

# CONTENTS

### STORIES

REVOLT OF THE ROBOTS	E 1 00 00 00 00 00 00 00 00 00 00 00 00 0
THE INVISIBLE ROBINHOOD  Criminals and warlords feared him, good people	
THE EMPRESS OF MARS	
THE SLEEPING GODDESSSealed from the world, the valley evolved its peop	100 E
ADVENTURE IN LEMURIA	
THE MUMMY OF RET-SEH	
THE DEVIL FLOWER	
F E A T U R E S	
The Editor's Notebook 4	Quiz Page
Fantastic Inventions	Ray Holmes, Scientific Detective 88
Fantastic Hoaxes	Readers' Page
Introducing the Author 84	The Man From Mars 97
Front cover by Robert Fuqua, depicting a scene in Revolt of the Robots	

Back Cover by Frank R. Paul Illustrations by Julian S. Krupa

Copyright, 1939, ZIFF-DAVIS PUBLISHING COMPANY
608 South Dearborn St., Chicago, Ill.
William B. Ziff, Publisher, B. G. Davis, Editor, Raymond A. Palmer, Managing Editor, Herman R. Bollin, Art Director Contributors are advised to retain a copy of their manuscripts and illustrations. Unavailable manuscripts will be destroyed, unless accompanied by return postage. Contributions will be handled with reasonable care, but this magazine assumes no responsibility for their safety. Any copy accepted is subject to revision or changes to meet the requirements of this publication. Payment for manuscripts and illustrations will be made at our current rates.

The names of all characters that are used in short stories, serials and semi-fiction articles that deal with types are fictitious. Use of a name which is the same as that of any living person is accidental.

## FANTASTIC INVENTIONS

#### PERPETUAL MOTION MACHINES

### An impossible invention which has lured many inventors

CONTRARY to all logic, many inventors have sought to create a machine which would work until it wore out, without an application of outside force to keep it going. This is a complete fallacy, and a little serious thinking will make it apparent.



A water wheel is run by sun-power

At first thought, a water wheel is such a machine, but it is not. It is evident that it is the sun which makes the wheel go by raising the water.

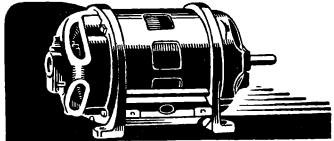
A Foucault pendulum might be said to be a perpetual motion machine, since it continues to describe an arc as the earth revolves. But here again, a phenomenon of nature, evidenced in a machine, depends wholly on an outside force, motion of the earth.

Many things occur in nature and in mechanics which those inventive dreamers who seek the will-o-the-wisp of a perpetually moving machine point out as evidence that it is not an impossibility. But when they try to carry out these apparent instances in an inventive manner, creating all sorts of machines, they run up against the obstacle of impossibility.

They have tried to use magnetism, rigging up complicated systems of inter-operating magnets, and have achieved some remarkably baffling machines, but upon examination, each has shown itself to possess some outside motive power, either intentionally placed there by the inventor, or not realized by him as such.

Basically, all these magnetic devices have been nothing more than electric motors, in fantastic forms. They need a power input to activate them.

The force of gravity has been used by many in an effort



An electric motor operates magnetically

to produce perpetual motion. Many fantastic devices were created. One, for instance, is a wheel equipped with buckets, something like a ferris wheel geared to an upright elevator conveyor, operating on the continuous belt prin-

ciple. It uses metal balls to make it go, the balls ascending the elevator being propelled up by the geared wheel which is turned by the weight of other balls continually being dumped in at the top, and rolling out of the buckets at the bottom, to return once more to the elevator to be raised again. Thus a series of balls is supposed to keep the wheel going. The theory of the inventor who devised this one is simple. Inasmuch as the distance the balls had to be lifted was shorter than the distance the same balls traveled around the wheel's circumference from the top, it seemed that there would be surplus unexpended gravity power left

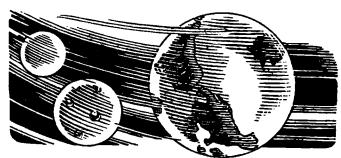


One form of hypothetical perpetual motion machine

to be utilized in moving the wheel. And as long as the wheel moved, the balls would continue to become available for still more power-producing descents. In fact, however, the friction of the wheel, the gears, etc., needed far more power than supplied by the balls. It is a law of physics that it is impossible to get more power out of an apparatus than is put into it.

These inventors persisted because they pointed to the motion of the earth and the stars as perpetual motion. But again they erred. The motion of every heavenly body is dependent on other bodies. If we analyze deeply, we come to the Einstein precepts of relativity, and discover all motion to be relative. A lone planet, plunging at incredible speed through absolutely empty space could not be said to be moving. There would be no basis of comparison.

Perpetual motion machines are impossible.



Motion of heavenly bodies depends on mutual gravitation