точностью аналитическими методами. В самом деле, известно, например, что разрежение в вакуумных камерах высевающих аппаратов сеялок СУПН-8 и СКПП-12 не превышает 3.6 кПа, что не намного отличается от расчетных. Следует при этом отметить, что давление, превышающее 3.0 кПа, в определенных условиях может оказываться излишним.

Это часто наблюдается в виде присасывания к одной присоске нескольких семян, что крайне нежелательно.

Прогнозированием точного давления воздуха с последующим тщательным его регулированием на требуемую величину можно свести присасывание по 2 и больше семян к минимуму. Полученные закономерности движения семян в фазе отбора позволяют находить наиболее благоприятные режимные параметры рабочего процесса высевающего аппарата.

ВЫВОДЫ

1. Разработана математическая модель однозернового дозирования семян пневматическими высевающими аппаратами с наружной поверхностью дозирования и закономерности перемещения семян и захватывающих отверстий.

2. Определены режимные параметры рабочего процесса высевающего аппарата с наружной поверхностью дозирования.

3. Установлены пределы конечных перемещений семян и присосок аппарата при различных давлениях и их критические скорости движения.

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CONSIDERATIONS ON DESIGNING A FACE-MILLING CUTTER FOR OPEN PLANE SURFACES PROCESSING

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Rezumat. Freza este realizată cu elemente aşchietoare sub forma unor dinţi demontabili, pe care sunt brazate plăcuţe aşchietoare. Geometria frezei permite prelucrarea în condiţii optime a materialelor cu duritate mică şi mijlocie. Ascuţirea şi reascuţirea părţilor aşchietoare ale dinţilor se realizează după principiul ascuţirii continue.

Key words: Continuous sharpening, Dismountable teeth, Face-milling cutter.

INTRODUCTION

The present work discusses the building of a face-milling cutter with dismountable teeth, and the continuous sharpening, intended to open plane surfaces processing.

Open plane surfaces processing is an operation often met in mechanical engineering. To work out these surfaces, the most used proceeding is cutting with milling heads.

These tools are built with fastening cones directly on the milling machine, or are provided with special diameter of bore. In the second case, the milling head fastening is made by special, standardized milling-machine arbores.

At present, there exists a various range of milling heads, depending on the fastening system of removing tips on the tool frame.

Thus, there exist milling heads which use tips mounted directly on the frame, or chip removing teeth, on which are mounted the chip removing parts.

The firms producing removing tips also diversified the milling heads' construction by working out tips which can be sharpened and resharpened, and tips that don't allow resharpening.

A wide range of milling heads with resharpenable tips allows the working out of this operation by conical grinding.

To work out this operation, the chip removing tips or bodies are reoriented in seats or are placed using special surfaces.

OBJECT AND TECHNIQUE OF RESEARCHES

The milling cutter is composed of a body 1 (see Fig. 1) which is fastened in the milling machine axle by means of the ISO-50 cone. On the opposite side of the body are equipped several canals, in which are fastened the chip removing teeth 2.

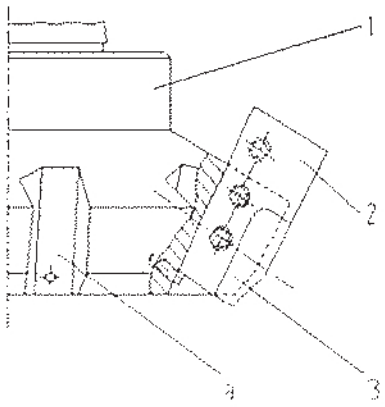

Fig. 1. Side view of the milling cutter

These teeth have a prismatic shape and are equipped with some grooves in which are strong brazing the chip removing tips. Also, each tooth is equipped with 3 threaded bores in which are mounted all two screws which insure the teeth fastening on the milling head body. Initially, the screws are mounted in the bores from the tips. Once the retargeting stock is consumed, the lower part screws are mounted in the bores from the upper part of the teeth.

The teeth positioning in the body grooves is made by placing them on the „a" surfaces of the grooves (Fig. 2), guiding them on the "b" surfaces, and leaning them upon the pegs 5, pressed in the milling cutter body in bores specially made on the "b" surfaces of the grooves.

RESULTS OF RESEARCHES AND THEIR ANALYSIS

During the experiments the characteristics of a Merck-Fe sample of high purity were used, refried in vacuum at 1400 °C for 4 hours and cooled with a 5 °C per minute (table 1).

Table 1.

The characteristic of the lines of diffraction to the Merck sample

hkl	d_0	a	b_0	2 θ
110	2,024	2,8629	2,35	57,13
211	1,1697	2,8653	6,85	116,89

To work out the required seating angles, the „c" surfaces of the grooves are inclined as against the same radial plane under an angle â, given by the following relation:

$$\beta = \alpha + \gamma \qquad (1)$$

in which ă represents the imposed optimal seating angle. This construction insures the possibility of working out positive removal angles, at the same time as insuring the continuous sharpening.

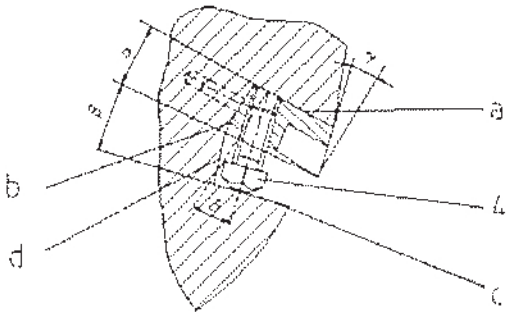

Fig. 2. Section through groove with the teeth in working position.

The blocking screws axis is inclined towards the normal to the tooth seating surface with an angle δ:

$$\delta = 2\alpha + \gamma \qquad (2)$$

The slope angles of the grinding wheel axis towards the milling cutter axis are presented in Fig. 3.

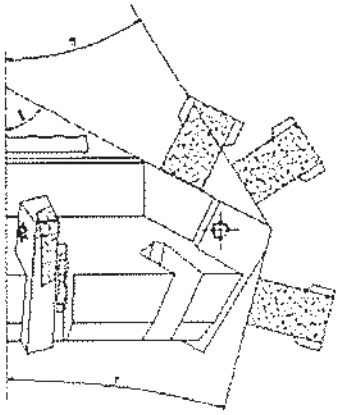

Fig. 3. The sharpening mode of the milling-cutter teeth

As it can be noticed from the figure, the sharpening can be applied to the main seating faces, the passing seating faces, and the secondary seating faces. All these sharpening are worked out from the same fastening (with the teeth mounted in the sharpening position).

CONCLUSIONS

1. Offers a simple construction from the constructive, functional and technological point of view.
2. Offers the possibility of groove grinding after the heat-treatment applied to the body, which permits the functioning precision of the teeth.
3. There can also be grinded the side surfaces of the teeth.
4. It also offers a good blocking, due to the screws axis slope towards the seating surface; the clamping force insures the contact on the seating and guiding surfaces.
5. It reduces the resharpening time.
6. Both in the working position and the sharpening position, the tooth has the same seating position.

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