ABSTRACT: A new structural solution in the field of aggregates for electric power generation, herewith described provides: a cost-effective production, independent from other sources of energy, environmentally clean, reliable functioning, inexpensive assembling, simple use and etc. The structure of the invention consists of: a base (1) whereeto fixed (welded) are poles (2) and (3), and fixed onto a support (19) there is a direct current generator (16) with a pulley (9), then a direct current electric motor-aggregate (15) is connected to a pulley (12), onto a pole (2) fixed are a converter (17) and a direct current consumer (21), then onto a base plate (20) a battery (14) is set, mounted on a shaft (4) are a flywheel (7), pulleys (8) and (11) and bearings (5) and (6). The aggregate functions so that: actuating a switch (24) into position ON, energy from a battery (14) is by means of a cable (23) brought to an electric motor (15) that activates a pulley (12) and through a belt (13) and a pulley (11) a shaft (4) is driven with a pulley (8) and a flywheel (7) by a belt (10) by a pulley (9) a generator (16) is driven. Electric power from a battery (14), through the cables (28) and (29), is brought to a converter (17) which converts direct current into alternating current and by means of a cable (32) the alternating current is distributed to the consumers (33).
Description

Title of Invention: AUTONOMOUS AND MECHANICAL AGGREGATE FOR ELECTRIC POWER GENERATION

Technical Field

[0001] This invention belongs to the field of energetic in general, and more precisely to the aggregates for electric power generation, and it refers to an autonomous mechanical aggregate for electric power electric power.

[0002] According to the International Patent Classification (IPC), the invention belongs to F03B 13/00.

[0003] Technical Problem

[0004] Problem solved with herewith described invention is how to give a structural solution by means of an autonomous mechanical aggregate for production of electric power mechanically and independently from other sources of energy, while at the same time to have: a cost-effective, autonomous, environmentally clean, reliable for operation, inexpensively assembling, easy for use and maintenance and etc. and with the application of a flywheel.

[0005] State-of-Art

[0006] So far, the electric power generation is carried with various technologies and aggregates such as: nuclear plants, thermoelectric plants, hydroelectric plants etc. In various aggregates to commercial fuels, but all of them have several disadvantages: they are expensive, static, there is a risk of environmental pollution, there is a problem with maintenance of ecologically clean environment and human health, depend on natural atmospheric conditions, reliability of operation is due to other factors or atmospheric conditions, complex and expensive attending, maintenance in operation, etc. Nuclear plants demand high technology and high-profile experts, very expensive equipment, and above all a great risk to the environment and human health. Therefore, electric power generation is very expensive, and the risk is severe. Functioning of thermoelectric plants depends on the supply of fuels (coal, oil, gas), and an expensive equipment is required, it also demands a complex attending during operation, expensive service and maintenance, and a care for ecologically clean environment etc. Hence, electric power generation is expensive.

[0007] Hydroelectric power plants depend on meteorological conditions, i.e. on water quantity, and hence their reliable functioning is not certain, a change of natural en-
vironment is required, and often of inhabited places, so as to enable water accumulation, expensive dam construction works, complex maintenance (in a case of ice) there is a risk of dam failures etc. Besides, production of electric power is also expensive.

[0008] Aggregates for electric power generation from commercial fuels depend on supplying the fuels and are expensive, demand a constant and continuous fuel feeding, a regular service and maintenance. Due to all above mentioned the present technologies and aggregates for electric power generation are not cost-effective and are unfavourable for production.

[0009]

**Short Description of the Invention**

[0010] The autonomous mechanical aggregate for electric power generation consists of:

[0011] A base whereto fixed (welded) are poles, shafts whereto assembled are a flywheel, pulleys and bearings-axial for taking a shaft, a flywheel, pulleys with belts, a battery as an initial source of energy, an electric motor-generator to start operating the aggregate, a direct current generator to convert mechanical energy into electric power and a direct current into alternating current converter.

[0012] The structure of aggregate consists in that there are: poles fixed and (welded) on a base then a generator is fixed with a pulley on a support, i.e. a pole, then an electric-motor aggregate is connected to a pulley, then a converter is fixed onto a pole, a direct current consumer is set onto a pole, then a battery is set onto a base, and mounted on a shaft there are a flywheel, a pulley and bearings, pulleys are connected to each other by belts and then these are connected by means of cables: a battery with an electric motor-aggregate, a generator with a battery, a battery with a converter, an electric motor-aggregate is connected to a direct current consumer, and a converter is connected to an alternating current consumer. The aggregate functions so that by pressing the switch, the switched on initial excitation energy from a battery reaches to an electric motor-generator which, by means of a pulley and a belt, drives, by means of a pulley, a flywheel on a shaft. Besides, from a shaft by means of a pulley and a belt, a generator is connected through the cables to a battery and the battery through the cables to a converter which converts direct current into alternating current. From the converter, electric power continues to the consumer of alternating current. This is a continual recurring cycle therewith a flywheel, due to its own energy, consumes even less energy from electric motor-aggregate, and the consumed electric power from a battery is supplied from the generator, so that the aggregate constantly works with its optimal same power.

[0013]
Short Description of the Drawings

[0014] Invention is described in details in the examples of embodiment represented in the drawings where:

- Fig. 1 shows the aggregate in oblique projection.
- Fig. 2 shows the aggregate in frontal projection.
- Fig. 3 shows the aggregate in lateral projection.

Detail Description of the Invention

[0016] Autonomous mechanical aggregate for generation of electric power (from now on in this text referred as 'aggregate') is shown in figures 1, 2 and 3 is a novel structural solution in the field of aggregates for generation of electric power, and it provides: a cost-effective and independent generation of electric power from other sources of energy, it is environmentally clean, its function is reliable, assembling is inexpensive, similar use and maintenance, etc.

[0017] Aggregate is intended for electric power generation and at the places where there is no other sources of energy (shepherd's huts so called 'katuns', mountain hostels; and alike).

[0018] The aggregate consists of a base 1, poles 2 and 3, a shaft 4, bearings 5 and 6 axial, a flywheel 7, pulleys 8 and 9, a belt 10, pulley 11 and 12, a belt 13, a battery 14, an electric motor-aggregate for moving 15, a direct current generator 16, and an alternating current converter 17.

[0019] Construction of the aggregate consists of: a base 1, whereeto fixed (welded) are poles 2; 3, and then are attached (welded) reinforcements 18 with a pole 3 and a base 1, and then is screwed a direct current generator 16 by means of a pulley 9 onto a support 19, and then a direct current alternator-aggregate 15 is connected to a pulley 12 and then on a pole 2 is fixed a direct current converter 17 and, also, a direct current consumer 21, and then a battery 14 onto a main plate 20, and then onto a shaft 4 are mounted-fixed pulleys 11 and 8, and a flywheel 7 and bearings 5 and 6 are set onto poles 2, 3 are screwed by the bolts 22, then a belt 13 is connected by a pulley 12, and a belt 10 with a pulley 9, then by means of a cable 26 and 27 is connected a direct current generator 16 with a battery 14, and by cables 28 and 29 a battery 14 is connected to a converter 17, a cable 30 is connected to a direct current consumer 21, an electric motor-generator 15, by a cable 31, connected is a consumer 21 to a pole 2 and a cable 32 a converter 17 to a consumer 33 is connected.

[0020] The aggregate operates so that: actuating a switch 24 to the position ON, electric power from a battery 14 is transmitted through a cable 23 to an alternating current electric motor-generator 15 which drives a pulley 12 and starts its rotation, this rotation
of a pulley 12 is transferred by means of a belt 13 onto a pulley 11 and drives a shaft 4 with a pulley 8 and a flywheel 7, and in bearings 5 and 6, rotation of a pulley 8 is transferred by means of a belt 10 onto a pulley 9 which drives a direct current generator 16. From a direct current generator 16, the energy, through the cable 26 and 27, flows to a battery 14, and from a battery 14 through a cable 28 and 29 flows to a converter 17, it converts direct current into alternating current which, by a cable 30, flows to a consumer 21, and by a cable 32 is transferred to a consumer 33. This is a continual recurring cycle, besides the flywheel 7 due to inertia consumes even less energy coming from a direct current electric motor-generator 15, and the consumed energy from the battery 14 is supplied from a direct current generator 16, hence the aggregate constantly functions using its optimal-same electric power.

[0021] A peculiarity of the structure is in that: electric power generation uses no fuel and there are no problems related thereto (transportation, financial, technical, ecological and etc.), that the generation is possible even at the places where there is no energy sources, as the aggregate is autonomous, mobile and can be assembled or dis-assembled.

[0022] Cost-effective production, i.e. inexpensive generation of electric energy is obvious in that, it consumes no fuel, that it requires neither particular technology of working out but an easy typical and a standard one) nor highly experienced experts for processing the aggregate and for its use-application, as there are no expenses, with preparing the location, dam construction works, fuel transportation, etc. The aggregate is autonomous and mobile, and independent from other sources of energy, so that generation of electric power is possible wherever and at every location. As this type of electric power generation has no combustion of fuels, the environment is pristine, i.e. there is no pollution to the environment. Reliability of aggregate function is obvious in that: a flywheel due to inertia later on consumes less power from electric motor-generator 15, and the consumed electric power from the battery 14 is supplied from generator 16, so that the functioning of aggregate is constantly optimal and this cycle repeats constantly. Structure of aggregate is simple and for its assembling standard commercial materials and elements are used along with application of simple technology, which makes it inexpensive. Due to its simple structure, operating-use of the aggregate is very simple, as it is practically down to a switch 24 "switched on/switched off". For keeping aggregates in function practically has no need. Peculiarity of this structure is evident in that it takes a small space and in its applicability at any location and ground and that there is a possibility of binding a serially more aggregates in order to increase the capacity.

[0023] There is a prototype and it is confirmed due to good results in electric power generation.
At „Tesla fest“ 2011, the prototype was exhibited with commercial name, "mechanical aggregate for electric power generation". At the international exhibition "Braca Than", Becej, under commercial name "mechanical aggregate". At the international exhibition of inventions "Inventum", in Ilok, Croatia, under commercial name "mechanical aggregate". At the exhibition "Pronalazastvo - Beograd 2011" under the commercial name "mechanical aggregate for electric power".

**Induction method and other application of the invention**

The aggregate is of simple construction, and for it's assembling standard commercial materials and elements are used along with application of easy-standard technology. It's operating and maintenance manual is included as a part of the delivery of a product.
Claims

[Claim 0001] Autonomous mechanical aggregate for electric power generation consists of a base (1) whereon formed are poles (2) and (3) and a support for battery (14), a pole (2) whereon mounted is a bearing (5), an electric motor-aggregate (15), a converter (17) and a consumer (21) of direct current, and a pole (3) whereto mounted is a bearing (6) and a support (19), of a shaft (4) whereto mounted is a flywheel (7), a pulley (8) and (11) and bearings (5) and (6), bearings (5) and (6) which are mounted in the poles (2) and (3) and wherein is set a shaft (4), of a flywheel (7) which is mounted onto a shaft (4), a pulley (8) which is mounted onto a shaft (4) and whereto set is a belt (10), pulleys (9) which is mounted onto a direct current generator (16) and whereto set is a belt (10), a belt (10) which is connected, connected are pulleys (8) and (9), a pulley (11) which is mounted onto a shaft (4) and whereto set is a belt (13), a pulley (12) which is mounted onto a direct current electric motor-generator (15), a belt (13) by means of which connected are pulley (11) and (12), a battery (14) which is mounted on the main plate (20) and whereto fixed are cables (23), (25), (26), (27), (28) and (29), of a direct current electric motor-generator (15) which is connected to a pulley (12) and a converter (17) which is mounted on a pole (2), is characterized in, that on a shaft (4) are mounted pulleys (11) and (8), a flywheel (7) and bearings (5) and (6), that pulleys (11) and a pulley (12) are connected by a belt (13), and a pulley (8) and a pulley (9) are connected by a belt (10) that a battery (14) is connected to a cable (23) and (25) by a switch (24) with electric motor-generator (15), that a cable (26) and (27) is connected to a direct current generator (16) to a battery (14) and a cable (28) and (29) is connected a battery (14) to a converter (17), by means of a cable (30) an electric motor-aggregate (15) connected to a direct current consumer (21), by a cable (31) connected is a direct current consumer (21) to a pole (2) that by cable (32) is connected a converter (17) of direct current into alternating current connected to an alternating current consumer (33).