Jan. 24, 1956 E. H. KOSSA 2,731,738

UNDERGROUND PIPE STRIPPER

Filed March 30, 1953

Fig. 1

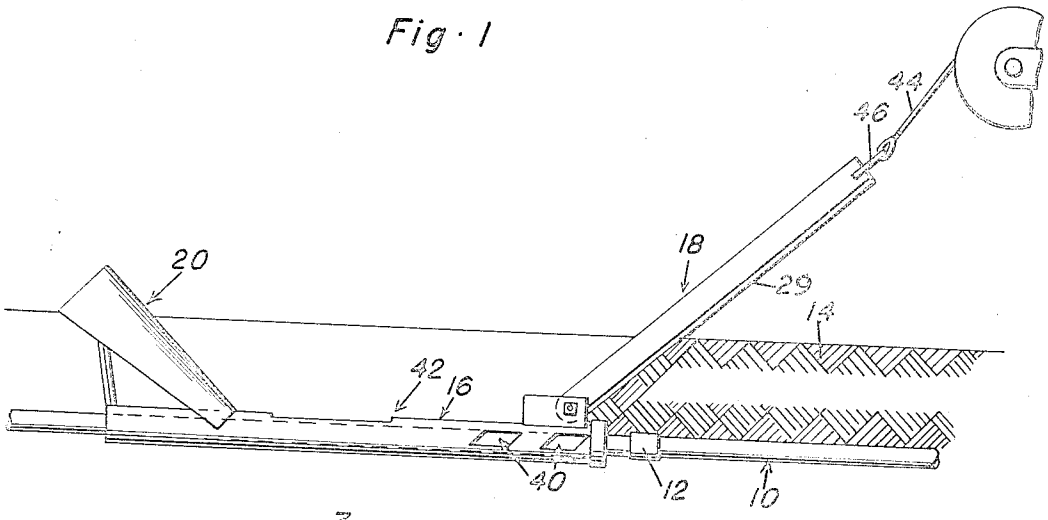

Fig. 2

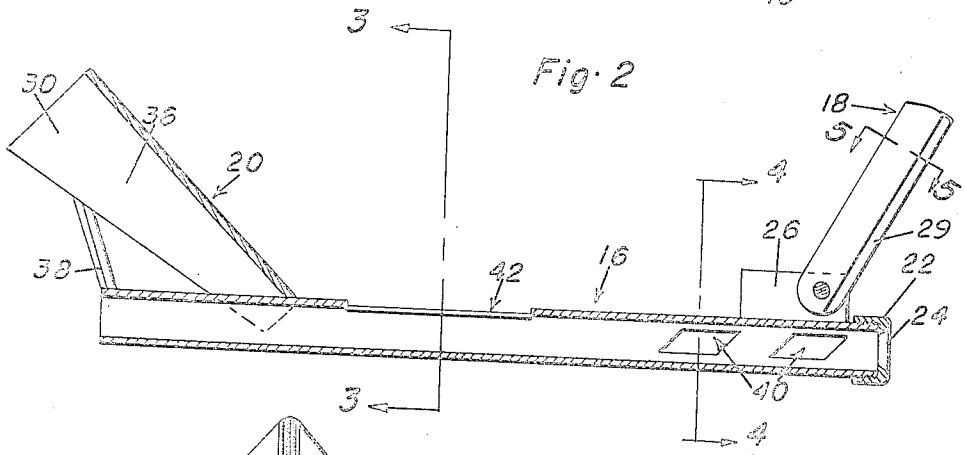

Fig. 3

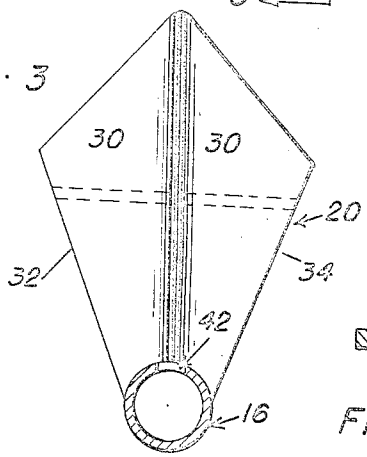

Fig. 4

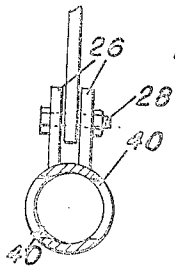

Fig. 5

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UNDERGROUND PIPE STRIPPER

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1 Claim. (Cl. 37—1)

This invention relates generally to a device for unearthing and exposing pipe lines, and has for its principal object the removal of buried pipe lines without necessitating the removal of overlying earth.

An important object of this invention is to provide a device for rapidly and easily exposing or unearthing buried pipe lines so that the same may be readily and quickly removed.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a vertical section through the ground showing the device in operation;

Figure 2 is an enlarged vertical section taken through the device showing details of its construction;

Figure 3 is a transverse vertical section taken substantially along the plane of section line 3—3 of Figure 2 showing details of construction of the earth spreading shoe;

Figure 4 is another transverse section taken substantially along the plane of section line 4—4 of Figure 2 showing the end bracket construction; and

Figure 5 is a transverse section taken substantially along the plane of section line 5—5 of Figure 2 showing details of construction of the pulling bar.

Referring now more particularly to Figure 1, reference numeral **10** indicates generally a pipe line which is shown as buried and which is provided with a coupling member **12** normally securing adjacent sections of pipe together. The earth **14** overlying the pipe may be merely several inches deep or may range to a depth of several feet, in any event, requiring considerable time and effort to expose the pipe by conventional digging methods.

To enable such buried pipe lines to be rapidly and easily exposed for removal, the elongated tubular sleeve **16** is slipped over an end of the pipe which has been exposed for this purpose and the tubular member is pulled longitudinally along the pipe beneath the surface of the ground through the medium of the pulling bar **18** whose free end is attached to a suitable source of pulling power, such as a winch, tractor or the like. The trailing end of the sleeve is provided with an upwardly projecting shoe **20** which spreads the earth over the pipe and throws the same to one side so that the pipe can subsequently be removed with a minimum of effort.

Referring now more particularly to Figures 2–5, it will be seen that the tubular sleeve is provided adjacent its pulled end with a guide member **22** threaded thereon which is provided with a flared mouth opening **24** for allowing the assembly to easily slide over radial projections on the pipe such as the coupling member **12** previously described. A pair of spaced ears **26** are secured to the sleeve adjacent this end and receive therebetween a pivot bolt

28 connecting one end of the pulling bar **18** between the brackets, the bar being provided with a knife edge **29** so that it may be easily pulled through the ground.

The other end of the sleeve is provided with the previously described shoe assembly which comprises a longitudinally folded plate presenting a pair of trapezoidal wings **30** whose opposite side edges **32** and **34** are disposed in upwardly diverging relation with respect to the sleeve, the narrowest end of the shoe being suitably secured to the outer surface of the sleeve, the shoe is sloped away from the pulled end of the sleeve so that it will direct the earth overlying the pipe in an upward and outward direction, thus exposing the pipe. The shoe may be suitably braced on its rear surface by means of the bracing bars **36** and bracing props **38** may be provided to assure absolute rigidity of this assembly.

The pulled end of the stripper sleeve is provided with a plurality of diamond shaped openings **40** which are arranged in diametrically opposed pairs and which are provided for the purpose of allowing passage of dirt and rocks out of the stripper sleeve or barrel to prevent binding between the sleeve and the pipe upon which it is sliding. A rectangular vent opening **42** is provided medially of the stripper barrel along its upper surface and this vent serves also to prevent jambing of dirt, rocks or other foreign material between the sleeve and the pipe.

In operation, it will be noted that the puller blade or bar **18** slices through the soil and any obstructing vegetation and serves to allow the shoe to more efficiently perform its earth spreading and exposing operation while the vent insures a minimum of frictional loss between the sleeve and the pipe over which it is being pulled. The device utilized to impart pulling power to the free end of the puller bar **18** may be any suitable mechanism but in any event a cable and hook arrangement **44** and **46** should be employed for maximum efficiency since this will allow the puller blade to properly align itself with respect to the ground surface and the pulling device so as to exert a maximum of thrust longitudinally of the pipe being uncovered.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

A device for exposing buried pipe comprising a tubular sleeve adapted to receive and be pulled along a pipe and having front and rear ends, a shoe inclining upwardly and rearwardly from the top of the sleeve and having one end fixed to said sleeve adjacent said rear end and also having upwardly and rearwardly diverging side wings for spreading earth above said sleeve, said sleeve having a longitudinal top slot therein directly in front of said shoe for the escape of earth out of said sleeve to be spread by said shoe, and means attached to the front end of the shoe for pulling the same.

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