Innovative design of walnut shelling machine (2)

Main functional module mechanism design

The transmission mechanism is composed of a hopper 1, a chute 2, and a U-shaped guide rail 8. An opening B is provided at equal intervals on the hopper. The spacers on the chute 2 which are alternately arranged alternately form a plurality of cells, and one cell can only accommodate one walnut at a time. The walnut enters the cell of the chute along the U-shaped track through the B port of the hopper.

Microwave drying machine

At this time, the chute slides a distance of one cell length, the cell is opened, the walnut slides along the U-shaped guide rail, and the equidistant lines are arranged along the straight line into the loading position between the clamps. While the cell is open, the opening B is blocked to ensure that only one walnut is entered at a time. The reciprocating movement of the chute causes the cells to open and close intermittently, continuously releasing the walnuts in the cells and entering new walnuts.

The needle-adaptive fixture can simultaneously clamp a number of walnuts of different sizes and can accommodate different sizes of walnuts, so there is no need to classify walnuts before processing. The fixture consists of 4 parts, including two splints, springs and steel pins. The transverse diameter of the walnut is usually between 35 and 45 mm. In order to prevent the dryness of the steel needle from slipping, the clamping width is set to 27 mm. At this time, the minimum angle between the steel needle and the walnut surface is between 41 ° and 54 °, to ensure the single. There are at least 4 side clamping points, and the uniform density of the steel needle is set to 2.72 / 6 = 1.2 / cm2.

There is no relative movement between the two splints, and the steel pin is equipped with a limit card for loading the spring. During work, the walnut falls through the U-shaped track between the two clamps, the clamp is closed, the steel needle meets the walnut, and the limit card compresses the spring to force the walnut to clamp. The clamp clamps the walnut and reciprocates in a straight line, allowing the fixed cutter to cut the walnut. After the cutting is completed, the jig is relaxed, and the walnut enters the fence passage, and the process is repeated for the cycle.

Conclusion

(1) The cutting walnut peeling machine scheme enhances the adaptability of the shelling machine to walnuts of different sizes through the innovative design of the clamp. The method of breaking the shell, crushing and impacting eliminates the manual grading, improves the shelling rate and the integrity of the nuts, and is suitable for the factory production and promotion of the walnut production area.

(2) Through the innovative design of the transmission device, each walnut is treated as a separate processing object, and the one-to-one cutting is completed, which improves the rate of breaking the shell and reduces the rate of broken kernels.

3.Combining the fence channel with the blower can better separate the shell.