

NEW AIR-DRIVEN DYNAMO IS BUILT ON ROTOR BASIS

Machine Invented by German
Scientist For Generating
Power.

PLANT IS PORTABLE

Has Wing Spread of 4.5 Metres
—Develops 14 Horse-
power Easily.

By MAJOR KURT BILAU, BERLIN.
Special to The Advertiser.

Berlin, April 11.—Everybody who
has been out on a boating trip, has
had the experience of sudden turmoil
on otherwise placid waters, when a
large steamer passed in the vicinity
of his small craft. The steamer
pushes along a small mound of water,
which is followed by relatively deeper
hollow. Our little pleasure boat re-
sponds but slightly to the pressure of
the mounting wave, whereas the
sucking action of the backwash pro-
duces a mighty current causing the
boat to rock violently. Herein lies
the case in which the action of
suction is greater than that of the
corresponding pressure.

The properties of water currents
are generally known, because they are
visible and can easily be followed by
the eye. Apart from the difference
in weight, the movements of air
currents are governed by precisely
the same laws as those of water;
but since air is invisible, they have,
until recently, received but little at-
tention, and not much research has
been applied to the elucidation of
their properties.

Motion of Air Balls
At one time or another, everyone
has quite unconsciously dabbled in
aerodynamics. For instance, we are
standing on the top of a tree and our
gaze wanders over a field of corn
swaying in the breeze. The waving
tops remind us of the sea in motion.
In the course of a single minute we
count about 25 wavelets that go
rippling over the end of the field.
How can we account for this phenom-
enon? This is the answer:
Air does not travel with uniform
flow. It is easily compressible, and
when in motion is constantly broken
up and squeezed into a number of balls
each about as large as a bale of
wool. In every minute, then, 25 of
these balls, "pulsations" in scientific
terminology, go tumbling over the
edge of our corn field.

If we now move away from the top
of the hill, walking against the breeze
we feel the wind pressing against our
cheeks like a heavy weight. Actually
air, like any other gas, ponderable
matter. Its weight was first deter-
mined by Torricelli, who balanced a
column of mercury in a vacuum tube
against the weight of the at-
mosphere.

Measure of Pressure
A cube of air one metre long, i.e.,
one cubic metre in volume, weighs
about one and three-tenths kilo-
grammes. If the velocity of the breeze
on our walk amounts to three metres
per second, then three such cubes
press against our chests in every
second.

On our stroll we have at last reached
a board fence, in the shelter of
which there is a dead calm. Where
then have our air cubes got to? Indeed,
they press just as heavily
against the fence as previously
against our bodies. They cannot sud-
denly disappear, and by the aid of a
barometer we can ascertain that
before the fence there is a greater
pressure, and behind it less than in
the open field. Behind the fence there
is a partial vacuum, technically
known as a "sog", which is greater
than the excess of pressure in front
of it. We notice here an exact parallel
to what occurred in the water in our
boat.

Rowat's Teas
Our Special Blends Please People Who
Are Particular. 70c, 80c, 90c, \$1.00,
\$1.10 and \$2.00 a Pound.

T.A. Rowat & Co.
250 Dundas St. W. Phone 3051-3052.

ACCURACY
Specially prescribed glasses are
generally needed by those whose
work requires constant, exacting
use of the eyes.

**CARE FOR THE EYES THAT
CARE FOR YOU**

BROWN OPTICAL CO
QUALITY BEYOND
QUESTION.

223 Dundas St. W. Phone 1577.
Branches: Hamilton, Montreal,
and Windsor.

COAL
Egg, Stove, Nut and Pea coal,
the best obtainable.

Prompt delivery to all parts
of the city.

Orchard's
45 York St. Phone 354.

**BADGES AND BUTTONS
MILITARY RIBBONS
AT PEEL'S**

Red Star News Company
10 MARKET LANE.

**FOR —
AMBULANCE SERVICE
PHONE 1958**

**HEATED INVALID COACH
GEO. E. LOGAN**

371 DUNDAS ST. W.

Planting Trees Finances Scouts

Special to The Advertiser.

St. Thomas, April 12.—The
second St. Thomas troop of boy
scouts have hit upon a novel plan
to raise money for their annual
camp. A canvas of the residents
of Yarmouth Heights was made,
and all residents desiring to have
their lawns decorated with maple
trees were listed. The scouts
then made a trip to the woods,
where a number of saplings were
dug up and replanted on the
lawns.

boating trip mentioned at the be-
ginning.

Form of Zeppelin

The growth of aeronautics has
made it imperative that exact meth-
ods be devised for the scientific explora-
tion of atmospheric forces. One of
these is the "wind-channel". In this
an artificial breeze which speeds up
to 60 metres per second (138 miles
per hour) can be produced and kept
at constant velocity. The bodies to be
examined are suspended in the chan-
nel by thin wires, and the forces
acting upon them measured by
counterweights to the wires.

More recently interesting researches
have been made into the distribution
of pressure and suction on oblique
planes. It is noticeable that a strong
"sog" occurs close behind the front
edge. It is this "sog" and not the
pressure beneath the wings, which is
chiefly responsible for keeping planes
afloat in the air.

Most remarkable of all is the "sog"
action on rotating cylinders, which
was discovered about 50 years ago
by Magnus. (Magnus effect) Experi-
ments by Prof. Prandtl of Goet-
tingen have yielded exact information
on the workings of this phenomenon.
It is an endeavoring to adapt
to the propulsion of his "rotor-
ship". As far back as 1915, Scotter
of Kingston proposed this principle
for driving aeroplanes.

"Lift" Is Vital Factor.

For all practical purposes, the fac-
tor to be considered are the resist-
ance offered by the moving object to
the wind-currents, and the "sog" or
"lift" produced and working directly
upwards. In the case of aeroplanes,
the effect aimed at is minimum re-
sistance with maximum lift, so that
the plane can glide smoothly against
the wind, and requires but slight
engine-power. This smooth gliding
engine-power. It is also a main requisite of sailing-
craft (canvas sails, rotating cylin-
ders), but unfortunately the Prandtl
rotor is not a good glider.

For a lift of nine units, there is a
resistance of four and six-tenths
units. To produce maximum effi-
ciency, the surface of the cylinder
must be constantly curved windward.
By the use of propeller-like wings,
the present writer has succeeded in
obtaining a very high degree of effi-
ciency in exploiting wind-force. Wing-
blades eight and five-tenths metres
in length will produce up to 60-
horsepower, with a wind velocity of
seven metres (official measurements).

The small portable plant will gen-
erate fourteen horsepower with wing-
lengths of four and five-tenths metres,
and medium wind velocity. It does other
things such as driving motors, heat-
ing hot-baths, etc. The electric part
of the plant functions almost wholly
automatically, so that it requires no
attention.

Scientific Windmills.

The secret of this high efficiency
lies in the observation of the prin-
ciples enunciated above for aero-
planes, namely, that the suction side
of the wings is completely exposed,
and that the blades offer a minimum
of resistance to the air passing be-
tween them. The "propeller-wheel"
is mounted in the direction of the
wind. The shaft itself forms the ro-
tating axle of the dynamo which is
secured in front of the "wheel" to a
reinforced concrete pillar by means
of a turntable socket.

The pressure of the wind on the
wings automatically causes them to
assume the required position, since
all movable parts run on roller or
ball-bearings. The use of a special
weather-vane is thus rendered un-
necessary. The wind glides easily
between the propeller-like,
stream-line shaped wing-blades.

The wings of the aerodynamic can
come with any speed to which an aero-
plane may be exposed (up to three
times the velocity of a heavy gale). It
is, however, not desirable to allow
the shaft to turn too rapidly, lest the
blades or the dynamo be injured.

When the velocity of the wind
reaches eight metres per second, flaps
fitted to the blades open out me-
chanically by their own centrifugal
force, and act as a brake. These
flaps then stand at right angles to
the wind-current, and by disturbing
its easy passage through the blades,
cause eddies which reduce the num-
ber of revolutions, and with them
the power generated down to as low
as 61 per cent.

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**EMBRO STUDENT AWARDED
QUEEN'S SCHOLARSHIP**

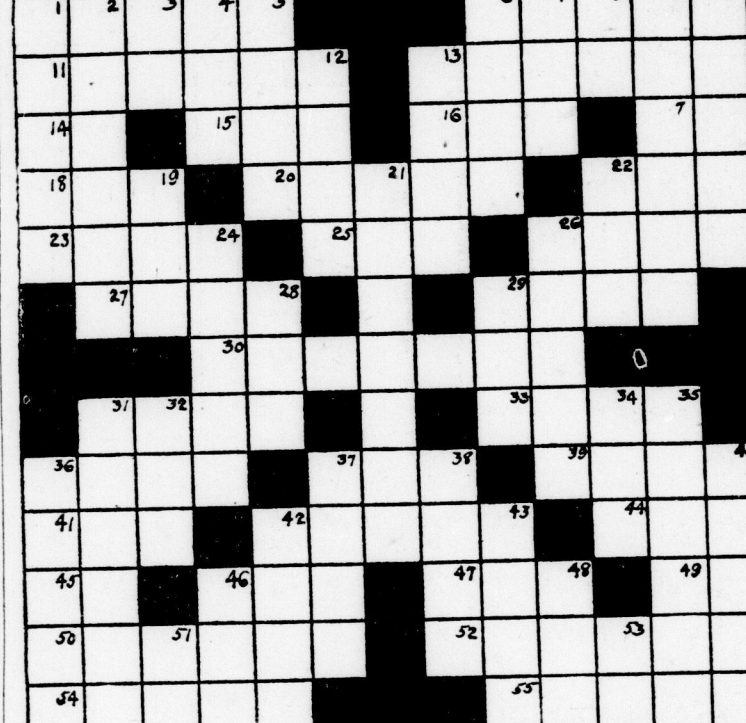
Canadian Press Despatch.

Toronto, April 12.—The chancellor's
scholarship, valued at \$70, will be
awarded to R. W. Langdon of Embro,
Ontario, at the Queen's theological
convocation on Monday next, accord-
ing to an announcement made this
refusal of the citizens' committee
of Grace Bay to accept \$5,000 sent
by the North American Newspaper Alliance
miners of Nova Scotia, and supported
the efforts of reds of European coun-
tries to bring the Amsterdam and
third international together as the
world expression of trade unionism.

PEEN—POLEMIC

The title of this puzzle is the solution to a word or group of words
appearing in this puzzle. Can you find them?
Each word ends from left to right (horizontal) or downward (vertical)
according to position. Lettered in correctly, words that cross will interlock.
Each number in the white squares also refers to a definition in the
accompanying table.
Each definition suggests a word possessing the exact number of letters
to fit the white spaces allotted to it.
Each white space is to receive one letter only. Words start only in
numbered squares.

THE ADVERTISER'S DAILY CROSSWORD PUZZLE NO. 154.



HORIZONTAL. VERTICAL.

- | | | | |
|-------------------|--------------------|--------------------|-------------------|
| 1 Dough | 30 A controversial | 1 Metrical com- | 24 One afflicted |
| 2 Buddhist | 31 Specially mod- | 2 Specific per- | 25 With a disease |
| 3 The eighth day | 32 part of | 3 A proffered | 26 Steps |
| 4 A fancy textile | 33 Lowest tide | 4 direction (abbr) | 27 To put on |
| 5 Latin for "and" | 34 Man who killed | 5 A small street | 28 A useful metal |
| 6 One who makes | 35 Alex Hamilton | 6 boy (colloq) | 29 Most undefined |
| 7 a first appear- | 36 A size of coal | 7 Always | 30 Before |
| 8 (danger) | 37 A cicatrix | 8 Solid ground | 31 Progenitor |
| 9 None in par- | 38 Form of "to be" | 9 Fem. name | 32 A variety of |
| 10 Fixed type | 39 Prisons (obs) | 10 Mien, air | 33 A variety of |
| 11 Proposition | 40 French definite | 11 Article of fem. | 34 A variety of |
| 12 Circular | 41 generic name | 12 apparel | 35 A variety of |
| 13 Through (Lat) | 42 of cattle | 13 Native of Den- | 36 A variety of |
| 14 The round, the | 43 A monkey | 14 mark | 37 A variety of |
| 15 Point of com- | 44 A verb-forming | 15 Expire | 38 A variety of |
| 16 An agreement | 45 Concurrence | 16 To experience | 39 A variety of |
| 17 Require | 46 Bold, fearless | 17 Norm, standard | 40 A variety of |
| 18 Sour | 47 A piece of rock | | 41 A variety of |
| | 48 Hackneyed | | 42 A variety of |
| | 49 state | | 43 A variety of |

SOLUTION TO NO. 153.



NOTHING IS FOUND BY LONG GRILLING

Hamilton Accountant Ques-
tioned Again—Await
Nickle's Return.

Canadian Press Despatch.
Toronto, April 12.—George R.
Harris of Hamilton, who figured
prominently in the public accounts
committee's investigation into the
administration of the highways de-
partment under F. C. Blakes, former
minister of highways, and whose ad-
mitted falsification of the books of
the Provincial Securities Company
led to his evidence being referred to
the attorney-general, was questioned
for a further two and a half hours at
the parliament buildings on Saturday
afternoon without, however, any sen-
sational developments ensuing.

Deputy Attorney-General Edward
Bayly and Major A. E. Nash carried
forward the investigation of the
bookkeeping methods of Mr. Harris,
who had with him his solicitor, John
A. Rowland, of Toronto, and his part-
ner, A. G. Brown, K.C., of Hamil-
ton. No statement as to progress
was forthcoming.

Further developments, if any, prob-
ably will be made on the return to the
city of Attorney-General W. F. Nickle.
It is unlikely, however, that he will
be back in Toronto tomorrow, which
is his holiday at the parliament build-
ings. The meantime it is undecided
whether Harris will be further ques-
tioned.

**RIDDLES CHICKEN COOP
AND HUMAN OCCUPANT**

Stamford Township Resident
in Jail at Niagara
Falls.

Canadian Press Despatch.

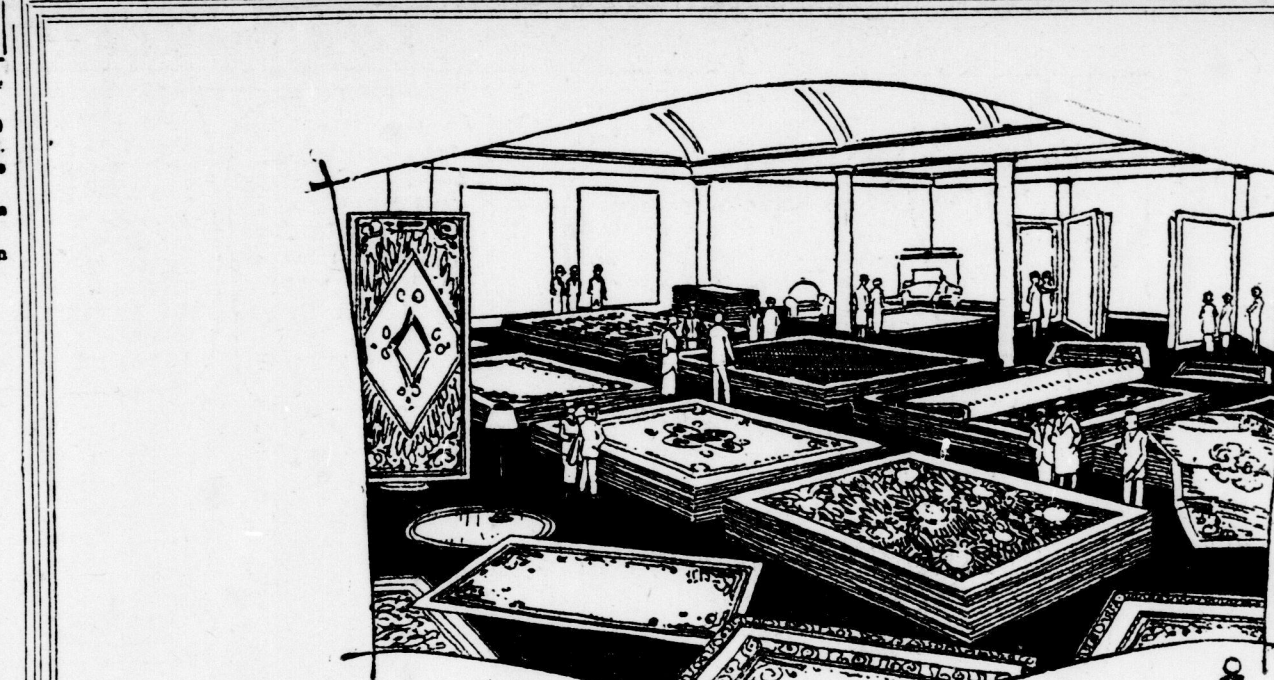
Niagara Falls, Ont., April 12.—Patsy
Frail is in jail charged with intent
to do bodily harm, and Dominick
Gualinto is in hospital with several
shots through his body as the result
of an affray in Stamford township
early today.

Frail claims he was aroused by a
noise proceeding from his chicken-
house. Seeing a man moving there
he emptied his revolver, five shots
being fired. Frail did not know the identity
of the other man until after the shoot-
ing. Gualinto has one wound in the
stomach and four flesh wounds.

ENGINEER DIES.

Associated Press Despatch.

Los Angeles, April 12.—Jas. A. Ligh-
step, 68, former associate of Thomas
Edison, and widely known electrical
engineer, died here yesterday.



EXHIBITION and SALE of ORIENTAL RUGS

\$10—\$15—\$20—\$50—\$75 Up To \$720

INCLUDING

- | | | | |
|-------------|----------|-----------|------------|
| SULTANABADS | SAROUK | ROYAL | DOZAR |
| GOROVAN | MESHED | BUCHARAH | LILLIBAN |
| MAHAL | KEIVA | IRAN | ZAZAK |
| KERMANSHAH | BUCHARAH | ANATOLIAN | KURDISTAN |
| FERAGHAN | SPARTAN | BELUGE | SADDLEBAGS |
| TURPAFF | ZARNIMI | BIJAR | STRIPS |
| CHINESE | | | |

RICHNESS AND BEAUTY!

Marvelous in coloring and texture! Rugs of the Orient—bringing with them the subtle
beauty appeal that is an heritage of Eastern looms.

You can get something of the charm of a visit to the Orient by seeing these gorgeous bits of
Oriental weaving.

Of special interest to the home-lover—for an Oriental rug will always be among your prized
possessions. And the prices are the result of our own carefully planned arrangements with
the importer.

All This Week, Third Floor.

FUR STORAGE
Summer Accommodation now
ready. Phone 4400 for delivery.

SMALLMAN & INGRAM
LIMITED

WONDER CLEANSER
Demonstration of Wonder Cleanser
and Instant Hose Darners,
all this week.
—Main Floor—

LABOR BODY IN ONTARIO IN COMMUNISTS' HANDS

Radicals Gain Control of On-
tario Section of Canadian
Labor Party.

Officers Elected

Place Their Candidates in
President's and Vice-Presi-
dent's Chair.

Canadian Press Despatch.

Toronto, April 12.—The Communists
scored a victory in the election of
officers at the convention of the On-
tario section of the Canadian Labor
party here yesterday. A. E. Smith,
a one-time Methodist minister in
western Canada, was elected presi-
dent over Harry Kerwin, the candi-
date of the trades unions, by two
votes in a convention of 160 delegates.
The Communists also elected their
candidate, John McDonald, as vice-
president and secured control of the
executive committee.

A resolution presented by the Com-
munists, providing that the five dele-
gates from the Canadian Labor
party to the gathering of British
Empire labor parties in London next
year be instructed to move that the
colonial and semi-colonial portions
of the empire have complete inde-
pendence was adopted.

An amendment to have "self-
determination" substituted for "inde-
pendence" failed.

Wm. Irvine and J. S. Woodsworth,
members of the federal parliament,
and James Simpson, Toronto, are
among the delegates chosen to attend
the London conference.

In addition to naming executive
officers the communists were success-
ful in placing at the head of the pol-
ity of the five delegates to the Do-
minion convention, which meets this
year in Ottawa, while the Trades and
Labor Congress of Canada is in ses-
sion.

The fifth delegate was James
Simpson, secretary of the party, who
secured 54 votes.

The communists regarded the elec-
tions as a clear-cut victory, and
stated that their next step would be
an attempt to gain control of the
Dominion convention of the Trades
and Labor Congress.

**AGED MAN BELIEVED
TO BE SUICIDE AT FALLS**

Canadian Press Despatch.

Niagara Falls, Ont., April 12.—The
police believe that Francis H. Parker,
an 86-year-old resident of Cleveland,
has committed suicide by throwing
himself over the falls. The chief of
police received a wire today stating
that Parker had expressed a desire to
throw himself over the cataract.
Clothing was found near the falls,
and an officer stated that he saw a
man answering Parker's description
in the vicinity.

52 ASSIGNMENTS.

Ottawa, April 12.—Notices of 52
assignments under the bankruptcy
act appears in the current issue of
the Canada Gazette.

FATHER SEEKS TO STOP GIRL 19 WEDDING UNCLE

Petrolia Man Wants War-
rant For Arrest of
Relative.

Special to The Advertiser.

Detroit, April 12.—When John Stark
of Petrolia, Ont., saw the name of his
19-year-old daughter Mabel in a list
of marriage licenses issued here as
the bride of her uncle, Frederick
Griffin, 57 years old, he came to De-
troit and asked that a warrant be
issued for Griffin.

According to Stark's story, his
daughter and Griffin left Petrolia
last month on a vacation trip. Stark
said he was under the impression
that the couple were still on their
vacation until he saw their names in
the list of licenses.

Anna B. Carmichael, assistant
prosecutor, recommended the war-
rant.

BLOODHOUNDS TRAILING YOUNG GIRL'S ASSAILANT

Associated Press Despatch.

Somerville, N. J., April 12.—State
troopers and townspeople 10 miles
from here, yesterday searched for
John Durckuch, 30, who probably
fatally stabbed 11-year-old Josephine
Krysovaty late Thursday afternoon
at her home. Bloodhounds used last
night failed to pick up Durckuch's
trail, but troopers said today they
are hopeful of finding him and put
the dogs out again.

PETROLIA BOWLERS PLAN TO BUILD NEW CLUB HOUSE

Special to The Advertiser.

Petrolia, April 12.—The local bow-
ling club, which is credited with
having one of the best greens in
Ontario, will boast of a splendid new
clubhouse this summer. The new
clubhouse will be built in the near
future and will replace the small
frame structure that has served the
bowlers a number of years. The
surroundings of the greens have be-
come greatly beautified, and the bow-
lers are anticipating a most success-
ful season. It is understood that a drive
will be made for new members short-
ly.

Extensive plans are now under way
for tournaments to be held here dy-
ing the Old Boys' reunion, between
July 1 and 5.