In recent years Soviet mines have been making increasing use of a new economic type of belt rotary-link swing chute with a sector-circular scheme of developing the terrace (Fig. 1).

The swing chute consists of console links and a rotary shoe in which the drive station and loading-drawing equipment are fitted.

As the terrace is worked the console links are increased with a windlass placed on the base. The chains are rotated by the drive bogies over a monorail placed on sleepers. The bogies are placed at the end of the chain. Each bogie is fitted with a drive.

In the middle of the discharge link there are the rejection plows, wedge-shaped, fitted on to the bogies.

The swing chute can operate in conjunction with conveyers and dump trucks.

The rotary-link swing chute has the following advantages:

- the area under the dump is small, since the material is discharged at an angle of 12-16°; with a long console there is a progressive increase in the width of the discharge turn;
- the small terrace areas permit them to be removed in direct proximity to the pit, which reduces the cost of transporting rocks to the dump;
- the low metal capacity and energy consumption; for example, a machine installed by the Karakoks Mining Authority with a length of 120 m, weighs 35 tons, and the capacity of the drive in only 55 kW, the cost is 16,600 rubles;
- the operating costs are lower than with existing dump equipment.

The low cost is due to the fact that the machine combines transportation and dumping and reduces the distance over which the material has to be moved.

A drawback of the machine is the need for systematic increase of the belt of the chute which weakens it, and the uneconomic feature of using it for locating dumps at a distance of more than 3-4 km from the face.

The relationship between cost of 1 m³ of material and dumping with different console lengths is shown in Fig. 2. The minimum cost of laying the rock in a dump is obtained with a chute length of 70-80 m.

However, the volume of rock in the pits which needs to be placed in the dump is much greater than that poured by a chute 80 m long. Therefore it is necessary to form several piles.* The scheme of the swing chute should be selected in accordance with these factors.

* The pile is the volume of rock poured from one chute installation.
After the first pile has been poured, it is obvious that it is best to move the swing chute to its summit which enables us to use the capacity formed after the first pouring.

Subsequent operation of the swing chute is possible by placing the console parallel or at a small angle to the horizontal ground surface.

When the console is placed parallel to the surface, the cost of 1 m³ of dumped material is lower than with a slightly inclined position (Fig. 3). This is because the cost of electricity increases more rapidly than the poured volume with an inclined console.