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NOTE NEW DESIGNS, EXTENSIVE MODERNIZATION OF MACHINE-TOOL PARK

NEW PRECISION BORING MACHINE -- Sovetskaya Kirgiziya, No 65, 1 Apr 50

The Frunze Repair Plant of the Ministry of Agriculture Kirgiz SSR has started mass production of the URB-VP boring machine, designed by Engineer Voronov. This plant is the first in the Soviet Union to produce this type of machine tool. It will precision-bore connecting rod heads for automobile and tractor engines, eliminating further scraping operations before installation.

TO BUILD NEW SEMIAUTOMATIC -- Trud, No 68, 21 Mar 50

A brigade leader at the Kalibr Plant submitted sketches of a semiautomatic which would replace five turret lathes. Designer Ovechkin has approved the drawings and the new machine will be manufactured in a very short time.

INNOVATION WILL INCREASE PRODUCTION RATE -- Moskovskiy Komsomolets, No 36, 23 Mar 50

Machining the measuring device of a micrometer is done on one section of a conveyer at the Kalibr Plant. This operation is performed by Vladimir Utkin, a Stalin Prize winner, and his brigade. Previously, a lathe operator had to use 11 successive tools for this operation. Utkin found a way to cut the number of tools to seven and in some cases was able to use old and cast-off tools, which had been used by other sections, without hurting the quality of the product. As a result, not only was a great saving effected in salvaged pobedit cutting tools, reamers, and counterbores, but there was a rapid increase in the rate of the entire productive process.

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Utkin, his brigade, and Engineer Ovechkin have developed a combination machine tool for machining these measuring devices which will replace five existing turret lathes. It will soon go into actual production.

SEMIAUTOMATIC FOR MOLDING GRINDING WHEELS -- Sovetskaya Litva, No 76, 30 Mar 50

Until recently, packing of abrasive grains into molds was done by hand, a process which was slow and outmoded. At present, a large park of semiautomatic packing machines, designed by Engineer N. F. Volynin, is in operation at the Leningrad Il'ich Plant. The durability of large grinding wheels has been doubled and the consumption of raw material considerably decreased.

MACHINE TOOLS REPLACE CONVENTIONAL TYPES -- Krasnaya Zvezda, No 70, 23 Mar 50

The Kharkov Light Combination-Machine-Tool Plant fulfilled the Five-Year Plan ahead of time in gross production and in number of types of machine tools.

During the postwar Five-Year Plan the plant has produced hundreds of high-production universal combination machine tools for automobile and tractor plants and agricultural machine-building plants. During this year the plant has manufactured seven multispindle combination machine tools for the Shadrinsk Machine-Building Plant. These combination machine tools replaced 35 conventional types.

CONVERT MACHINE TOOLS TO HIGH-SPEED CUTTING -- Trud, No 68, 21 Mar 50

Associates at the Leningrad Polytechnical Institute imeni M. I. Kalinin have worked out a method for determining the suitability of machine tools for high-speed machining of metals and ways of modernizing the tools. They have scientifically proven that three-fourths of the machine-tool park existing in the Soviet Union can be converted to high-speed methods. Conversion is accomplished for the most part by increasing the number of revolutions, increasing the power of machine tools, improving the weak points in their design, cutting the time required for auxiliary operations, and instituting measures for accident prevention.

In cooperation with scientists at the Polytechnical Institute, workers of the Leningrad Plant imeni Sverdlov are mounting spindles on roller bearings in the DIP lathes. This is being copied by many enterprises.

MODERNIZE MACHINE TOOLS -- Leningradskaya Pravda, No 71, 24 Mar 50

Conclusions based on experiments of innovators in machine-building enterprises throughout the country in respect to modernization of metal-cutting machine tools have been made at the Laboratory for Cutting of the House of Technology. A series of schematic drawings has graphically shown how equipment could be converted to high-speed methods with a minimum loss of time and labor. At present, the laboratory is disseminating the experiments of innovators to Leningrad plants. At the same time, a retooling of existing machine tools for increased cutting speeds is taking place in the demonstration hall.

Visitors are shown a horizontal milling machine recently been set up in the hall which is equipped with an attachment which permits high-speed face-milling. The attachment, designed by the chief of the laboratory, S. L. Fokinym, consists of a special head which is fastened to the tool holder and stand of the machine tool. A supplementary electric motor, which drives a spindle on which a milling cutter is mounted, is installed on this same tool holder. The mill on the spindle can be replaced by a drill or any other metal-cutting tool according to the

need. The head, depending on the type of operation, can be mounted in different positions, which makes possible the milling of a part at any angle. The cutting speed in face milling can reach 300 meters per minute; the number of spindle revolutions can be brought to 1,500 and more, thus making possible high-speed machining of light metals.

Horizontal milling machines are being modernized in many Leningrad plants. Modernization is not presenting any technical difficulties.

The Udmurt screw-cutting lathe has been modernized according to methods developed by Candidates in Technical Sciences I. M. and A. M. Kucher. Its rated speed is 450 rpm. This speed was nearly doubled by merely replacing the motor. By improving the longitudinal and traverse feed spindles, together with other additions and changes, the innovators were able to increase considerably the speed of metalworking and shorten the time required for preliminary operations.

Machine tools are also being modernized at the Dinotip, Krasnyy metallist, and other plants.

DEVELOP 2-POSITION FEED ON 4-SPINDLE AUTOMATIC LATHE -- Moskovaskaya Pravda, No 28, 23 Mar 50

Engineers Aver'yanov, Sheremet'yev, Komarov, and Sukhanov of the Second State Bearings Plant have introduced a so-called two-position metal feed on a four-spindle automatic lathe. Machine-tool productivity has increased 30-35 percent.

The two-position feed on a four-spindle automatic can be used when cutting trust-bearing races, as well as in manufacturing other parts.

THREAD LONG ONE-PIECE SCREWS -- Izvestiya, No 77, 31 Mar 50

A more than 14-meter-long screw had to be threaded for a new high-powered machine tool which was being assembled at the Gor'kiy Machine-Tool Building Plant. Ordinarily, a screw of this length would be made from three to four billets, each billet being machined individually. This method is not very satisfactory. The suggestion that only one billet be used was not satisfactory either since only half of the screw bar would fit into the bed of the machine and the other half remained suspended. The problem was solved by setting up special supports to hold the loose end of the bar.

Lathe operator Smirnov, who made the above suggestion, also devised a method whereby he could machine parts to specified size by attaching a signal light to his machine. If the cutters should remove chips even a hair's breadth beyond the specified length, the light in the signal bulb goes on immediately. The checking of parts during machining has thus been eliminated.

TECHNOLOGICAL PROGRESS AT AVTOARMATURA PLANT -- Leningradskaya Pravda, No 69, 22 Mar 50

Personnel of the Avtoarmatura Plant are constantly increasing the output of products, perfecting 10-15 new types of parts yearly. Rejects in comparison with 1948 have been decreased 40 percent and flaws on some parts have been completely eliminated.

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A great deal of technological progress has been made at this plant. Cold upsetting of parts is being used, riveting and rolling-out machine tools have been perfected, anode-mechanical metal cutting and electrohardening of tools have been introduced. spectral analysis of metals and mechanization of a number of labor-consuming processes have been perfected.

Assembly of automobile signals had been a bottleneck for a long time. The majority of assembly operations were performed by hand. In an effort to mechanize these operations, Toporov designed a number of simple and original attachments which cut labor consumption 25 percent in the manufacture of each signal.

Threading bolts and taps was previously done with cutting tools. A method of performing this operation with knurling rollers has been developed. This tripled labor productivity and improved the quality of parts.

Other innovations have been instituted at this plant, including an automatic for truing disks, modernization of a machine tool for anode-mechanical metal cutting, and the improvement of press molds and dies.

INNOVATIONS AT YEREVAN PLANT -- Kommunist, No 74, 28 Mar 50

By attaching a chip breaker to his machine, one worker at the Yerevan Machine-Tool Building Plant imeni Dzerzhinskiy was able to machine a spindle at a speed of 225 meters per minute with the use of ordinary cutting tools. He machined 75 parts instead of 30 according to the norm.

Plans are being made in the foundry to shift from hand molding to machine molding. A compressor will clean castings pneumatically. This will replace hand cleaning.

A special high-frequency unit for heat treatment of parts has been perfected and put into operation. Sixty gears can be tempered in 12 minutes; this operation formerly required 2 hours.

Among the bottlenecks at the plant was the machining of short screws. A special head for vertical threading was designed. With the use of the new lathe attachment, 50 shafts were threaded in 4 hours; this operation required 5 days under the conventional method.

Previously, the assembly shop experienced difficulties in meeting its norms in the assembly of gear boxes and machine tools. Work was done on an individual basis. Now separate units and entire machine tools are assembled on conveyer lines. While four men used to assemble only two gear boxes, after converting to conveyer methods these same four men were able to assemble four to five gear boxes per shift.

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