecting said cross member to said vertical guides and connecting said guides to said base to form a parallelogram, an elevator between said guides and movable to a position below said pivots connecting said guides to said base, slides on said platform engageable with said vertical guides removably connected to said platform, an upwardly extending end plate on said platform having a notch therein into which one of said vertical guides may extend when said guides are pivoted downwardly with respect to said base.

8. A builder's tower comprising a base, a pair of vertically extending guides secured in spaced relation upon said base, brace means connecting said vertical guides to said base, an elevator vertically slidable between said guides, said elevator including a platform, removable sides secured thereto engageable with said vertical guides and cross members connecting said removable sides to hold said sides in engagement with said guides, a hoisting mechanism on said base, and means connecting said hoisting mechanism with said elevator to raise and lower said elevator by said hoisting mechanism.

9. A builder's tower comprising an elongated base, a pair of standards pivotally secured in spaced relation to said base, a cross member connecting the upper extremities of said standards, parallel pivot means connecting said cross member to said standards ad connecting said standards to said base to form a parallelogram, a cable guide support projecting upwardly from said base adjacent one of said standards, means removably connecting said one standard to said cable guide support, a hoisting unit and an elevator between said standards and flexible cable means connected to said hoisting unit guided by said cable guide means and connected to said elevator to raise and lower said elevator by means of said hoisting unit.

10. A builder's tower comprising an elongated base, a pair of standards extending vertically in spaced relation from said base, a vertically movable elevator supported between said standards, said elevator including a platform, sides secured to said platform engageable with said standards, means connecting said sides to hold said sides in engagement with said standards, cross brace means on said sides forming a ladder construction, a hoisting unit on said base, and means connecting said hoisting unit with said elevator to raise and lower said elevator with said hoisting unit.

11. A builder's tower comprising a base, a pair of standards projecting upwardly from said base, a cross member connecting the upper extremities of said standards, parallel pivots connecting said cross member to said standards, and connecting said standards to said base to form a parallelogram, an elevator removably positioned between said standards, a hoisting unit on said base, means connecting said hoisting unit to said ele-

vator to raise and lower said elevator by said hoisting unit, and a right-angular brace secured to said cross member to limit pivotal movement between said cross member and said vertical standards in one direction.

12. A builder's tower comprising an elongated base, a pair of longitudinally spaced vertical standards projecting upwardly from said base, a cross member connecting the upper extremities of said standards, parallel pivots connecting said cross member to said standards and connecting said standards to said base, an elevator removably positioned between said standards, a hoisting unit on said base, an upwardly projecting cable guide secured to said base, a pulley supported by said upwardly projecting support in alignment with said vertical standards, and brace means removably supporting said standards in vertically extending position.

13. A builder's tower comprising a vertically extending mast, a base to which said mast is secured, an elevator cage vertically movable on said mast, a removable railing on one edge of said cage, substantially U-shaped brackets supporting said railing in place on said cage, and a pair of brackets extending in the path of said railing to engage said railing as said cage lowers to remove said railing from operative position with respect to said cage.

14. A builder's tower comprising an elongated base frame, a pair of spaced vertical guides pivotally connected to said frame, said guides being positioned on a vertical plane through the base and through or substantially parallel to the longitudinal axis of said base frame, a head pivotally connecting the upper extremities of said guides, said guides being pivotally movable in said vertical plane, an elevator cage supported by said guides, a hoisting unit secured to said base, and flexible connecting means connecting said hoisting unit to said elevator cage, whereby said elevator cage may be vertically reciprocated by said hoisting unit.

15. A builder's tower comprising an elongated base frame, a hoisting mechanism thereupon, a pair of vertical guides secured in longitudinally spaced relation on said base frame, transversely extending pivots connecting said vertical guides to said base frame whereby said guides may be pivoted toward horizontal position maintaining parallel relationship, an elevator cage between said guides and engaging opposed inner surfaces thereof, and flexible means connecting said elevator cage between said vertical guides.

OLA L. BERBY.