

621.548

Y. B. Sokolovsky, PhD., L. G. Limonov, PhD.,
A. Y. Sokolovsky

ON THE APPLICATION OF WIND POWER PLANTS

Abstract. *The article deals with the improvement issues of wind-driven electric power installations with center of rotation and horizontal axis of rotation that can be widely used by industrial and domestic consumers as alternative energy sources. Proposed measures for design improvement are focused on the efficiency upgrading for wind-driven electric power installations and on the improvement of environmental situation in the area of their application.*

Keywords: *wind power plant, the rotational axis, generator, wind turbine, wing, wind pump*

Principle)

(Lift Principle).

0,46,
0,36 – 0,38.

©

.., 2014

()

(- $\equiv R^2$,

() , - $\equiv NR^2$),

6 , -
a, b, c, d, e, h, . 2 . 3.

7. -

(a-a; b-b; c-c; d-d; e-e; h-h) ()

- 23 - 22 , - , -

(, -

).

() -

1. () -

2. / . -

3. , -

4. , -

5. , -

wake-

6. , -

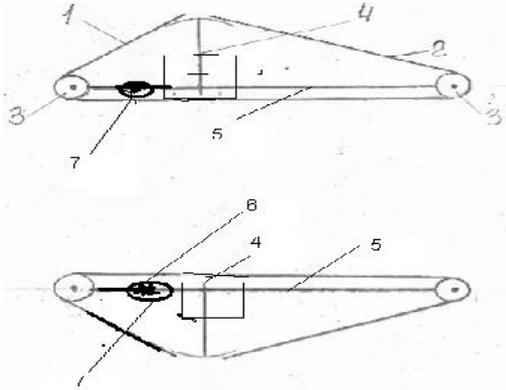
(.5).

.6

(V)

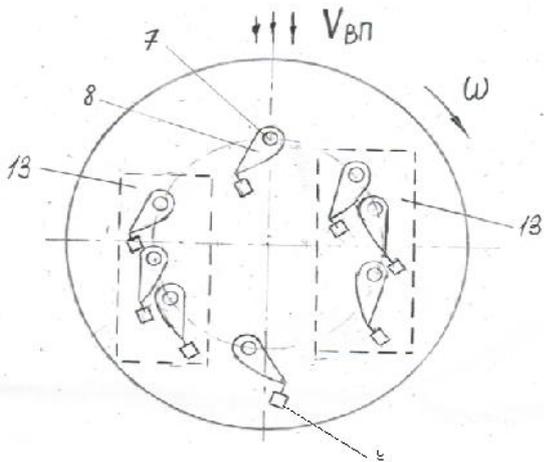
(

V).



.5.

- 1 - ;
- 2 - ;
- 3 - ; 4 - ;
- 5 - ;
- 6 - ;
- 7 - ;



.6.

- 7 - ; 8 - ;
- 9 - ; 13 -

6 - ()

[11].

(.7).

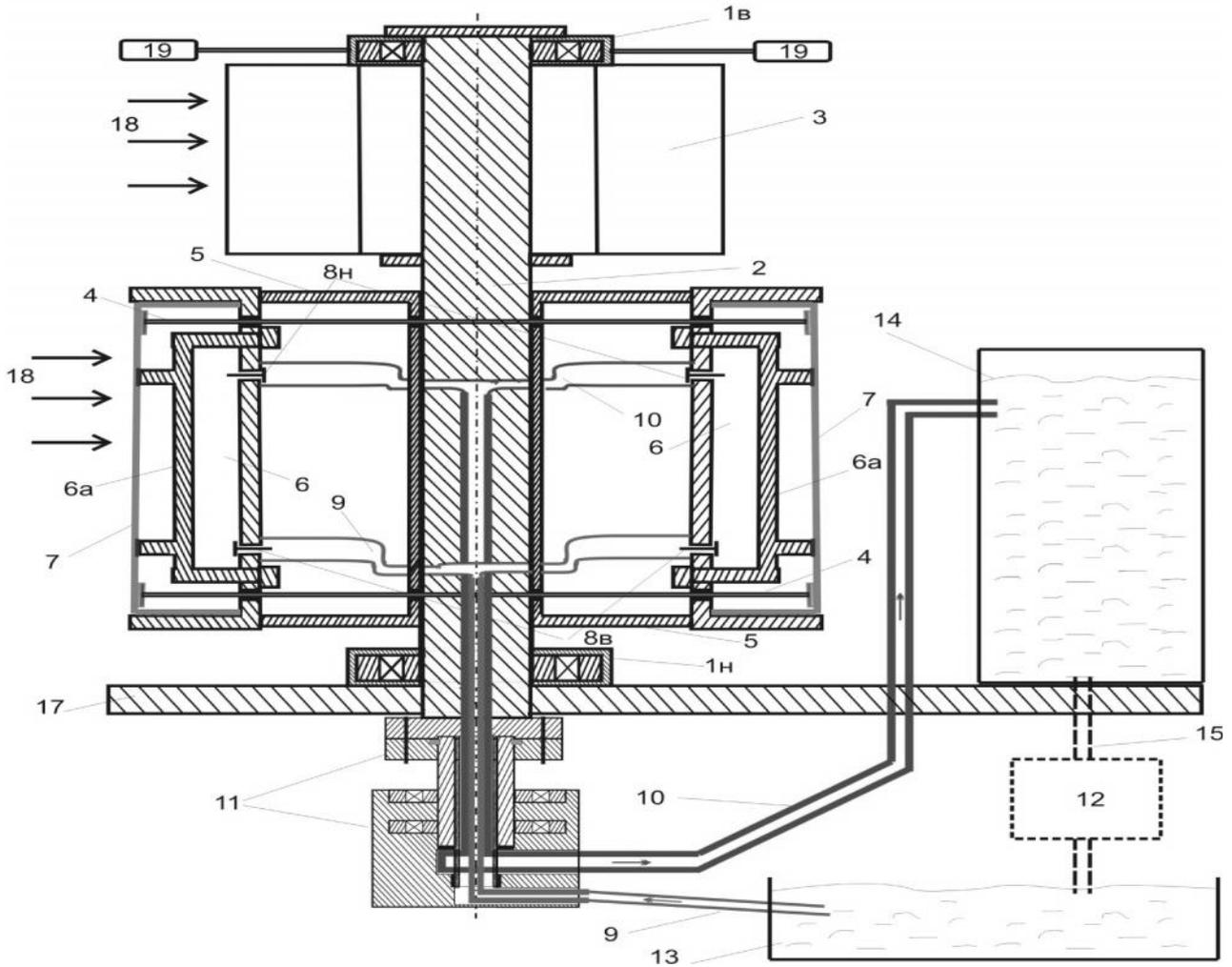
(, [12]),

2(2+) -

(),

15
12,

13.



- 1 – ; 2 – ; 3 – ; 4 – ; 5 – ; 6 – ; 7 – ; 8 – ; 9 – ; 10 – ; 11 – ; 12 – ; 13 – ; 14 – ; 15 – ; 16 – ; 17 – ; 18 – ; 19 –

7. // Otto-von-Guericke-University. – , – 2010. – 223 .

2.

3. Sokolovsky Y.B. Sokolovsky A.Y., (2013), Technical Proposals for Wind Turbine Structures, *Journal SCIENTIFIC ISRAEL. Technological Advantages*, Vol 15, No. 3.

4. // . – : – 2014. – .XXX11. – .80 – 87.

References

5. / . . . – 1920. – (« » .).
6. / . . . – . : – 2003. – 9.
7. / . . . , . . . // 2014103914 (04.02.2014).
8. / . . . , . . . // 2014117781 (30.04. 2014).
9. / . . . , . . . // i i . – 2010. – . : – . 12. – 4. – . 26 – 35.
10. / . . . i / . . . , . . . , . . . // 16097 F03D 3/00, F03D, 07.06.2006. – 7. – 174 .
11. / . . . , . . . // RU 2484296 2 F03D 3/00 .03.08.2011.
12. / . . . , . . . // RU 2498109 2 15.07.2011.
13. Sokolovsky J., Heifetz A., Sosenushkina V., (2013), Wind Power in Israel with the Use of Sea Coasters, Technical and Economic Calculation in the Project Business Plan, *Journal SCIENTIFIC ISRAEL. Technological Advantages*, Vol 15, No. 2.
14. Sokolovsky J., Heifetz A., Sokolovsky A., (2014), Railway Electrification of Israel with Self-Contained Power Electric Locomotives, *Journal SCIENTIFIC ISRAEL. Technological Advantages*, Vol. 16, No. 1 – 2. 22.10.2014
1. Stichinski Z.A. Voropay N.I. Vozobnovlyaemie istochniki energii. Teoreticheskie osnovi, tekhnologii, tekhnicheskie karakteristiki, ekonomika, [Renewable Energy. Theoretical Technology, Performance, Economy], (2010), Magdeburg, *Otto-von-Guericke-Universit* , 223 p. (In Russian).
2. Sokolovski J.B. Ispolzovanie vetraekologicheskoi chistogo istochnika energii, [The use of Wind – a Clean Energy Source], (2011), *Vestnik Doma Uchenih*, Haifa, Vol XXIV, pp. 16 – 21 (In Russian).
3. Sokolovsky Y.B., Sokolovsky A.Y., (2013), Technical Proposals for Wind Turbine Structures, *Journal SCIENTIFIC ISRAEL, Technological Advantages*, Vol 15, No. 3.
4. Sokolovsky Y.B. Vetrovie energeticheskie ustanovki, [Wind Power Plants], (2014), *Vestnik Doma Uchenih*, Haika, Vol XXXI, pp. 80 – 87 (In Russian).
5. Gukovski N.E. Vetryanaya melnitsa tipa NEG, [Windmill type Neiges], (1920), (*Site “Malaya Exegetical” Rozin M.N.*) (In Russian).
6. Haskin L. Bashnya iz vetroenergeticheskikh modulei, [Tower of Wind Power Modules], (2003), oscar, Russian Federation, *Nauka and Life*, No. 9 (In Russian).
7. Gurevich V.A. Sokolovsky Y.B. Sokolovsky A.Y. Frolov E.A. Cilindricheskaya vetroturbina, [Cylindrical wind Turbine], (2014), Zayavka na Patent Russian Federation, 2014103914, Data 04.02.2014 (In Russian).
8. Gurevich V.A. Sokolovsky Y.B. Sokolovsky A.Y. Heifets A.B. Sposob orientacii ustanovok s gorizontarno-osevimi propellernimi turbinami, [Method Orientation Plants with HAWT Turbines], (2014), Zayavka na Patent Russian Federation 2014117781, Data 30.04. 2014 (In Russian).
9. Kayan V.P. Lebed A.G. Optimizaciya rabochih karakteristik polnomasshtabnogo ma-keta vetrorotora Darie s pryamimi upravlyaemimi lopastyami, [Optimizing the Performance of full-scale Layout Vetrorotora Darya Direct Controlled Blades], (2010), iev,

Ukraine, *Prikladna Hidromehnika*, Vol 12, No. 4, pp. 26 – 35 (In Russian).

10. Kayan V.P. Dovgii S.J. Boyko P.M. Lebid A.G. Vitrosilova ustanovka, [Vitrosilova Installation], (2006), Patent Ukraine No. 16097 na korisnu model, F03D 3/00, F03D, (07.06.2006), No. 7, 174 p. (In Ukrainian).

11 Sokolovsky Y.B. Gurevich V.A. Vetrovaya energeticheskaya ustanovka, [Wind Power Plant], (2011), Patent Russian Federation 2484296 2 F03D 3/00 (03.08.2011) (In Russian).

12. Sokolovsky Y.B., Gurevich V.A. Karuselnoe vetrokoleso, [Carousel Windwheel], (2011), Patent Russian Federation 2498109 2 (15.07.2011) (In Russian).

13. Sokolovsky J., Heifetz A., Sosenushkina V. Wind Power in Israel with the Use of Sea Coasters, Technical and Economic Calculation in the Project Business Plan, (2013), *Journal SCIENTIFIC ISRAEL, Technological Advantages*, Vol 15, No. 2.

14. Sokolovsky J., Heifetz A., Sokolovsky A., (2014), Railway Electrification of Israel with Self-Contained Power Electric Locomotives, *Journal SCIENTIFIC ISRAEL, Technological Advantages*, Vol. 16, No. 1 – 2.



33301, , - ,
17, .12.
.: (972)0775640723
E-mail:
sokol1937y@gmail.com



« -
», .
61072, -
, 56.
.: (057)7586488.
E-mail:
lgl@tpa5.com.ua



“ ”.
36610, - ,
, 24, .
.: (972)052281 21 87.
E-mail:
ssokols@gmail.com