April 29, 1958 J. H. TURNBULL 2,832,628

MANHOLE COVER LIFTER

Filed Sept. 6, 1955

Fig. 1.

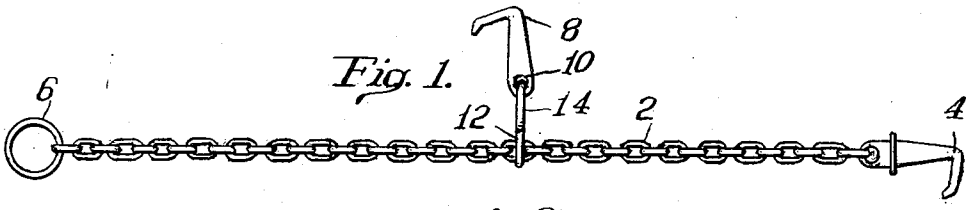


Fig. 2.

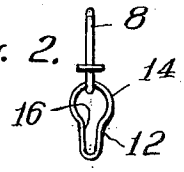


Fig. 3.

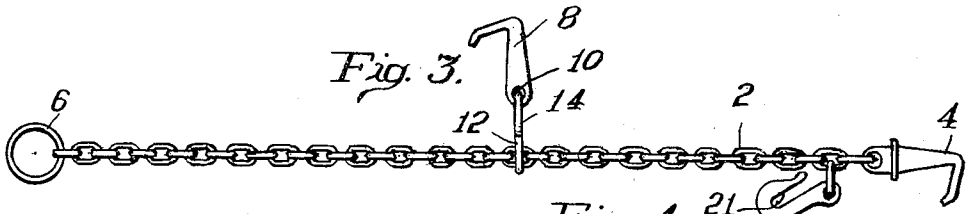


Fig. 4.

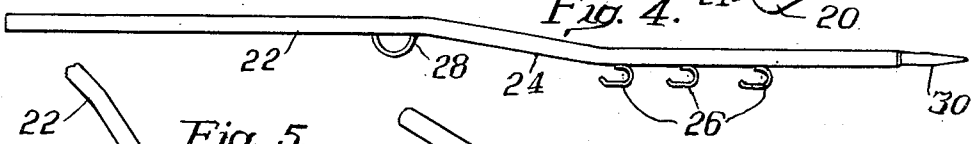


Fig. 5.

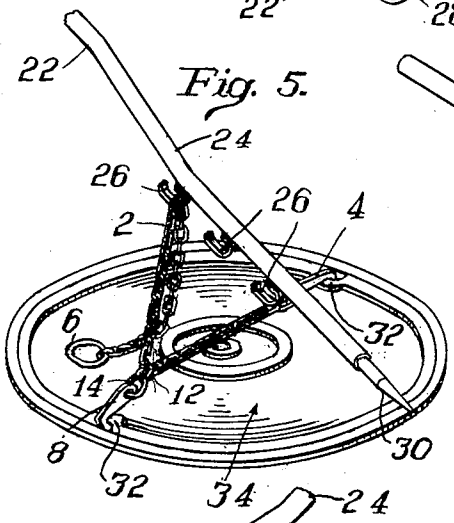


Fig. 7.

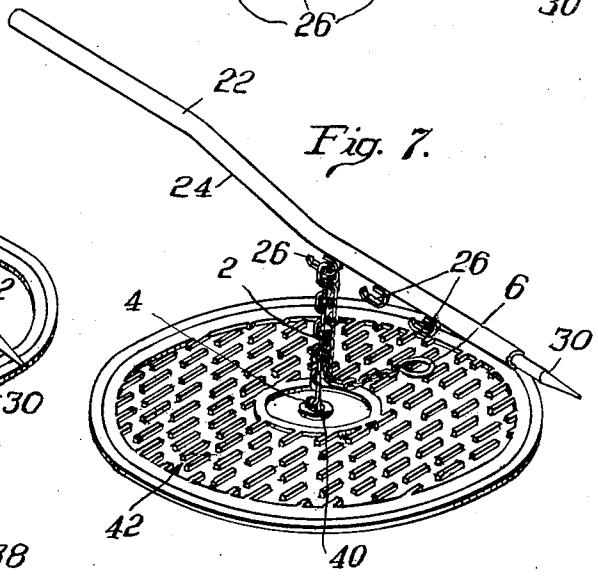
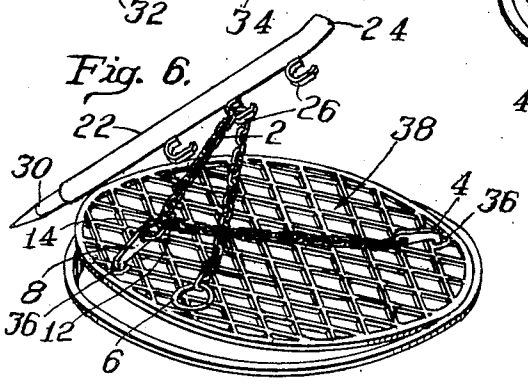


Fig. 6.



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MANHOLE COVER LIFTER

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Application September 6, 1955, Serial No. 532,704

2 Claims. (Cl. 294—17)

This invention is an improved lifter for loosening and lifting manhole covers.

The principal object of the invention is to provide a simple, strong and sturdy manhole cover lifter, which will loosen and lift manhole covers of different sizes and weights. The lifter comprises an operating lever which can be operated by one man to loosen the cover, lift it up and swing it laterally away from the manhole.

More specifically, the lifter comprises a chain provided with a pair of manhole engaging hooks; one of these hooks is preferably carried by one end of the chain, while the other is preferably positionable at a desired point along the chain, toward or away from the other hook, for readily spacing apart the other hook, for readily spacing apart the two hooks, so as to accommodate the different distances between the holes or notches in manhole covers of different size.

The lifter also comprises a hand operated pry lever having one or more chain engaging hooks thereon, this lever also having a ground engaging pry point, useful in initially loosening the manhole cover.

Further features of the invention will be described in connection with the accompanying drawings wherein:

Fig. 1 is a plan view of the preferred form of chain of the manhole cover lifter of this invention;

Fig. 2 is a view of a detail;

Fig. 3 is a plan view similar to Fig. 1 showing a modification;

Fig. 4 is a side view of the operating lever of this invention;

Figs. 5, 6 and 7 are perspective views showing the lifter of this invention in use in lifting different types of manhole covers.

Referring now to these drawings, a chain **2** is provided at one end with a manhole cover engaging hook **4**, and if desired, with a ring **6** at the other end.

A second manhole cover engaging hook **8** is provided, which is variably positionable on the chain **2**; hook **8** has an eye **10** through which passes an adjustable loop **12**, the loop having an enlarged part **14** and a narrowed throat **16**. This loop **12** is for positioning hook **8** at any desired point on the chain, at an appropriate distance from hook **4**, for accommodating manhole covers of different sizes. To change the position of hook **8** on the chain, the loop **12** is moved laterally of the chain until the links are in part **14**, which is large enough to allow the loop to be moved to the right or left over the chain links. When the desired point is reached, the loop **12** is moved perpendicularly to the chain so that the throat **16** engages over a particular link, whereby it is locked against further movement to the right or left.

In the modification of Fig. 3, a third hook **20** is provided, having a throat **21** adapted to engage over any desired intermediate link of the chain for foreshortening the chain, for providing the most effective operating length for the chain **2**.

Fig. 4 shows the pry lever **22**, preferably tubular, which may have an intermediate offset portion **24** and

is provided with several chain engaging hooks **26** and a loop **28** welded thereto. The pry lever is provided with a pry point **30** of tool steel welded at one end thereof.

The operation of the apparatus is shown in Figs. 5, 6 and 7. In each case, the manhole cover if stuck in place, may be loosened by pry point **30**, engaged in any available hole or notch in the manhole cover.

In Fig. 5, hook **8** is placed on chain **2** at the proper distance from hook **4** so that the hooks engage in opposite notches **32** in manhole cover **34**. The chain **2** is engaged with one of the hooks **26** and lever **22** lifted to lift the cover and the lever **22** moved laterally to remove the cover from the manhole.

In Fig. 6, the hooks **4** and **8** are engaged in holes **36** of cover **38**, chain **2** being engaged in one of the hooks **26** and the lever lifted to loosen, lift and remove the cover.

In Figs. 5 and 6, hook **26** is nearer hook **8** than to hook **4**, to apply more force to one side of the cover than the other, for more readily loosening the cover.

In Fig. 7, one of the hooks is passed through a central hole **40** in manhole cover **42** and the lever operated to lift and remove the cover.

Greater leverages may be obtained by selecting hooks **26** nearer the ground engaging point **30**. If the chain is too long for any particular cover, it may be foreshortened by use of hook **20**, Fig. 3.

While the invention has been described in detail, it should be understood that changes may be made as falling within the scope of the appended claims.

I claim as my invention:

1. A manhole cover lifter comprising, a chain having a load end and an end to be lifted, a first hook on the load end of said chain, a second hook provided with means for fixing it along said chain whereby the chain is adapted in one operative position to lift a manhole cover with a single hook and also adapted in other operative positions to lift a manhole cover with one hook at each side of a manhole cover and whereby varying the position of said second hook on said chain will adapt the lifter to fit manhole covers of varying diameters when used in said other operative positions, said second hook in said other operative positions being fixed on a link at a distance from said first hook less than the distance defined by the diameter of the manhole cover to be lifted whereby a lifting force exerted on the end to be lifted will be effective at each of said hooks, and a hand-operated pry lever including an operating handle at one end and a fulcrum at the other end with a plurality of hooks spaced at intervals intermediate said ends to provide a lever of the second class, the end of said chain to be lifted for exerting a lifting force in its operative position being engaged with one of said lever hooks for placing said fulcrum in a ground-engaging position beyond the edges of the manhole cover.

2. The method of lifting and removing a manhole cover from a manhole opening which comprises attaching a hook carried by one end of a flexible member to one marginal edge of a manhole cover, and positioning a second hook along said flexible member at an intermediate point a distance from said first hook of less than the diameter of the manhole cover to be lifted and attaching said second hook to said manhole cover at a point on the periphery of the manhole cover opposite said first hook, and applying a lifting force with a lever of the second class by placing the fulcrum end of said lever at a point beyond said opening and applying the lifting force to that portion of the flexible member extending beyond said second hook whereby said lifting force will lift one side of the manhole cover ahead of

the other to tilt it and thereafter, while said lifting force is effective, swinging the lever in a direction generally perpendicular to an imaginary line drawn between said first and second hooks to swing the manhole cover off the manhole while it is tilted for ease of swinging motion.

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