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F. CLARKE ET AL

3,426,659

ROAD EXCAVATION COVER

Filed Jan. 6, 1967

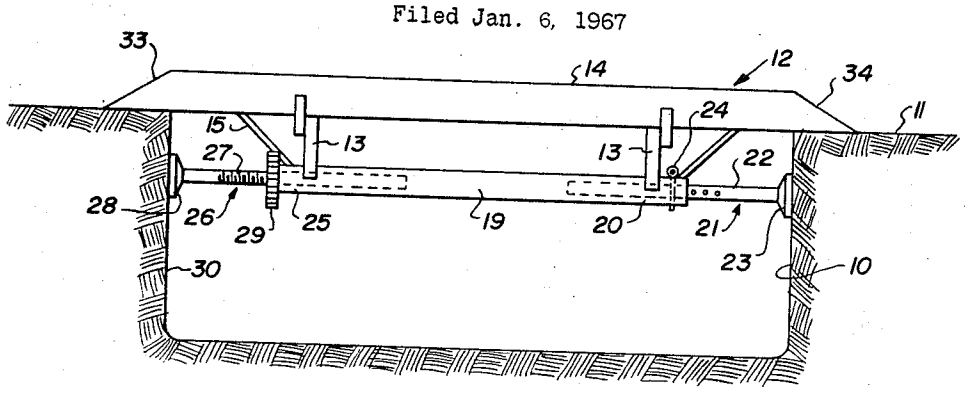

FIG. 1.

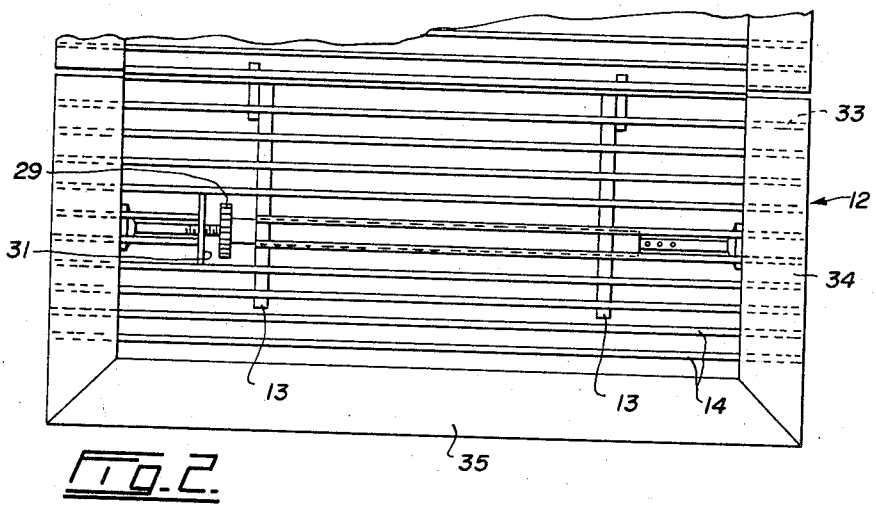

FIG. 2.

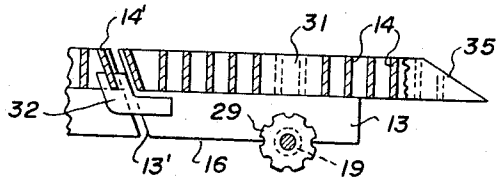

FIG. 3.

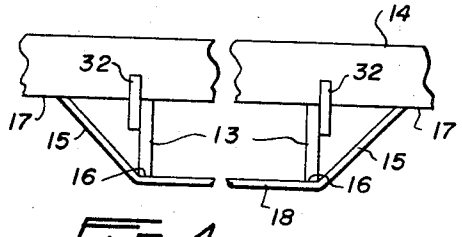

FIG. 4.

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ROAD EXCAVATION COVER

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ABSTRACT OF THE DISCLOSURE

A metal cover for excavations which can be placed in position from above the excavation and including jacking means which adjusts the fitting of the cover to the excavation and holds same firmly in place, and comprising, generally, a grating component for spanning the excavation and resting on the road surface surrounding the excavation. Adjustable screw jack means are provided on the underside of the grating to stabilize the grating against movement relative to the excavation, the ends of the screw jacks engaging the side walls of the excavation. A plurality of grating components can be detachably secured together to form a larger grating if desired.

Our invention relates to new and useful improvements in road excavation covers.

Road excavations are normally covered temporarily by relatively heavy sheets of cast steel which are laid over the excavation when it is desired to close same to permit traffic to pass thereover.

These covers suffer from several disadvantages, the principal one of which being that the action of the traffic passing thereover tends to displace same from the excavation with the subsequent danger inherent with such displacement.

Furthermore these relatively heavy steel sheets are noisy, are slippery in wet weather, and, due to the configuration thereof, cause certain damage to the tires of the vehicles passing thereover.

We have overcome these disadvantages by providing a grating type cover which includes jacking members upon the underside thereof engageable with the side walls of the excavation thus stabilizing the grating device from movement.

The principal object and essence of our invention is therefore to provide a device of the character herewithin described which permits an excavation to be covered by a firmly attached grating element.

Another object of our invention is to provide a device of the character herewithin described in which a plurality of grating elements can be secured together to cover a relatively large excavation.

Still another object of the invention is to provide a device of the character herewithin described in which the jacking elements associated therewith are adjustable thus permitting the device to be used with a variety of sized excavations.

A still further object of the invention is to provide a device of the character herewithin described which is provided with sloping ends and sides so that traffic can pass over it in any direction without damage occurring to the tires of the vehicles passing thereover.

A still further object of the invention is to provide a device of the character herewithin described in which the jacking elements can be actuated from the upper surface after the grating has been placed in position.

A still further object of the invention is to provide a device of the character herewithin described which is

simple in construction, economical in manufacture, and otherwise well suited to the purpose for which it is designed.

With the foregoing in view, and such other objects, purposes or advantages as may become apparent from consideration of this disclosure and specification, the present invention consists of the inventive concept in whatsoever way the same may be embodied having regard to the particular exemplification or exemplifications of same herein, with due regard in this connection being had to the accompanying figures in which:

FIGURE 1 is a side elevation of our device showing same in position within an excavation.

FIGURE 2 is a top plan view of one grating component.

FIGURE 3 is a fragmentary sectional view of a pair of grating components secured together.

FIGURE 4 is a fragmentary side elevation of one of the grating components.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Proceeding therefore to describe my invention in detail, reference character **10** illustrates an excavation normally formed within a road surface **11**.

Our device collectively designated **12** is adapted to span the excavation and to rest upon the road surface **11** surrounding the excavation.

In detail, the grating component comprises a pair of spaced and parallel support members **13** having a plurality of spaced and parallel grating members **14** secured to the upper sides of the supports and extending at right angles thereto.

Diagonal braces **15** extend from the under side edges **16** of the support to the under side edges **17** of the grate members and parallel braces **18** extend between the under side edges **16** of the two support members as shown in FIGURE 4 thus giving a stable and rigid grate element.

Means are provided to anchor the grate element within the excavation and to prevent relative movement of the element with the excavation. This consists of a hollow tube **19** secured to the under side edges **16** of the support members **13**. Within one end **20** of this tube is a jack component collectively designated **21** comprising a stem **22** having a jack head **23** secured upon the upper end thereof. This stem **22** is apertured and the end **20** of the tube **19** is also apertured so that a pin **24** can extend through adjacent apertures thus giving an adjustable feature to this jacking component **21**.

Within the other end **25** of the tube **19** is a further jacking component collectively designated **26** said jacking component including a screw threaded stem **27** having a jacking **28** upon one end thereof.

An adjustment wheel **29** engages around the screw threaded stem **27** so that the element **26** may be moved outwardly in engagement with the wall **30** of the excavation whereupon the wheel **29** may be rotated until it engages the end **25** of the tube **19** thus preventing inward movement of this jacking component.

We have provided an aperture **31** within the grate members **14** immediately above the wheel **29** so that it can be manipulated from the upper surface of the device.

FIGURE 3 shows details of adjustably and detachably connected together, grate components, in which hooks **32** are provided upon the ends of the supports **13**. These are engaged by the end grate member specifically designated **14'** and to facilitate this engagement to prevent disengagement, the adjacent ends **13'** of the supports **13** are inclined as illustrated.

The end **33** of the grate members **14** are inclined inwardly and an end plate **34** is secured thereto thus forming a lead-in ramp for the grate members.

Also the sides 35 of the grate component are provided with an inclined plate as shown in FIGURE 3, all of which facilitates the engagement of the wheels of the traffic passing thereover.

It will therefore be appreciated that we have provided a relatively strong excavation cover which is firmly held in place against undesirable movement by means of the jacking component hereinbefore described and which furthermore can be installed and removed from above the excavation.

Various modifications can be made within the scope of the inventive concept disclosed. Accordingly, it is intended that what is described herein should be regarded as illustrative of such concept and not for the purpose of limiting protection to any particular embodiment thereof, but that only such limitations should be placed upon the scope of protection to which the inventor hereof is entitled, as justice dictates.

What is claimed as the present invention is:

1. A traffic carrying cover for road excavations comprising in combination a grating component spanning said excavation and registering upon the road surface surrounding said excavation, and means on the underside of said grating for stabilizing said grating against movement relative to said excavation, said means including an adjustable jacking element secured to said grating upon the underside thereof, said jacking element engaging opposite side walls of said excavation, said grating component including a pair of spaced and parallel support members, a plurality of spaced and parallel grate members secured upon said support members at right angles thereto, said jacking element being secured to said support members and lying also at right angles thereto, said jacking element including a stationary tube, a jack component secured to and extending from one end of said tube, and a further jack component extending from the other end of said tube, and screw threaded adjustment means on said last mentioned jack component for adjusting the position of said last mentioned jack component within limits.

2. The device according to claim 1 which includes means to adjust said jacking element, said screw threaded adjustment means being manipulable from the upper side of said grating component.

3. A traffic carrying cover for road excavations comprising in combination a grating component spanning said excavation and registering upon the road surface surrounding said excavation, and means on the underside of said grating for stabilizing said grating against movement relative to said excavation, said means including an adjustable jacking element secured to said grating upon the underside thereof, said jacking element engaging opposite side walls of said excavation, said grating component including a pair of spaced and parallel support members, a plurality of spaced and parallel grate members secured upon said support members at right angles thereto, said jacking element being secured to said support members and lying also at right angles thereto, a plurality of grating components, and means to detachably secure said components together, said means comprising hook elements on one side edge of said component engageable by the adjacent side edge of the next adjacent component.

4. The device according to claim 3 which includes means to adjust said jacking element, said screw threaded adjustment means being manipulable from the upper side of said grating component.

5. The device according to claim 3 in which said jacking element includes a stationary tube, a jack component secured to and extending from one end of said tube, and a further jack component extending from the other end of said tube, and screw threaded adjustment means on said last mentioned jack component for adjusting the position of said last mentioned jack component within limits.

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U.S. Cl. X.R.

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