No. 891,000. PATENTED JUNE 16, 1908.

G. A. OMWAKE.

DITCHING MACHINE.

APPLICATION FILED NOV. 29, 1907.

Fig. 1.

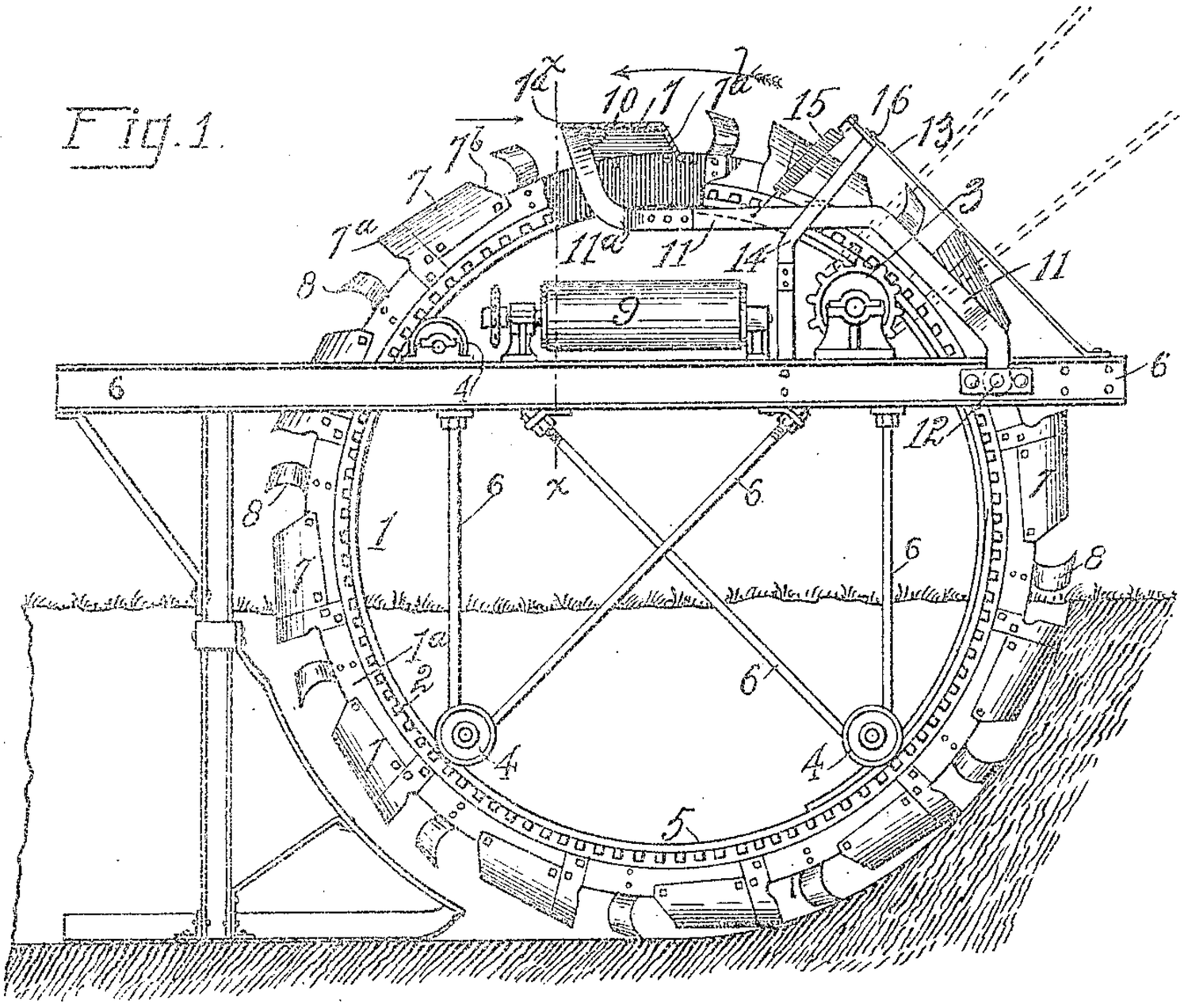


Fig. 2.

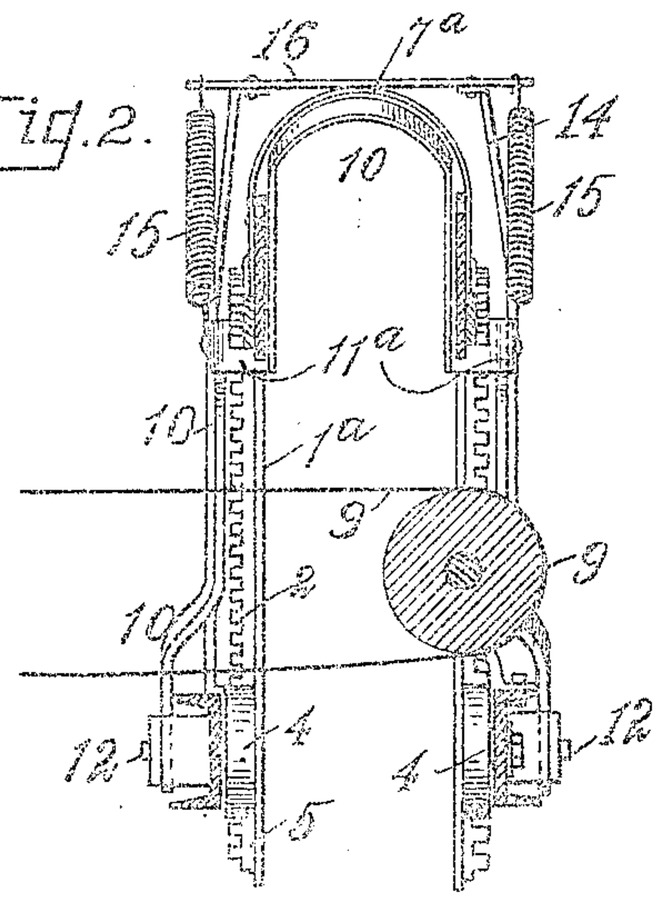


Fig. 3.

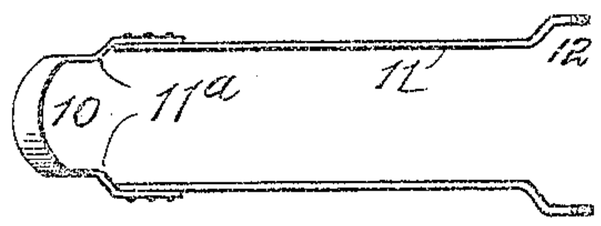
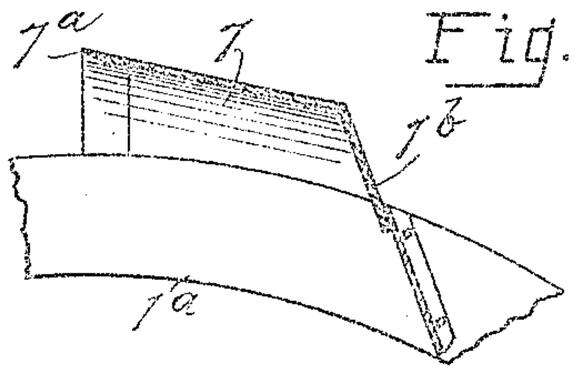


Fig. 4.



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GEORGE A. OMWAKE, OF CROMER, OHIO.

DITCHING-MACHINE.

No. 891,000. Specification of Letters Patent. Patented June 16, 1908.

Application filed November 29, 1907. Serial No. 404,327.

To all whom it may concern:

Be it known that I, GEORGE A. OMWAKE, a citizen of the United States, residing at Cromer, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Ditching-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ditching machines, of that class in which the scoops or shovels are mounted upon the periphery of a stout ring,—that is, a wheel having no spokes or hub,—the ring being supported internally upon rollers and being driven by gears engaged with a circular rack upon the ring. In this class of ditching machines a serious difficulty heretofore encountered is that the shovels or scoops fail to clear themselves of earth, especially in wet or clayey ground. Various devices have been tried for obviating this objection but have not proved satisfactory. My invention is designed to overcome the difficulty here indicated, and, more particularly, to provide an attachment for machines of the character indicated which shall quickly and certainly clean each of the scoops or shovels as soon as it has performed its work; which shall be cheap, durable, and highly efficient, and which may be attached to any of the machines of this class already in use. I accomplish these results by means of the devices and arrangement of parts hereinafter described and shown, and illustrated in the accompanying drawings, in which,—

Figure 1 is a side-elevation of the digging mechanism of a machine of the described character provided with my scraping device; Fig. 2, a sectional front-elevation of a portion of the same, taken on line *x*—*x*, Fig. 1; Fig. 3, a bottom plan view of my scraper, hereinafter referred to, detached, and Fig. 4, a central vertical sectional elevation of one of the scoops or shovels with which my scraper is designed to coöperate.

Like numerals of reference indicate like parts throughout the drawings.

In the drawings, 1 is a large stout ring composed of two parallel rims 1^a and provided with circular racks 2 engaged and driven by gear-wheel 3. The ring 1 is supported upon and guided by a series of rollers 4 which travel upon internal tracks 5 upon the rims 1^a. These rollers are supported by and journaled upon a stout frame 6, projecting rearwardly from the machine, between two parallel parts of which frame the ring 1 revolves. The two rims of which the ring 1 is composed are secured in separated relation and are spaced apart and braced by means of scoops or shovels 7, which are substantially U-shaped in cross-section, the forward end of the scoop being provided with a cutting edge 7^a the other end being inclined backwardly and partly closed, as at 7^b, (see Fig. 4). The ring 1 is usually provided with a series of cutters 8 secured between the rings 1^a and which operate in advance of the scoops 7.

9 is an endless apron or conveyer mounted upon the frame 6 directly beneath the topmost part of the ring 1. This endless apron is arranged to receive the earth as it drops from the inverted scoops as they pass in succession above the apron after having respectively made their cut. The apron is arranged to carry and deposit the earth as it is received off to one side of the ditch.

The machine thus far described is of a well known type, and its construction and operation will be understood without further illustration or description.

10 is a U-shaped scraper curved to conform substantially to the interior transverse curvature of the scoops 7 and having its extremities attached to or extended as arms 11, the extremities of which are pivoted, as at 12, upon the frame of the machine. The arms 11 lie outside of and parallel with the rims 1^a, but near their ends opposite the pivots 12 the arms are bent inwardly, as at 11^a, so that the U-shaped upwardly curved scraper lies between the rims 1^a and in such position that the scraping edge of the scraper 10 is presented to the inner surface of the scoops as they successively pass the scraper. Two bars 13 and 14 are secured at their lower ends to the frame 6 and at their upper ends meet at an angle and are secured together. At this point a spring 15 is secured to the braces 13—14 and to the arm 11 of the scraper. The braces 13—14 not only serve as a support for the spring 15 but as a vertical guide for the arm 11. As shown in Fig. 2, the spring and the braces 13—14 are, preferably, duplicated at opposite sides of the ring 1, the braces being connected by cross-bars 16

The springs 15 hold the pivoted scraper pressed normally upward so that the scraping edge of the scraper strikes and follows and cleans the concave surface of each of the scoops 7 as it passes in inverted position above the endless apron 9. It will be seen that thus the scoops are enabled to work constantly at their full capacity without becoming packed or clogged with earth or clay; that the scrapings from the scoops fall directly upon the apron and are prevented from falling back into the excavation, and that the scraper is readily accessible for renewals, repairs, and for sharpening and may be readily attached to or detached from any of the machines of this class now in use.

Having described my invention, what I claim and desire to secure by Letters Patent is,—

1. In a machine of the described character, a circular rotatable series of scoops arranged in a vertical plane and adapted to discharge their contents by gravity at the top of their circular path, a conveyer disposed beneath the point of such discharge, and a spring-controlled scraper disposed directly above said conveyer and adapted to scrape successively the interior under side of each of the scoops in the series.

2. In a device of the described character, a circular rotatable series of scoops disposed in a vertical plane and adapted to discharge their contents by gravity at the uppermost point in their circular path, a conveyer disposed directly beneath such point of discharge, a frame for the support of the series of scoops, a scraper disposed directly above said conveyer, pivotal connections between the scraper and the frame, and a spring which holds said scraper pressed normally upward.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. OMWAKE.

Witnesses:
CLAYTON MURPHY,
ADA E. CAMERON.