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DEEP SOFTENING WAS CARRIED OUT BY WORKING BODIES ANALYSIS OF SCIENTIFIC AND RESEARCH WORK

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ANNOTATION

The article presents the location of the working bodies of the combined machine that prepares the soil in one pass for planting rice crops, as well as the technology of high-quality soil treatment.

Key words: *machine, soil, field crops, technology, furrow softener, ploughshare, irrigation ditch.*

Introduction: Today, around 4.0 million hectares, including 3.1 million in Asian countries. 1 hectare of land, poliz products are grown, which makes up 78 percent of the total cultivated area. It is important to use advanced tillage technologies and modern equipment while maintaining soil fertility in order to obtain a high yield in the cultivation of rice crops.

M.Murodov, R.I. on justification of the types and parameters of the work bodies included in the combined aggregates in our republic. Baymetov, A. Tokhtakoziyev, F.M. Mamatov, I.T. Ergashev, Sh.M. Muradov, M. Mirakhmatov, Kh.R. Research works were carried out by Ghafarov, M.A. Allanazarov, B.K. Utepbergenov, S. Aminov, I.Z. Nosirov, I.A. Inoyatov, A.O. Khadji-Muradov, A.D. Nuriddinov, X.A. Faizullayev and others.

Analysis of constructions of deep softening working bodies

Deep softening working bodies (Fig. 1 and 2) are designed for basic soil processing. They soften the soil well. The following types of chisel working bodies are used: vertical handle (Fig. 1. a); with a slanted handle (Fig. 1. b), has low traction resistance and softens the soil well; with a curved handle (Fig. 1. c), the advantages are the same as those of a slanted handle, and it completely destroys the scythes at the bottom of the egate.

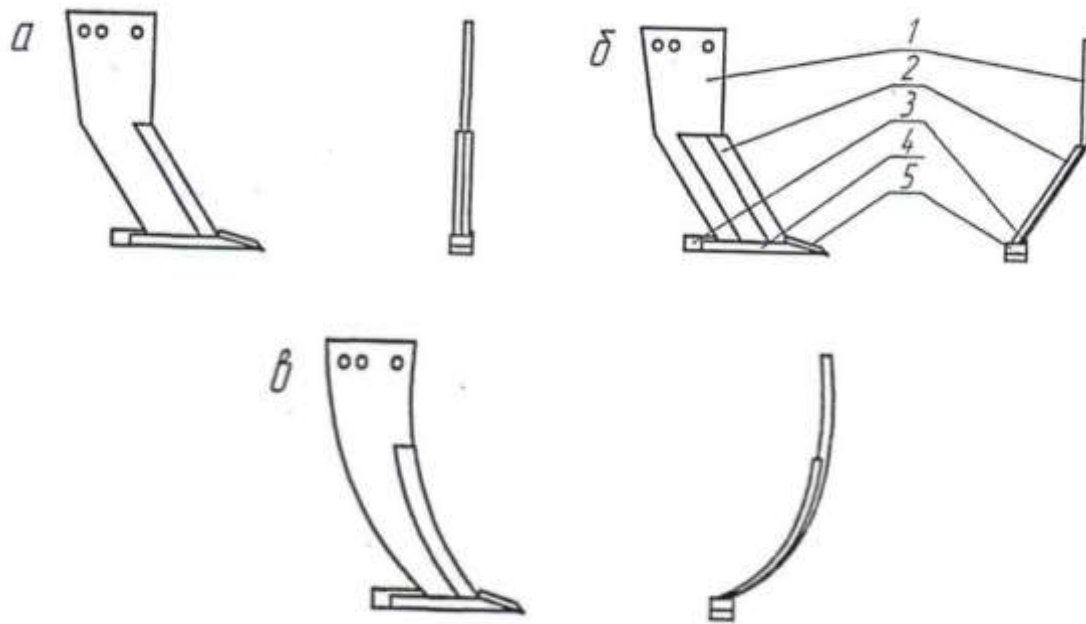
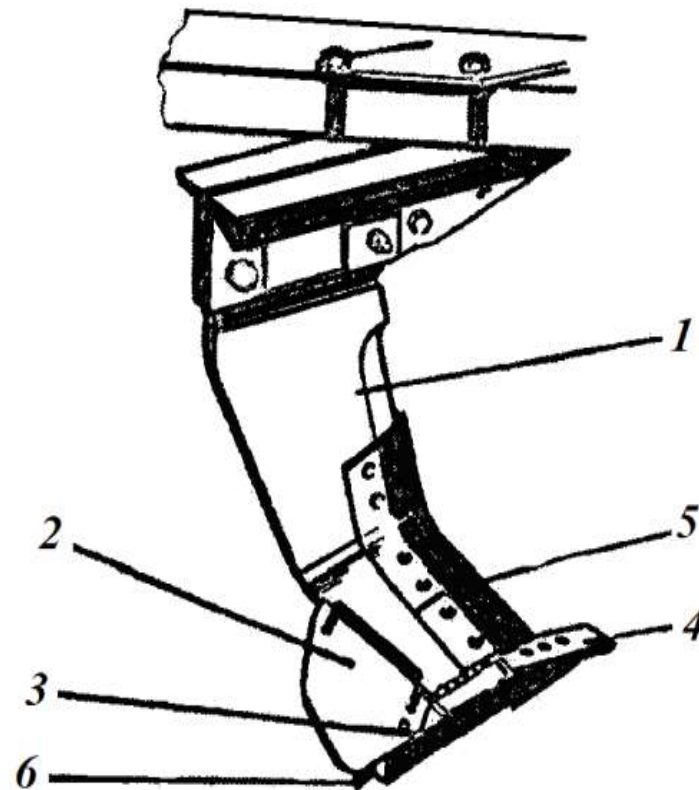


Figure 1. Type of chisel working bodies: 1 – handle; 2 – knife; 3 – field board; 4 – the head; 5 – anchor

In the plug softener [67-69] designed for radical improvement of perennial meadows, a working body with a slanted handle was used. The working body of the "Paraplau" type consists of a handle 1, a softening plate 2, an awl 3, an awl 4, a knife 5 and a field board 6 (Fig. 2). Under it is the presence of a plate 2 with a tilt and twist adjustment, which is installed on the lower part of the back of the handle. At the bottom of the handle, a needle 3 with a replaceable needle is closed. The front part of the handle is sharpened on one side, and ten replaceable knives 5 are attached. From the left side, the field board 6 is attached to the pin 3. The difference between the 1st type of working bodies and the 2nd type of working bodies is that the bending line of the body handle of the 1st type is above the surface of the cultivated soil, and that of the 2nd type is below the soil surface. During the operation of the plug softener, the soil slab is bent in the longitudinal and transverse planes under the influence of the handle and the working surface of the softening plate.



2 – picture. Work body without tilting handle

Bending and stretching stresses that occur in this case lead to the formation of fractures along the smallest line of connection between the plank aggregates. Based on the tests, the energy transmitted through the working surfaces of the blade, handle and softening plates is not dissipated into the tilled soil as is the case with vertical handle working bodies. As a result, the soil aggregates are softened without mixing and coming to the surface of the field. Up to 90% of plant residues remain on the surface of the treated field, due to the formation of numerous cracks and breaks in the soil, the loss of moisture on the surface is reduced by 85-90% compared to plowing. The use of such working bodies in a plug-softener reduces the energy consumption for soil cultivation by 30% on average compared to conventional plows with a tipper. The most important of the achievements in chisel processing is the creation of working bodies for processing with and without a tipper.

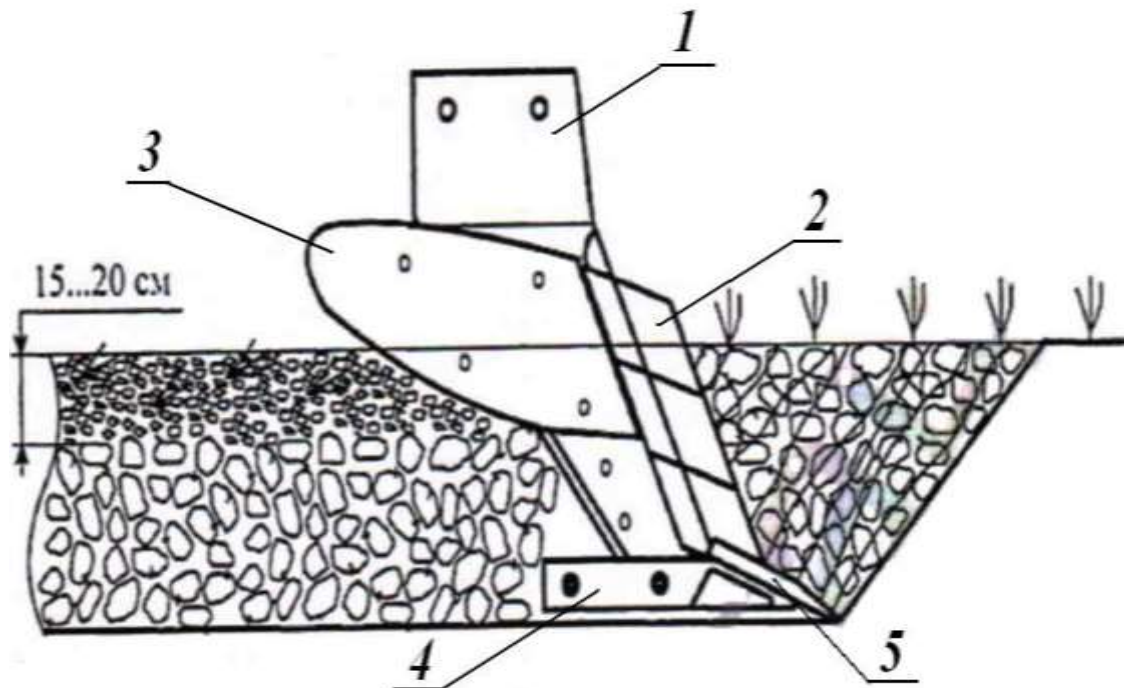


Figure 3. Working body with tilting handle

This body of work has several advantages [68]. In this case, the tipper is attached to the upper part of the handle. The tiller's processing depth is 15 cm. The vise performs its function in the same way as in a working body with an inclined handle. The tiller overturns the top layer, resulting in weeds and plant debris being buried in the resulting depth. As a result, microbiological processes accelerate in the additionally softened layers 0-15, which leads to the formation of humus and accumulation of organic substances in the upper layer. Based on the above, this project envisages the use of a working body with a tilting handle in a combined unit for deep loosening of the soil of the planting area for planting rice crops and justifying its parameters.

Summary: The analysis shows that it is reasonable to develop the design and parameters of passive deep reclamation softening tools with the accuracy and durability of the construction, simplicity and low cost. It is possible to reduce the fuel consumption and other costs and the harmful effects of agricultural machinery on the soil during autumn preparation of the soil for sowing of cash crops by using a combined unit that performs soil preparation operations simultaneously.

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