

June 2, 1936.

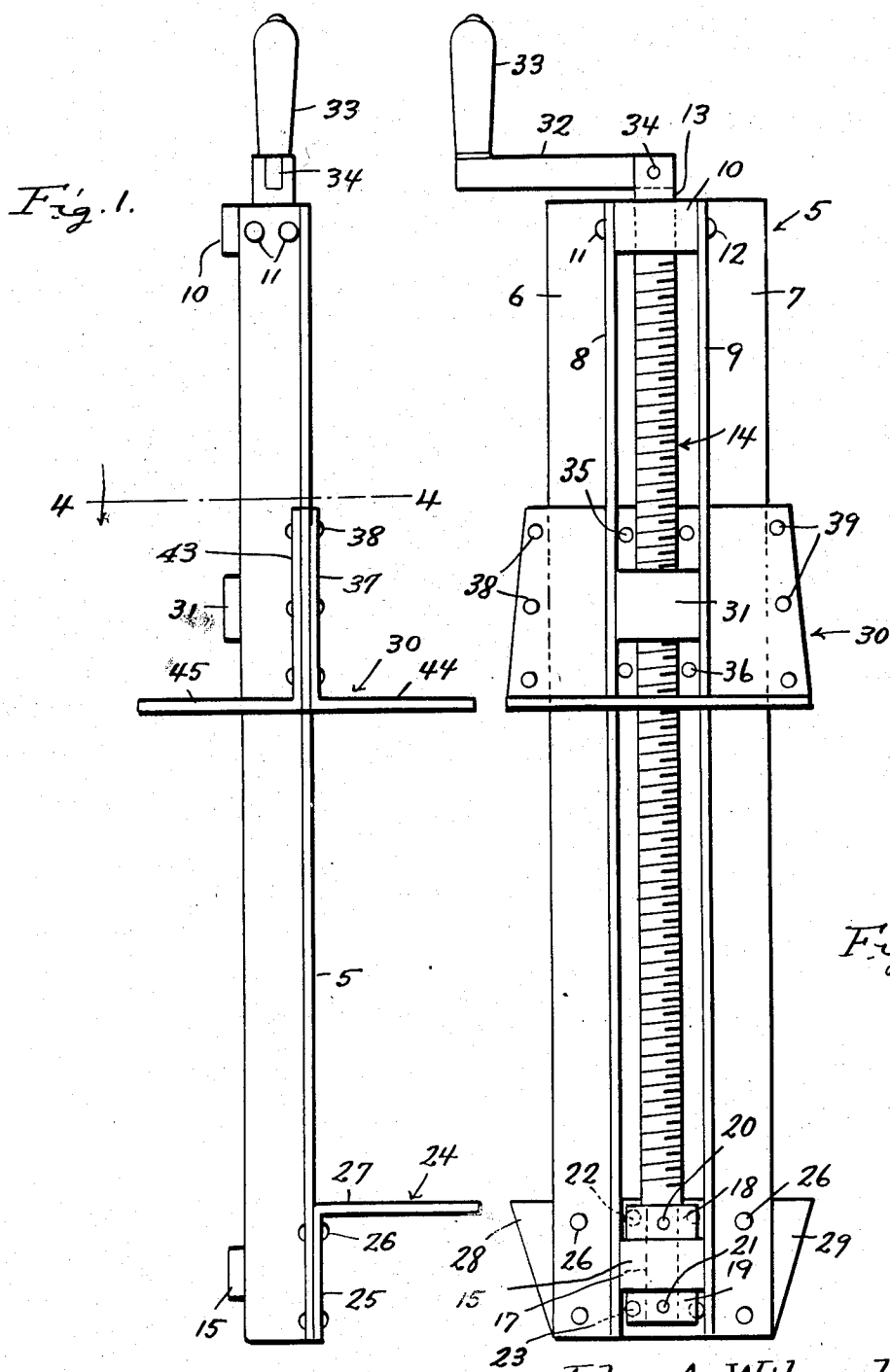
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2,043,140

EXPANDING AND CONTRACTING DEVICE

Filed March 28, 1935

2 Sheets-Sheet 1



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Fig. 3.

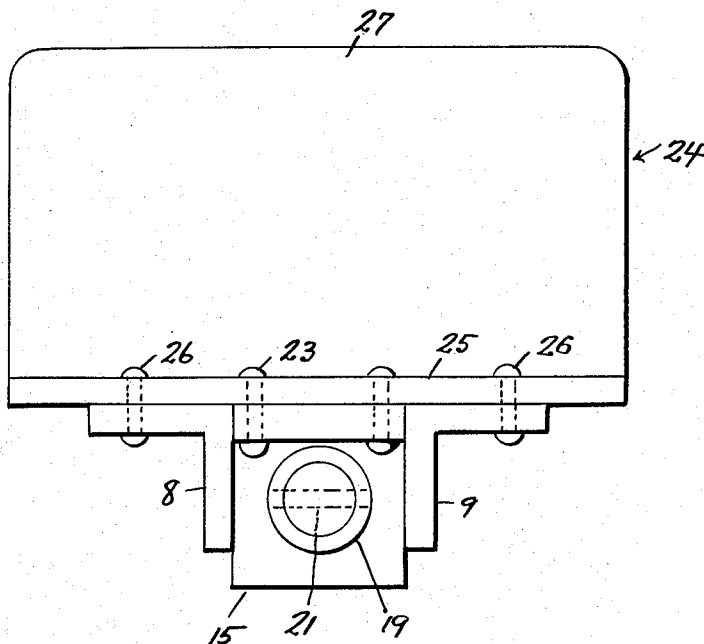
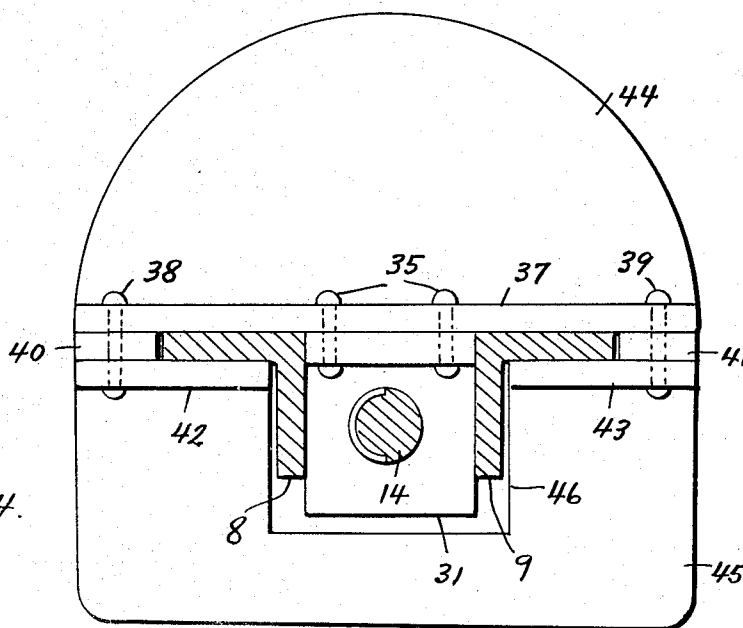


Fig. 4.



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UNITED STATES PATENT OFFICE

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EXPANDING AND CONTRACTING DEVICE

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Application March 28, 1935, Serial No. 13,509

1 Claim. (Cl. 254—100)

My invention relates generally to apparatus which is capable of being arranged relative to objects so as to be capable, when operated, to push or pull the objects toward or away from each other according to the arrangement of the apparatus relative thereto, and an important object of my invention is to provide a highly simplified and inexpensive apparatus of this type which is possessed of unusual mechanical efficiency and ruggedness, and is capable of being adapted, in principle, to different forms, such as lifting jacks, automobile tire rim expanders and contractors, and the like.

Another important object of my invention is to provide a device of the character indicated which can be easily and cheaply constructed of relatively inexpensive materials.

Other objects and advantages of my invention will be apparent from a reading of the following description in connection with the drawings, wherein for purposes of illustration I have shown a preferred embodiment of my invention.

In the drawings:—

Figure 1 is a general side elevational view of the embodiment.

Figure 2 is a front elevational view thereof, taken from the left of Figure 1.

Figure 3 is a bottom plan or end view of Figure 1.

Figure 4 is a horizontal sectional view taken through Figure 1 approximately on the line 4—4 and looking downwardly in the direction of the arrows.

Referring in detail to the drawings, the numeral 5 generally designates the frame or base of the device which may be suitably formed of two angle forms 6, 7, which will be made of suitable metal and arranged approximately parallelly spaced as indicated in Figures 2, 3 and 4. Between the parallel flanges 8 and 9 at one end thereof is the metal block 10 which is riveted to these flanges as indicated at 11 and 12, and this block has an unthreaded opening which forms a journal for the smooth part 13 of the screw 14 which is generally designated 14.

Between the opposite ends of the angle irons 6 and 7 is fastened a block 15 which has an opening forming a journal for the smooth part 17 of the screw 14.

Inner and outer collars 18 and 19, respectively, are keyed as indicated at 20 and 21 to the smooth part of the screw and on opposite sides of the block 17 whereby the screw 14 is held in place rotatably.

On the front side of the remaining flanges of

the angle irons 6 and 7 is attached the L-shaped support 24 which has the rectangular flange 25 riveted as indicated at 26 to the said remaining flanges and extending thereacross and therebetween so as to support the horizontal or right angular part 27 of the support inward of the corresponding end of the frame 5. The flange 25 has triangular extensions 28 and 29 which project outwardly of the outer edges of the said remaining flanges as clearly shown in Figure 2.

The block 15 is T-shaped in cross section and the rivets 22 pass through the upper arm of the head thereof and through the web of the flange 25, while the lower rivets 23 pass through the flange 25 and through the lower arm of the head. The standard portion of the block 15 has the smooth opening journaling the corresponding end of the screw 14. As shown in Figure 3 the horizontal flange 27 of the support 24 is generally rectangular in form.

The movable support which is generally designated 30 is mounted on another T-shaped block 31 in whose standard portion is a threaded opening corresponding in pitch of the threads thereof to the pitch of the threads of the screw 14 and receiving the screw 14 in such a way that when the screw 14 is rotated by means of the crank 32 and the handle 33 fastened to its upper end as indicated generally by the numeral 34, the support 30 will be moved toward or away from the support 24, according to the direction of rotation of the screw 14.

The opposite arms of the head of the T-shaped block 31 are riveted as indicated by the numerals 35, 36, respectively, to the web of the plate 37. Vertically spaced rivets 38 at one side and 39 at the opposite side pass through the side edges of the plate 37 through respective spacers 40 and 41 a little thicker than the gauge of the remaining flanges of the angle irons 6 and 7 and through guide plates 42 and 43 which bear against the front face of the said remaining flanges, as clearly shown in Figure 4. The spacers 40 and 41 are of such a width that they give ample clearance but act as guides in bearing arrangement to the edges of the said remaining flanges, and the inner edges of the guide plates 42 and 43 provide ample clearance from but are arranged to come into bearing relation with the sides of the flanges 8 and 9 of the angle irons, thereby preserving the free sliding relation of the support 30 on the frame 5 while at the same time providing for adequate guidance thereof.

It will be observed that the horizontal flange 44 is semi-circular in plan as indicated in Figure

4, while the rearwardly extending flange 45 is generally rectangular in form and provided with a rectangular opening 46 in which the flanges 8 and 9 and the block 31 work. It is obvious that the flange 44 cooperates opposite the flange 27 of the support 24, while the flange 45 extending from the plates 43 and 42 and connecting the same provides for engaging an object at the side of the frame opposite the flange 27, so that objects in different planes may be worked upon.

Although I have shown and described herein a preferred embodiment of my invention, it is to be definitely understood that I do not desire to limit the application of the invention thereto, and any change or changes may be made in the materials, and in the structure and arrangement of the parts, within the spirit of the invention and the scope of the subjoined claim.

What is claimed is:—

20 An apparatus of the class described comprising a frame composed of spaced parallel members

L-shaped in vertical cross section, a block secured adjacent one end of the frame between said members to the opposed flat sides thereof, said block having a longitudinal bore therein, a similar block secured to the frame in the same manner inwardly of the other end of the frame and being provided with a longitudinal bore therein, a screw having unthreaded portions journaled in said bores of said blocks, a handle on said screw, an internally threaded T-shaped block threaded on said screw and slidable between said members, an L-shaped support having one leg secured to the cross member of the T-shaped block and being slidable on the outer surfaces of one of the legs of the L-shaped members, a second L-shaped support slidable on the opposite surfaces of the aforementioned leg, said L-shaped supports extending beyond the free ends of the frame members and spacer members disposed between and secured to said support.

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