March 3, 1942. W. R. TIFFANY 2,274,970

DIGGER CHAIN BLADE AND SOIL ELEVATOR

Filed Jan. 15, 1941

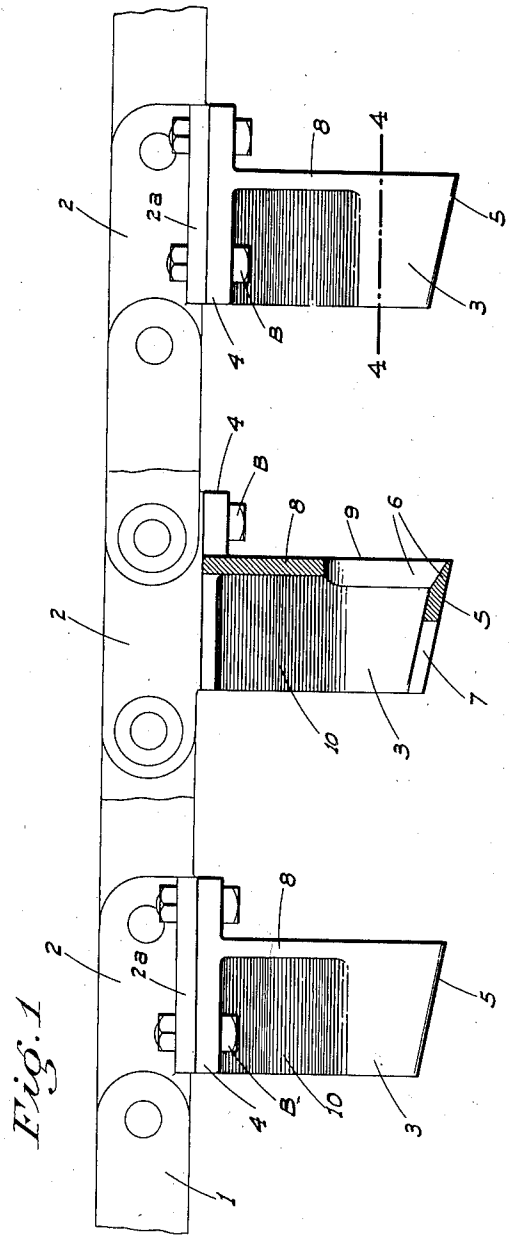


Fig. 1

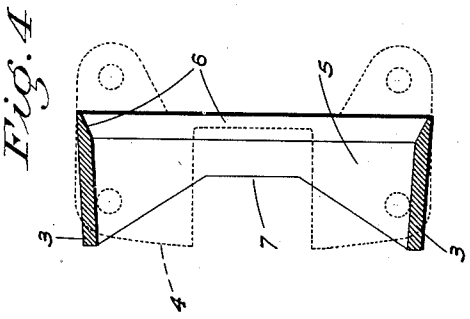


Fig. 4

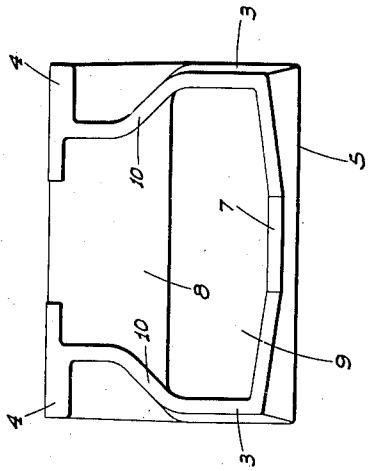


Fig. 3

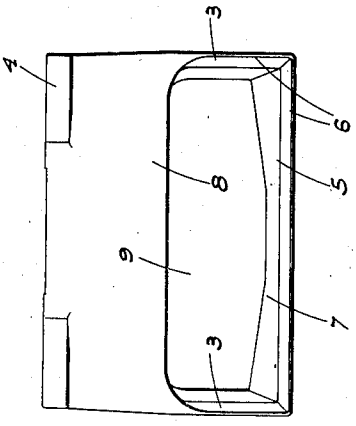


Fig. 2

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Patented Mar. 3, 1942

2,274,970

UNITED STATES PATENT OFFICE

2,274,970

DIGGER CHAIN BLADE AND SOIL ELEVATOR

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Application January 15, 1941, Serial No. 374,529

4 Claims. (Cl. 37—191)

This invention relates to ditch digging equipment, and particularly to a digger blade for the endless chain type of ditch digger such as is commonly used in digging narrow ditches for irrigation laterals, underground pipe, etc.

The principal object of my invention is to provide a blade for the purpose so constructed that an efficient digging action is had with a minimum of friction and wear, one which prevents possible packing of the dirt as cut and which also acts to elevate the cut or excavated dirt from the ditch. The cutting and elevating features being incorporated in a compact unit depending from a single link of the chain, a great number of cutters may be mounted on the chain and a rapid cutting action, with a minimum of strain on any one blade, is obtained.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a fragmentary side elevation of a digger chain, showing a number of adjacent digger blades mounted thereon, one such blade being in section.

Figure 2 is a front end view of a blade detached.

Figure 3 is a rear end view of a blade.

Figure 4 is a sectional plan on line 4—4 of Fig. 1.

Referring now more particularly to the characters of reference on the drawing, the chain 1 as here shown includes alternate attachment links 2 of standard form to which my improved blade units are connected in depending relation. Each unit comprises side walls 3 depending from the top side flanges 4 which match and abut against the side flanges 2a of attachment links 2; the matching flanges being secured together by bolts B.

The side walls at their lower end are connected by a bottom plate 5 forming a blade. The forward edge of the blade, as well as the forward edges of the lower portion of the walls are alined with each other and are beveled as at 6 to form cutting edges. The blade slopes upwardly, or toward the chain, from its front to its rear end, and is cut away in a forward direction from side to side for a certain distance from the rear edge of the side walls as shown at 7.

This cut away feature, together with the upward slope of the blade, prevents packing of the cut dirt within the unit, since the dirt soon after being cut, is free to drop behind the blade and collapse. Continued frictional contact of the dirt with the unit is also relieved.

A front dirt pushing plate 8 is formed integral with side walls 3 and extends to the top of flanges 4 from a bottom level parallel to and some distance above blade 5, thus providing a rectangular dirt entry opening 9 outlined by the blade, the lower portions of the side walls and the bottom edge of plate 8. The front face of plate 8 is flat and said face and the side edges thereof are flush with cutting edges 6 as clearly shown in Figs. 1 and 2. Besides acting to elevate the cut dirt from the ditch, as the chain slopes upwardly from the same, the plate serves as a brace between the side walls.

Above the bottom of the plate 8, the side walls, which are behind the plate, are deflected inwardly toward each other as at 10, so as to brace plate 8 against possible rearward deflection, and also tending to prevent dirt passing through opening 9, from piling up behind plate 8.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A digger unit for use on an endless digger chain comprising side walls adapted to be secured on and depend from a link of the chain, a bottom plate forming a blade connecting the side walls and extending rearwardly from the forward edge thereof, and a transverse dirt engaging plate rigid with the side walls and extending upwardly from a lower termination above the blade.

2. A digger unit for use on an endless digger chain comprising side walls adapted to be secured on and depend from a link of the chain, a bottom plate forming a blade connecting the side walls and extending rearwardly from the forward edge thereof, and a transverse dirt engaging plate rigid with the side walls and extend-

ing upwardly from a lower termination above the blade; said last named plate being disposed in a plane substantially flush with the forward edges of the blade and side walls.

3. A unit as in claim 1, in which said dirt engaging plate is substantially rectangular and its side edges substantially aline with the outer face of the side walls at their forward end.

4. A unit as in claim 1, in which the side edges of the dirt engaging plate are substantially alined with the outer face of the side walls below said plate and said side walls, above the bottom of said plate, extending upwardly behind and in engagement with the plate in converging relation to each other.

WILLIAM R. TIFFANY.