

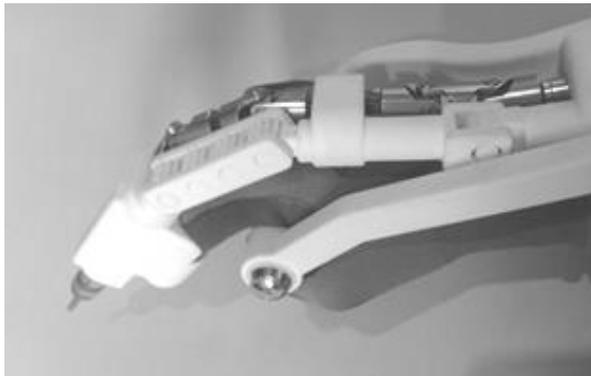
Flexible electric screwdriver

Cordless electric screwdriver wearable on the hand

Invention

Cordless screwdrivers are nowadays must-have components for any professional craftsman as well as for private do-it-yourself projects and repairs. The market offers a wide array of tailored products spanning a big range of functionalities, dimensions and prices. The most common tools have a T-Handle or a pistol grip and offer a comfortable grip facilitating the handling and avoiding hand fatigue and strain. In situations where it is necessary to access an area with very restricted space, however, there is a lack of

suitable tools in the actual state of the art. Offset screwdrivers with an angled head are the solutions proposed to fasten screws positioned, for example behind a radiator. This kind of tools requires the use of both hands and need a certain space. All in all a continuous work flow is not really possible with the existing models. The invention here presented is a cordless electric screwdriver



wearable on the hand. The flexible shaft runs over the back of the hand transferring the torque effectively to the screwdriver tip which can be precisely addressed with the index finger. The entire compressive force required at the bit is transferred across the guiding structure into the frame of the screwdriver mounted at the hand. The human finger does not bring up the compressive force since the structure can be locked in the working position. The handle offers a comfortable grip and an easy access to the power-switch on the side with the thumb. The device is easy to handle, comfortable to be worn through the supplied glove and can be used for long working sessions without strain on the wrist. It has an optimal distribution of the weight due to the flexible shaft running over the back of the hand. An additional switch inverts the rotation direction to unscrew the screws. The ergonomic shape of the flexible electric screwdriver simplifies inserting and removing screws in many working positions and can also be used for drilling.

A video of the invention can be found at the following link:
https://www.youtube.com/watch?v=X_oefxylgV4

Commercial Opportunities

The flexible electric screwdrivers is a powerful tool for all those who need to afford protracted assembly and disassembly sessions in the framework of a professional activity or a do-it-yourself project (e.g. building flat-pack furniture, setting up exhibition booths, etc...). Easy to handle and precise to address, this device saves time and effort, enabling at the same time to access screws located in an area with a limited space. The working parameters as voltage and torque can be competitive with those of the most advanced devices offered on the market without losing the flexibility and the user-friendliness.

Current Status

A fully working prototype of the flexible screwdriver has been tested and a patent application has been filed in Germany. On behalf of the RWTH University, PROVendis is seeking a partner for further development in view of licensing the technology.

An invention of the RWTH Aachen University.

Competitive Advantages

- Enables access to areas with a small clearance
- Easy to handle and comfortable to wear
- Suitable for a long continuous assembly/disassembly session
- High performing and precise

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