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S. B. MINNICH.

TUBULAR TELESCOPING JACK OR PRESS.

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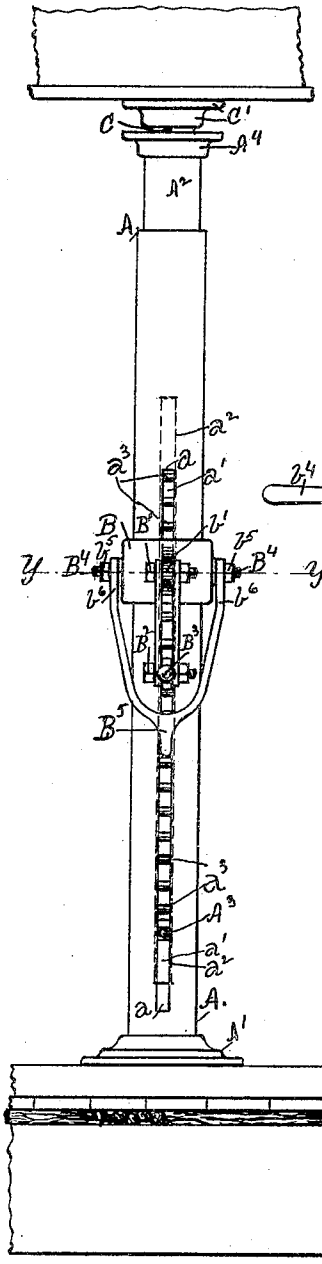


Fig. 1.

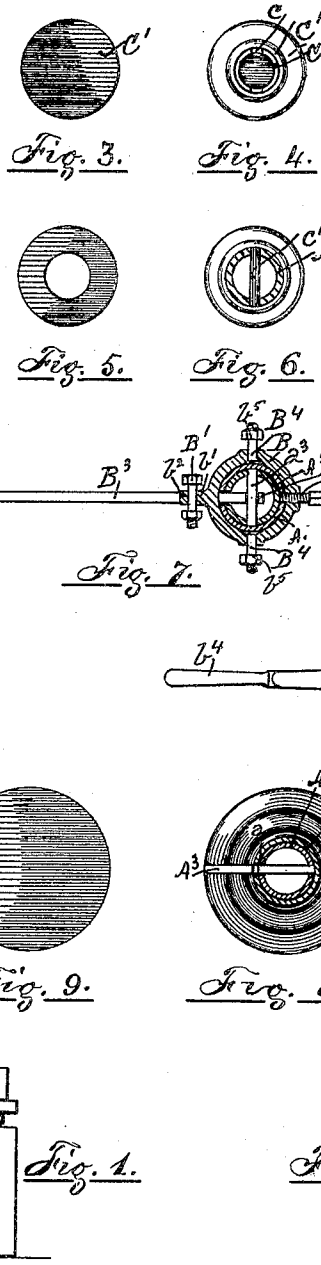


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 9.

Fig. 8.

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TUBULAR TELESCOPING JACK OR PRESS.

No. 820,983. Specification of Letters Patent. Patented May 22, 1906.

Application filed January 20, 1905. Serial No. 241,998.

To all whom it may concern:

Be it known that I, SIMON B. MINNICH, a citizen of the United States, residing at Landisville, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Tubular Telescoping Jacks or Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in a tubular telescoping jack or press of that class in which two tubes are made to telescope one within the other, the outer tube having its lower end rigidly secured into a base-plate upon which to stand and the inner or telescoping tube movable up and down within said former tube and having at its upper end a ring-flanged plate to engage against the under surface of a ceiling or joist when the jack is to be used as a press, with a lever and pawl provided, whereby the telescoping tube is raised or lowered.

The object of the invention is the construction of a jack or press to work between certain prescribed limits, being simple in construction, readily applied, and not liable to get out of order.

The elements of the invention will severally and at large appear in the following description, and they will be separately or combinedly set forth in the appended claims.

The purposes of the invention are attained by the mechanism, devices, and means illustrated in the accompanying drawings, with similar reference characters to designate like parts throughout the several views, in which—

Figure 1 is a front elevation of the jack in engagement above and below when used for pressing, showing a pawl and lever in position; Fig. 2, a longitudinal central vertical section of the same, but showing the lever-arm and suspending-links in full side elevation; Fig. 3, a top view of the upper cap or plate as it appears when removed from the ceiling; Fig. 4, an inverted view of the same cap or plate, showing an upper end extension-tube in place; Fig. 5, a top view of the ring-cap or flanged plate as it appears when removed from the upper end of the telescoping tube; Fig. 6, a cross-section of the telescoping tube, taken on the line $x\ x$ in Fig. 2, showing the pin for supporting the extension-tube in place; Fig. 7, a cross-section of the lever-arm and pawl-supporting collar, taken on the line $y\ y$ in Fig. 1, with the lever-arm-supporting links and the pawl removed; Fig. 8, a cross-section taken on the line $z\ z$ in Fig. 2, showing the telescoping-tube-lifting pin or rod in place; Fig. 9, an inverted plan of the base-plate as it appears when removed from the follower or press-board.

In the drawings, A designates the outside or supporting tube of the required dimensions, having its lower end rigidly secured in any approved manner into the top of an approved base-plate A′, which plate is adapted to be placed on top of a follower or press-board, (indicated by the numeral 1.) In one side of this tube is a vertically-disposed slot a of the required dimensions to be engaged by the lever-arm end, the hook of the depending pawl and the telescoping-tube-lifting pin in place. Inside of this tube is mounted to be moved up and down therein a second tube A^2 of the required dimensions, which is called in this description the "telescoping tube," having in its side a prescribed vertical slot a' of the required dimensions to register with the slot a of said former tube, but being made slightly wider than said slot a, as indicated by dotted lines a^2 in Fig. 1, allowing freedom of motion therethrough of the lever-arm end and the pawl-hook in performing their functions.

In a vertical plane perpendicular to the central vertical plane of said slot a are arranged a number of pins a^3, which have their extremities rigidly secured, as by riveting, into the opposite sides of said central tube, and being the required distance apart to be engaged by the inner end of said lever-arm and by the pawl-hook. (Best shown in Fig. 2.) With its forward end extending through said slot a and situated in its central vertical plane is a pin or rod A^3, which pin passing through the sides of said central tube is rigidly secured thereto in any approved manner, being adapted to keep the slots in vertical alinement and to raise or lower said inner tube when so desired, and the tube A^2 has at its upper end a ring cap or flanged plate A^4, with an orifice in the center thereof of equal diameter with the inside diameter of said tube A^2, while within the tube A and resting on the base-plate A′ is placed a pre-

scribed washer or disk of lead to constitute a cushion A^5 for the tube A^2 to impinge upon when it is suddenly dropped or lowered.

At the required height from the bottom of the tube A and surrounding the same is a prescribed collar B, rigidly secured in place by a set-screw *b*, which may have its inner end passing through the body of said tube, and on the side opposite the set-screw said collar is provided with a lug or ear *b'*, situated in the vertical plane of said slot *a*. Said lug *b'* is pierced by an orifice b^2, through which orifice a bolt B' serves to pivot thereto the upper ends of a pair of links or hangers, and between the lower ends of which links is pivoted, by a bolt B^2, a prescribed lever-arm B^3, so that its end b^3 will engage underneath the pins a^3 of the central tube to raise the tube the desired distance for the pawl to engage on said pins a^3, and the lever-arm has at its outer end a hand-grip or handle b^4 whereby to manipulate said lever-arm end b^3. Of course said lever-arm end b^3 has formed in its upper surface a transverse groove to be engaged by the under sides of the respective pins a^3 of the central tube, and the under side of said lever-arm end b^3 is made upwardly sloping, so that it may readily slide from over the top of a succeeding pin when the outer end b^4 is raised, thereby adapting said lever-arm end to pass underneath said succeeding pin to engage it. (Best shown in Fig. 2.) With their inner ends rigidly secured through the sides of the collar at right angles with the plane of the lever-arm are bolts B^4, with nuts b^5 on their threaded ends, onto which are journaled the upper ends of arms b^6 of the pawl-hook B^5, which hook, shaped as shown in Figs. 1 and 2, is adapted to pass through the slots *a* and *a'* of the tubes, with its upper edge slightly recessed to engage underneath the required pin a^3 of the central tube and its under edge slightly curved or sloped to readily pass over the upper side of the succeeding pin before engaging on the under side thereof. (Also best shown in Figs. 1 and 2.)

When so desired or required, said inner tube A^2 may be lengthened by having inserted therein through its top plate or ring-cap A^4 a tube C, provided at its upper end with a ring flange C', secured thereto in any approved manner and adapted to engage against a ceiling or joist, (indicated by the numeral 2,) and this latter tube C has in its opposite sides in line with the pins a^3 prescribed slots *c* to be engaged by a pin *c'*, with its extremities rigidly secured to the sides of the tube A^2, and through the oppositely-disposed side edges of the slots *c* are formed branch openings or recesses c^2 to be engaged by said pin *c'* by rotation of said latter tube C to extend or retreat said latter tube within the tube A^2. Of course said tube C may have its lower end closed, as indicated by dotted lines c^3 in Fig. 2, and when only one extension is required the slot with the side recesses may be omitted and the lower end of the tube placed on top of said pin *c'*.

The invention having thus been ascertained and described and the manner in which its functions are performed fully shown and set forth, what is considered new, and desired to be secured by Letters Patent, is—

1. The combination in a press with the tube A secured and having the base-plate A' and the vertical slot *a*, of the telescoping tube A^2 mounted therein and having the vertical slot *a'* with the series of pins a^3 rigidly secured into the opposite sides thereof, and the ring or flanged plate A^4 rigidly secured to its upper end, with the cushion A^5 placed within the tube A and on said base-plate A', with means provided to raise or lower said telescoping tube, all substantially as described and for the purpose hereinbefore set forth.

2. The combination in a press with the tube A and the telescoping tube A^2 mounted therein with the pins a^3 secured into the opposite sides thereof, said tubes having respectively the vertical slot *a* and the vertical slot *a'*, of the collar B rigidly secured to said first-meantioned tube, said collar having the lug or ear *b'* with the orifice b^2 and the bolt B' with the links or hangers having their upper ends pivoted on said bolt and their lower ends journaled to the sides of the lever-arm B^3, said lever-arm having its end b^3 notched above and upwardly sloped on its under side for the successive engagement with said pins a^3, substantially as described and for the purpose hereinbefore set forth.

3. In a press of the character described having the telescoping tubes A and A^2, said former tube having the slot *a* and said latter tube the slot *a'* with the pins a^3 all as shown, the combination with the collar B as described and rigidly secured to said tube A and having the bolts B^4 rigidly secured into the opposite sides thereof, of the pawl-hook B^5 having the upper ends of its arms b^6 journaled to said bolts B^4, said arms having at their lower ends the pawl-hook B^5 shaped as shown and engaging through said slots with its inner end to successively engage on said pins a^3, substantially as described and for the purpose hereinbefore set forth.

4. In a press of the character described having the tube A and the telescoping tube A^2, said former tube having the slot *a* and said telescoping tube having the slot *a'*, the combination with said latter tube of the pin or rod A^3 passing through the slots and rigidly secured thereto with its forward end extending through said slot *a* closely engaging the side edge thereof, substantially as described and for the purpose hereinbefore set forth.

5. The combination in a press of the character described having the tube A and the

telescoping tube A^2 with the flanged cap A^4 at the upper end thereof, and having the central orifice of equal diameter with the interior diameter of the tube A^2, and the pin c' rigidly secured into the opposite sides thereof, with said telescoping tube, of the extension-tube C with the ring flange C′ secured to the upper end thereof, said latter tube C situated within the telescoping tube and engaging on said pin c', substantially as described and for the purpose hereinbefore set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SIMON B. MINNICH.

Witnesses:
CHAS. E. LONG,
DANL. H. HERR.