March 10, 1931. J. L. BARWICK 1,795,991

CULVERT SHOVEL

Filed Jan. 29, 1930 2 Sheets-Sheet 1

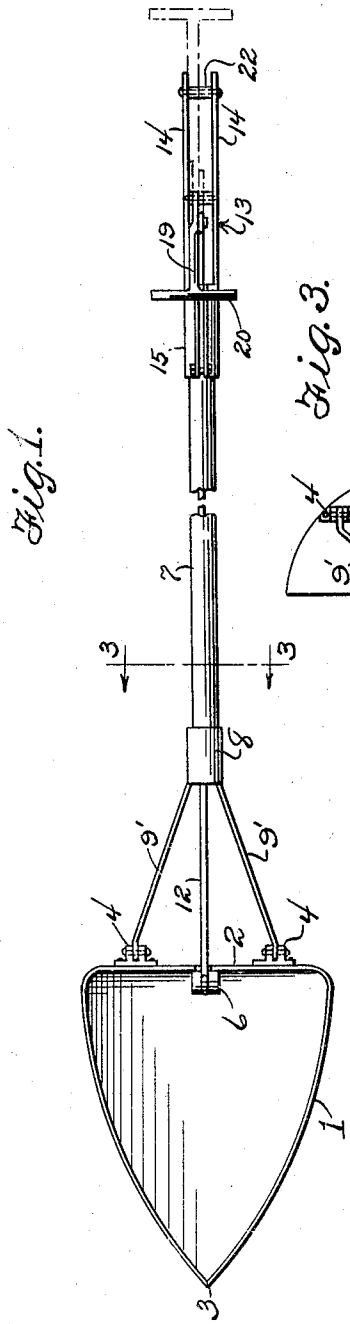


Fig. 1.

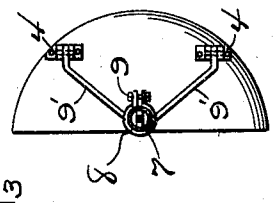


Fig. 3.

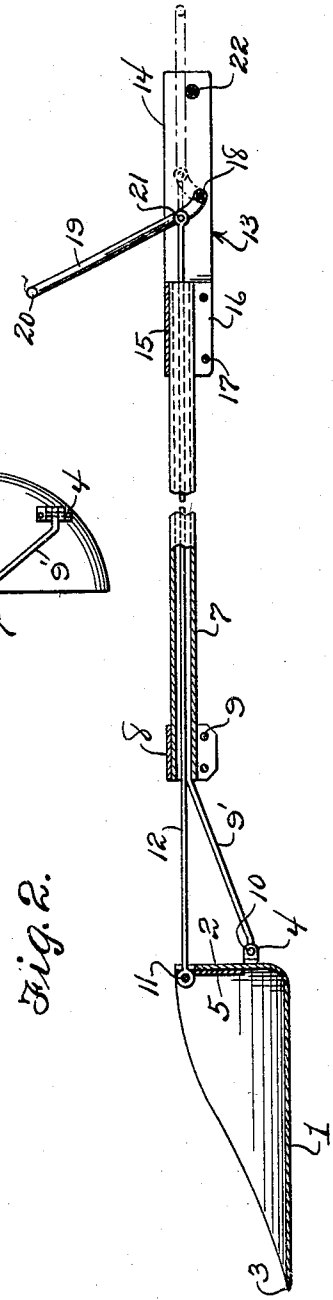


Fig. 2.

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CULVERT SHOVEL

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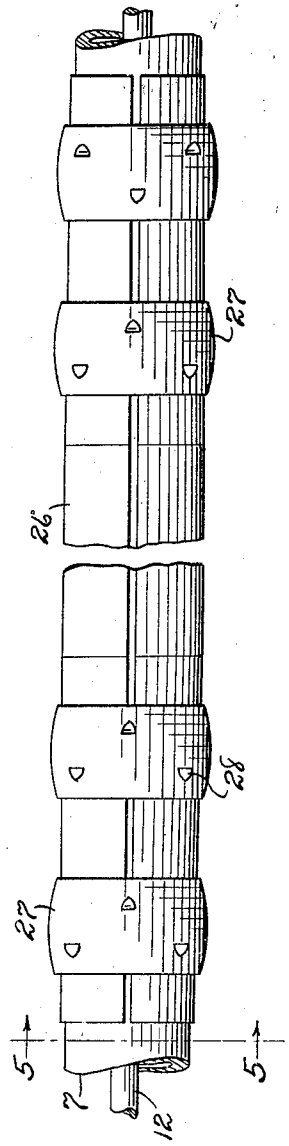


Fig. 4.

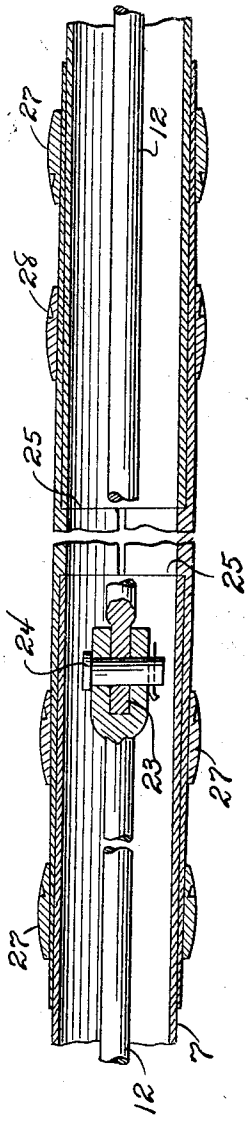


Fig. 6.

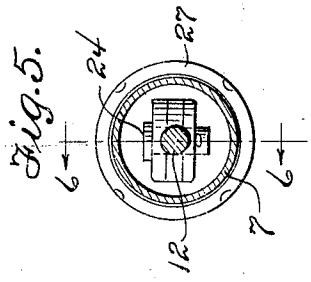


Fig. 5.

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Patented Mar. 10, 1931 1,795,991

UNITED STATES PATENT OFFICE

JOHN L. BARWICK, OF BARWICK, GEORGIA

CULVERT SHOVEL

Application filed January 29, 1930. Serial No. 424,354.

My present invention has reference to an implement for cleaning culverts.

The object of the invention is to provide a device of this character which is extremely simple in construction and which is so designed as to be employed to the best advantage for the several operations of loosening and removing dirt or other matter with which a culvert is clogged.

For a full description of the invention and the merits thereof as well as for an understanding of the details of the construction, reference is to be had to the following description which is to be read in connection with the accompanying drawings.

In the drawings:

Figure 1 is a plan view of the improvement.

Figure 2 is a side elevation thereof with parts in section.

Figure 3 is a sectional view approximately on the line 3—3 of Figure 1.

Figure 4 is a plan view of the sectional stem of the handle.

Figure 5 is a sectional view approximately on the line 5—5 of Figure 4.

Figure 6 is a sectional view approximately on the line 6—6 of Figure 5.

As the description progresses it will be noted that my improvement is in the nature of a combination penetrating, boring, agitating and shoveling device. The blade of the improvement may be of different sizes to properly operate in different sized culverts and as culverts are of varying lengths the handle of the improvement is formed so that the same may be lengthened or shortened to suit conditions.

The blade 1 of the improvement is of steel and has its body portion cross sectionally arched. The head 2 of the blade is straight but is rounded at its connection with the sides and bottom of the body 1. The sides of the body 1, from the head 2 have their outer edges cut at a curvature to the pointed end 3 of the said body. By this arrangement the pointed end will cut into or penetrate the dirt or other material which clogs the culvert and as the blade is turned the side edges thereof will cut into the dirt.

The head 2, adjacent to the sides and also adjacent to the bottom of the said head is provided with rearwardly extending spaced pairs of ears 4. The head 2, at the center thereof has its upper edge notched, and the same upon its inner face is preferably centrally reinforced by a bracket plate 5 which has its top rounded to form the same with an eye 6, and the said eye is cut-away in a line with the notch in the upper edge of the head 2.

The tubular stem of the improvement is indicated by the numeral 7. The stem has its end, adjacent the blade arranged therearound a split clamp 8 and there is passed through the ends of the said clamp 8 binding elements 9, such as short bolts which are engaged by nuts.

Fixedly secured to the sides of the split clamp 8 are strong rods 9 which are pivoted, as at 10 between the ears 4 on the head 2. The rods comprising the arms 9 are arranged at downward and upward inclinations from their connection with the sleeve or with the clamp 8 on the said sleeve.

Pivotally secured, as at 11, between the eyes 6 there is a rod 12 that is directed through the tubular sleeve 7. Removably but firmly fixed on the outer end of the stem there is the handle portion 13 of the improvement. The handle comprises a bifurcated member whose parallel arms are indicated by the numeral 14. These arms are formed upon the side of a split tubular clamp 15 which is arranged around the outer end of the stem 7. The straight end 16 of the tubular clamp 15 has passed therethrough binding elements, such as bolts 17 which are engaged by suitable nuts.

Pivotally secured, as at 18, between the arms 14 of the handle 13 there is the curved or rounded end of a lever 19. The lever has its outer free end formed with a laterally extending hand grip 20. The lever has pivotally secured thereto, as at 21, the outer end of the rod 12. The numeral 22 designates a spacer element for the arms 14 of the handle. The spacer element 22 also serves as a stop for the lever 19 when the said lever is swung between the said arms 14.

As best disclosed by Figures 4, 5 and 6

of the drawings, the sleeve 7 comprises any desired number of tubular sections and also as disclosed by these figures the rod 12 is made up of sections which are removably and pivotally connected. One end of each of the rod sections is bifurcated, as at 23, to receive the flat end of the cooperating rod section therein and a removable pivot 24 passes through the ends of the said rod sections. The tubular sections comprising the stem have their ends in contact with shoulders 25 formed in the bore of a split sleeve 26. The sleeve 26 is of any desired length, and the said sleeve has its outer surface gradually tapered to the ends thereof. Passed over the stem and the flared periphery of the sleeve there are any desired number of cuffs 27 whose bores are flared. The cuffs at points opposite the center thereof are peripherally formed with series of oppositely disposed substantially V-shaped notches 28. The inner and straight walls of these notches are designed to be engaged by a suitable implement, such as a punch and the said punch is subjected to a force such as the impact of a hammer or the like and whereby the sleeves are brought into tight frictional engagement with the flared split sleeve 26 to cause the said sleeve to frictionally engage with the stem sections or to cause the cuffs to travel off of the sleeve to permit of the said sleeve being removed from the stem sections. By this simple arrangement it will be noted that the handle portion of the device may be lengthened or shortened to suit conditions.

The device is operated by at least three hands when the culvert is of any determined length and is never operated by less than two hands, one of which grasps the tool adjacent to the blade 1, the second, when three are employed, grasps the tool close to the center thereof while the other hand grasps the handle of the tool. The blade is, of course, inserted in the culvert and the pointed end thereof is shoved against the dirt or other material that clogs the culvert. The operator at the handle end of the device manipulates the lever 19 to cant, or if desired, to oscillate the blade so that the same will both penetrate and agitate the dirt or other clogging material. By thus manipulating the tool the same will dig through the clogged material and by canting the blade and removing the same from the culvert the clogged material will be drawn therefrom and dumped to one side of the culvert. The operation is, of course, continued until the culvert is entirely cleaned.

The construction and advantages of the improvement will, it is thought, be apparent to those skilled in the art to which such invention relates so that further detailed description will not be required. Obviously I do not wish to be restricted to the precise details herein set forth and, therefore, hold myself entitled to make such changes therefrom as fairly fall within the scope of what I claim.

Having described the invention, I claim:

1. A cleaning device for culverts, comprising a blade having a straight head, a tubular stem, a handle on the outer end thereof, comprising a bifurcated member, arms extending from the stem and pivotally secured to the blade, and to the head adjacent to the ends thereof, a rod member pivotally secured to the head adjacent the top thereof and guided through the stem, a lever having a rounded end which is pivotally secured in the bifurcated head to which lever the rod is pivoted.

2. A cleaning device for culverts, comprising a blade having a straight head, a tubular stem, a handle on the outer end thereof comprising a bifurcated member, arms extending from the stem and pivotally secured to the blade and to the head adjacent to the ends thereof, a rod member pivotally secured to the head adjacent the top thereof and guided through the stem, a lever having a rounded end which is pivotally secured in the bifurcated head and to which lever the rod is pivoted and a combined spacer element for the arms of the bifurcated head and a stop element for the lever when swung thereagainst.

3. A cleaning device for culverts, comprising a blade having a straight head, a tubular sleeve, a clamp fixed on one end of the sleeve having angularly disposed downwardly inclined arms extending therefrom and which arms are pivoted to the head adjacent the ends thereof, a handle comprising a bifurcated member having one end formed with a split tube which is clamped around the outer end of the stem, a rod guided through the stem and pivotally secured to the head adjacent to the top of said head, a lever having a rounded end which is pivoted between the arms of the bifurcated handle and to which lever the free end of the rod is pivoted, said lever having a laterally extending handle, and a spacer element for the arms of the bifurcated handle against which the lever contacts when swung in the handle.

4. A cleaning device for culverts comprising a blade whose body portion is arched in cross section and whose rear portion is flat and affords a head which is rounded to its juncture with the body, the sides of the body having their upper edges rounded and concaved to form the outer center of the body with a point, a tubular stem made up of removably connected sections, arms on one end of the stem pivotally secured to the head, a rod made up of removably connected sections centrally guided through the stem, the head of the blade having a central notch, a reinforcing bracket in the head having eyes disposed to the opposite sides of the notch between which one end of the rod is received and pivoted, a bifurcated handle removably

secured on the outer end of the stem, a lever having a curved end pivoted in the bifurcated handle and to which lever the outer end of the rod is also pivoted.

5. A cleaning device for culverts comprising a blade having an inner straight head, a tubular stem made up of sections, a split sleeve having inner shoulders, said stem sections being received in the sleeve and the ends thereof contacting with the shoulders, said sleeve having its outer surface flared from its center to its ends, cuffs having flared bores arranged over the split sleeve, said cuffs having series of peripheral V-shaped notches to the sides of the center thereof, angle rods on the inner end of the stem pivotally secured to the head of the plate, a rod made up of connected sections guided through the stem, and having one end pivotally secured to the head of the blade, a bifurcated handle removably secured to the outer end of the stem, a lever pivoted in the bifurcated handle and to which lever the rod is also pivoted.

In testimony whereof I affix my signature.

JOHN L. BARWICK.