BLADE COATING DEVICE AND COATING APPARATUS

~~CROSS-REFERENCE TO RELATED APPLICATION~~

~~This application claims the priority of Chinese patent application No. 202010497169.8, entitled "BLADE COATING DEVICE AND COATING APPARATUS" and filed with the CNIPA on Jun. 03, 2020, disclosure of which is incorporated herein by reference in its entirety.~~

TECHNICAL FIELD

The present application relates to the technical field of coating and, in particular, to a blade coating device and a coating apparatus.

BACKFLOOR

With the rapid development of robot technology, robots are used more and more widely, but at present, there is no fully automatic equipment that can be used in the construction site of epoxy floor, and the existing construction technology generally relies on a polishing dust collector, an automatic mixer, a rolling brush/trowel and manual construction, and these tools need a lot of manual operation to complete the construction of the entire epoxy floor. In addition, the manual construction needs a long-term squatting operation, the labor intensity is high, the process is complex, the labor needs to bear the pungent smell volatilized from raw materials, the construction efficiency is low, and the health and safety of the construction personnel are endangered.

SUMMARY

An object of embodiments of the present application is to provide a blade coating device and a coating apparatus capable of automatically mixing, dispensing and spraying materials in combination with a guide cart, so as to solve the problems of low construction efficiency and endangering the health and safety of construction personnel in existing manual construction methods.

The embodiments of the present application provide a blade coating device. The apparatus includes a frame; a material mixing and dispensing mechanism, which is provided on the frame, and configured to mix a blade-coating material and for spraying the blade-coating material onto a floor to be blade-coated; and a blade coating actuator, which is configured to perform blade

231	first guide rod
232	upper plate
233	through motor
234	lower plate
235	first linear bearing
240	blade coating actuator
241	second guide rod
242	second linear bearing
243	elastic element
244	roller fixing plate
245	tension spring
246	rotating bracket
247	blade
228	translation platform module
229	material mixer
2262	rotating shaft
2261	stirring element
22	drive assembly
24	telescopic assembly
25	swing assembly
248	rotating axle

The feed bin 227 includes a plurality of material inlets 224, and is configured to mix a plurality of blade-coating materials. In this embodiment, the number of material inlets 224 may be two, two material inlets 224 are a paint inlet 2241 and a curing agent inlet 2242, respectively. The paint inlet 2241 and the curing agent inlet ~~225~~ 2242 may be connected to a material box through a flexible metal tube and a pump, the materials, such as paint and curing agent, in the material box may be pumped into the feed bin 227 through the flexible metal tube, and the material mixer 229 is mainly used for stirring and mixing the paint and the curing agent.

The dynamic mixing tube 226 is communicated with a lower end of the feed bin 227, disposed perpendicular to the floor, and configured to mix the blade-coating material entering the feed bin 227. A sprayer such as a spray nozzle is disposed at a lower end of the dynamic mixing tube 226, so that the mixed blade-coating material can be output to the floor. A stirring element 2261 is disposed in the dynamic mixing tube 226.

The drive assembly 22 is drivingly connected to the stirring element 2261 through a rotating shaft 2262, and configured to provide the active mixing for the blade-coating material.

After the preliminary mixing in the feed bin 227, on the one hand, the active mixing enables further full mixing of the plurality of blade-coating materials before dispensing the blade-coating materials, and on the other hand, active stirring is carried out in the dynamic mixing tube 226 of the material mixing and dispensing mechanism 220, and after the stirring is completed, the blade-coating materials are directly output to the floor to be blade-coated through the lower end of the dynamic mixing tube 226, thereby ensuring the mixing effect of the blade-coating materials, and avoiding the possible problem of an undesirable stirring effect or secondary precipitation of the blade-coating materials (which then affects the spraying effect) due to the time delay of conveying the blade-coating materials to the floor after the stirring is completed.

As an implementation, the drive assembly 22 may include a mixing motor 221 and a coupler 222. The stirring element 2261 may be a strip-shaped propeller, the mixing motor 221 is disposed above the feed bin 227, and a bearing seat 223 is disposed below the mixing motor 221. The mixing motor 221 is connected to the rotating shaft 2262 through the coupler 222, and the rotating shaft 2262 extends through the bearing seat 223 to the feed bin 227 and downward into the dynamic mixing tube 226 to be connected to the strip-shaped propeller in the dynamic mixing tube 226, so that the mixing motor 221 can drive the strip-shaped propeller to rotate and fully stir and mix various blade-coating materials flowing into the dynamic mixing tube 226.