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INCREASING THE EFFECIENCY OF TEMPORARY DITCH EXCAVATOR

Annotation: *The article notes that two straight – disc drives are installed in front of the channel excavator in order to improve the irrigation, thus reducing the quality of the channel excavation. During the excavation, due to partial disintegration of the soil layer due to rotational movement of the discs, the slope of the ditch is maintained at the required level and interrupted the problem of maintaining the uniformity of the ditch sidewall.*

Key words: *The greatest length, The smallest length, Maximum water consumption, Minimum water consumption, КОП-500А, КЗУ-0,5, КПУ-2000А, КБН-0,35, КЗУ-03, temporary, longitudinal, cross.*

Nowadays futher improvement of irrigated lands, wide spreading of intensive methods of agricultural production, first of oll, water and resourse-saving modern technologies is one of the fields which are well paid attention in The Republic of Uzbekistan. In this regard, the use of water-saving modern technologies and maintenance of irrigation networks is always in technically good condition, and creating and the use of energy-saving modern technologies are very important. As we know, temporary irrigation networks are used for irrigating of crops on the surface of the ground.

Temporary irrigation networks are dug at the beginning of the irrigation season and leveled after the end of the irrigation season. Temporary irrigation networks include temporary irrigation ditches, beams and irrigation furrows.

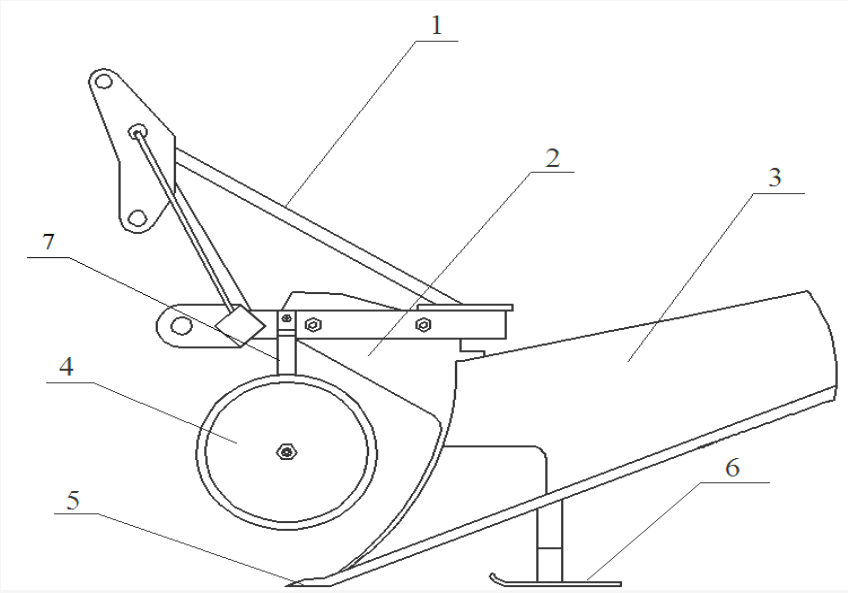
The recommended moderate rates for temporary irrigation networks are shown in Table 1. (Н.Т. Лактаев) [2].

1-table

The parametres of an arrow ditch *(The information of N.T.Laktaev)*

Parametres of a temporary ditch	**Layout scheme**	
	longitudinal	**cross**
The greatest length, m	600-800	400
The smallest length, m	300-400	300
Maximum water consumption 1/sek	60	40
Minimum water consumption 1/sek	10	10
The distance between The temporary ditches, m	70	According to the length of the furow

In Uzbekistan for irrigating crops КОП-500А, КЗУ-0,5, КПУ-2000А, КБН-0,35, КЗУ-0,3 branded ditch excavators dig the ditches, dig up the soil along the ditches as well as smooth and provide the slope of the ditches [1]. These ditch excavators have also some disadvantages. For example, these ditch axcavators need much energy for digging out the ditches on hard surface of the ground. The amount of large lumps increases, as a result, the quality of the softening decreases and as a result of deformation of the equipments of excavators. They lose geometric shapes. Magnitude of resistance force of the soil and requiring considerable effort to lay the working equipment during excavation are main disadvantages. Taking into account the aboves, in order to improve the productivity of the temporary ditch excavator, two straight disks are mounted at a certain distance to the forward part of the overturner of the excavator for reduction of the soil softening resistance and improvement quality of the soil fraction and the slope of the ditch [3]. (1-a,b picture)



1-picture. Overview of improved temporary ditch excavator.

a-Side view of improved temporary temporary ditch excavator

b-Front view of improved temporary ditch excavator

The improved ditch excavator includes the frame 1, the frame of main working equipment 2, the overturner 3, rotating two straight disks which are mounted at a certain distance between each other to the forward part of the excavator 4, lemex 5, equipment for condensation bottom of ditch 6, the rack which disks mounted 7. The straight disks are mounted on the racks using a connecting arrow. The technological process of the improved ditch excavation is as follows: During excavation, the working equipment is mounted on the back of excavator by hanging and put into operation. Due to the forward movement of the tractor, the working equipment is lowered to a certain depth in the soil. In the process of digging a temporary ditch the straight disks, which are located at a cartain distance, are buried in the soil. And the disks move around their axis.

1-picture. Overview of the device

The disks cut the soil layer in front of the overturner of the excavator at a specified depth. The crushed soil layer is pushed to the side with the help of the overturner and the ditch is ready. As can be seen from the aboves, the force resistance will be reduced during digging process of the ditch excavator with the straight disks. In the process of excavation, a qualitative ditch is formed by the dislocation of of the soil layer with disks, providing the slope and geometrical shape of the ditch. Dogging temporary ditch with the ditch excavator improved with disks will reduce energy consumption and increase productivity by 8 to 10 percent.

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