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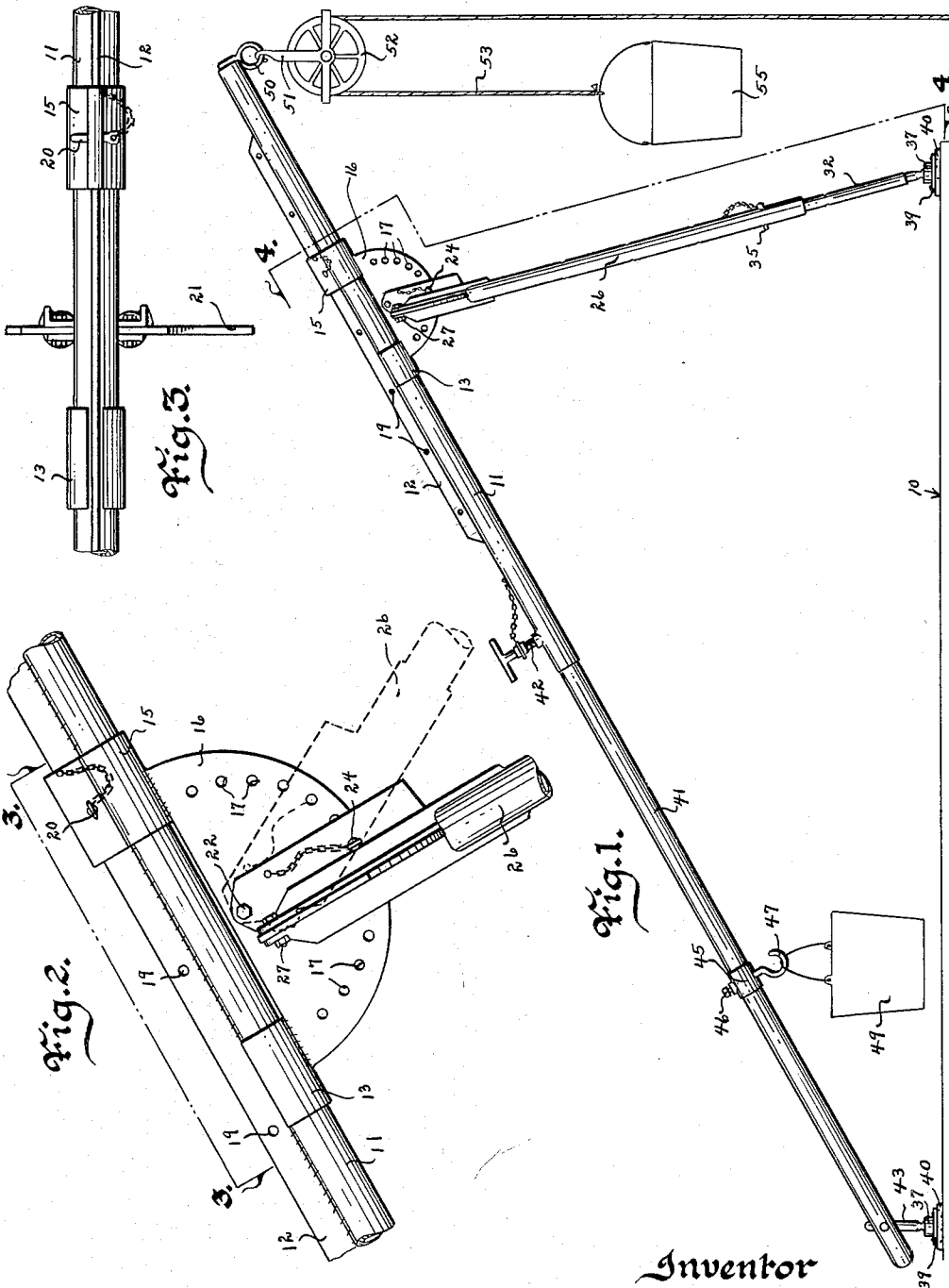
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2,984,444

HOIST STAND

Filed June 1, 1959

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

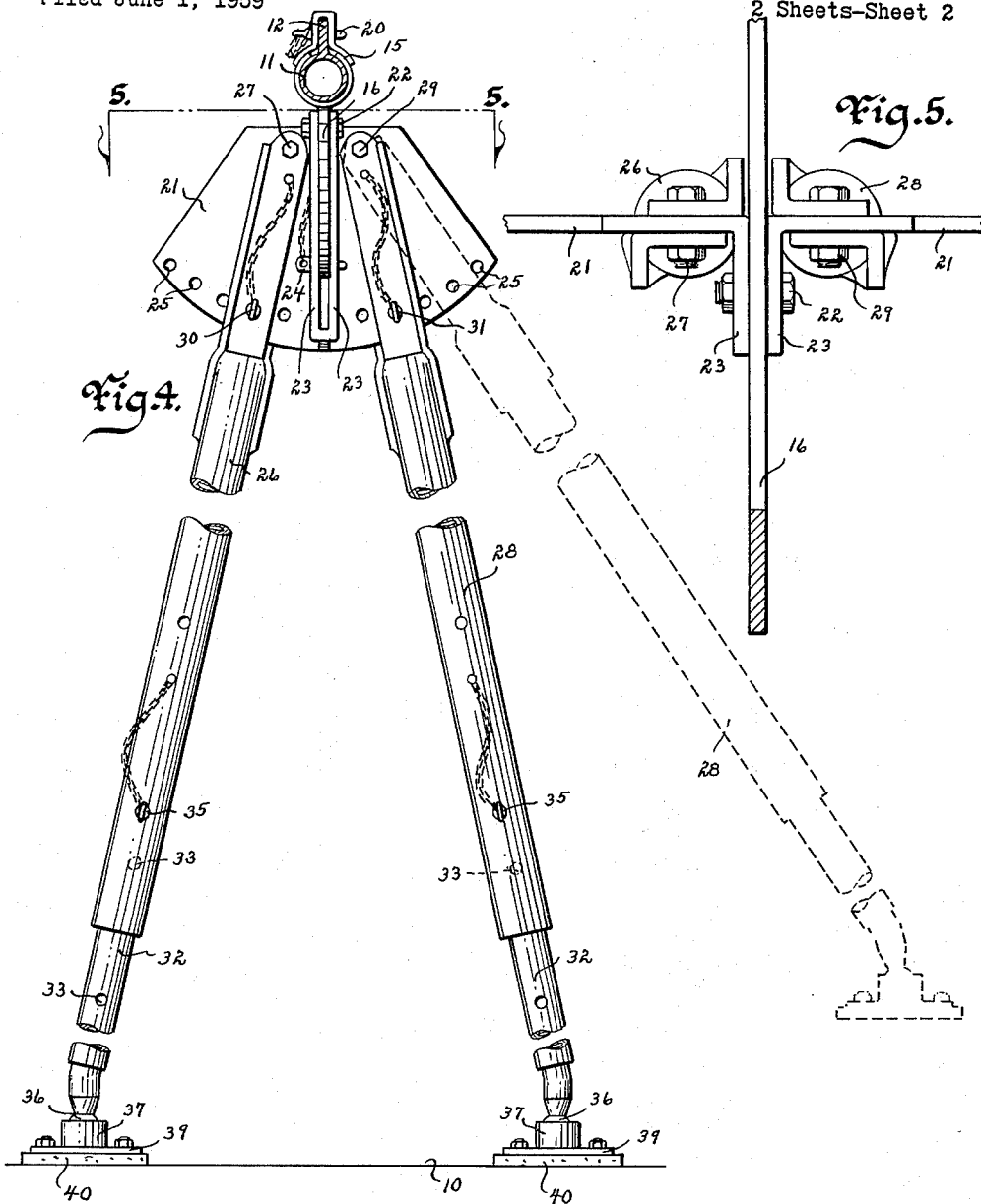
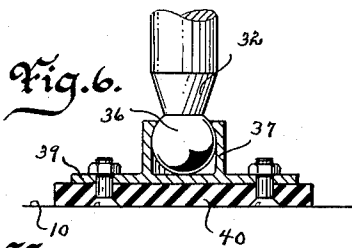


Fig. 4.

Fig. 5.

Fig. 6.



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HOIST STAND

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5 Claims. (Cl. 248—166)

This invention relates to a hoist and more particularly to a hoist used for the purpose of facilitating the elevating of objects and materials to the roofs of buildings.

One of the chief problems of roof construction and/or repair is the transportation of supplies to the roof surface. One reason for this is that buildings vary greatly as to construction. Another reason is that the job is not a continuous one and therefore no permanent lifting installation is available. The most common method is to either pack the materials up a ladder or construct a pulley on a temporary scaffold.

Therefore one of the principal objects of my invention is to provide a simple portable hoist for the movement of objects and supplies to roof tops.

A further object of this invention is to provide a collapsible hoist for the tops of buildings.

A still further object of this invention is to provide a roof hoist that is easily and quickly adjusted for all purposes and for different pitched roofs.

A still further object of this invention is to provide a roof hoist that is rigid and safe in use.

Still further objects of my invention are to provide a hoist for use on building tops that is economical in manufacture, durable in use and refined in appearance.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a side view of my device in use;

Fig. 2 is an enlarged side view of the upper portion of the leg area of the hoist;

Fig. 3 is an enlarged top plan view of a portion of the device and is taken from line 3—3 of Fig. 2;

Fig. 4 is an enlarged front view of the hoist with sections cut away and taken from line 4—4 of Fig. 1;

Fig. 5 is an enlarged top plan view taken on line 5—5 of Fig. 4 and more fully illustrates the construction of the device; and

Fig. 6 is an enlarged vertical sectional view of one of the three duplicate foot members.

In these drawings I have used the numeral 10 to designate the top or roof of a building or like. The numeral 11 designates an elongated pipe having a vertical rib flange 12 running the major portion of its length as shown in Fig. 3. The numeral 13 designate a split sleeve slidably embracing the pipe 11. The numeral 15 designates a sleeve slidably embracing the pipe 11 and its rib 12, as shown in Fig. 3. Secured to the sleeves 13 and 15 is a downwardly extending plate member 16 having a plurality of spaced apart holes 17 extending in an arc as shown in Fig. 2. The numeral 19 designates a plurality of spaced apart holes in the rib flange 12. The numeral 20 designates a detachable pin extending through the sleeve 15 and selectively through one of the holes 19.

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By this arrangement the plate 16 may be adjustably positioned on the bottom side of the pipe 11, and extend longitudinally of the length of the pipe 11. The numeral 21 designates a split plate arranged transversely of the plate 16 and slidably embracing the bottom and two sides of the plate 16 as shown in Fig. 4. The upper ends of this split plate are pivoted to the plate 16 by bolt means 22. The plate 21 has two flange portions 23 at each side of the plate 16, respectively. The numeral 24 designates a pin detachably extending through the flanges 23 and selectively through one of the holes 17 of the plate 16, thus selectively securing the plate 21 in various positions of its forward or rearward swinging movement.

The numeral 25 designates a plurality of spaced apart holes in the plate 21 extending in an arc as shown in Fig. 4. The numeral 26 designates a leg having its lower portion in the form of a pipe, and its upper end hinged to the plate 21 at one side of the plate 16, by a bolt 27 as shown in Fig. 4. The numeral 28 designates a duplicate leg but having its upper end pivoted to the plate 21 at the other side of the plate 16, by a bolt 29. The numeral 30 designates a detachable pin extending through the leg 26 and selectively through one of the holes 25 of the plate 21. The numeral 31 designates a pin detachably extending through the leg 28 and selectively through one of the holes 25 of the plate 21 as shown in Fig. 4.

The numeral 32 designates a bar slidably telescoping into each of the pipe legs 26 and 28. Each of these bars has a plurality of spaced apart holes 33. The numeral 35 designates a detachable pin extending through each of the legs 26 and 28 and selectively through a hole 33 of the adjacent bar. The numeral 36 designates a ball on the lower end of each of the bars. Each of these balls is embraced by a socket 37 as shown in Fig. 6. These portions 36 and 37 form a ball and socket structure. Each socket is supported on a foot plate 39. Secured to the bottom of each foot plate is a resilient non-slip pad 40, of rubber or like material. The numeral 41 designates a beam adjustably slidably extending into the rear end of the pipe 11. Threaded through the wall of the pipe 11 and capable of engaging and adjustably securing the beam in locked condition in the pipe 11 is a hand screw 42. Pivoted to the rear end portion of the beam is a bar 43 to start the foot portion for the rear end of the beam and is a duplicate of the foot shown in Fig. 6. It has the ball 36, socket 37, plate 39 and pad 40.

A sleeve 45 slidably embraces the beam 41 and is adjustably held in position by a set screw 46 threaded through its wall and capable of engaging the beam. This sleeve has a hook 47 for detachably holding a bucket 49. The numeral 50 designates a ring on the forward end of the pipe 11 for detachably supporting a pulley wheel frame 51. A pulley wheel 52 is rotatably supported by the frame 51. The numeral 53 designates a rope extending over the pulley wheel and which has a bucket 55 secured to one of its ends.

The practical operation of the device is as follows: During the transportation or storage, the beam 41 is telescoped within the pipe 11, the bars 32 telescoped within their respective legs 26 and 28 and the legs 26 and 28 moved together and folded under the pipe 11. To erect the device for use on a roof, the beam 41 is extended to the selected length and the hand screw 42 tightened for rigidly locking the beam 41 with and to the pipe 11. The legs 26 and 28 are spread outwardly from each other to selected positions and the pins 30 and 31 installed for rigidly holding the legs to the plate 21. Next, the legs and plate 21 are swung forwardly to extend downwardly and forwardly at the selected angle after which the pin 24 is inserted through the flanges 23 and the selected hole 17 of the plate 16. The desired length of the legs is obtained by inserting the pins 35

through the respective legs 26 and 28 and the selected holes 33 of the bars 32. These adjustable changes will be necessary not only to extend the structure but also to cause it to conform to different types and slopes of building roofs. The ball and socket feet will automatically conform to the angle of the roof relative to the beam 40 and pipe 11. Also it may be desired to adjust the pipe 11 to extend further beyond the vertical side of the building and this is accomplished by sliding the sleeve 15 to the selected position on the pipe 11 and then placing the pin 20 through the sleeve and the appropriate selected hole 19 of the flange 12. After the device has been erected, the pulley wheel unit is attached to the forward end of the device as shown in Fig. 1. Materials, supplies and like may easily be elevated by the pulley means to the roof top. If desired, the material or supplies may be removed from the pulley cable unit and placed in the bucket 49. In order to prevent the bucket 49 from engaging the roof top which may be sloping, it may be detachably temporarily placed on the supporting hook 47.

From the foregoing it may be seen that my device is light of weight, strong, and easily and quickly assembled and disassembled.

Some changes may be made in the construction and arrangement of my hoist without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a hoist, an elongated pipe, a beam slidably adjustably extending into the rear end of said pipe, a plate slidably adjustably mounted on said pipe having a plurality of holes and extending longitudinally of the length of said pipe, a second plate pivoted to said first mentioned plate having a plurality of holes and extending transversely of said first plate, a detachable pin selectively engaging one of the holes in said first plate and in engagement with said second plate, a leg hinged to said second plate, a detachable pin extending through said leg and selectively through one of the holes of said second plate, a second leg hinged to said second plate, a detachable pin extending through said second leg and selectively through one of the holes of said second plate, and a hook on the forward end of said pipe adapted to support a cable and pulley wheel unit.

2. In a hoist, an elongated pipe, a beam slidably adjustably extending into the rear end of said pipe, a plate slidably adjustably mounted on said pipe having a plurality of holes and extending longitudinally of the length of said pipe, a second plate pivoted to said first mentioned plate having a plurality of holes and extending transversely of said first plate, a detachable pin selectively engaging one of the holes in said first plate and in engagement with said second plate, a leg hinged to said second plate, a detachable pin extending through said leg and selectively through one of the holes of said second plate, a second leg hinged to said second plate, a detachable pin extending through said second leg and selectively through one of the holes of said second plate, a foot member on said beam, a foot member on each of said legs, and a hook on the forward end of said pipe adapted to support a cable and pulley wheel unit.

3. In a hoist, an elongated pipe, a beam slidably ad-

justably extending into the rear end of said pipe, a plate slidably adjustably mounted on said pipe having a plurality of holes and extending longitudinally of the length of said pipe, a second plate pivoted to said first mentioned plate having a plurality of holes and extending transversely of said first plate, a detachable pin selectively engaging one of the holes in said first plate and in engagement with said second plate, a leg hinged to said second plate, a detachable pin extending through said leg and selectively through one of the holes of said second plate, a second leg hinged to said second plate, a detachable pin extending through said second leg and selectively through one of the holes of said second plate, and a hook on the forward end of said pipe adapted to support a cable and pulley wheel unit; each of said legs having a cylinder portion and a bar portion slidably adjustably extending into the cylinder portion.

4. In a hoist, an elongated pipe, a beam slidably adjustably extending into the rear end of said pipe, a plate slidably adjustably mounted on said pipe having a plurality of holes and extending longitudinally of the length of said pipe, a second plate pivoted to said first mentioned plate having a plurality of holes and extending transversely of said first plate, a detachable pin selectively engaging one of the holes in said first plate and in engagement with said second plate, a leg hinged to said second plate, a detachable pin extending through said leg and selectively through one of the holes of said second plate, a second leg hinged to said second plate, a detachable pin extending through said second leg and selectively through one of the holes of said second plate; said legs capable of being adjustably moved toward or away from each other, and a hook on the forward end of said pipe adapted to support a cable and pulley wheel unit.

5. In a hoist, an elongated pipe, a plate slidably adjustably mounted on said pipe having a plurality of holes and extending longitudinally of the length of said pipe, a second plate pivoted to said first mentioned plate having a plurality of holes and extending transversely of said first plate, a detachable pin selectively engaging one of the holes in said first plate and in engagement with said second plate, a leg hinged to said second plate, a detachable pin extending through said leg and selectively through one of the holes of said second plate, a second leg hinged to said second plate, a detachable pin extending through said second leg and selectively through one of the holes of said second plate, and a hook on the forward end of said pipe adapted to support a cable and pulley wheel unit.

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