

June 6, 1950

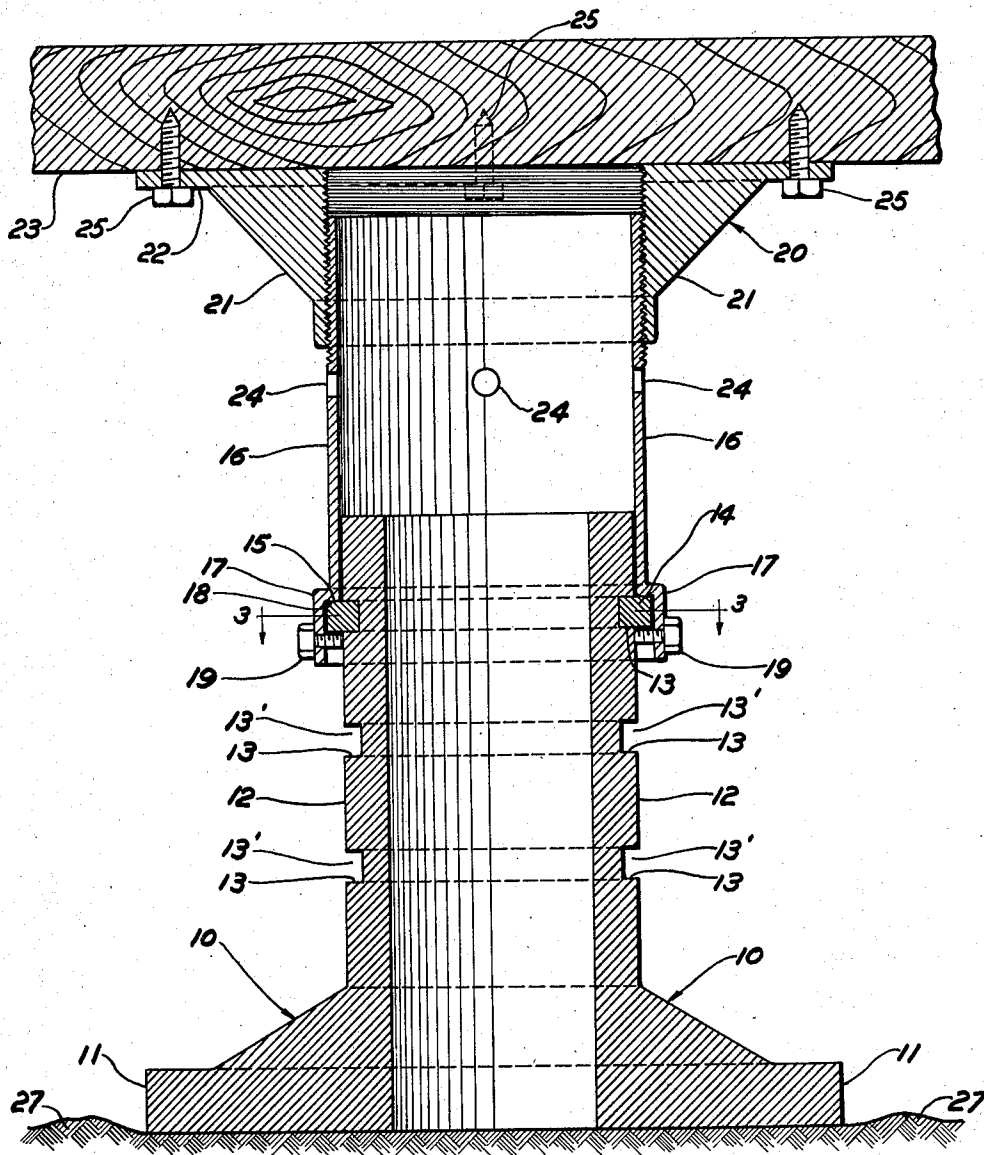
N. S. BLACK  
ADJUSTABLE BUILDING PIER

2,510,328

Filed June 28, 1945

2 Sheets-Sheet 1

*Fig. 1*



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June 6, 1950

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*Fig. 2*

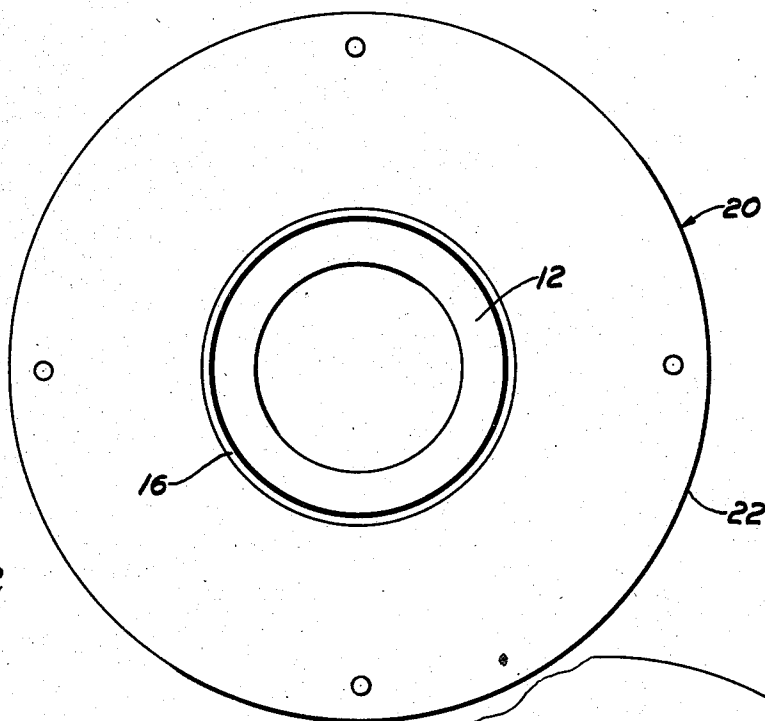


*Fig. 3*

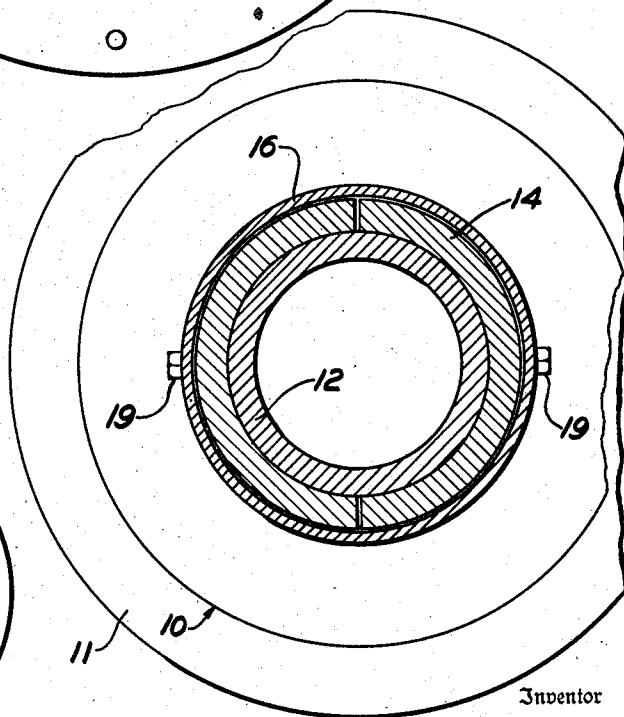
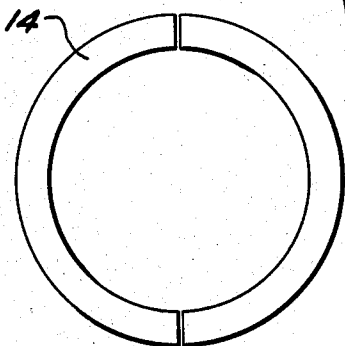


*Fig. 4*

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## UNITED STATES PATENT OFFICE

2,510,328

## ADJUSTABLE BUILDING PIER

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Application June 28, 1945, Serial No. 602,016

6 Claims. (Cl. 254—98)

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This invention relates generally to building piers and more particularly to adjustable supports for buildings.

In the past, adjustable shoring or supports have been provided for leveling buildings at the time of their construction and for releveling where shifting or sinking of the earth causes a building to settle with accompanying danger of the building walls cracking and door and window frames warping. One known type of adjustable building support includes a number of radially spaced, individually operable adjustment screws by means of which an axially movable supporting tube mounted thereon may be moved vertically. This support is not only objectionable because of the large number of parts it comprises but, in addition, the several individually adjustable screws are not easily properly adjustable with the result that the supporting tube may be canted setting up undesirable frictional forces, stresses and strains. Another type of adjustable building support is vertically adjusted by a single adjustment nut but, this type of support is not entirely satisfactory since the entire upper, vertically movable structure is supported on a wedge-like vertically adjustable key having by reason of the particular structure and arrangement of parts, an undesirably relatively small supporting surface for the large upper structure. Furthermore, because of the heavy loads on these supports, the wedge-like key would jam with the part seating thereon making it difficult to remove the key for additional vertical adjustment thereof. In addition, this type of support entails a large number of parts with corresponding manufacturing expense.

Accordingly, it is one of the objects of the present invention to provide for buildings, a new and improved adjustable support of simplified and low cost construction.

Another object of the invention is to provide a new and improved adjustable support which may be readily positioned beneath a building and quickly adjusted to level the building.

A further object of the invention resides in the relative arrangement of the parts of the adjustable support in the provision of a practical, efficient and inexpensive device.

Other objects of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings in which:

Figure 1 is a view in vertical central section of my improved adjustable building support;

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Figure 2 is a plan view of the adjustable support;

Figure 3 is a cross sectional view of the support taken along the line 3—3 of Figure 1; and,

5 Figure 4 is a view of a part of the support shown removed therefrom.

Referring to the drawings by characters of reference, the adjustable support includes a base 10, which, as shown, may be a metallic casting or the base may be formed of concrete or any other suitable material. Preferably, the base 10 includes a lower and suitably large outturned flange 11 to provide an adequate seating surface to rest on the ground and extending upwardly 15 and centrally from the base flange 11 there is an integral, cylindrical or tubular base portion 12. In the side wall of the tubular base portion 12 is provided a plurality of vertically spaced steps having upwardly facing seating surfaces 13 20 formed by external annular grooves 13' in the outer wall surface of the tubular portion 12.

A supporting or bearing member 14, preferably a two part split ring, surrounds or encircles the tubular base portion 12 and may be positioned 25 in any one of the grooves 13' for support on the base at a desired height. The ring 14 has an outer edge or border portion extending outwardly from the outer wall surface of the tubular portion 12 providing an upwardly facing seat and large annular bearing surface 15 for an intermediate supporting and adjustment member 16 which is 30 rotatable thereon. Preferably, the intermediate supporting member 16 is in the form of an open-ended tube having an internal diameter large enough so that the tube will fit over the upper end of the tubular base portion 12 with sufficient 35 clearance so as to be freely rotatable relative thereto. The supporting member 16 is provided with a lower end portion 17 of enlarged diameter to obtain an internal, downwardly facing annular seat or shoulder 18 for seating on the upwardly facing seat 15 of the ring 14. Below the ring 40 14, the side wall of the tubular member 16 is provided with a pair of diametrically opposed threaded apertures to receive screws 19 which extend below and adjacent the underside of the ring 14 to serve as stops to limit upward movement of the tubular member 16.

An upper supporting member 20, carried by 45 and mounted on the upper end of the intermediate supporting member 16, comprises a hollow boss or tubular portion 21 having an upper outturned continuous flange 22 to provide a seating surface for stringers 23 of the floor structure 50 of the building. The boss 21 is preferably in-

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ternally threaded to receive an externally threaded upper end portion of the intermediate tubular member 16 which, upon rotation in one direction, causes the upper supporting member 16 to be moved bodily and vertically upward. Pairs of diametrically aligned holes 24 may be provided in the side wall of the tubular member 16 to receive a suitable tool (not shown), such as a metallic rod, by which the tubular member 16 may be easily rotated. In the flange 22 of the upper support 20, apertures are provided to receive screws 25 for securing the support to the wooden stringers 23 of a building.

In using the above described adjustable support, the base 10 may be positioned or set on a roughly leveled area of the ground with the split ring 14 in the desired groove of the base for rough or approximate height adjustment and with the rotatable adjustment tube 16 seating thereon. Then with the use of a suitable tool, such as a steel rod insertable in the aligned apertures 24 of the tubular adjustment member 16, the tubular adjustment member is rotated until the upper surface of the upper support 20 is brought up against the underside of the floor stringers 23. During this operation, vertical movement of the adjustment tube 16 is prevented by the stop screws 19 engaging the underside of the ring member 14 so that upward lineal movement only is imparted to the upper support 20. With the upper surface of the upper support 20 in contact with the building stringer 23, the screws 25 are applied to secure the upper support to the building, thus holding this part against rotation. By means of the bar or other suitable tool, the tubular adjustment member 16 is further rotated in a direction to impart upward movement to the upper support 20, thus to raise the building at this point. There will, of course, usually be several of these adjustable supports for a building and when necessary, each or all of them may be adjusted, as required, to level the building and thus prevent cracked building walls, etc.

From the foregoing description it will be seen that I have provided for buildings, an adjustable support of simplified, inexpensive construction and one which is easy to apply and operate. The simplicity of construction, it will be seen, is due partly to the arrangement of the parts whereby the ring serves not only as a vertically adjustable seat for the upper movable structure but in addition also serves to support directly as a bearing the entire upper structure of the device on a large, continuous supporting surface and further, cooperates with the stop screws to restrain upward movement of the tubular adjustment member. Vertical lineal movement of the upper supporting member 20 will result from rotation of the tubular adjustment member 16 because of the stop screws 19 engaging the underside of the split ring 14, restraining or limiting upward movement or movement other than rotative movement of the adjustment member 16.

I claim:

1. In an adjustable building support, a base having an upwardly extending wall portion provided with a plurality of vertically spaced steps, a movable supporting member selectively positioned on one of the steps of the base portion, a rotatable member seating on the supporting member, an upper supporting member carried by the rotatable member and having a seating surface for the building, cooperable means on the upper supporting member and on the rotatable supporting member imparting vertical movement to the

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upper supporting member upon rotation of the rotatable member, and stop means carried by the rotatable member for engaging the movable supporting member to restrain other than rotative movement of the rotatable member.

2. In an adjustable building support, a base having an upwardly extending portion provided with vertically spaced steps, a seat member positioned on a selected step of the upwardly extending portion of the base, an intermediate supporting member telescoping with the upwardly extending portion of the base and rotatable relative thereto, the intermediate supporting member having a downwardly facing seating surface resting on the seat member, an upper supporting member providing a seating surface for the building, the upper supporting member being supported by the intermediate supporting member, means on the upper supporting member and on the intermediate supporting member cooperably moving the upper supporting member vertically upon rotation of the intermediate supporting member, and stop means restraining vertical movement of the intermediate supporting member.

3. In an adjustable building support, a base having an upwardly extending cylindrical portion and having vertically spaced annular grooves in the outer wall surfaces thereof, a rotatable tubular member telescoping with the cylindrical portion, the tubular member having a downwardly facing seating surface, an upper supporting member carried by the rotatable tubular member, means for vertically adjusting the upper supporting member relative to the rotatable tubular member upon rotation of the tubular member, and a split ring interposed between the downwardly facing seating surface of the rotatable tubular member and a selected groove of the upwardly extending cylindrical portion.

4. In an adjustable building support, a base having an upstanding cylindrical portion provided with a plurality of vertically spaced annular grooves in the outer wall thereof, a rotatable tubular member fitting over the cylindrical portion and having a downwardly facing seat, a split ring selectively positioned in one of the grooves, the ring having an outer border portion extending outwardly from the outer wall surface of the cylindrical portion to provide an abutment on which the downwardly facing seat of the rotatable tubular member rests, an upper supporting member mounted on the rotatable tubular member, means for vertically moving the upper supporting member relative to and by rotation of the rotatable tubular member, and retainer means carried by the rotatable tubular member and engageable with the ring to limit relative vertical movement between the rotatable tubular member and the base.

5. In an adjustable building support, a base having an upstanding cylindrical portion provided with vertically spaced grooves in the outer wall surface thereof, a split ring selectively positioned in one of the grooves of the cylindrical portion, the split ring having an outer border portion projecting from the outer surface of the cylindrical portion to provide a seating surface, an open ended rotatable tubular member fitting over the cylindrical portion of the base, the tubular member having an enlarged lower end portion providing an internal downwardly facing seating surface resting on the outer border portion of the split ring, the tubular member having an upper threaded end portion, and an upper

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supporting member providing a seating surface for a building and screw threaded for cooperation with the upper threaded end portion of the tubular member.

6. In an adjustable support for buildings, a base having a plurality of vertically spaced seating surfaces, an intermediate supporting member rotatable relative to the base, an upper supporting member carried by the intermediate supporting member, means associated with the intermediate supporting member and with the upper supporting member cooperably moving the upper supporting member vertically upon rotation of the intermediate supporting member, a height adjustment member seating directly on one of the vertically spaced seating surfaces and providing a bearing surface for directly supporting the intermediate supporting member, and stop means carried by the intermediate supporting

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member and engaging the height adjustment member to restrain vertical movement of the intermediate supporting member.

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#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

| Number    | Name               | Date          |
|-----------|--------------------|---------------|
| 1,819,173 | Hunley et al. .... | Aug. 18, 1931 |
| 1,848,476 | Hall .....         | Mar. 8, 1932  |
| 2,294,745 | Goetz .....        | Sept. 1, 1942 |

#### FOREIGN PATENTS

| Number  | Country       | Date          |
|---------|---------------|---------------|
| 44,806  | Austria ..... | Nov. 10, 1910 |
| 347,010 | France .....  | Feb. 20, 1905 |