



## DEVELOPMENT OF CURVED SURFACES

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<https://doi.org/10.5281/zenodo.13329569>

**ANNOTATSIYA:** Ish o'rnini mehnatni ilmiy tashkil qilish talablari asosida yo'lga qo'yish; asbob tanlash, gira balandligini ishlovchi bo'yiga qarab o'rnatish; trenajyor qurilmalaridan foydalanish; egovlashdagi hamma ish usullarini ongli va to'g'ri bajarish; xavfsiz mehnat qilish, mexanizatsiyalashtirilgan moslama va asboblardan foydalanish kabi amallarni egallashlari lozim.

**KALIT SO'ZLAR:** go'niyalar, quloqli gaykalar va chilangarlik po'lat arra ramkasining orqa uchlari, rejalash shablonlari, chilangarlik bolg'alari, egri chiziq sirtli hap xil ishlab chiqarish zagotovkalari.

**АННОТАЦИЯ:** Организовать рабочее место на основе требований научной организации труда; подобрать инструмент, установить высоту гирла в соответствии с ростом работающего; пользоваться тренажерами; Осознанно и правильно выполнять все приемы работы в организации; владеть такими действиями, как безопасная работа, применение механизированных приспособлений и инструментов.

**КЛЮЧЕВЫЕ СЛОВА:** дюбели, гайки и задние части рам пил слесарных станков, шаблоны для строгания, молотки слесарные, криволинейные поверхности, различные производственные заготовки.

**ANNOTATION:** Setting up the workplace based on the requirements of the scientific organization of work; tool selection, setting the gira height according to the worker's height; use of exercise equipment; Consciously and correctly perform all work methods in the organization; they should master actions such as safe work, use of mechanized devices and tools

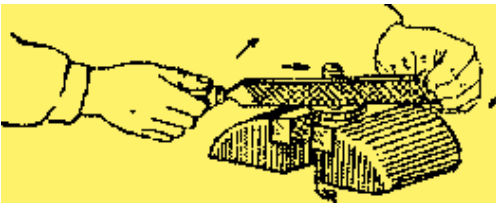
**KEY WORDS:** dowels, lug nuts and locksmith steel saw frame back ends, planing templates, locksmith hammers, curved surface hap various manufacturing zagotovka.

**RESULTS:** rules for choosing tools and devices and methods of their use; possible types of failures and their causes and measures to prevent them; requirements for the scientific organization of the workplace; the function and structure of simulators and mechanized devices, the rules of their use; to learn the safety rules in handling. 250-300 mm long 2- and 3-digit flat chisels with pointed ends, 200 mm long 2-digit chisels, circular and semi-circular chisels, planing tools (planing circle, ruler, kerner), radius gauge, scale a set of tools with rulers, turning-cleaning lathe. Order of work. Contouring of convex surfaces

1. Holding a fixed cylindrical rod in a horizontal position.

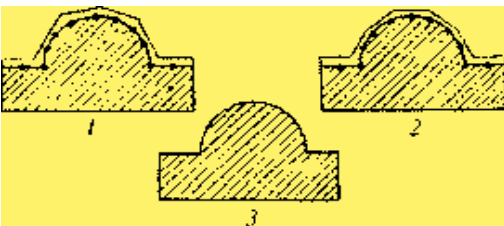


1. The rod should be attached to the gira in such a way that its working part protrudes from the jaws of the gira from the left or right side. Sterjen should be adjusted according to the following position: the beginning of the working stroke - the tip of the elbow is lowered, the handle is raised; the middle of the work walk - the ego is in a horizontal position; the end of the working process - the tip of the ego is raised, the handle is lowered. When turning, the steering wheel is periodically removed from the girder and turned a little (1/5-1/6 turn). Using the indicated method, the convex surfaces of the parts being processed, for example, the hammer seal and the key handle with the end nut, etc., are prepared). 2. Holding a fixed cylindrical rod in a vertical position.



2. The rod is fixed perpendicular to the jaws of the gira. Sterjen should be adjusted according to the following position of the ego: the beginning of the work march - the ego tip is turned to the left; the end of the work walk - the tip of the ego is directed forward. When turning, the steering wheel is periodically released from the girder and turned a little (1/6-1/5 turn).

3. Trim the convex surface of the zagotovka with a thickness of 3-5 mm.



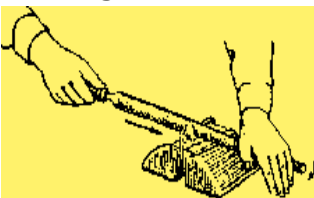
3. The rough product is planned according to the drawing. For this, a margin of 2-3 mm is left. The material is cut in the form of polygons without reaching the planning line by 0.5 mm. Its convex surface is trimmed with a transverse surface and a margin of 0.1-0.2 mm for finishing. The convex surface

is checked with a template and processed leaving fold lines. 1. Designing concave surfaces with a large radius of curvature.



1. The rough product is planned. It is clamped in such a way that the concave part is at the top. The concave surface is smoothed with the rounded part of the semi-circular groove, leaving 0.1-0.2 mm; During operation, the device is slightly turned and moved to the right or left along the surface being treated. The concave surface is processed along longitudinal lines.

2. Design of concave surfaces with a small radius of curvature.



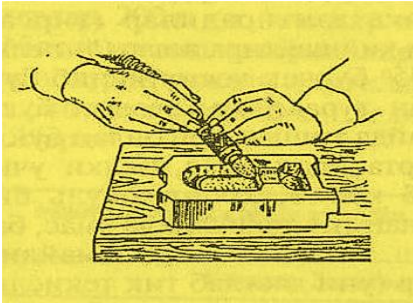
2. The round ego is selected in such a way that its diameter is smaller than twice the radius of curvature. The ego is rotated around its axis during the work process and is egoized according to the plan. 3. Checking the radius of curvature with a template or radius.



3. Curvature with a large radius is checked by the light slit method with a certain template. Curvature with a small radius is checked by the light slit method with a template or radius gauge. Processing curved surfaces with a mechanized tool. 1. Processing the surface with a milling cutter, a rotating round ego, an abrasive head.

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Reminder. With milling cutters, a thick layer of metal is removed or surfaces and



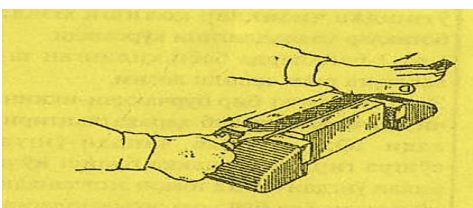
edges are roughly cleaned; shaped round egos are used for precise processing; surfaces treated with shaped abrasive heads are given a final cleaning treatment. The shape of the tool is selected according to the configuration of the surface being processed.

1. The rear end of the cutting tool is placed on the tool holder of the turning-cleaning lathe. The walker is started and the machine is tested to run smoothly. The form is checked with

certain templates, and the surface is processed to the required cleanliness. Safety rules when working on curved surfaces. It is forbidden to work with an ego without a handle or with a broken handle; the handles must have a smooth and polished outer surface and a base. When cleaning, do not hold the tip of the cleaner from below: if you move it without using it, your hand may touch the zagotovka and your fingers may be injured. When the ego is pushed too far forward, the handle can hit the edge of the trigger, and the rear end of the ego can come off the handle, causing injury to the hand. It is not recommended to remove the scum formed during cleaning and blow away, otherwise the hands may be injured and the scum may fall into the eyes: the scum is removed with a brush. In order to save work time, workbenches, jigs, working and measuring tools should be kept in order and stored in appropriate places. It is strictly forbidden to work with electrified and pneumatic tools without first studying the special instructions. Difficulties students face and mistakes they make and how to avoid them. When taking the ego, the students hold the handle of the ego in the right hand incorrectly (they stretch the index finger along the handle, turn the paws of the hand in relation to the plane of the ego); when bending, they move the left wrist like a pendulum (lower and raise the elbow); they bend the body (lower the right shoulder); instead of turning their bodies to form an angle of  $45^\circ$ , they stand with their sides to the gira, and bend the ego by placing it transversely to the object; when making longitudinal lines with a small toothed ego, they hold the ego not from the middle, but from the end; the item is clamped to the gira and measured with a compass; the product is measured with a circle not in a vertical plane, but in a horizontal plane; they do not use torture; they measure incorrectly with an angle (instead of first pressing it on a vertical plane, and then lowering it down), they press it on a horizontal plane; parallel, curved lines are determined using a barbell circle, not a circle circle.

**DISCUSSION:** Fastening the rough material in the gira.

1. Zagotovka is carefully fixed so that the wide surface of the jaws protrudes 8-10 mm. It is not suitable to fasten the details with the edges of the jaws of the gira, because then the jaws will be crooked and the zagotovka will not hold the pyxta. Usually, 1 mm for egov. until The excess should be cut off. 2. Trim a wide surface with longitudinal lines. Reminder. When cutting a detail with longitudinal lines, the size of the cut should be chosen based on such a calculation that it is at least 150 mm longer than the part being cut.



2. The gira should be installed (turned) in such a way that the ego moves along the zagotovka. Edging starts from the left edge of the surface. When moving backwards, the ego is pushed about  $1/3$  of its width to the right. After one pass, turning is repeated from right to left in the same

way as above. During the Egov work trip, the whole zagotovka; special importance is attached

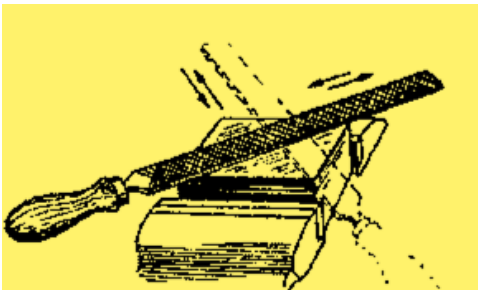
to touching the surface. The worker stands on the right side of the gear with his right elbow on the machine. Gavra is turned 450 degrees to the right from the ego's line of motion. Ego balancing should be followed. 3. Cut a wide surface with transverse lines.



3. The gira is set so that (turned), the ego moves in a transverse direction relative to the zagotovka. The surface is treated in one of the following ways:

a) when the ego is walking backwards, it is pushed to the right (or left) approximately equal to its width after each step;

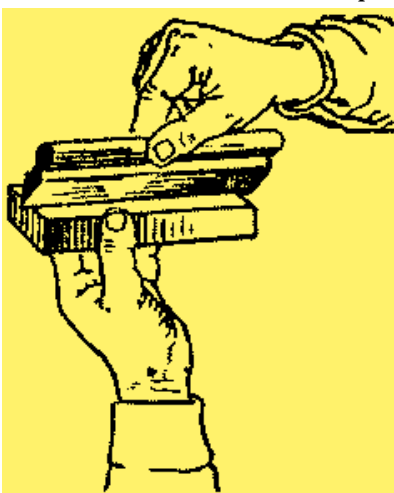
b) ego to the right (or to the left) is moved to a size approximately equal to its own width. The surface is fixed 5-8 mm above the jaws of the gira. Ego balancing is followed. A right angle is formed between the edges being processed and the edges adjacent to them. Do not allow the edges to become slanted. The resulting lines are eliminated with a toothed ego of number 2. 4. Covering a wide surface with lines.



4. Gira is set so that ego 30-400 angle relative to zagotovka moves in position. Before one of the indicated methods is used, and the wide surface is tilted from left to right. The gira is turned in such a way that the ego moves at an angle of 30-400 relative to the zagotovka. The wide surface is tilted from right to left. The quality of the surface treatment is checked according to the

lines. If the lines formed in the previous pass completely disappear in the repeated pass, the surface is considered to be properly finished. The presence of lines from the previous pass indicates the presence of depressions on the surface. It is necessary to comply with the requirements stated in clauses 1 and 2. The ego is moved from one corner to another. The surface is tilted first from left to right, then from right to left by turning the gear at an angle; the ego is continued to move diagonally without moving to transverse or longitudinal egos. When a diagonal line is formed along the entire surface being processed, the working position and the position of the ego are changed, and the ego is switched to the second diagonal direction.

**CONCLUSION:** Check and prepare the wide surface with a ruler.



Dirt on the treated surface is removed with a brush or cloth. The material is removed from the gira, and its wide surface is treated in any of the previously indicated ways (longitudinal, transverse or cross lines). After 1-2 passes, the material is removed from the machine and the quality of the surface is checked with a level ruler as follows:

a) zagotovka with the left hand, right hand and the ruler is caught with;

b) the line is on the surface under inspection is placed in a perpendicular position with the edge, while the ruler should cover the surface along its entire length. (The ruler should not be moved over the metal, it should be lifted from the

surface every time and then put in another position);

c) when turning towards the light source, the zagotovka is raised to the level of the eyes and the ruler is placed in a perpendicular direction to the examined surface;

g) along the treated surface, transversely and diagonally

It is necessary to check from corner to corner, if the ruler and a crack of light between the surface

if it is not or it is flat, the surface is correctly curved, if the light slit is uneven, it is not correctly curved.

d) control the quality of processing (depending on the evenness of the slot). The surface treated in other directions is checked in the same way. The convex areas identified on the surface are polished, and the light gap between the line and the polished surface is at the required level..

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