RESERVE COPY

PATENT SPECIFICATION

620,220

Convention Date (Switzerland): Oct. 21, 1946.

Application Date (in United Kingdom): Jan. 9, 1947. No. 790/47.

Complete Specification Accepted: March 22, 1949.

Index at acceptance:—Class 35, A1c7b, E2l.

COMPLETE SPECIFICATION.

Improvements in and relating to a Synchronous Electric Motor with Automatic Starter, in particular for Electric Clocks.

We, SCHILD & Co. S.A., a body corporate organised under the laws of Switzerland, of 137 rue du Parc, La Chaux-de-Fonds, Switzerland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of the present invention is a synchronous electric motor with an automatic starter, in particular for electric clocks.

The present invention consists in a synchronous electric motor with automatic starter in particular for electric clocks, characterized in this that it comprises a stator magnetic circuit having an auxiliary air gap, a movable armature mounted on a stationary part of the motor co-operating with said auxiliary air gap, a gear in gearing relation with the rotor shaft, and a pawl driven by said movable armature and driving said gear in such a manner as to start the motor as soon as it is energized.

The attached drawing represents by way of example an embodiment of the invention.

Fig. 1 is an elevation view thereof.

Fig. 2 is a side-view.

In the embodiment shown, the starter comprises a movable armature 1 mounted on a lever 2 pivoted in 3 on a bracket of the motor frame so as to be apt to move and shut an auxiliary air gap 4 provided in the magnetic circuit 5 of the stator of the synchronous motor. The latter carries a field coil 6 and comprises two toothed poles 7 co-operating with a toothed rotor 8. The shaft of the rotor carries a pinion 9 meshing with a first gear 10 of a clockwork partially shown.

The pivot 3 carries a second lever 11 linked with lever 2 by a spring 12 whose elongation is limited by a stop 13. At the end of lever 11 is mounted a pawl 14 pivoted in 15 and co-operating with the teeth of gear 10.

The operation of this starter is as follows:—

When current is sent through the coil 6, the magnetic flux draws the armature 1 and the lever 2 pulls lever 11 through the action of spring 12 and stop 13. The gear 10 thus receives from pawl 14 an impulse without knock which gives the motor a speed which is sufficient for starting it.

When the current is accidentally cut out, the motor will be automatically restarted in the same way as soon as the current is re-established; this is a great advantage over the manual starters, considering the frequent short interruptions that occur on networks.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A synchronous electric motor with automatic starter in particular for electric clocks, characterized in this that it comprises a stator magnetic circuit having an auxiliary air gap, a movable armature mounted on a stationary part of the motor co-operating with said auxiliary air gap, a gear in gearing relation with the rotor shaft, and a pawl driven by said movable armature and driving said gear in such a manner as to start the motor as soon as it is energized.

2. A synchronous electric motor with automatic starter according to Claim 1, characterized in this that the movable armature is built as a unit with a first lever mounted on a pivot near the end of the starter core, and that a second lever is mounted on said pivot and linked with said first lever by a spring with a stop limiting its elongation, said second lever carrying the driving pawl.

Dated this 9th day of January, 1947.

MARKS & CLERK,
of
London, Birmingham,
Manchester and Glasgow.

[Price 2/-]

Printed for H.M. Stationery Office by the Redditch Indicator Co., Ltd., Redditch, Code 39-242.—1949.
Published at the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies, price 2s. 0d. each (inland), 2s. 1d. (abroad) may be obtained.

Price 4s 6d Price 5s. 0d.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig.2

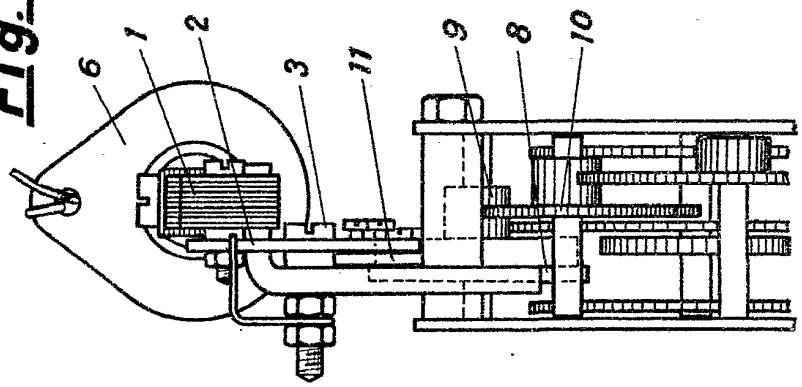
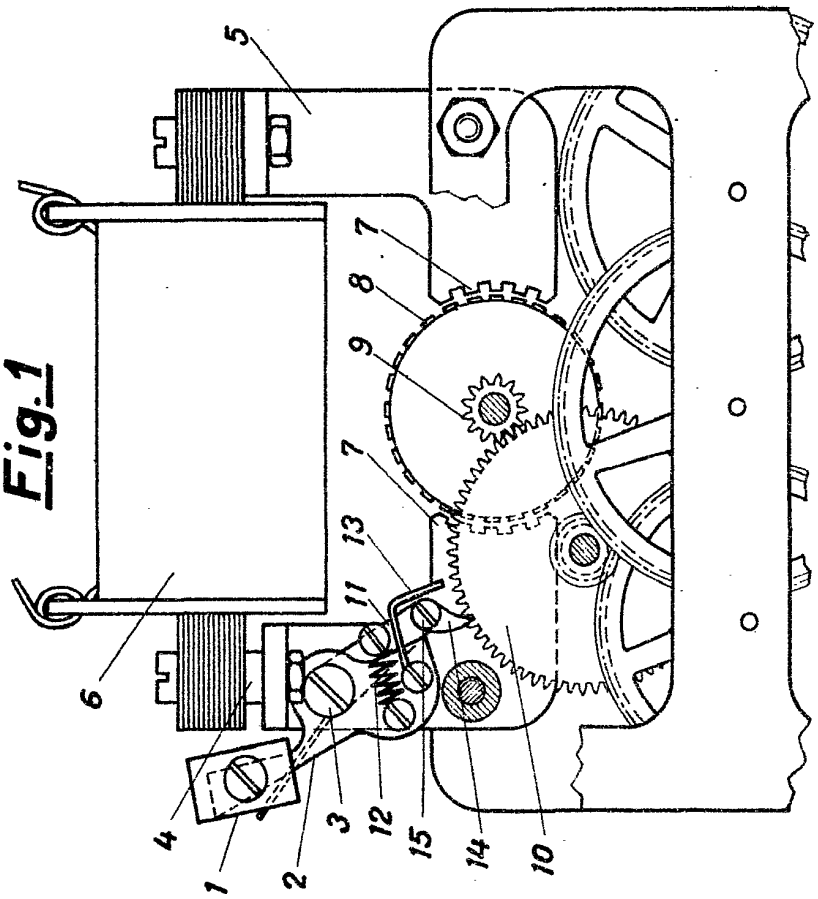


Fig.1



H.M.S.O. (Ty.P.)