(No Model.) 5 Sheets—Sheet 1.

L. VOJACEK.

ROTARY DISK MOTOR.

No. 546,688. Patented Sept. 24, 1895.

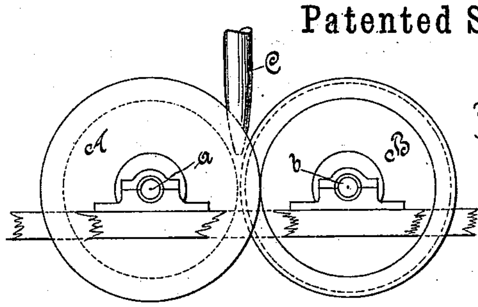


Fig. 1.

Fig. 2.

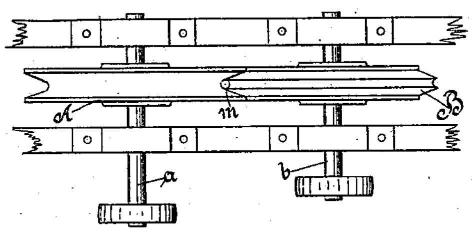
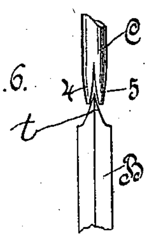


Fig. 6.



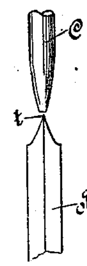


Fig. 5.

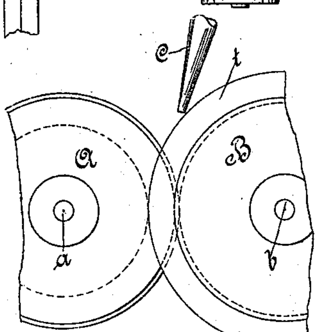


Fig. 3.

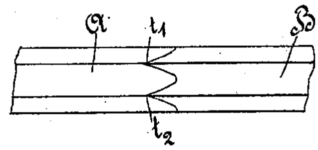


Fig. 7.

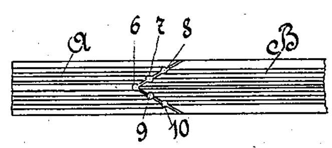
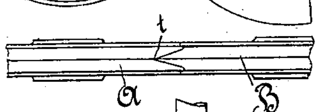


Fig. 8.

Fig. 4.



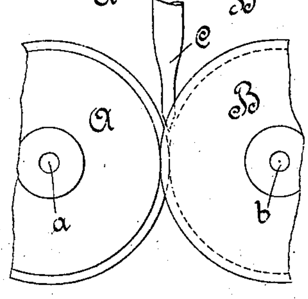


Fig. 9.

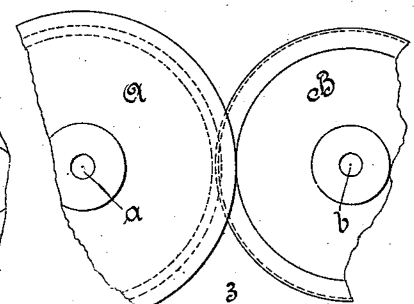
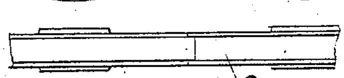


Fig. 11.

Fig. 10.



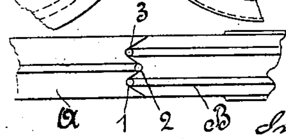


Fig. 12.

Witnesses
E. K. Sturtevant
Madeline Supple

Inventor:
Ladislav Vojacek,
by [signature]
attorney.

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L. VOJACEK.

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No. 546,688. Patented Sept. 24, 1895.

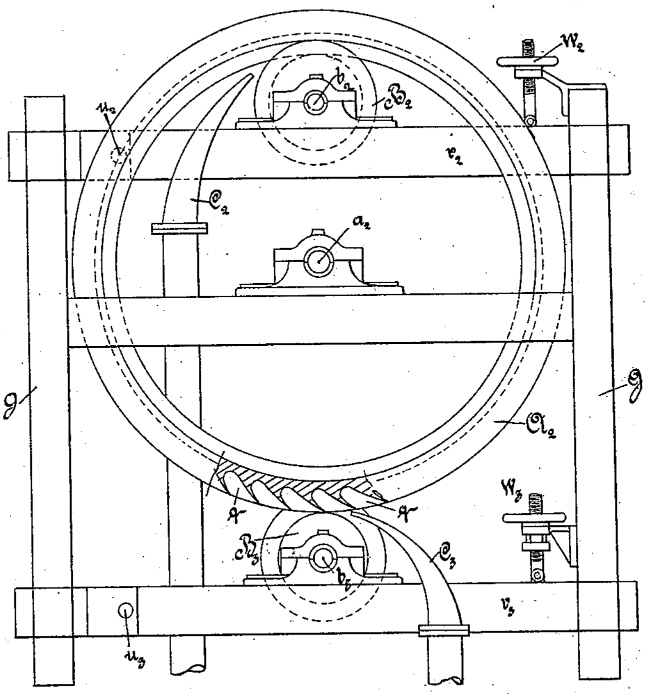

Fig. 13.

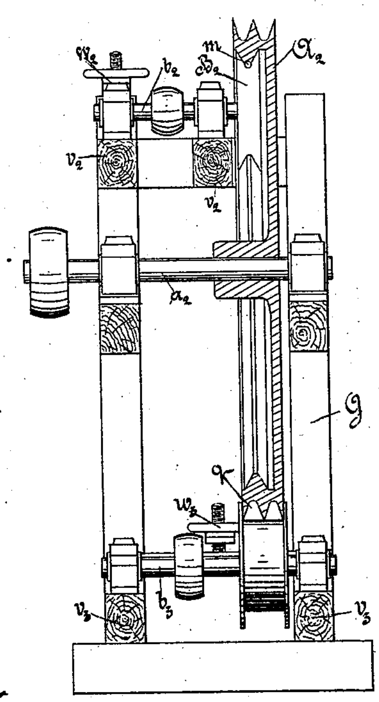

Fig. 14.

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ROTARY DISK MOTOR.

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Fig. 15.

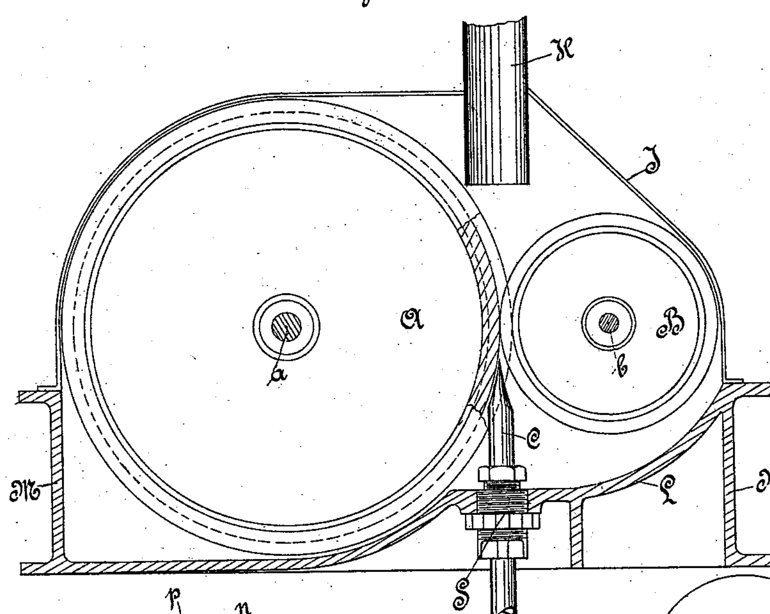
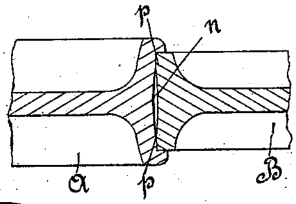


Fig. 18.



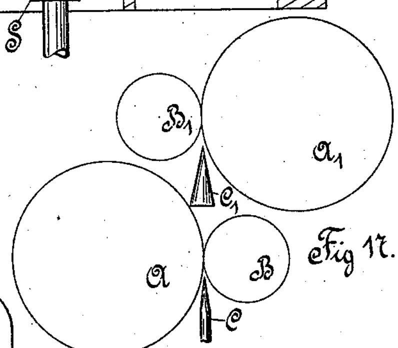


Fig 17.

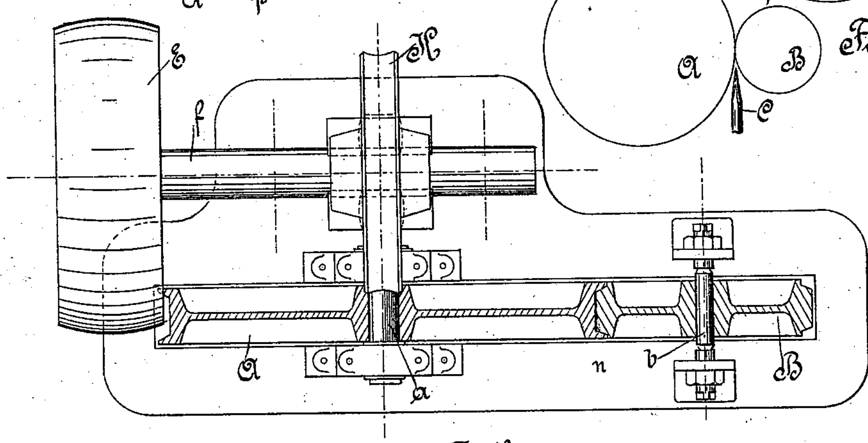


Fig. 16.

Witnesses
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Ladislav Vojacek,
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ANDREW B. GRAHAM. PHOTO-LITHO. WASHINGTON, D.C.

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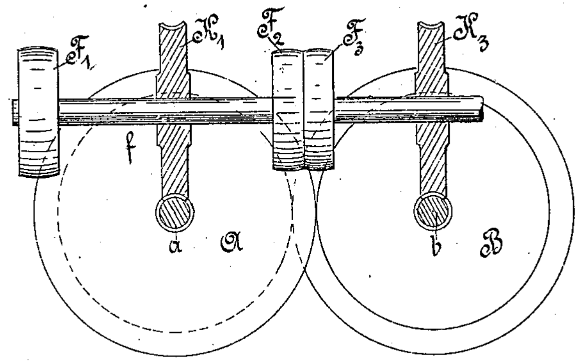
L. VOJACEK.

ROTARY DISK MOTOR.

No. 546,688. Patented Sept. 24, 1895.

Fig. 19.



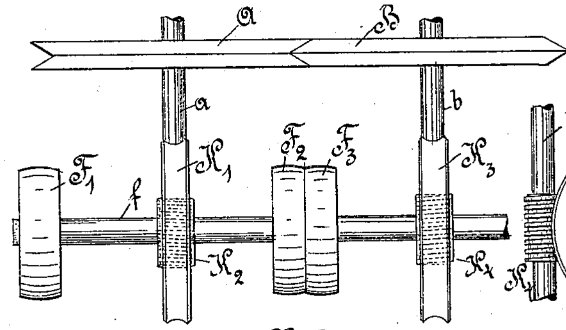


Fig. 20.

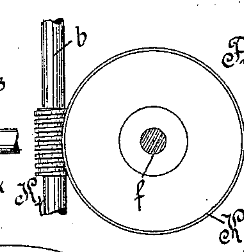
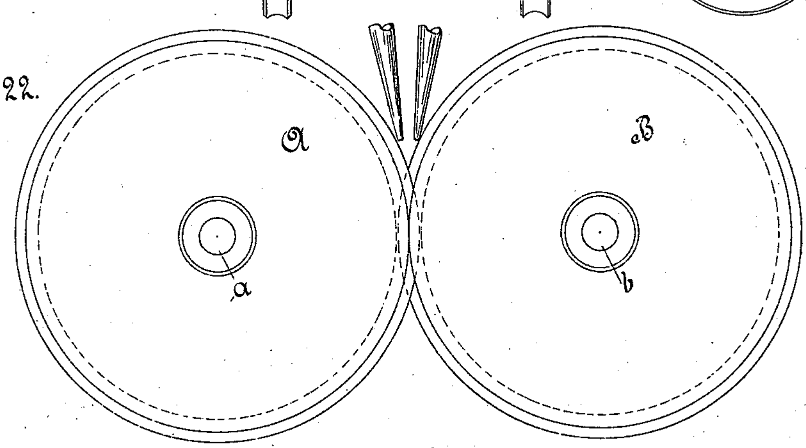


Fig. 21.

Fig. 22.



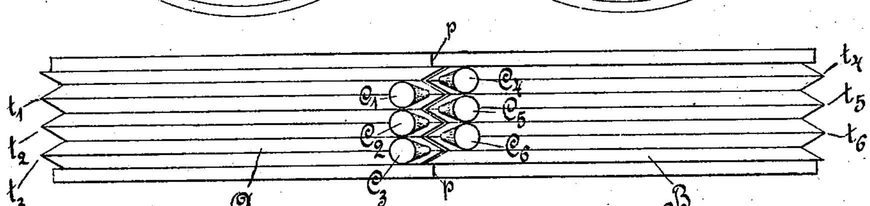


Fig. 23.

Witnesses
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Madeline Supple

Inventor:-
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by
attorneys.

ANDREW B. GRAHAM. PHOTO-LITHO. WASHINGTON, D.C.

(No Model.)

5 Sheets—Sheet 5.

L. VOJACEK.

ROTARY DISK MOTOR.

No. 546,688.

Patented Sept. 24, 1895.

Fig. 24.

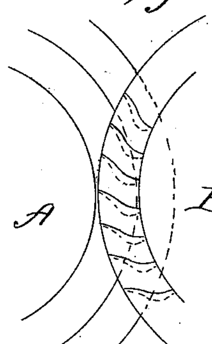


Fig. 26.

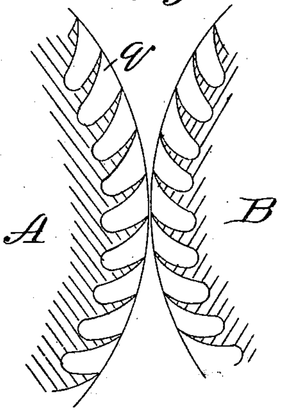


Fig. 25.

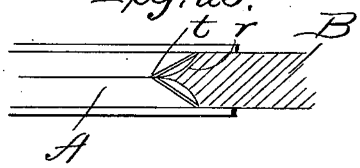


Fig. 27.

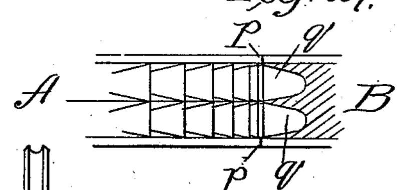
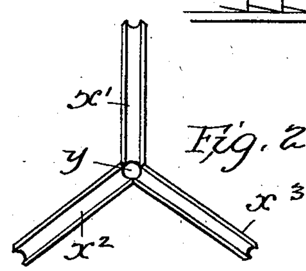


Fig. 28.



Attest
Walter Donaldson
F. L. Middleton

Inventor
Ladislav Vojacek
by Richards & Co
Attys.

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

LADISLAV VOJACEK, OF PRAGUE, AUSTRIA-HUNGARY.

ROTARY-DISK MOTOR.

SPECIFICATION forming part of Letters Patent No. 546,688, dated September 24, 1895.

Application filed November 14, 1894. Serial No. 528,735. (No model.)

To all whom it may concern:

Be it known that I, LADISLAV VOJACEK, a resident of Prague, in the Kingdom of Bohemia, Austria-Hungary, have invented certain new and useful Improvements in Rotary-Disk Motors, of which the following is a specification.

My invention includes a pair of disks arranged with a small space between their peripheries adapted to receive a steam, water, or other jet directed to the point of meeting between the wheels, said jet acting by its force and adhesion upon the adjacent part of the wheels or disks to rotate the disks. The jet as used by me acts upon the disks in a manner similar to a rope moving in contact with the disks and passing through the small passage between their peripheries.

In the drawings, Figure 1 is a side view of one form of my invention, and Fig. 2 a plan view of the same. Figs. 3 and 4 are similar views of disks with modified forms of peripheries. Figs. 5 and 6 are further modifications of the disk-rim and the nozzles adapted thereto. Figs. 7 and 8 are plan views of further modifications, and Figs. 9, 10, 11, and 12 show side elevations and plans of other modified forms of disks. Fig. 13 is a side view of a ring form of motor, partly broken away. Fig. 14 is a central vertical section of the same. Figs. 15 and 16 represent in elevation and plan, partly in section, a modified arrangement of parts. Fig. 17 is a diagrammatic view showing a second pair of wheels with a jet arranged to receive the fluid from the first jet. Fig. 18 is a detail sectional view. Fig. 19 is a side view, partly in section, of a mechanical connection between the disks to keep them at the same speed. Fig. 20 is a plan, and Fig. 21 a detail, of the same. Figs. 22 and 23 show disks with a plurality of jet-nozzles. Figs. 24, 25, 26, and 27 are details of modifications. Fig. 28 is a plan view of a series of disks.

A B, Figs. 1 and 2, show two rotary disks on shafts a, and b and c the jet of steam or other fluid being directed to the meeting point of the peripheries of the disks. If the space between the disks is a little less in cross-section than the cross-section of the jet, the disks will be revolved by the jet simply by the adhesion of the material forming the jet, which having a larger cross-section than the space between the wheels will act like a rope or band, which would be forced through the space. If the space is circular in cross-section, as at m, in Fig. 2, the central part of the body of fluid forming the jet will escape through the opening without effect. To avoid loss of this kind, I in some cases form one disk with an edge, as shown at t, Figs. 4, 5, and 6, and the other disk has a groove fitted to receive the rib or edge t. The jet is divided by this edge and spreads out on each side, escaping through the small V-shaped space between the corresponding surfaces of the disks. This will materially increase the adhesive effect of the jet, which, as it spreads over the divergent surfaces, will exert its full force on the disk. The jet-nozzle C, as in Fig. 6, may be divided to direct a jet onto each of the inclined surfaces on each side of the edge t.

In Fig. 7 a plurality of rills or grooves and corresponding ribs are shown at t' t^2.

Fig. 8 shows a series of grooves 7, 8, 9, and 10, formed in the V-shaped small space between the disks.

Figs. 11 and 12 show a plurality of ribs, such as shown in Fig. 2, the grooves corresponding to m, being shown at 1, 2, and 3.

Figs. 9 and 10 show two disks, in which the small space between them is provided by a flat rib on one disk entering a similar groove in the other wheel.

In Figs. 13 and 14 a ring-shaped disk A^2 is used, disk B^2 being within it and fitted to the V-shaped groove thereof. A jet from nozzle C^2 is directed to the point of contact between the disks. A third disk B^3 has an outside contact with the ring disk, which has on its periphery pockets q to receive the jet from a nozzle C^3. This shows the combination of my invention with a bucket-form of disk. The shafts b^2 b^3 of the disks B^2 B^3 are supported in bearings on the framework v^2 v^3, pivoted at u^2 u^3 and adjustable by the screws W^2 W^3 to adjust the disks B^2 B^3 to or from the ring disk.

Figs. 15 and 16 show a disk B, having a flat rib, and a disk A, having a corresponding groove, the small space between them at the point of contact being shown at n. The disk a is the motor-disk in this form, the other disk

B having no other object excepting that of confining the jet so as to produce the adhesion. The jet comes from a nozzle C, having a flattened end to make a broad jet. Suitable means of adjusting the jet-nozzle are shown at S. The casing L collects water of condensation, the jet in this case being a steam-jet. H is an outlet-pipe for the spent fluid of the jet. If the jet after passing through the disks A B has still considerable force, a second nozzle C' may be used, Fig. 17, to force the jet to a second pair of disks. The two disks may be arranged to revolve at the same speed by making a positive contact between their peripheries, as shown in Fig. 18 at *p*, in which case the disks will revolve by friction. In this case the small jet-opening is shown at *n*, through which the fluid is forced to get the adhesive or rope-like effect. By thus causing the disks to revolve at equal speeds there is no internal friction between the particles of the jet itself, as would be the case were the jet on one side of its center to be retarded, while on the other side it would have a higher speed or flow, thus breaking up the jet within itself. The same result may be obtained, as in Figs. 19, 20, and 21, by providing the shafts *a b* of the disks A B with worms k^2 k^4, meshing with worm wheels K' K^3 on the common shaft *f*, from which the power is transmitted by means of the pulleys F', F^2, and F^3.

Figs. 22 and 23 show disks with a multiplicity of ribs t' to t^6 and jet-nozzles C' to C^6, directed against the V-shaped ribs thereon. These disks are in contact along their side edges at *p p* and revolve at equal speeds.

In Figs. 24 and 25 the inclined sides of the V-shaped ribs may have pockets, as at *r*, the small V-shaped space being present as before, and in Figs. 26 and 27 two disks are shown with pockets in their peripheries, this feature being old and well known, the only novelty in this modification being that two wheels are used with their side peripheries in contact at *p p*, so that they will revolve at equal speeds.

In Fig. 28 a series of disks x' x^2 x^3 are shown with a small space *y* between them for the jet.

I claim—

1. In combination the two wheels having their peripheries substantially in contact and grooved and ribbed, said ribs and grooves extending circumferentially around the two wheels and the fluid jet pipe directed between the wheels to cause the motor fluid to strike the ribbed and grooved surfaces, substantially as described.

2. In combination, the two wheels having their peripheries in contact along their side edges and the intermediate portions of said peripheries having a space to receive the motor fluid and the jet pipe directed to said intermediate space, substantially as described.

3. A rotary motor comprising a pair of disks, one having a V shaped circumferential rib and the other with a V shaped groove leaving a V shaped passage between the disks, and the jet nozzle directed to the meeting points of the disks, substantially as described.

4. In combination, the two wheels having their peripheries grooved and ribbed circumferentially and fitted to each other with buckets *r* formed in the periphery of one wheel, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

LADISLAV VOJACEK.

Witnesses:
ADOLPH FISCHER,
ADOLF FEMANEK.