*Results of independent experimental researches prove the mechanical-chemical mechanism of wear process metal frictional surfaces. Features of abrasive wear process are considered. Results of researches of microstructure, hardness, phase structure, trials on wear process in conditions of abrasive environment influence are brought. Examples of application the wear-resistant coverage's are presented.*

***Wear resistance, working organs agricultural machines, abrasive wear, hardening point, effect self-sharpening, cutting edge.***

UDC
631.3.004.62

## EFFECT OF CHANGE SETTINGS lancet paws on the draw RESISTANCE TYPE UNITS

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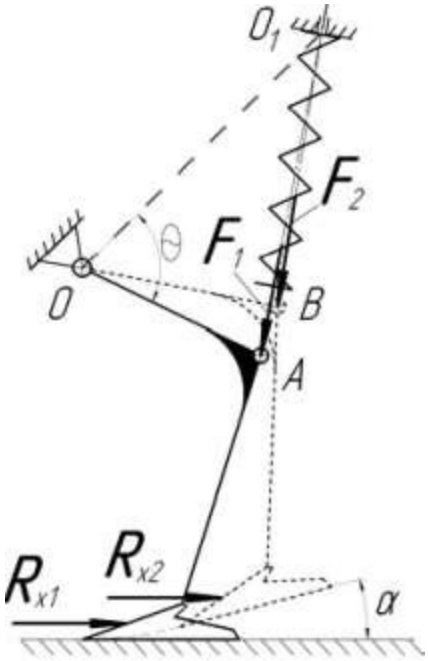
*It has been establishedabout the effects of changing parameters (wear) paw pointed type of traction resistance unit.*

***Paw lancet type of wear, rear bevel blade, rack design, traction resistance.***

**Resolutionska problem.** Naybilsh common body of work in minimum tillage technology is paw pointed type. The influence of parameters (wear) working bodies in the process of energy and agronomic performance, and ultimately, the harvest is the most significant. The process of changing parameters paws lancet type occurs in several stages, characterized by the degree of wear of the cutting edge and the size of the rear bevel blade. The reason for the formation of the rear facet was investigated. Therefore, the study of the influence of parameters on paws lancet type energy performance is a key issue and requires further study.

**AnaLiz recent research.** Andsnuet several assumptions about utsion rear bevel blade legs. One of them is the formation of the rear facet similar to blunt cutting tools [1]. There is also an assumption about the formation of facets due to movement of the blade paws "for complex trajectories, defined as fluctuations paws depth and its

onstupalnym movement "[2]. In our opinion, the second version is more reasonable. Past observations show that paw pointed type move in the soil than horizontally, and deflected back at an angle □□ (Fig. 1 fluctuations of the working body is relative to this position [3]. This angle depends on soil properties and geometrical parameters of the legs.




Ric. 1. Scheme of forces acting on the rack legs.

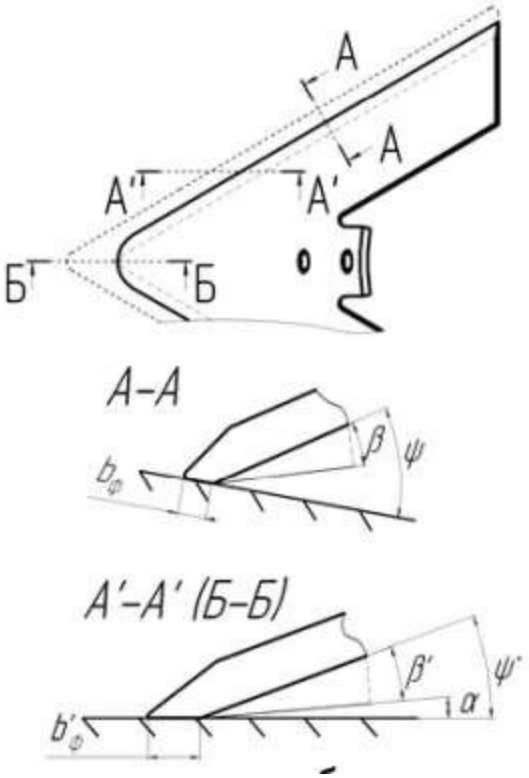
Danassumption is also confirmed by studies VN Tkachev to determine the wear Cultivator paws on soils with different texture, which indicated that the angle of the rear facet depends on soil moisture and content in the "physical clay" and heavy soil texture is more important than light [4].

**Metanddperssurvey findings**. EIDnachyty toSectionlil frommines parameters (Withnoshuvannya) paw pointed type of traction resistance unit.

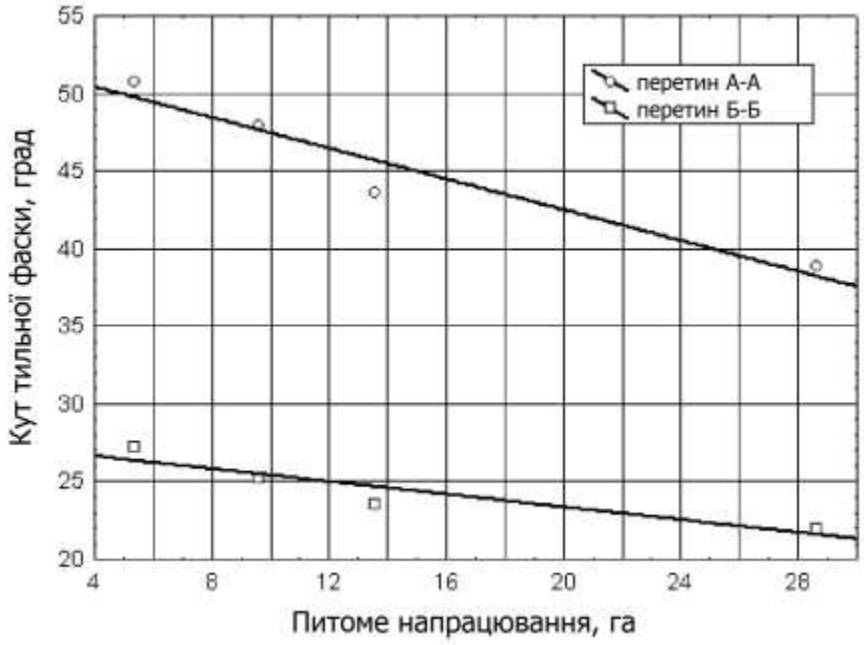
**Rezultaty dossurvey findings.** Theoreticalneither tand experimentsmental study geometry wear paws lancet type sivalky- cultivator STS-2 showed that the angle of the rear facet □2) (Fig. the blade paws depends on the operating time (Fig. 3).

In theidpovidno to conducted studies to determine the parameters fromnoshuvannya paws lancet type bevel angle back with increasing operating time decreases to some constant value for a specific working body. At this angle is different for the toe pointed wings and legs. This pattern of wear paws explained deviation rack (respectively, and legs) of the original

onprovisions to resultand supportsin DecemberNTU replacement forlin, uaboutSectionidtverdzhuyetsya uneven bottom grooves (Fig. 4).




Ric. 2. Geometry wear paw pointed type.




Ric. 3. The dependence of the angle of the rear facet of use.

In theidpovidno schemes to reject paw pointed type of initial installation as a result of it the resistance movement of the body in the ground, which is shown in (Fig. 2)

geometric calculations found that the angles between the facets on the location of the rear toe *A1-A'1* and *B-B* (section 1-1) in first approximation, have the same shape) and on the wing □ (PeretuCategories*AA*) Have the following relationship:

$$\psi = arctg\left[tg(\psi - \beta)\cdot \sin\gamma\right] + arctg\left[tg\beta \cdot \sin\gamma\right], \quad (1)$$

where □ - Angle crushing paws in section *A-And*(Figure. 2) deg .; □ - Rozhylu angle wings paws degrees.

Ric. 4. It is the working body drills cultivator STS-2 in the soil.

If the suggested deviation of the working body in the process of hauling in excess of a certain value of resistance $R_{X1}$ (Figure. 1) and the formation of wear facets back parallel to the bottom

borozField us, the horizontal component of resistance to traction paws lancet type drills, cultivators STS-2, with fuse spring is proportional to its spring characteristics:

$$R_{X2} \approx F_2 = c\left(\Delta l_0 + \Delta l\right), \quad (2)$$

where *with*- Spring stiffness N / $\Delta l_0$ – Draftdnye compression springs m;

m; $\Delta l$ – withyousnennya springs in the process, m.

Squeeze springsand to procB robotand EIDnachayetsya

geometric calculation when considering triangles *OO1And*tand*AboutO1V* (Ric. 1):

$$\Delta l = l - \sqrt{l^2 - 4r^2\cdot \sin^2\theta} + \cos\theta + \sqrt{r^2 - \left(\frac{l}{2}\right)^2 \cdot \sin^2\left|\alpha\right| \cdot \sin^2\left|\theta - \alpha\right|}, \quad (3)$$

where *l1* - The length of the spring in the mounting position of the city; $r_2$- Turning radius point *In the*around the hinge *About*,m; - angle between the beam counters *OO1*,and lever *AboutAnd*in the mounting position of the working body, hail.

ThenDi horizontal component traction resistance of the working body:

$$R_{2X} = \frac{F_2 \cdot l_F}{l_R}, \quad (4)$$

where $F_2$- The force that occurs during compression spring fuse, N; *IF* and*lR*
– shouldersand energy
$F_2$and*R2*,respectively, m.

The resulting expression (4) together with expressions (1-3) can determined by established empirically blade bevel angle back paws average value of the horizontal component of the traction resistance of each working body that perceives coupling tractor. However, equation (4) obtained from some assumptions that in the process of sowing - kultyvatora frame and rack lapy- opener is absolutely rigid. Also we neglect gravity and friction that occurs in the joints.

In fact, while working under dynamic forces arising in the design of elastic deformation, which give some allowance to the corner □□, which is very difficult to estimate theoretically, as needed eksperymentalna test suggested.

**Conclusion.** The study identified rdBand resistance paws lancet type depending on the change of parameters (angle rear bevel blade) and structural supports.

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*Installed Effect Changed parameters (yznos) lapы strelchatoho type Resistance to traction unit.*

***Paw strelchatoho type, yznos, tылnaya bevel blade, rack constructions, traction resistance.***

*The effect of changes in parameters (depreciation) on the paws lancet type tractive resistance unit.*

***Paws lancet type wear, rear bevel blade, stand design, draft resistance.***