ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

DEVELOPMENT OF A LONG-TERM PLANER STRUCTURE EQUIPPED WITH A MILLING SOFTENER

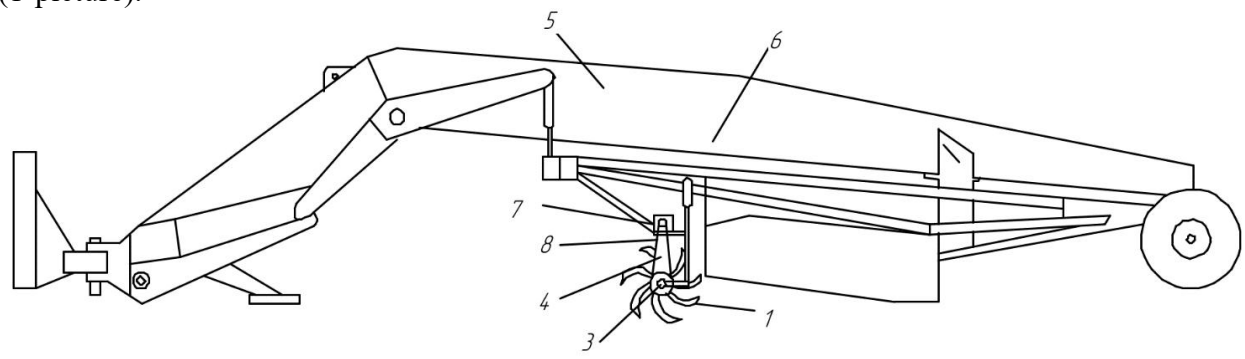
Ochilov Mukhriddinjon Zokirovich
Intern researcher at Bukhara State Technical University

Abstract: The article provides information on the role and importance of the basic leveler in leveling areas, the work carried out in this area in our republic, the attention given to it, and the structural design of the basic leveler..
Key words: soil, agrotechnical measures, milling cutter, economic efficiency, aggregate speed, hydromotor, energy, techniques and technologies, mechanical structure, hubs, support column, hydraulic cylinder.

Introduction: Resolution of the President of the Republic of Uzbekistan No. PQ-103 “On additional measures to stimulate the provision of the agrarian sector with modern agricultural machinery” was adopted [1]. The resolution aims to improve the system of incentives for the timely and high-quality implementation of necessary agrotechnical measures in the cultivation of agricultural products, to meet the demand for agricultural machinery in the agricultural sector, and to provide agricultural enterprises with modern and resource-saving equipment instead of morally and physically obsolete equipment. In accordance with this resolution, a total of 2.6 trillion soums will be allocated to finance the purchase of agricultural machinery in 2023-2024. [1, 2].

The existence of various sizes of irregularities in the existing cultivated areas in our country's irrigated agriculture and their negative impact on mechanized technological processes in irrigation and maintenance of crops indicate the need to improve leveling units for leveling existing cultivated areas. [3, 4].

Solution method: As a result of studying existing problems, a structural diagram of a basic land leveler was developed to determine the agrotechnical and energy performance indicators (1-picture).

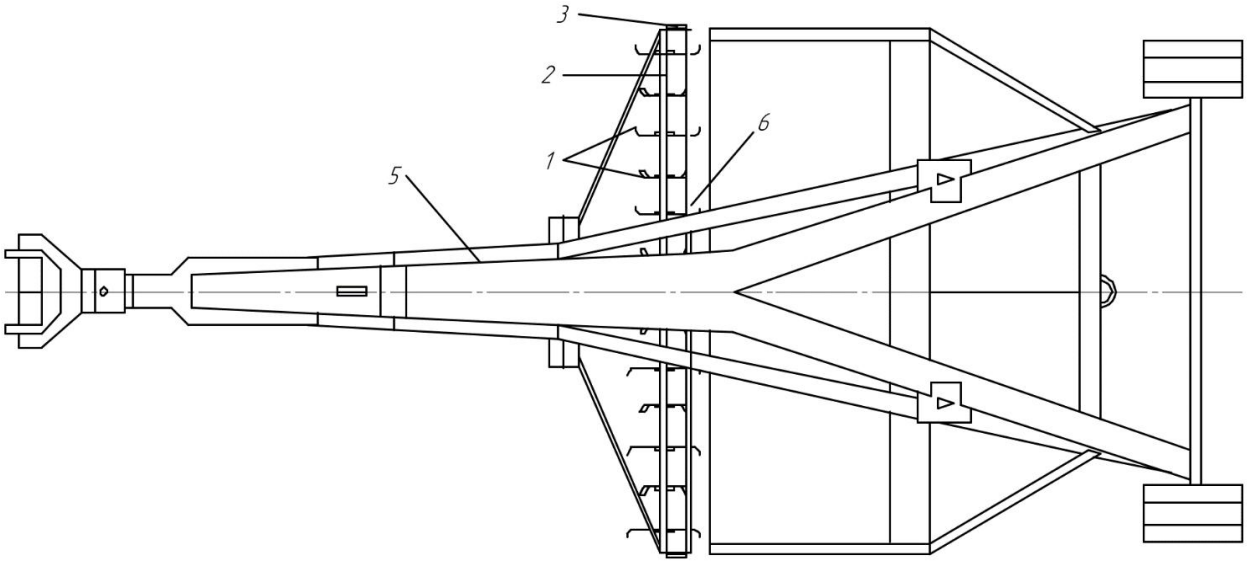


a

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai



b

1-milling cutters, 2-axis with milling cutters installed, 3-bumpers, 4-support column holding the axis, 5-device frame, 6- hydraulic cylinders for lifting and lowering milling machines, 7- hydromotor 8- drive chain.

a) side view, b) view from above

1-picture. Long leveling device with a softening milling cutter

The technological process of the softening milling device is as follows: during the forward movement of the longitudinal leveling unit, the milling device is brought into working condition using a hydraulic cylinder. The milling cutters, rotating around their axis, cut and soften a certain layer of soil in front of the bucket and crush various plant roots and residual stems, large clods. Softened and fragmented clods, cut and crushed roots and residual stems are formed in front of the leveling bucket, and a larger volume of soil pile is placed on the leveling bucket, the resistance of the leveling bucket blade to shearing the soil is reduced, at the same time, the soil pile is completely spread across the width of the bucket, as a result, the leveling quality of the area increases. The milling cutters are installed in two opposite directions, one half of which is equal to the axis. The rotary motion of the milling cutters is transmitted through a hydromotor and chain transmissions. Using a milling device on a long leveler reduces the resistance of the leveler's digging blade to cutting the soil, and the quality of leveling is improved by crushing large clods, roots, and residual stems..

The theoretical significance of the research results is that its main results are effective in improving the working bodies of the land leveling unit and improving its efficiency. The theoretical and practical proposals developed as a result of the research work provide practical and theoretical assistance in the effective use of the land leveling unit in ensuring the efficiency of the development of agricultural production..

LIST OF USED LITERATURE:

1. 29.03.2023 y “Agrar sektorni zamonaviy qishloq xo’jaligi texnikalari bilan ta’minlashni rag’batlantirishning qo’shimcha chora-tadbirlari” Resolution of the President of the Republic of Uzbekistan on

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 09,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

2. 2022 y 28th of january “Decree No. PF-60 "On the Development Strategy of the New Uzbekistan for 2022-2026"
3. Хасанов И.С. Обоснование основных параметров планировщика для работы на малых участках: Дис. канд.техн.наук.–Янгиюль, 1994. – 132 с.
4. J.J.Qo‘chqorov in research “Bazali tekislagich diskli yumshatkichlarining parametrlarini asoslash” Бухоро – 2021 yil
5. Никора О.Н., Никора К.В., Гавриленко Л.В. Длинобазовый плани-ровщик. Патент СССР. От 22.03.1982 г. № SU 1229271.
6. F.M.Mamatov, I.G‘.Temirov Agricultural machinery. Textbook. Tashkent “Voris – nashriyot” 2019 - 631 b
7. FAP20210208
8. Аугамбаев М, Иванов А.З, Терехов Ю,И. Основы планирования научно-исследовательского эксперимента–Тошкент: Ўқитувчи, 1993.–336
9. Спирин Н.А., Лавров В.В. Методы планирования и обработки результатов инженерного эксперимента.–Екатеринбург: ГОУ ВПО Уральский государственный технический университет–УПИ, 2004.–258 с.
10. Доспехов Б.А. Методика полевого опыта.–Москва: Колос, 1978.–335с.