Auto Climbing Multi-Link Device Based on Gravity

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In order to help workers who climb to the top of the poles, such as flag poles, telegraph poles and billboards, to do the detection and maintenance, we create this multi-link gravity based climbing machine which can take heavy materials with it. This equipment's principle is so easy that it only depends on the level principle and then use gravity of the device to enable itself to lock firmly on the pole. Through the process of locking and unlocking, the device can move up and down. Through adjusting the distance of the hands, the device can adapt to the pole with different diameters. During the process of going up, the device suspends on the pole by its gravity. The motors actuate the lower links to lock on the pole and then make the upper links move a distance. The motors actuate the upper links to move upward and then lock on the pole. The motors actuate the lower links to move the same distance as the upper links. With the circulation of these processes, the device can finally climb up the pole. Vice versa. In conclusion, the key advantages of our device are that from principle, the device use the level principle to lock itself on the pole by its gravity; from structure, the incorporation of four links and two motors enables the device to move up and down simply, and the movable hands enable the device to adapt to different diameters of poles; from application, the device can carry camera to high places on the pole, test and maintain the road lamp, carry Wi-Fi devices to build up internet temporarily and etc..

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