June 2, 1936. J. A. WILMESHERR 2,043,141

EXPANDING DEVICE

Filed May 13, 1935 2 Sheets-Sheet 1

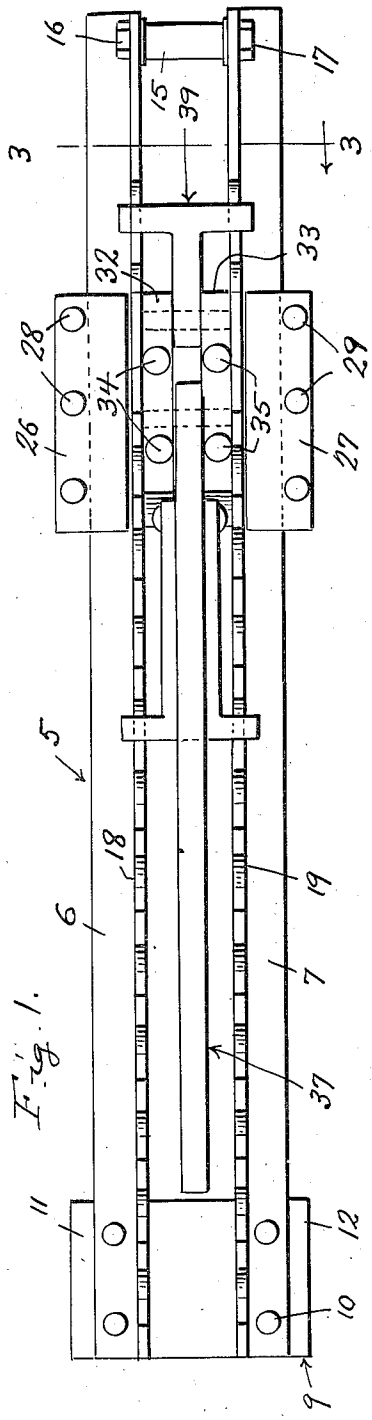


Fig. 1.

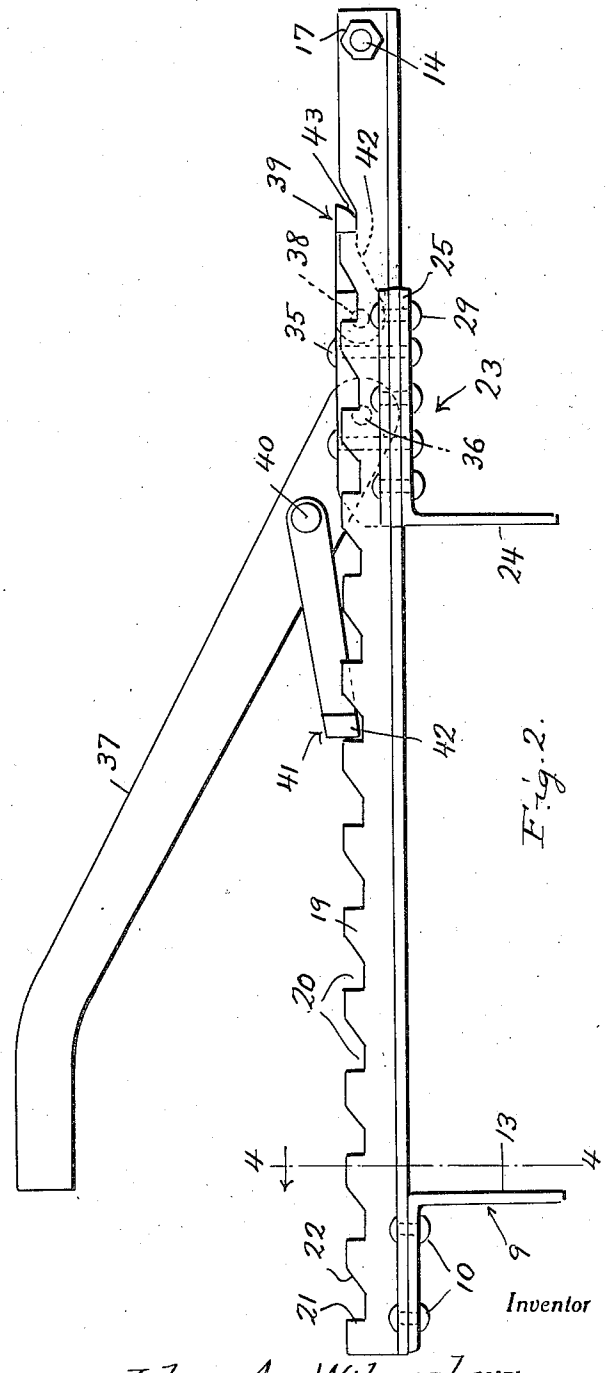


Fig. 2.

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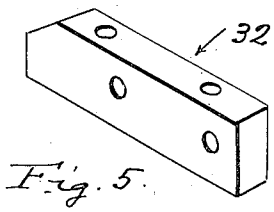


Fig. 5.

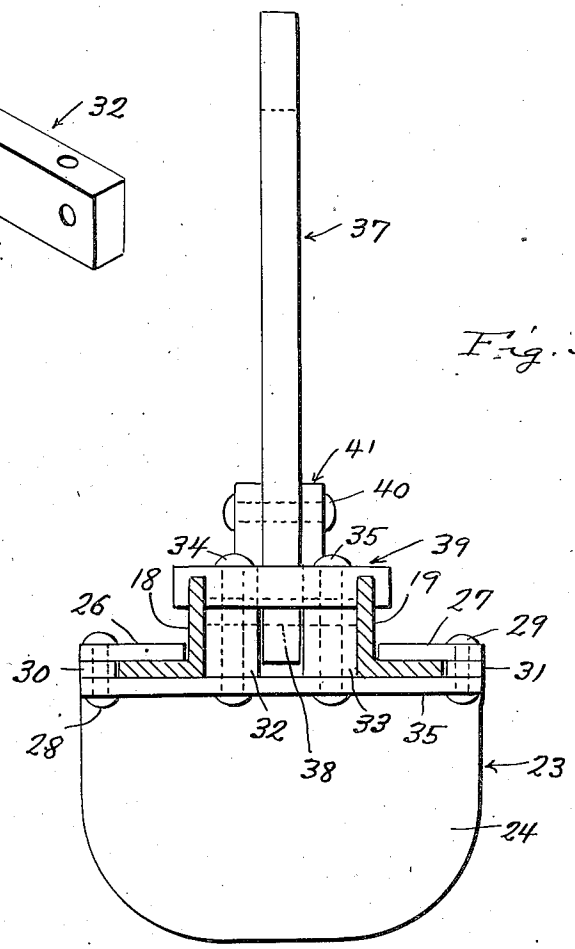
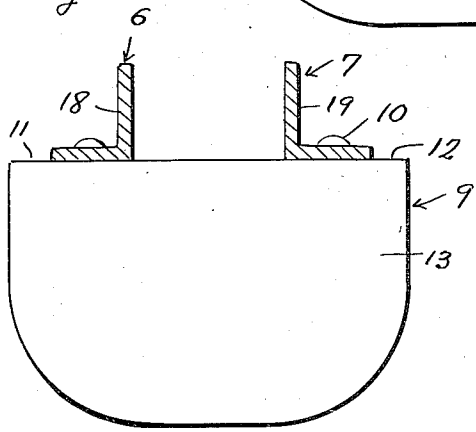


Fig. 3.

Fig. 4.



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2,043,141

UNITED STATES PATENT OFFICE

2,043,141

EXPANDING DEVICE

John A. Wilmesherr, Cuba, Mo.

Application May 13, 1935, Serial No. 21,257

1 Claim. (Cl. 254—108)

My invention relates generally to apparatus adapted to be arranged relative to two or more spaced objects and operated for pushing the objects away from each other or toward each other, and an important object of the invention is to provide a structurally and functionally efficient device of this character which is unusually simple and rugged.

Another important object of the invention is to provide a device of the character indicated above which can be relatively cheaply made up of fabricated steel and the like material.

Other important objects 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 the invention.

In the drawings:—

Figure 1 is a top plan view of the embodiment.

Figure 2 is a side elevational view.

Figure 3 is a transverse vertical sectional view taken through Figure 1 approximately on the line 3—3 and looking toward the left in the direction of the arrow.

Figure 4 is a transverse vertical sectional view taken through Figure 2 and looking toward the left in the direction of the arrow.

Figure 5 is a perspective view of one of the two handle mounting blocks.

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 irons 6 and 7 which are parallelly spaced as indicated in Figures 1, 3 and 4, generally similar to the frame used in the device which is the subject matter of my co-pending application Serial No. 13,509, filed March 28, 1935, for "Expanding and contracting device".

Attached to the horizontal flanges at the left hand end of the angle forms 6 and 7 is an L-shaped plate 9 which is riveted as indicated at 10 and extends outwardly of the outer edges of the horizontal flanges as indicated by the numerals 11 and 12. The depending part of the L-shaped plate forms the member to engage the interior of one side of the tire rim or the like which is to be expanded. The shape of the depending part 13 of the stationary member 9 is clearly shown in Figure 4.

The opposite end of the frame has the side members 6 and 7 thereof separated and connected by means of a bolt 14 on which is a spacer sleeve 15, the opposite ends of the bolt being engaged by fastening nuts 16 and 17 which engage the outer side of the vertical flanges of the side members 6 and 7, as clearly shown in Figure 1.

The upper edges of the vertical flanges 18 and 19 are provided with notches 20 which have a right angular shoulder 21 and an acutely angulated shoulder 22.

The sliding member which is generally designated 23 has the depending flange 24 to engage the inner side of the tire rim or the like opposite the depending flange 13, and has a shape similar to the flange 13 as clearly indicated in Figure 3.

The depending flange 24 is formed on the inner edge of the slide plate 25 which slides against the lower sides of the side members 6 and 7 toward and away from the stationary work engaging member 9.

Holding the plate 25 slidably in place are the opposite retainer plates 26 and 27 which slide on the upper surface of the horizontal flanges of the side members and are connected to the opposite edges of the plate 25 outwardly of the laterally outward edges of the side members 6 and 7 by means of rivets 28 and 29 which pass through spacer strips 30 and 31 which are slidably engaged with the laterally outward edges of the horizontal flanges of the side members in the manner clearly indicated in Figure 3. By these arrangements the slidable member 23 is securely and slidably mounted on the frame of the device.

Mounted on the top of the plate 25 within and slidably engaged with the laterally inward sides of the vertical flanges 18 and 19 are the mounting blocks 32 and 33 which have the form shown in Figure 5 and are fastened in transversely spaced positions by the respective rivets 34 and 35. The left hand part of the mounting blocks are traversed by a pin 36 on which the handle generally designated 37 is pivotally mounted between the blocks 32 and 33; while a second pin 38 traversing the right hand portion of these blocks pivots the retaining dog which is generally designated 39 in the positions shown particularly well in Figures 1 and 3.

The handle 37 is of a suitable length and thickness to enable the exertion of the required force.

Pivoted on the pin 40 traversing the handle 37 near its pivoted end, are the legs of the operating dog 41 on opposite sides of the handle. The operating dog 41 is generally T-shaped and its head 42 is polygonal in cross section and so shaped as to have its arms normally lying along the upper edges or in the notches 20 of the vertical flanges 18 and 19.

The retaining dog 39 is T-shaped in plan as shown in Figure 1, but has its underside curvedly

tapered as indicated by numeral **42** and the right hand side of its head portion curved as indicated at **43** to facilitate sliding of the retaining dog out of the notches **20** when the slide **23** is moved in a right hand direction. The squared rear face on the arms of the head of the retaining dog **39** engage the right angular shoulder **21** of the notches to hold the slide **23** against moving in a left hand direction after the tire rim or the like has been expanded to the desired degree.

The device of the invention is operated by first disengaging the dogs from the notches in the frame and then positioning the slide **23** at the desired distance from the stationary member **9**, so as to approximately engage both the stationary member **9** and the slide **23** with the opposed interior surfaces of the tire rim or the like, and then to reengage the dogs with the notches in the frame with the handle **37** in an elevated condition and then to depress the handle **37** in left a hand swinging direction, so as to cause the operating dog **41** to engage the corresponding notches **20** in a manner to push the slide **23** toward the right and expand the tire rim or the like.

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. It is obvious, for instance that a reversal of the positioning of the notches and of the handle would convert the device of the invention into a contracting rather than an expanding device for exterior application to the work instead of interior application.

What is claimed is:—

A device of the class described comprising a frame including upstanding spaced longitudinally extending members provided with spaced longitudinal notches therein, a laterally extending stationary work engaging member secured to said frame, an L-shaped movable work engaging member one leg portion of such member being slidable against said frame, a pair of spaced blocks secured to the aforementioned leg portion of the L-shaped movable work engaging member and extending between the longitudinal members of the frame, a handle pivotally mounted between said blocks, an operating dog pivoted to said handle and normally engaging the longitudinal notches on the frame member, said handle being swingable to operatively engage said operating dog with said notches and thereby move said movable member longitudinally relative to said stationary member, and a retaining dog pivoted between said blocks and normally engaging said notches to hold the position of the L-shaped movable member.

JOHN A. WILMESHERR.