S. DECKER.

ROOF JACK.

APPLICATION FILED MAY 2, 1918.

1,290,926.

Patented Jan. 14, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

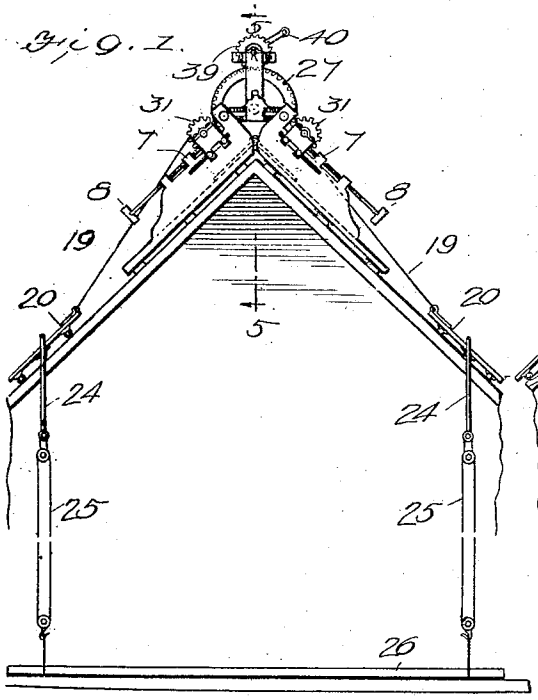


Fig. 2.

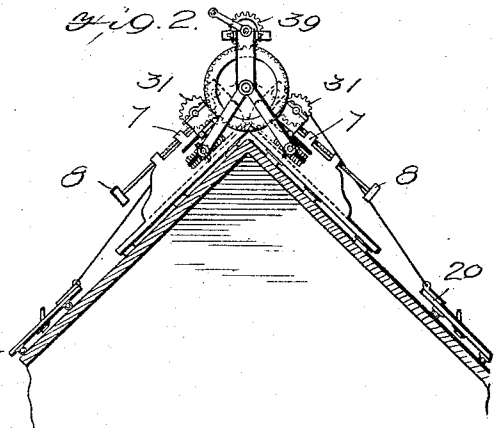
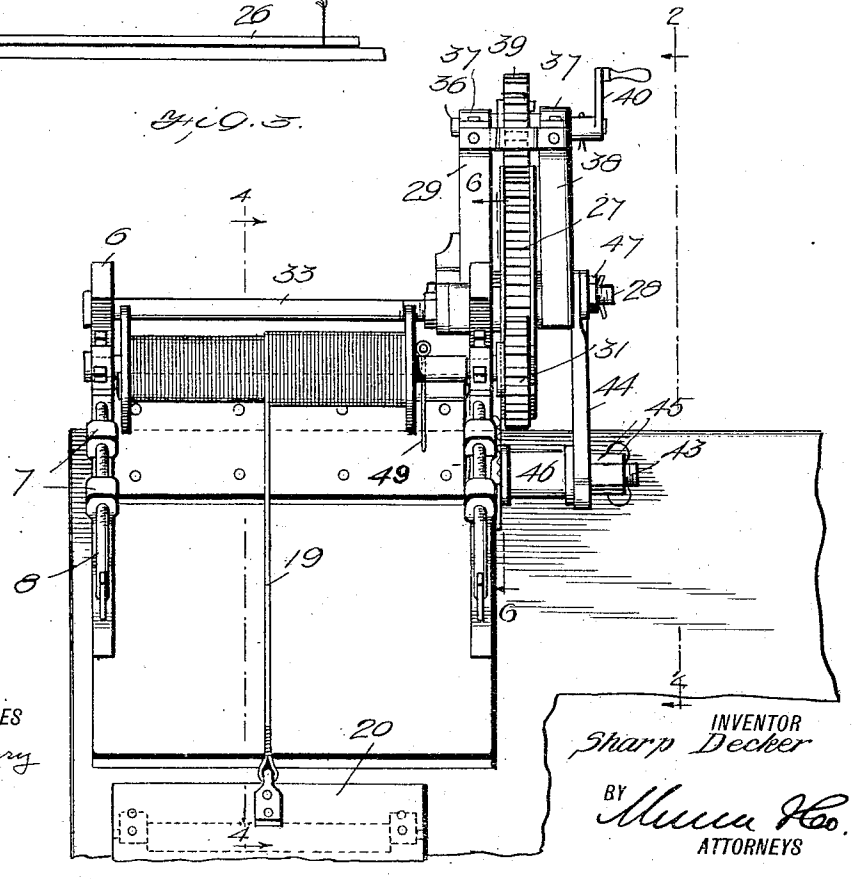


Fig. 3.



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 4.

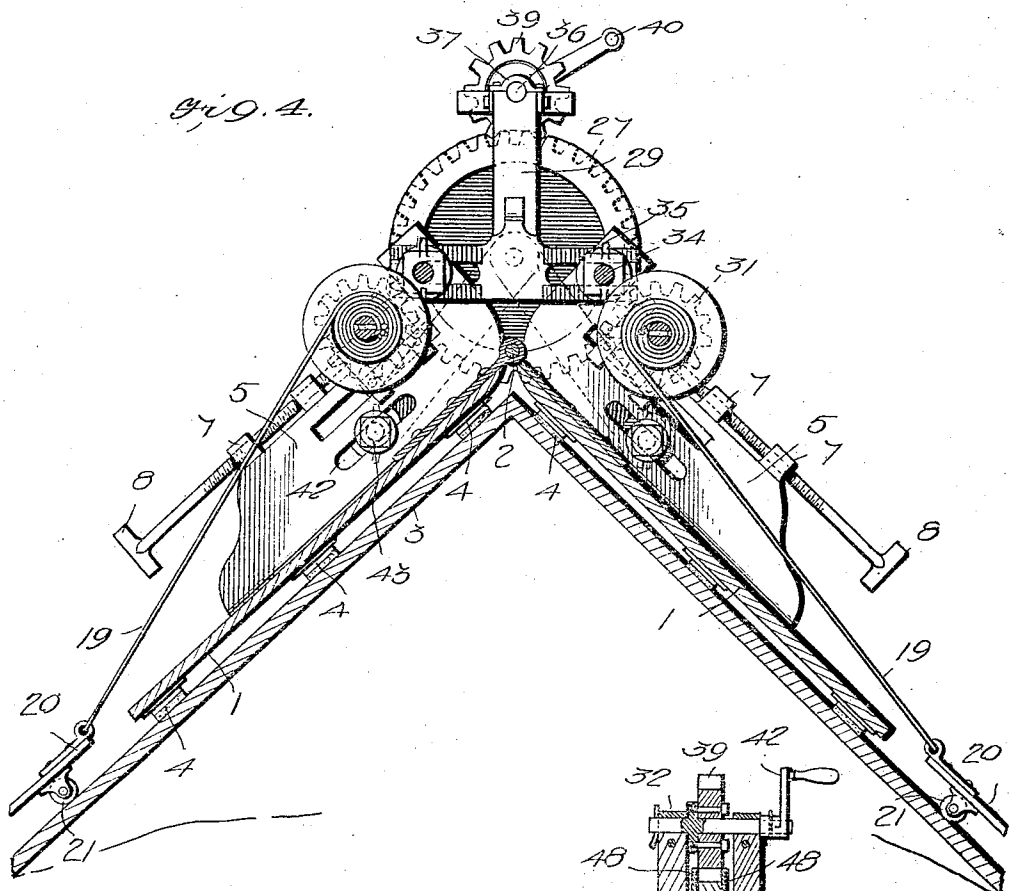
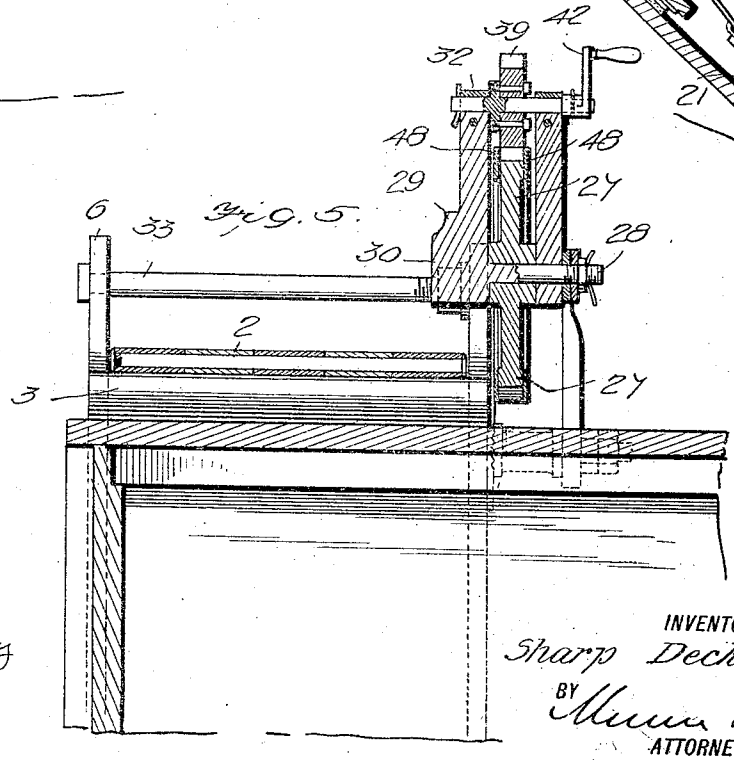


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 6.

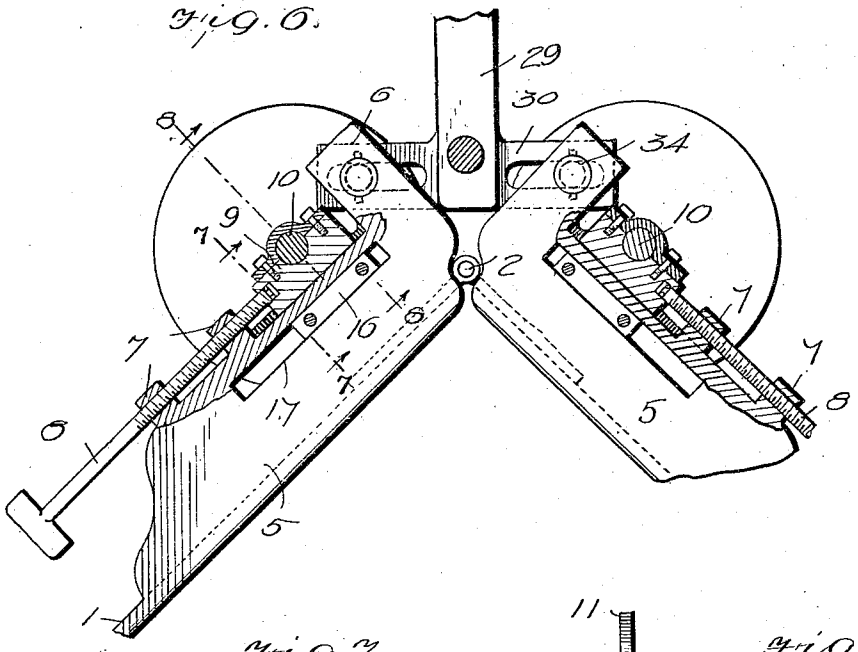


Fig. 7.

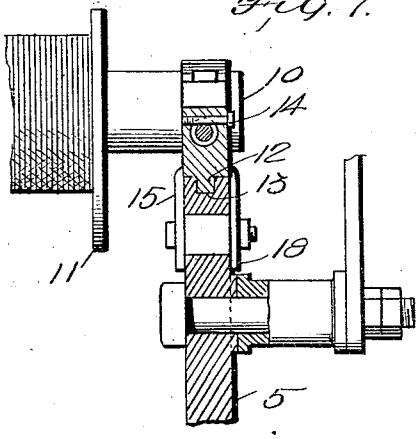


Fig. 8.

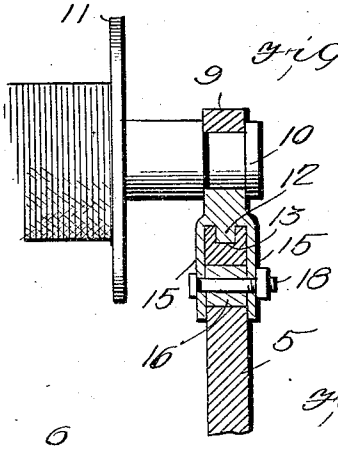


Fig. 10.

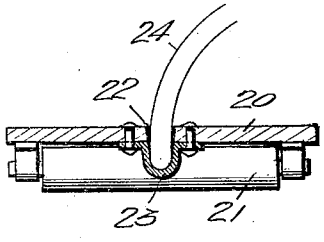
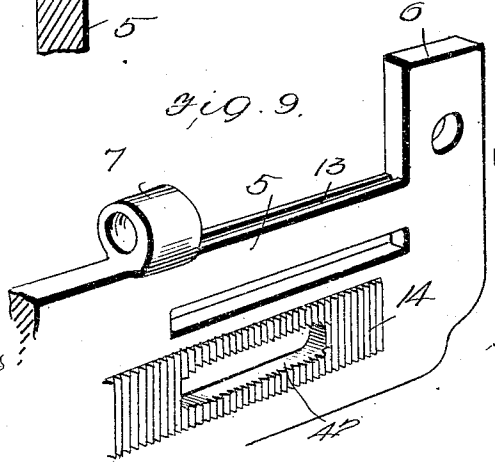


Fig. 9.



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UNITED STATES PATENT OFFICE.

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ROOF-JACK.

1,290,926. Specification of Letters Patent. Patented Jan. 14, 1919.

Application filed May 2, 1918. Serial No. 232,116.

To all whom it may concern:

Be it known that I, SHARP DECKER, a citizen of the United States, and a resident of Lovejoy, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Roof-Jacks, of which the following is a specification.

My invention is an improvement in roof jacks, and has for its object to provide a jack of the character specified especially adapted for swinging scaffolds, to be arranged upon the comb of the roof to support a swinging scaffold at the end of a building, wherein the jack is so arranged that it may be adjusted to a roof of any pitch, and wherein carriages are provided for engagement by the support of the scaffold, the said carriages being adjustable toward and from the jack.

In the drawings:

Figure 1 is a front view of the improved jack;

Figs. 2, 4 and 6 are sections on the lines 2—2, 4—4 and 6—6, respectively, of Fig. 3, each view looking in the direction of the arrows adjacent to the line;

Fig. 5 is a section on the line 5—5 of Fig. 1, looking in the direction of the arrows adjacent to the line;

Figs. 7 and 8 are sections on the lines 7—7 and 8—8 of Fig. 6, each view looking in the direction of the arrows adjacent the line;

Fig. 9 is a perspective view of one of the reel supporting plates detached; and

Fig. 10 is a section through one of the carriages.

In the present embodiment of the invention, a pair of plates 1 is provided, and the said plates are hinged together at one end, as indicated at 2, so that they may be placed at any desired angle with respect to each other. This hinge connection, as shown in Fig. 5, consists of a series of bearings, three on one plate and two on the other, which are adapted to be alined and to be engaged by a pintle pin, as shown.

These plates are adapted to rest upon the roof 3 at the comb thereof, with one plate on each side of the apex of the roof, and on their faces adjacent to the roof these plates have padded cross bars 4 which are adapted to engage the roof. The cross bars may be padded with any desired material, as, for instance, rubber or felt.

A pair of bracket plates 5 is secured to each plate 1 at the upper end thereof, and the said brackets of each plate 1 are at the opposite side edges of the said plate. Each of the brackets 5 is provided at the end adjacent to the other plate 1 with an upstanding lug 6, and near the opposite end with a pair of bearing lugs 7, each of which is internally threaded to receive a screw 8. A sectional bearing 9 is mounted to slide between the lugs 6 and the adjacent lug 7, and within the bearings of each plate 1 is journaled a shaft 10.

Each of the shafts 10 carries a reel 11 for a purpose to be presently described, and each of the said bearings has on its under side a central longitudinally extending rib 12, which is adapted to engage a groove 13 in the upper edge of the adjacent bracket plate 5. The screw 8 of each bracket plate 5 has a rotatable connection with the adjacent sectional bearing 9, as shown in Fig. 6, and it will be evident that by turning the screws in the proper direction the bearings and the shaft 10 may be adjusted toward and from the lugs 6.

The connection between each screw 8 and the sectional bearing is by way of an annular groove in the screw, as shown in Figs. 6 and 7, and a set screw 14 which engages the groove, the said set screw being threaded through the lower section of the bearing. By removing the set screw the screw 8 may be detached from the sectional bearing when desired. Each of the bearings 9 is provided with depending flanges 15 which depend upon opposite sides of the bracket plate 5, and these flanges are connected by a block 16, which is movable in a slot 17 extending longitudinally of the bracket plate. The blocks 16 are connected to the flanges by bolts and nuts 18, and it will be evident that the blocks 16 prevent disengagement of the bearings from the bracket plates.

Referring to Fig. 8, it will be noticed that the ends of the shaft 10 are annularly grooved, and that the sections of the bearing 9 engage within the groove to prevent longitudinal movement of the shaft in the bearings. With the construction above specified, it is obvious that the plates 1 may

be arranged upon a roof, one upon each side of the comb, regardless of the pitch of the roof, and that they will fit closely upon the roof, affording a perfect support for the swinging platform.

Flexible members 19 wind upon the respective reels, at one end of the said flexible members, and the opposite ends are connected with carriages 20 which are adapted to move upon the roof. Each of these carriages, as shown more particularly in Fig. 10, has rollers 21 at its ends, and at approximately the center of the carriage there is provided an opening 22 and below the opening a socket 23. The openings 22 and the sockets 23 are adapted for engagement by the hooks 24 on the block and tackle 25 which support the swinging scaffold 26. These hooks support the upper end of the tackle, the lower end being connected with the scaffold in the usual manner.

Referring to Fig. 4, it will be noted that the flexible members 19 wind upon the reels 11 in opposite directions, and a common means is provided for simultaneously rotating the reels. The said mechanism comprises a gear wheel 27 which is journaled on a stub shaft 28 extending laterally from a bracket 29 supported above the hinge connection of the plates 1. This gear wheel 27 meshes with pinions 31 on the shafts of the reels 11, and the gear wheel 27 is supported by a bracket 29—30 which is a T-shaped bracket, consisting of the cross member 30 and the vertical member 29, and the journal pin or stub shaft 28 is integral with the bracket.

It will be noticed by referring to Fig. 5 that the gear wheel 27 and the pinions 30 are at one side edge of the plate 1, being supported by the adjacent bracket plates 5. Bolts 33 connect the lugs of each pair of bracket plates 5, each bolt being passed through one lug 6 and having threaded engagement with the other. The horizontal portion 30 of the bracket 29—30 has its ends longitudinally slotted as shown in Fig. 6, and through these slots and through registering openings in the lugs 6 are passed bolts 34, the said bolts being engaged by nuts 35 to hold them in place. It will be obvious that when the nuts are tightly turned on the bolts the plates 1 will be held in adjusted position without possibility of further movement. When the nuts are released the plates may be adjusted. A driving shaft 36 is journaled in sectional bearings 37 in the upper end of the portion 29 of the bracket 29—30 and in the upper end of a bar 38, and this shaft is provided with a pinion 39 meshing with the gear wheel 27 and with a crank 40 for turning the drive shaft. It will be obvious that when the drive shaft is turned the gear wheel 27 will be driven, as will also the pinions 31 to operate the reels 11 to wind up the flexible members 19. Each of the plates 5 adjacent to the crank 40 is provided on its outer face with a series of teeth 41, and with a longitudinally extending slot 42 at the teeth. Each of these slots is engaged by a bolt 43, which connects a link 44 with the adjacent plate 5. These links are connected at one end to the bolts 43, and at the other to the shaft 28 upon which the gear wheel 27 is mounted. Each bolt is engaged by nuts 45, and a spacing sleeve or arbor 46 is arranged between each link and the plate to properly space the link from the plate. The inner end of each arbor has teeth to coöperate with the teeth of the plate. The upper ends of the links are held on the shaft 28 by a nut 47 which is locked by a cotter pin as shown.

In operation, the device is arranged as shown in Figs. 1, 2 and 4, the plates 1 being adjusted at such an angle with respect to each other that they will fit up over the comb of the roof, and they are then secured in adjusted position by means of the bolts 34. Before adjusting the plates 1 the reels 11 may be withdrawn from the gear wheel 27 if necessary to permit the adjustment, and after the adjustment has been made the reels 11 are moved toward the gear wheel by means of the screws 8 until the pinions 31 are in mesh with the gear wheel. The carriages 20, which have been moved to the proper position on the roof are now engaged by the hooks 24, and it will be obvious that the swinging scaffold may be raised or lowered, or may be moved from side to side, by shifting the carriages, the necessary compensation being obtained by the use of the block and tackle. When the crank 40 is turned the pinion 39 will rotate the gear wheel 27, and the gear wheels 31 will be rotated therewith in opposite directions.

Referring particularly to Fig. 5, it will be noted that housing rings 48 are arranged on the gear wheel 27, in such manner that the teeth of the gear wheel are housed at opposite sides.

The reel shaft, it will be noticed from an inspection of Fig. 3, has a diametrical opening, in which may be inserted a pin 49 to prevent rotation of the reel when desired. In using the device with the stage at the side of the house, instead of at the end, but one reel of each jack would be in use, and the rods might be inserted to prevent rotation of these reels. The nuts at the ends of the bolts 34 are wing nuts, as shown, for convenience in manipulation.

I claim:

1. A roof jack comprising a pair of plates hinged together at one end to fit upon the comb of a roof at opposite sides of the roof, a bracket plate at each side of each of the said plates, a bearing mounted to slide on each bracket plate, means for moving each

bearing, a shaft journaled in the bearings of each plate and carrying a reel, a flexible member winding upon each reel, a carriage for connection with a swinging scaffold connected with the outer end of each flexible member, and means supported by the bracket plates above the hinge connection of the first named plates for simultaneously rotating the reels, said means comprising a gear wheel, pinions on the reel shafts for meshing with the gear wheel, means for rotating the gear wheel, and a support for the gear wheel and the said rotating means adjustably connected with the bracket plates at the adjacent side edges of the first named plates.

2. A roof jack comprising a pair of plates hinged together at one end to fit upon the comb of a roof at opposite sides of the roof, a bracket plate at each side of each of the said plates, a bearing mounted to slide on each bracket plate, means for moving each bearing, a shaft journaled in the bearings of each plate and carrying a reel, a flexible member winding upon each reel, a carriage for connection with a swinging scaffold connected with the outer end of each flexible member, and means supported by the bracket plates above the hinge connection of the first named plates for simultaneously rotating the reels.

3. A roof jack comprising a pair of plates hinged together at one end to fit on opposite sides of the comb of a roof, a reel journaled on each plate and movable longitudinally thereof, means for moving each reel, a common driving means for the reels supported by the plates and adjustably connected therewith, said means including a gear wheel, pinions on the reels for meshing with the gear wheel, the reels being movable toward and from the gear wheel to compensate for change in the angle of the first named plates with respect to each other.

4. A roof jack comprising a pair of plates hinged together at one end to fit on the opposite sides of the comb of a roof, a reel journaled on each plate and movable longitudinally thereof, means for moving each reel, a common driving means for the reels supported by the plates and adjustably connected therewith, the reels being adjustable toward and from the driving means to compensate for changes in position of the plates with respect to each other.

5. A roof jack comprising a pair of plates hinged together at one end to fit on opposite sides of the comb of a roof, a reel journaled on each plate, and a common driving means for the reels supported by the plates and adjustably connected therewith.

6. A device of the character specified, comprising a pair of plates hinged together at one end, means for holding the plates in adjusted position with respect to each other, and reels on the plates for connection with flexible members for supporting a swinging scaffold.

SHARP DECKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."