Feb. 6, 1951 H. RESTETSKY 2,540,378

METHOD OF RAISING AND LOWERING HEAVY OBJECTS

Original Filed April 23, 1946

FIG. 1.

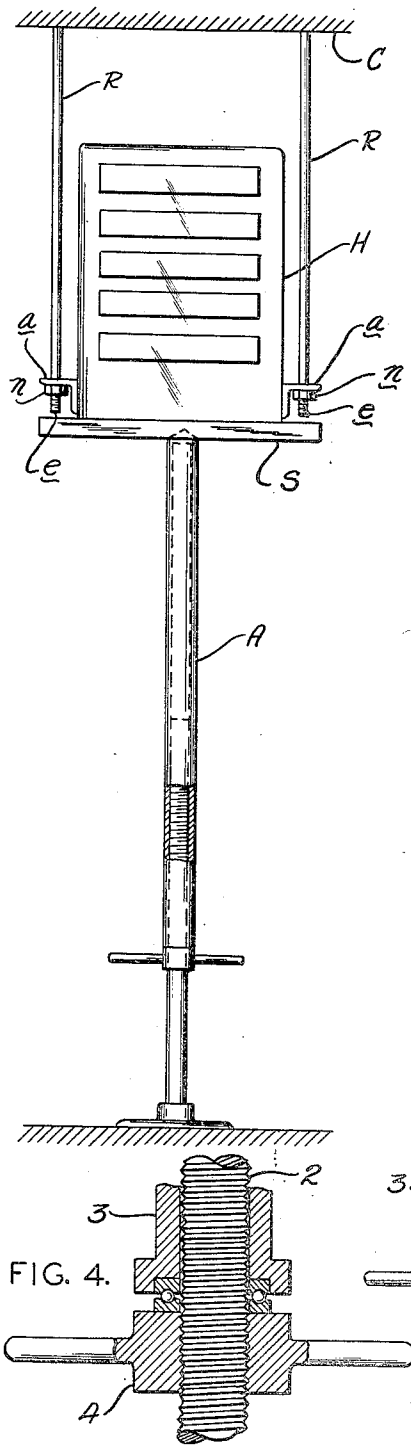

FIG. 2.

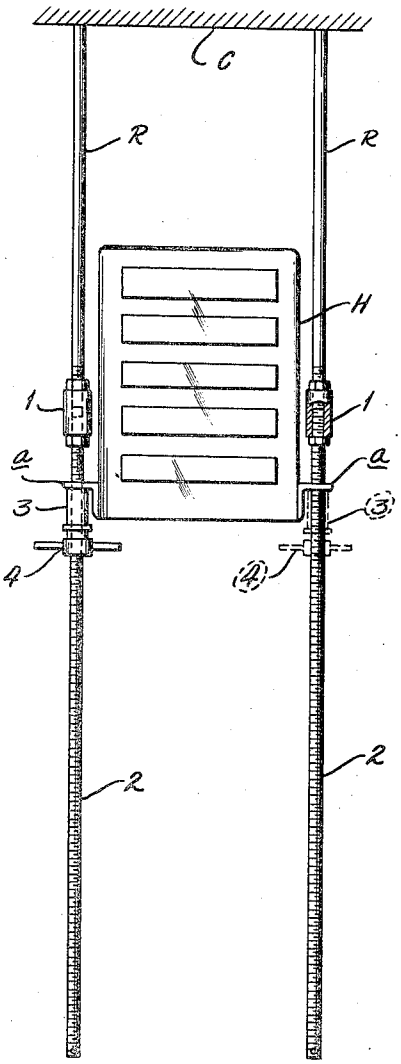

FIG. 3.

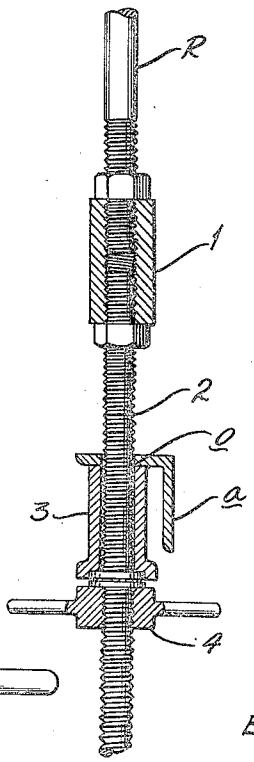

FIG. 4.

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METHOD OF RAISING AND LOWERING HEAVY OBJECTS

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2 Claims. (Cl. 214—152)

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My invention has relation to improvements in methods of raising and lowering heavy objects. It is common practice in industrial plants to suspend various industrial devices such as heating units, air conditioning units and related equipment from the ceilings by means of suspension rods. Since much of this apparatus is extremely heavy, the placing of the apparatus and removing the same when necessary is an extremely difficult operation. As far as I am aware this is now done by using a block and tackle and various jacking up devices.

I have devised an apparatus whereby an entirely new method is evolved which greatly simplifies the operation of installing and removing apparatus of the type referred to; and that furthermore, may be operated by one man.

Of course, the principal object of the present invention is to provide a labor saving device that is simple and efficient and at the same time embodies the necessary safeguards to eliminate the possibility of accident. Other advantages of my invention will be better apparent from a detailed description thereof in connection with the accompanying drawings in which—

Fig. 1 is an outline view of a heater suspended from a factory ceiling, with a jack applied to one end thereof as the preliminary step in my improved method; Fig. 2 shows the same heater partly lowered at one end with the apparatus employed in practicing the method applied to the supporting rods for the heater; Fig. 3 is an enlarged detail of the apparatus employed in practicing my invention; and Fig. 4 is a further enlarged sectional detail of the thrust bearing and nut employed in my apparatus.

Referring to the drawings, H represents a heater unit suspended from the ceiling C of a factory or shop by suspension rods R, R according to well-known practice.

One common method of supporting such units H is to provide angle members *a*, *a* extending from one end to the other on both sides of the unit H, which are perforated to receive the rods R, R over the threaded extremities *e*, *e* of which are securing nuts *n*, *n*. Obviously, when the heater unit H is to be removed it must either be temporarily propped or it must be supported by a block and tackle before the nuts *n*, *n* are removed.

In my improved method of raising or lowering the units H, I employ any common type of jack A and a sill S to temporarily jack up one end of the unit H so that the nuts *n*, *n* may be removed so as to disengage the one end of the

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heater from the supporting rods R, R. The jack A is then manipulated so as to allow the end of the heater that is being operated on to be dropped sufficiently to entirely clear the rods R, R from the angles *a*, *a* such as shown in Fig. 2.

It is now possible for me to apply the apparatus to the rods R, R such apparatus consisting of a coupling 1 whereby a threaded extension rod 2 is securely connected to each of the rods R (Fig. 3). Obviously, at this time the end of the heater being worked on is still supported by the jack A. The extension rods 2 are passed through the openings *o* in the angle member *a* and a thrust bearing 3 is passed over the extension rod 2 and held in engagement with the angle member *a* by a handle nut 4 which traverses the extension rod 2.

When both rods R, R at one end of the unit H have been thus supported on the extension rods 2 the opposite end of the unit H is handled in a like manner, so that the heater unit is finally supported entirely on four thrust bearings, one at each corner of the heater.

The operator may now manipulate the handle nuts 4 more or less synchronously so that the heater will be lowered at each of its four corners approximately simultaneously. The extension rods 2 may be of any desired length, depending upon the height of the ceiling C, from which the heater H is suspended; however, should the ceiling be exceptionally high it might be advisable to add a second extension rod to the first extension rod in a manner similar to that in which the first rod 2 is coupled to the suspension rod R.

It should be apparent that in raising a heater unit or equivalent piece of apparatus for attachment to suspension rods R, R the operation just described is reversed, that is; instead of lowering the unit H on the rods 2, 2 said unit will be raised thereon by a proper manipulation of the handle nuts 4.

Having described my invention, I claim:

1. A method of moving upwardly or downwardly heavy objects suspended from rods which comprises temporarily propping said object by an adjustable prop, coupling threaded extension rods to the suspension rods while propped, applying supporting nuts to the extension rods, removing said prop, and successively rotating said supporting nuts to either raise or lower said object.

2. The method of lowering heavy objects suspended from threaded rods, which comprises

temporarily propping said object at one end by an adjustable prop, releasing said object from the rods at said end, coupling threaded extension rods to the suspension rods, applying supporting nuts for the object to the extension rods, removing the prop to permit the object to rest on said supporting nuts, repeating said steps at the other end of the object, and successively withdrawing said supporting nuts, step by step, to permit the object to descend over the extension rods.

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REFERENCES CITED

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

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