

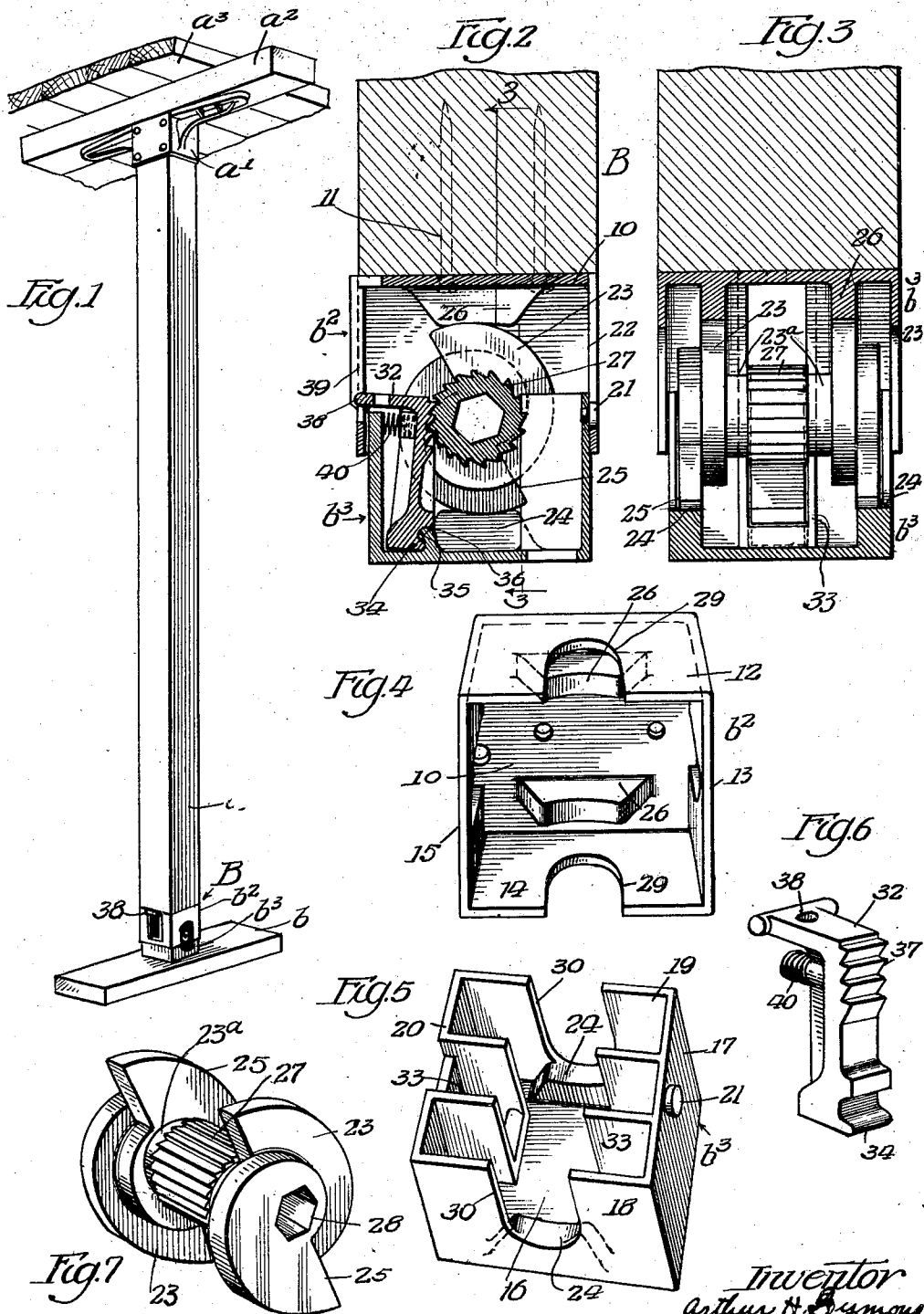
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ADJUSTING DEVICE

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UNITED STATES PATENT OFFICE

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ADJUSTING DEVICE

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The invention relates to adjusting devices which are more particularly adapted for shores used in the erection of buildings.

The objects of the invention are to provide, 5 an improved device which is adapted to be secured to the lower end of the shore and comprises a readily operable and adjustable cam for shifting the shore to its desired position; an adjusting device which consists of 10 a compact structure enclosed in a casing adapted to be secured to the lower end of the shore; an adjusting device which is adapted to be attached to the lower end of the shore so that it may be unitarily handled in stor- 15 ing and setting up; and a shore adjusting device which is simple in construction, can be produced at a low cost, and is efficient in operation.

The invention consists in the several novel 20 features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawing: Fig. 1 is a perspective, illustrating the invention in use. Fig. 2 is a 25 vertical section of the adjusting device. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is a perspective of the upper section of the casing of the adjusting device. Fig. 5 is a perspective of the lower section. Fig. 30 6 is a perspective of the dog or detent for locking the cam against reverse rotation. Fig. 7 is a perspective of the combined cam and ratchet unit.

The invention is exemplified with a shore 35 a provided at its top with a T-head a' , to which is secured a bar a^2 . The load to be carried by the shore is exemplified by boards a^3 of a form for a concrete floor or other structure, which is to be temporarily sup- 40 ported. In practice, it is desirable that the shore be adjustable vertically to support the floor or structure in its correct position, and for this purpose, an adjusting device B is interposed between the usual supporting bar 45 b which rests on a floor or other support and the lower end of the shore.

The improved adjusting device comprises a casing or box composed of a box-like upper section b^2 and a lower box-like section b^3 50 which are telescopically connected. The up-

per section comprises a top wall 10 which is substantially rectangular and fits against the lower end of the shore a , being provided with holes for nails 11 to attach the section to the shore. Section b^2 also comprises four 55 depending side walls 12, 13, 14 and 15 which are integrally formed with the top wall 10. The section b^3 comprises a bottom wall 16 and side walls 17, 18, 19 and 20 integrally formed therewith, and formed to slide into 60 the upper section. To hold the casing sections in connected relation, more particularly when the shore is not in use, the head of a screw 21, secured in the wall 17, rides in a vertical slot 22 formed with the wall 13 of 65 the upper section, the lower end of the slot serving as a stop to limit the separation of the sections. The device for relatively adjusting the sections to adjust the shore comprises a pair of similar cams 23 adapted to 70 bear against curved seats or abutments 24 integrally formed with the lower casing section and a pair of cams 25 which are adapted to engage curved seats or abutments 26 which depend from, and are integrally formed 75 with, wall 10 of the upper casing section. All of these cams are integrally formed so they will be unitarily rotatable. The cams 23 and 25 are oppositely arranged, so that they will act compoundly to relatively shift 80 the sections. This operation of the cams makes it possible to quickly and relatively adjust the casing sections to effect the maximum movement in approximately a half revolution of the cam structure. This, in prac- 85 tice, has been found to provide the desired leverage and to make it possible to effect the adjustment more quickly than is possible with a screw action. Walls 33 are integrally formed and extend inwardly from the walls 90 17 and 20 of the lower casing section so their inner ends will confine the hub portions 23^a of the cam structure against lateral or transverse movement.

A hexagonal hole 28 is formed in the cam 95 structure and extends longitudinally there-through so that a hexagonal bar may be extended into the structure and turned by a long wrench or other suitable tool, or a tool 100 may be provided with a stud to enter the hole

28 for that purpose. In the rotation of the cams, the axis is raised and lowered, and to permit the stud or bar is the hole 28 to rise and fall in its rotation, the walls 12 and 14 and the upper casing section are provided with slots 29, and the walls 18 and 19 of the lower casing section are provided with slots 30.

To prevent the reverse rotation of the cam structure and to hold the shore in its adjusted position, ratchet-teeth 27 are integrally formed with said structure and extend longitudinally between the hub portions 23^a of the cam structure and between walls 33. A dog or detent 32 fits between and is confined against transverse movement by the walls 33 at one side of the cam structure, and is provided, at its lower end with an integral tooth 34 which is adapted to be held in a seat or groove 35 formed in a rib 36 integrally formed with the bottom wall 16 of the lower casing section, a series of ratchet teeth 37 adapted to be engaged by the teeth 27, and an arm 38 which extends outwardly and terminates in a vertical slot 39 formed in the wall 15 of the upper casing section where it will be accessible for manual manipulation. A spring 40 is held in a socket in the detent and is adapted to bear against the wall 20 to yieldingly hold the teeth 37 in engagement with the ratchet teeth 27, to hold the cam structure against reverse rotation in its different vertical positions.

In assembling the adjusting device, the detent may be slipped into position with its rib 34 into the seat 35 so it will be pivotally held, before the cam structure is placed into the casing.

In operation, the cam structure is normally positioned to permit the casing sections to telescope into each other as far as possible. The shore member may then be placed in its supporting position, and by applying a suitable tool and rotating the cam structure, the shore will be raised into the desired adjustment. During this rotation, cams 25 will ride in the seats 24 to bodily raise the cam structure and cams 23 will engage the seats 26 to lift the top casing section relatively to the axis of the cam structure, thus compounding the displacement produced by the cams to obtain the desired lift. During this rotation, the dog 32 will lock the ratchet against reverse rotation and thus hold the shore in its adjusted position. When it is desired to release the shore or lower it, it is only necessary to pull the arm of the detent upwardly, and reversely rotate the cam structure, or in some instances the weight of the shore will retract the cam.

The invention exemplifies a shore with an adjusting device which is composed of relatively adjustable telescopic sections and in which the adjustment may be quickly effected by the rotation of the cam structure; in which

the entire adjusting device consists essentially of three cast units which can be produced and assembled at a low cost; which is adapted to be secured to the lower end of a shore and does not project substantially therefrom so that it will not interfere with the convenient storing and handling of the shores; and in which the cam structure can be operated by a wrench or other suitable tool.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a shore, of an adjusting device composed of slidably connected telescoping sections, one of which is adapted to engage the lower end of the shore, a pair of oppositely arranged rotatable integral cams, abutments on the sections respectively engaged by the cams, a ratchet-wheel rigid with the cams and a dog to engage the ratchet and lock the cams against reverse rotation said dog being enclosed by the sections and having an extension projecting through slots in said sections whereby it may be manipulated out of engagement with the ratchet-wheel.

2. An adjusting device for a shore, comprising a pair of telescoping box-like sections, one of which is adapted to act against the lower end of the shore, said sections being formed so that the interiors thereof together form a chamber, a cam disposed in the chamber and adapted when rotated in one direction to force the sections apart to adjust the shore, and means also disposed in said chamber for releasably locking the cam against reverse rotation.

3. An adjusting device for a shore comprising a pair of box-like sections, one of which has a top wall secured fixedly to the lower end of the shore, the other section telescoping into the said one section and forming therewith a chamber, a cam disposed in the chamber and adapted when rotated in one direction to force the sections apart to adjust the shore, and means also disposed in said chamber for releasably locking the cam against reverse rotation.

4. An adjusting device for a shore comprising a pair of slidably and telescopically connected box-like sections, two integral cams at the sides of the sections adapted when rotated in one direction to force the sections apart to adjust the shore, abutments integral with the sections for the cams respectively, and releasable means for preventing reverse rotation of the cams.

5. In combination with a shore, an adjusting device composed of a pair of telescoping box-like sections, one of which is

adapted to act against the lower end of the shore, said sections being formed so that the interiors thereof together form a chamber, a pair of oppositely arranged cams disposed in said chamber and adapted when rotated in one direction to force the sections apart to adjust the shore, said cams being rigidly secured together and positioned in side by side relation, and means also disposed in said chamber for releasably locking the cams against reverse rotation.

6. An adjusting device for a shore comprising a pair of slidably and telescopically connected box-like sections, two pairs of integral oppositely disposed cams adjacent the sides of the sections, said cams being adapted when rotated in one direction to force the members apart to adjust the shore, abutments for the cams respectively, and releasable means for preventing reverse rotation of the cams.

7. In combination with a shore, an adjusting device composed of a pair of telescoping box-like sections, one of which has a top wall secured fixedly to the lower end of the shore, said top wall being provided with an integral depending thickened abutment, a cam disposed between the sections and engaging operatively the abutment, said cam being operative when rotated in one direction to force the sections apart to adjust the shore, and means also disposed between the sections for releasably locking the cam against rotation in the reverse direction.

8. In combination with a shore, an adjusting device composed of a pair of telescoping box-like sections, one of which has the top wall thereof secured fixedly to the lower end of the shore, said top wall of the one section and the bottom wall of the other section being provided with integral relatively offset abutments, a pair of oppositely arranged cams disposed between the sections and positioned in side by side relation, said cams engaging the abutments respectively and being adapted when rotated in one direction to force the sections apart to adjust the shore, and means also disposed in said chamber for releasably locking the cams against reverse rotation.

9. An adjusting device for a shore comprising a pair of slidably and telescopically connected box-like sections, two pairs of integral oppositely disposed cams adapted when rotated in one direction to force the sections apart to adjust the shore; abutments integral with the sections, for the cams respectively, and releasable means between the pairs of cams for preventing reverse rotation of said cams.

10. An adjusting device for a shore comprising a pair of slidably and telescopically connected sections, two pairs of integral oppositely disposed cams enclosed by the sections, abutments integral with the sections for the cams respectively, ratchet teeth inte-

grally formed with the cams, and a dog for the teeth enclosed by the sections and pivotally held in one of the sections.

11. In combination with a shore, an adjusting device composed of a pair of telescoping box-like sections, one of which is adapted to be applied to the lower end of the shore, said sections being formed so that the interiors thereof form a chamber, a cam in said chamber adapted when rotated in one direction to force the sections apart to adjust the shore, a ratchet integral with the cam, and a releasable dog disposed in the chamber and pivoted to one of the sections, said dog being arranged to engage the ratchet and lock the cam against reverse rotation.

12. In combination with a shore, an adjusting device composed of a pair of telescoping box-like sections, one of which is adapted to be applied to the lower end of the shore, said sections being formed so that the interiors thereof form a chamber, a cam in said chamber adapted when rotated in one direction to force the sections apart to adjust the shore, a ratchet integral with the cam, and a releasable dog disposed in the chamber and pivoted removably to one of the sections, said dog being arranged to engage the ratchet and lock the cam against reverse rotation.

13. An adjusting device for a shore comprising a pair of slidably and telescopically connected box-like sections, two pairs of oppositely disposed rotatable and bodily movable cams enclosed by the sections, abutments on the sections for the cams respectively, ratchet-teeth rigid with the cams, and a dog pivotally held in one of the sections, the cams having a socket for the application of a turning device, the sections being slotted for the movement of said device.

Signed at Chicago, Illinois, this 26th day of January, 1927.

ARTHUR H. SYMONS.