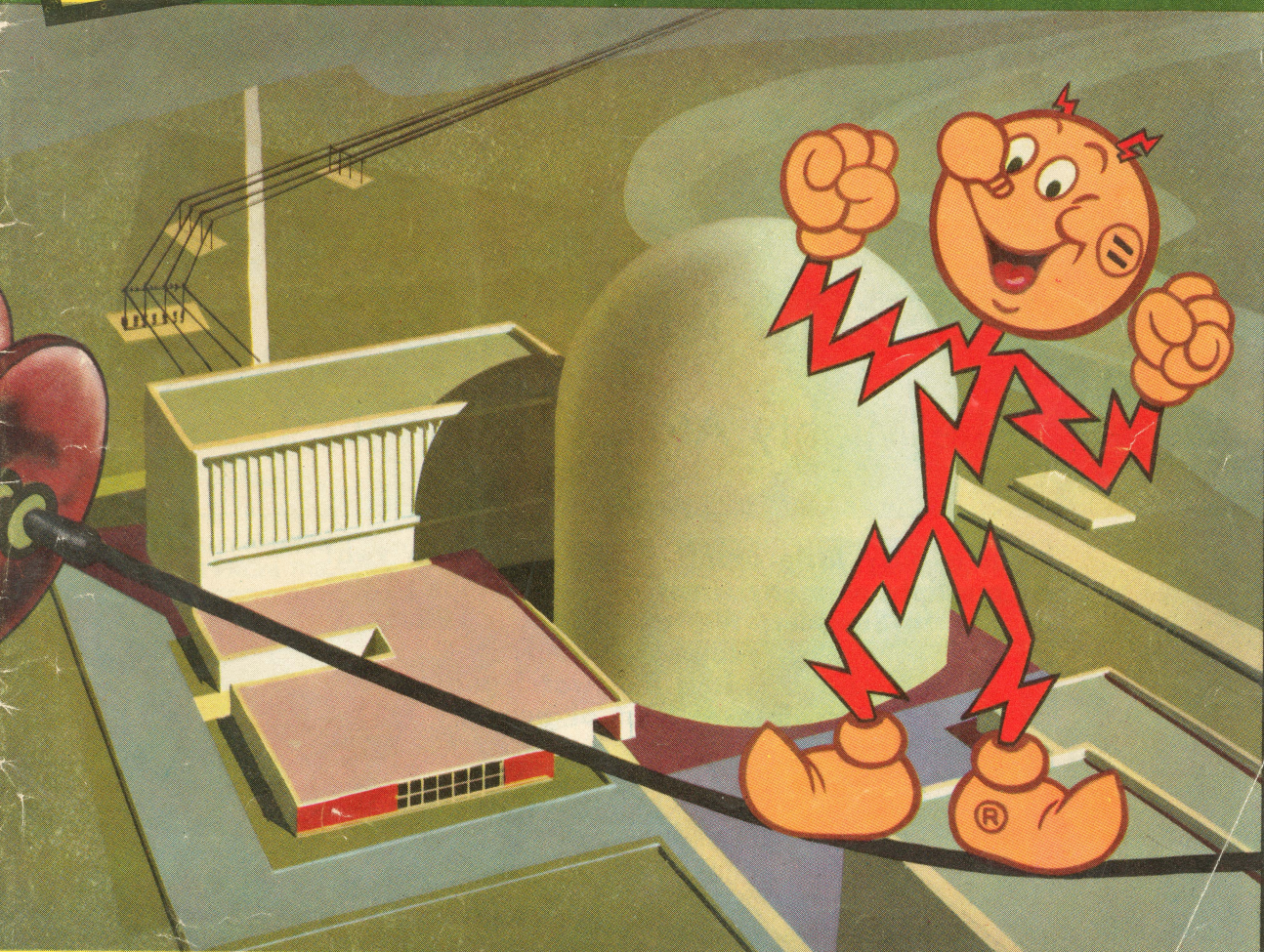
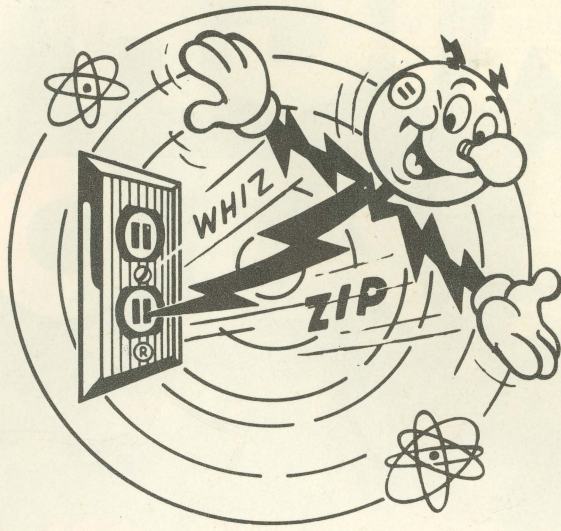


# The MIGHTY ATOM

Starring  
Reddy Kilowatt®



The Story of **ELECTRICITY**  
from **AMBER** to **ATOMS**

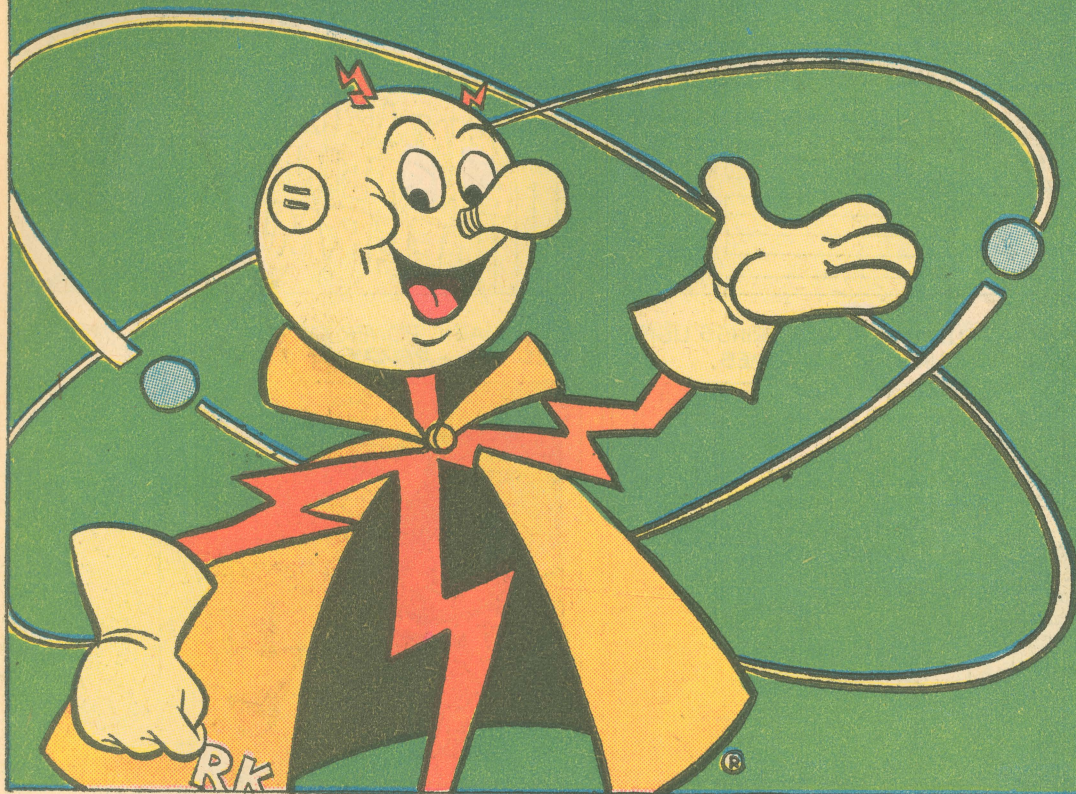


# REDDY KILOWATT<sup>®</sup>

The *Mighty Atom in Person!*

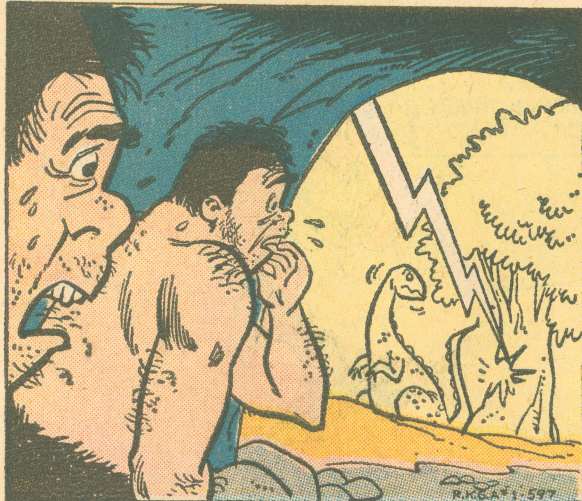
**I'm a busy little atom! I split myself in two!  
I multiply as many times as I have jobs to do!  
In Summer, Winter, Spring or Fall  
I'm ready every hour;  
Just push a switch and watch me zip  
With light or heat or power.**

# The MIGHTY ATOM



WHEN EARLY MAN FIRST SAW ELECTRICITY THUNDERING DOWN FROM THE SKIES, HE COVERED IN FEAR.

UNCOUNTED CENTURIES HAVE PASSED AND MAN HAS LEARNED TO HARNESS THIS COLOSSAL ENERGY. TODAY, THE MIRACLE OF ELECTRICITY IS A VITAL PART OF OUR DAILY LIVES.



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MANY MEN  
HAVE CONTRI-  
BUTED TO THE  
PROGRESS OF  
ELECTRICITY.  
THEIR GENIUS  
HELPED  
DEVELOP THE  
MIGHTY POWER  
THAT RUNS  
OUR CITIES,  
FACORIES  
AND FARMS.

THALES  
VOLTA

FRANKLIN  
WATT

AMPERE

FARADAY

EDISON

BRUSH

TESLA

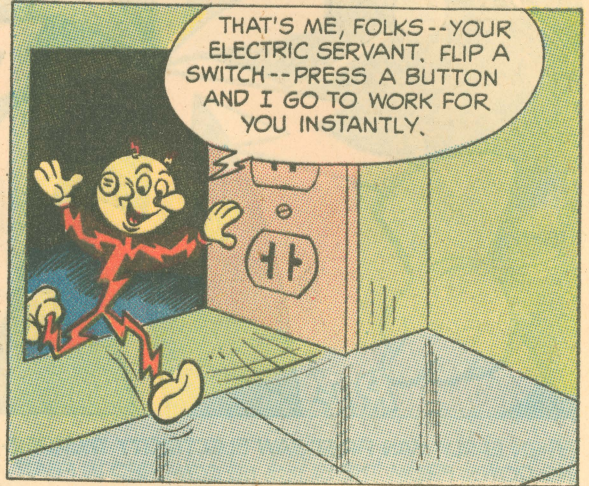
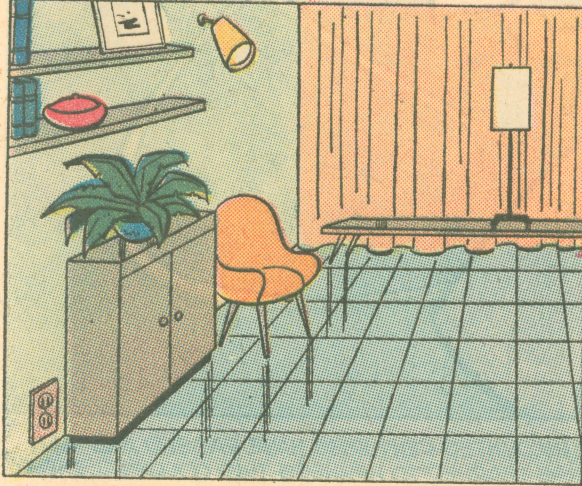
STEINMETZ

EINSTEIN

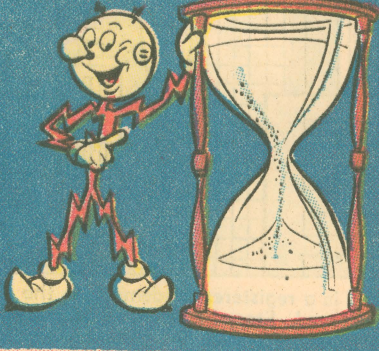
FERMI

AND THE MAGIC ELECTRIC POWER BRINGS LIGHT  
AND BEAUTY TO OUR MODERN HOMES.

THIS MAGIC POWER OF ELECTRICITY IS SYMBOL-  
IZED BY --REDDY KILOWATT.

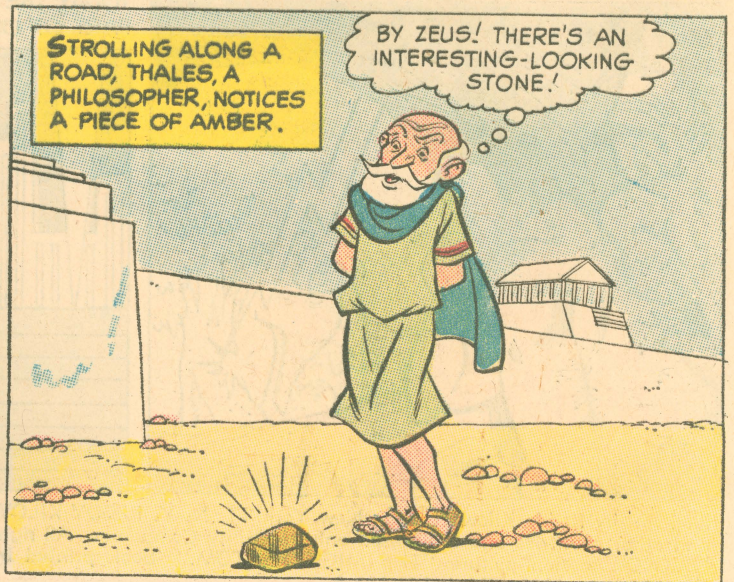


I'VE BEEN AROUND FOR A LONG  
TIME. IN FACT I WAS DISCOVERED  
ABOUT 2500 YEARS AGO IN  
ANCIENT GREECE.

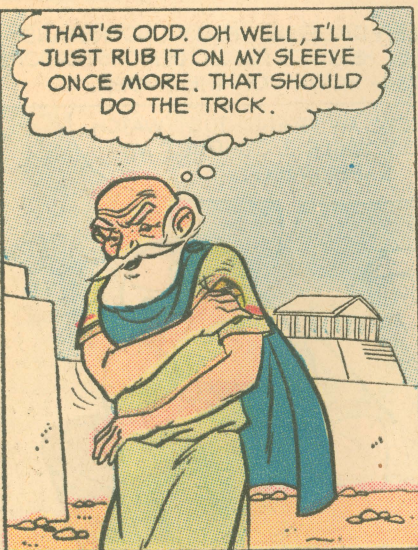
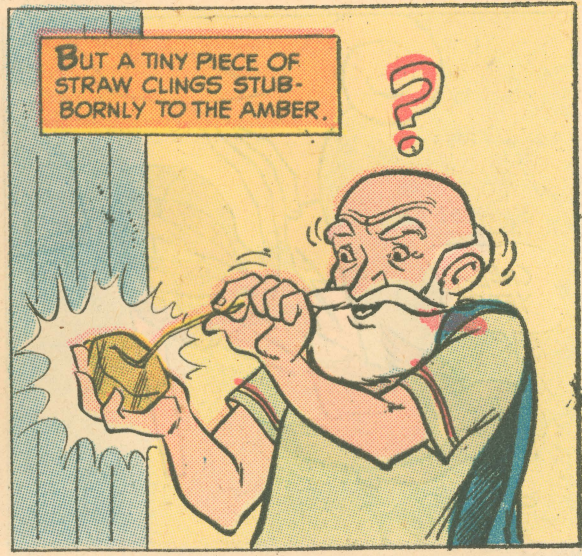
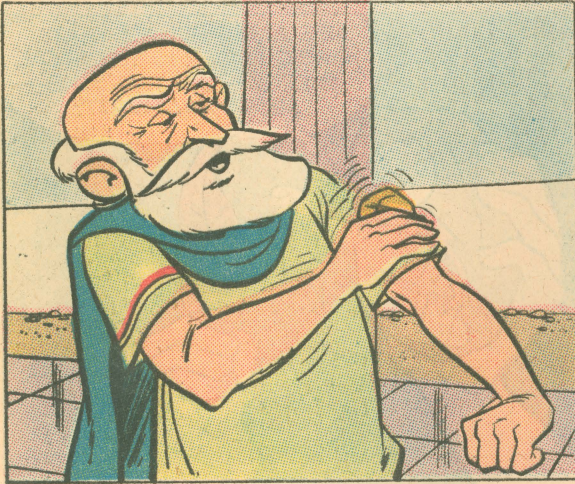


STROLLING ALONG A  
ROAD, THALES, A  
PHILOSOPHER, NOTICES  
A PIECE OF AMBER.

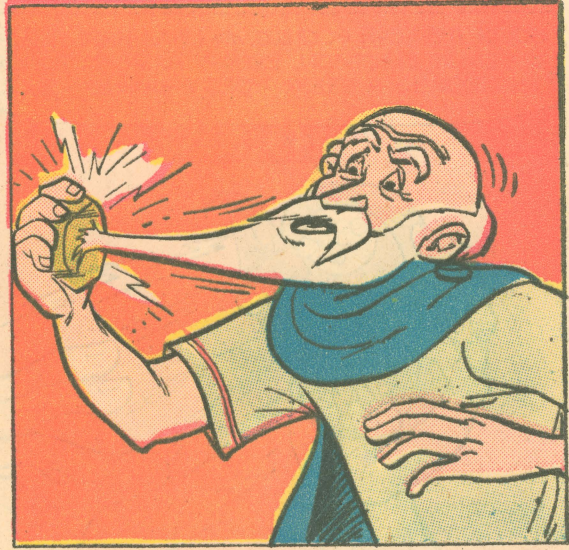
BY ZEUS! THERE'S AN  
INTERESTING-LOOKING  
STONE!



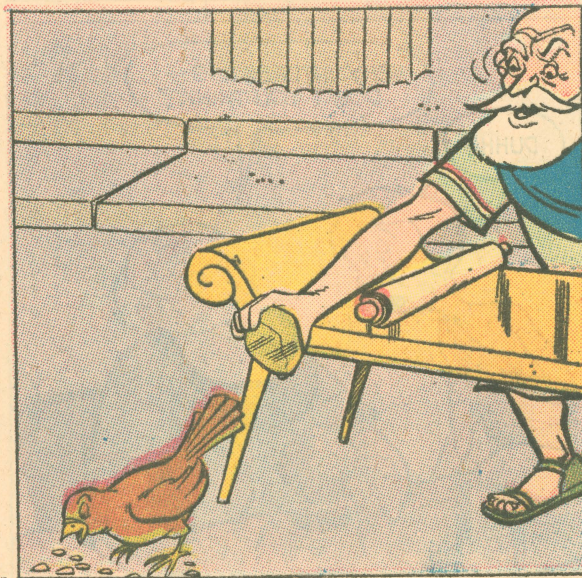
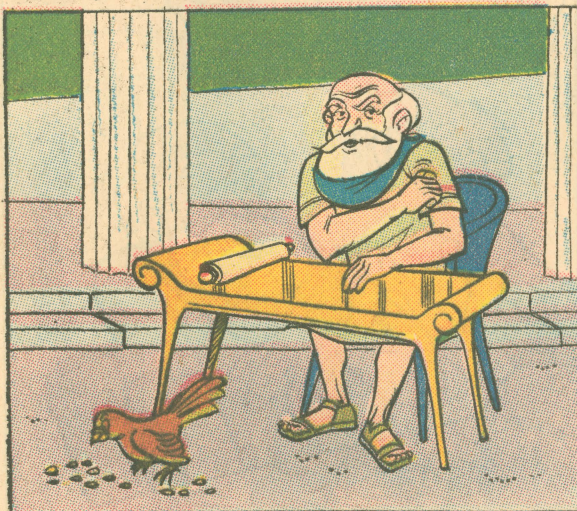
PICKING UP THE AMBER, HE RUBS IT AGAINST HIS SLEEVE TO CLEAN AWAY THE DUST.

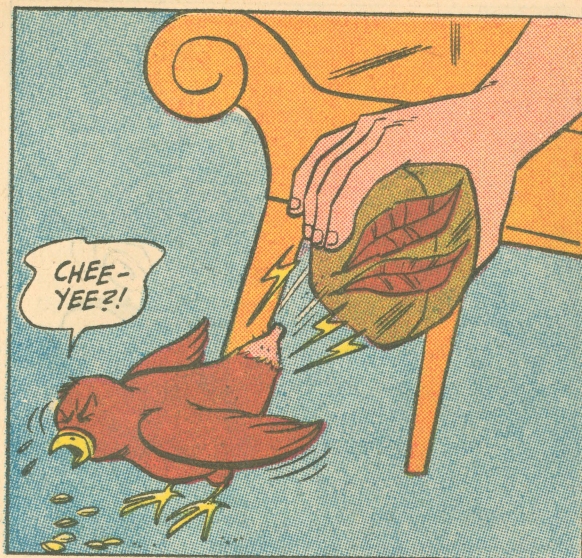


BY RUBBING THE AMBER THALES PRODUCES A CHARGE OF **STATIC ELECTRICITY**. THEN, WHEN THE AMBER PASSES TOO CLOSE TO HIS BEARD...

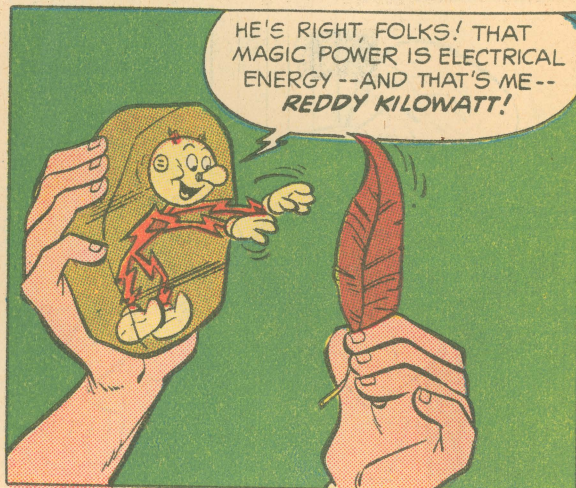


PUZLED BY THE STRANGE POWERS OF THE AMBER, THALES MAKES FURTHER EXPERIMENTS.

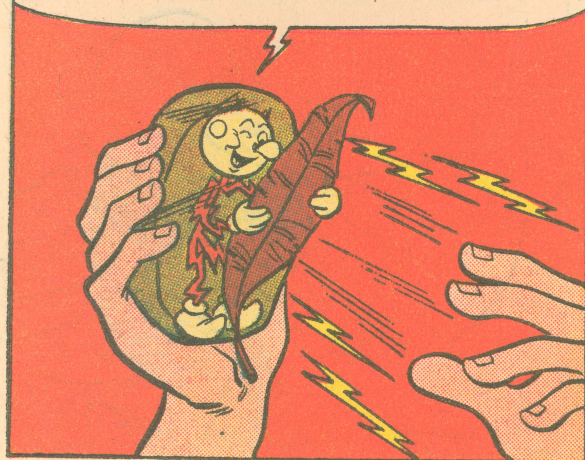




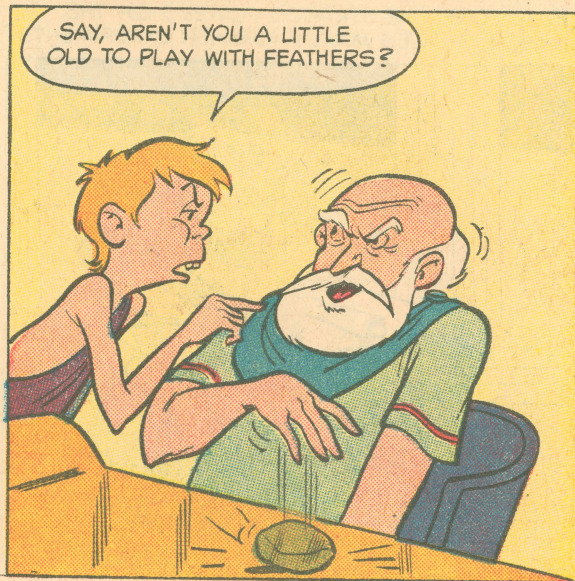
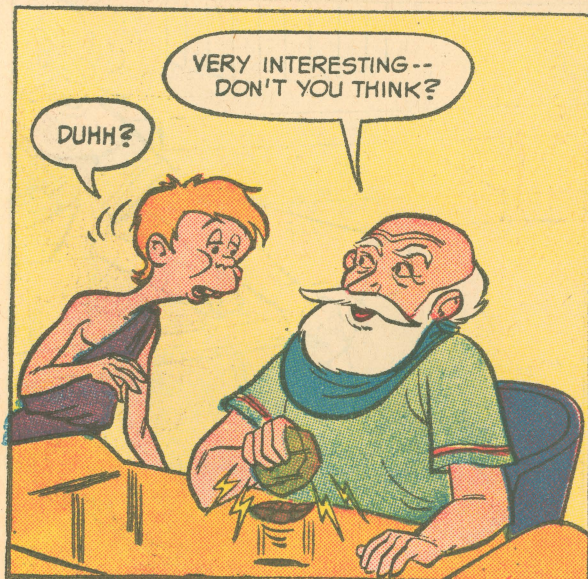
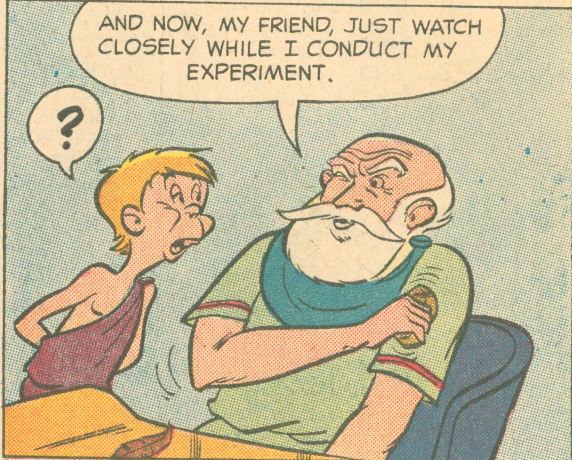
THALES IS CONVINCED THAT THE PIECE OF AMBER HOLDS SOME MAGIC POWER.



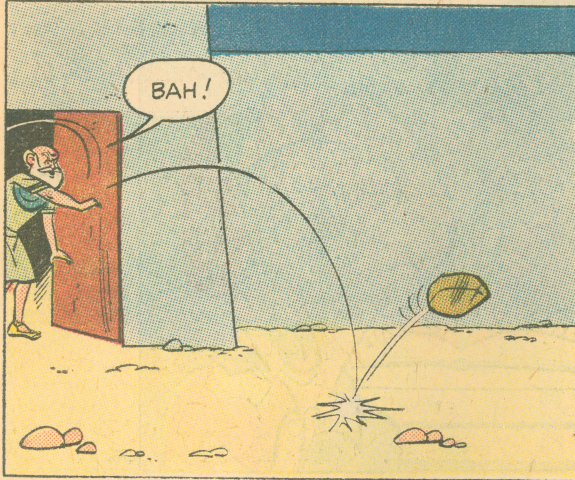
SO, IN THE YEAR 600 B.C. MAN WAS FIRST INTRODUCED TO ELECTRICAL ENERGY AND ELECTRONICS. "ELECTRON" IS A GREEK WORD MEANING "AMBER!"



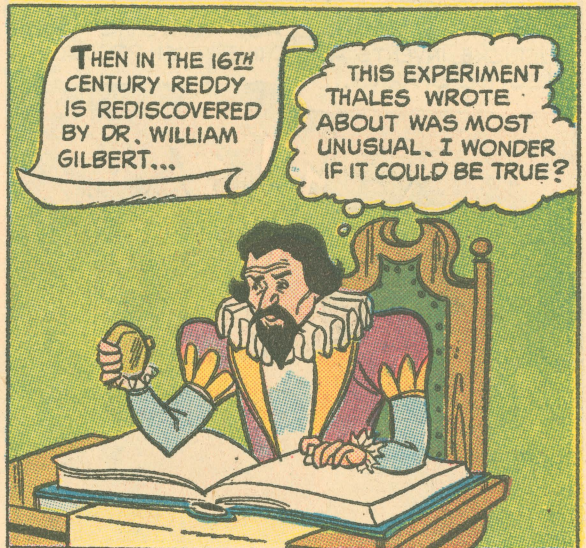
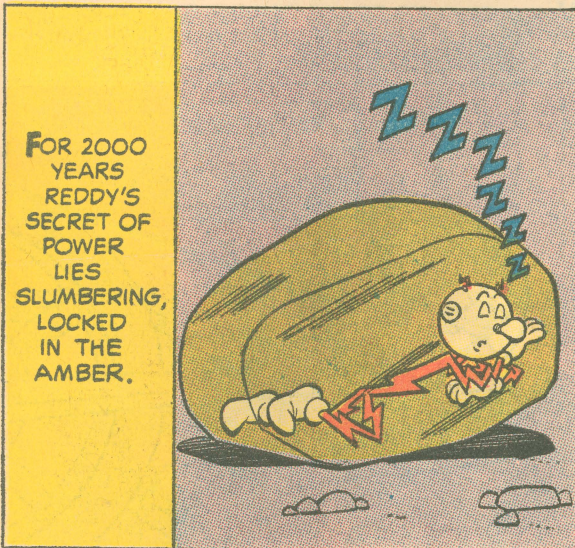
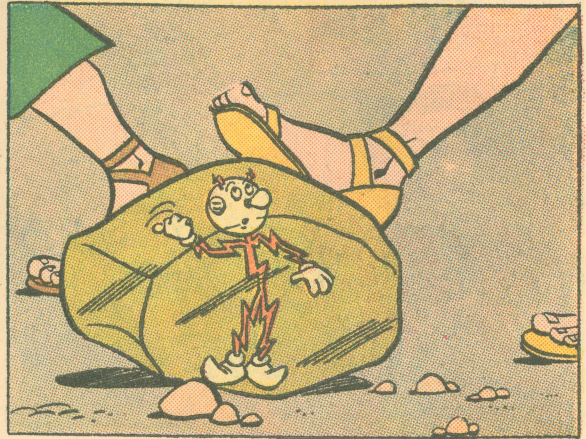
THOUGH THALES DOES NOT FULLY UNDERSTAND HIS DISCOVERY, HE GIVES PUBLIC DEMONSTRATIONS OF THE AMAZING POWER OF THE AMBER.



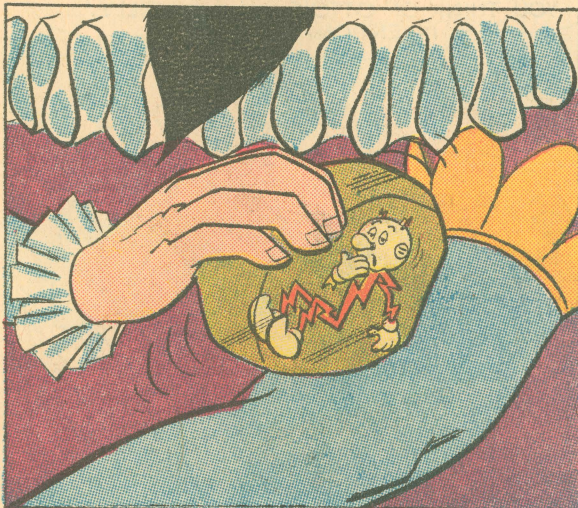
DISCOURAGED BY THE LACK OF PUBLIC INTEREST  
THALES TOSSES THE AMBER AWAY...



SINCE THE BEGINNING OF TIME REDDY HAD  
BEEN WAITING FOR SOMEONE TO DISCOVER HIS  
MAGIC AND PUT IT TO WORK, NOW IT LOOKS  
LIKE NO ONE IS INTERESTED.

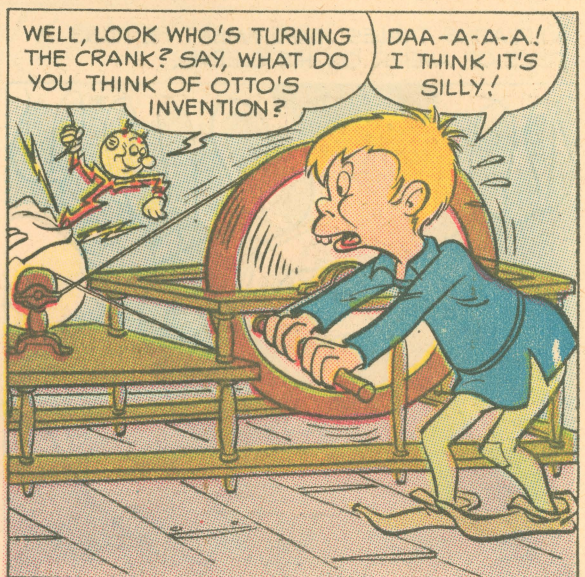
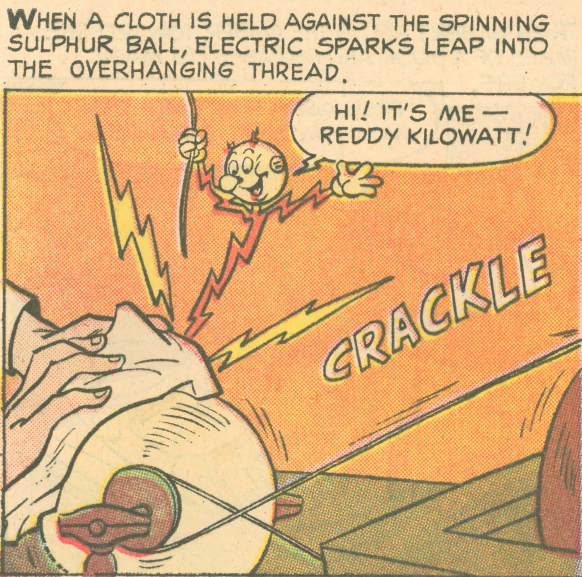
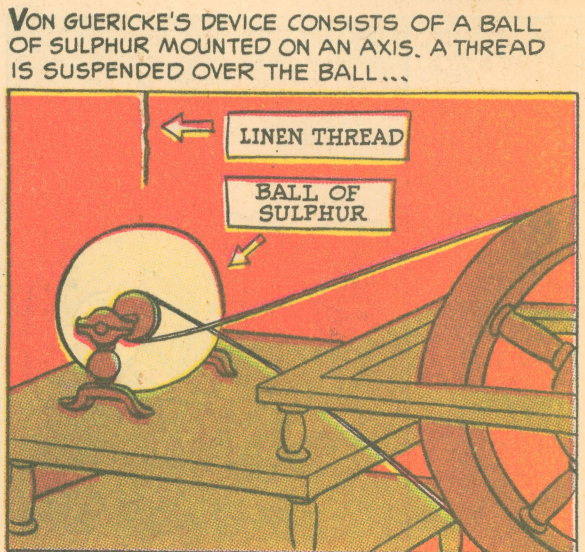
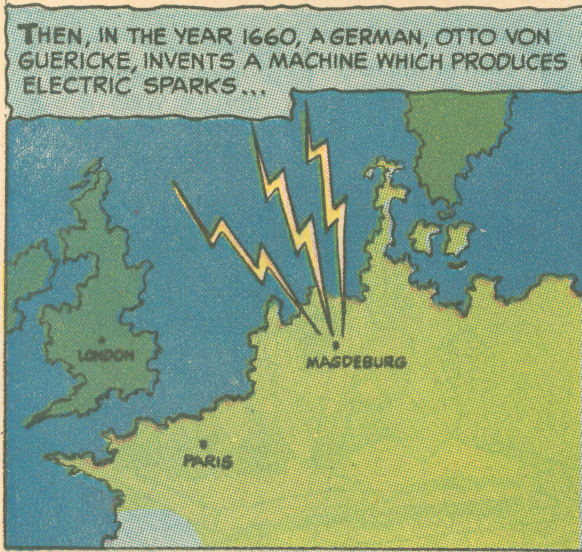
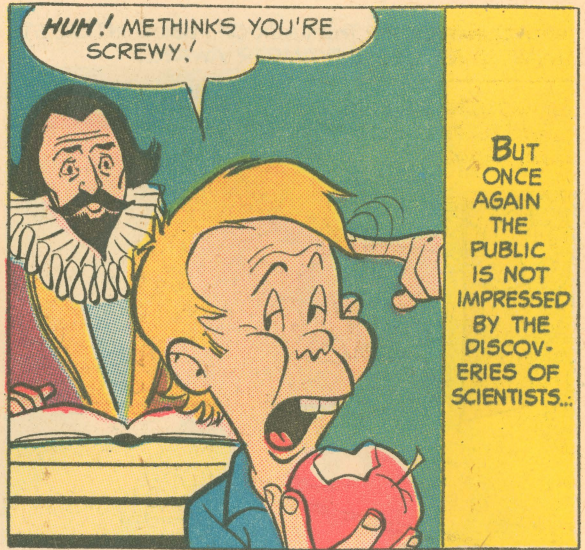
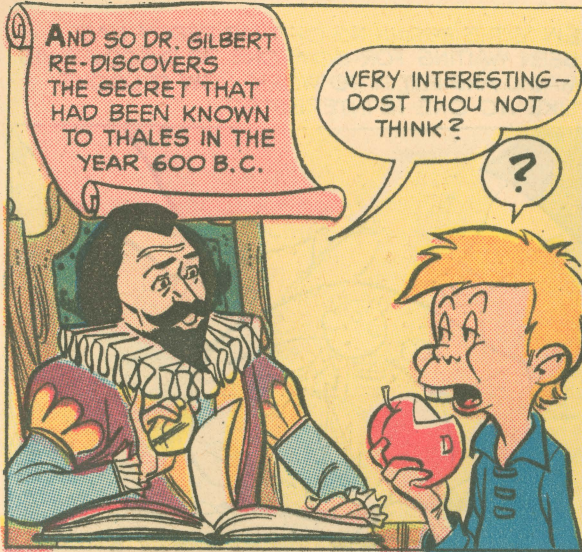


REPEATING THALES' EXPERIMENT HE RUBS A  
PIECE OF AMBER ON HIS SLEEVE.



THEN GILBERT HOLDS THE AMBER TOWARD THE  
PAGES OF A BOOK AND RELEASES ITS MAGIC  
POWERS.

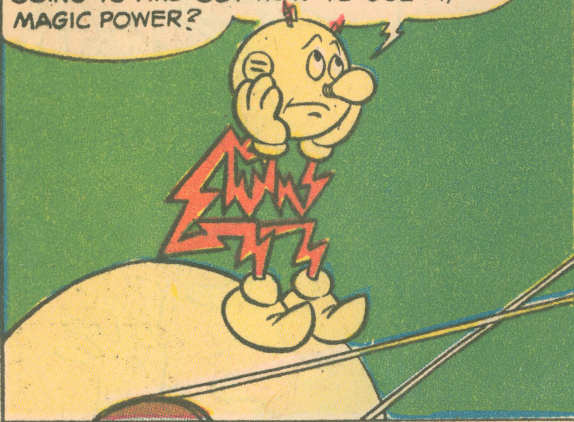






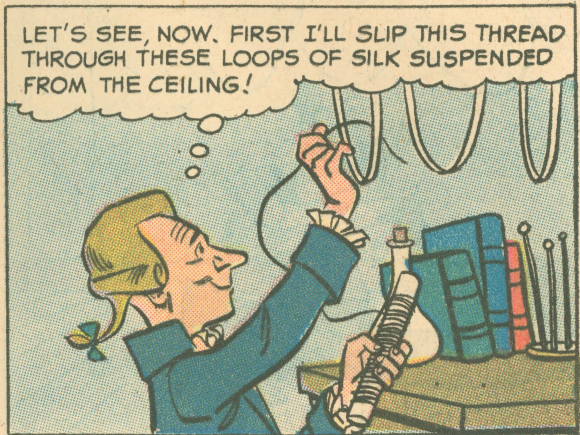
UNFORTUNATELY PEOPLE CONSIDER VON GUERICKE'S DEVICE TO BE USELESS...

FOR GOODNESS SAKE, ISN'T ANYONE EVER GOING TO FIND OUT HOW TO USE MY MAGIC POWER?



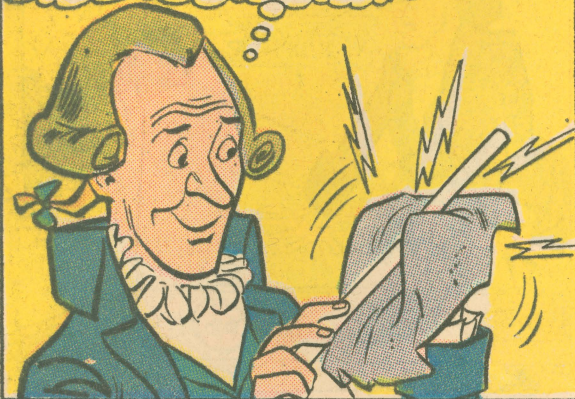
BUT REDDY WAS NOT TO BE FORGOTTEN AGAIN, IN 1729 STEPHEN GRAY OF ENGLAND PROVES THAT CERTAIN MATERIALS ARE GOOD CONDUCTORS OF ELECTRICITY...

LET'S SEE, NOW. FIRST I'LL SLIP THIS THREAD THROUGH THESE LOOPS OF SILK SUSPENDED FROM THE CEILING!



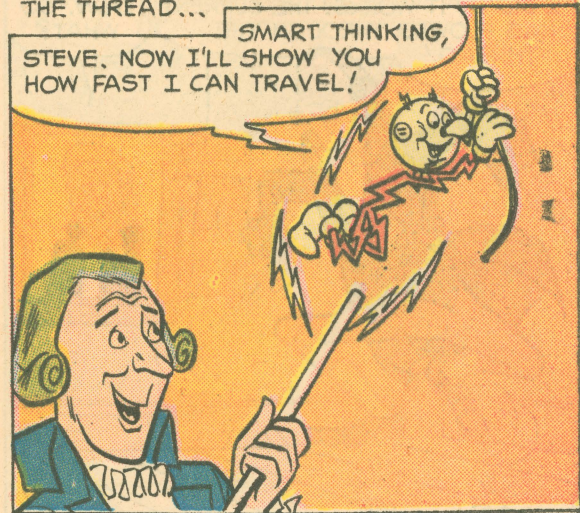
THEN, BY MEANS OF FRICTION GRAY ELECTRIFIES A GLASS ROD.

SILK IS A POOR CONDUCTOR, SO THE ELECTRICITY SHOULD REMAIN IN THE THREAD!

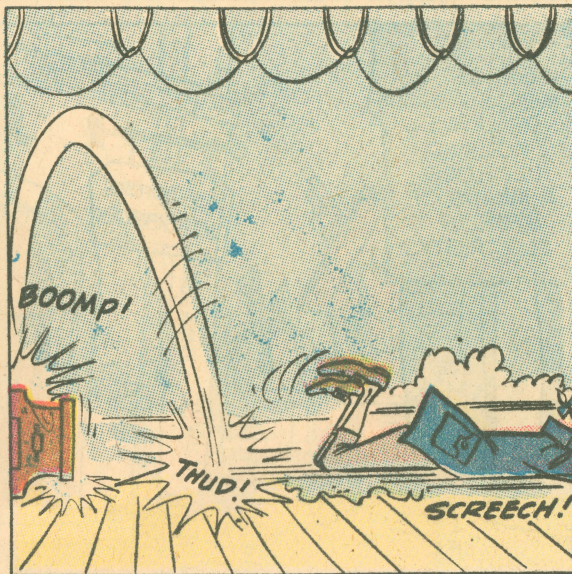
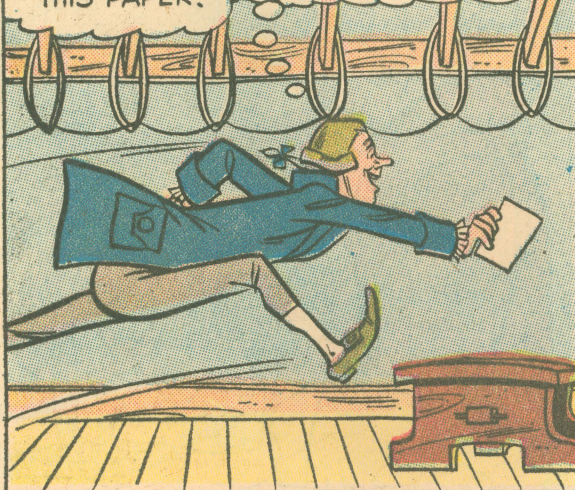


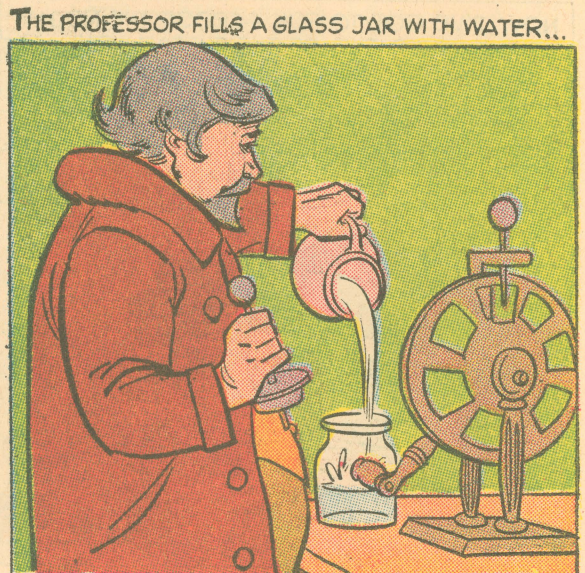
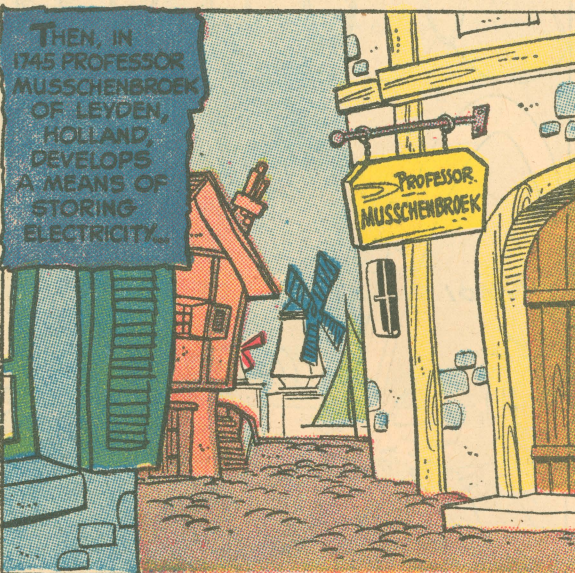
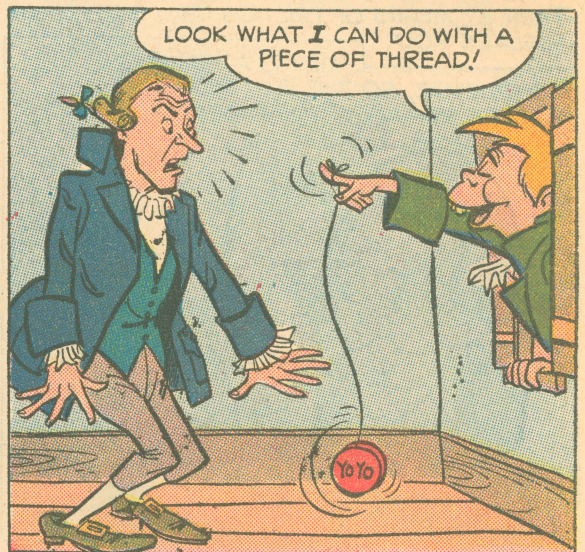
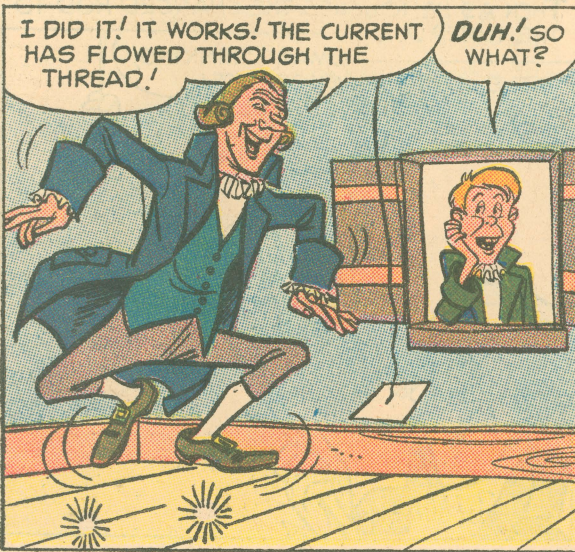
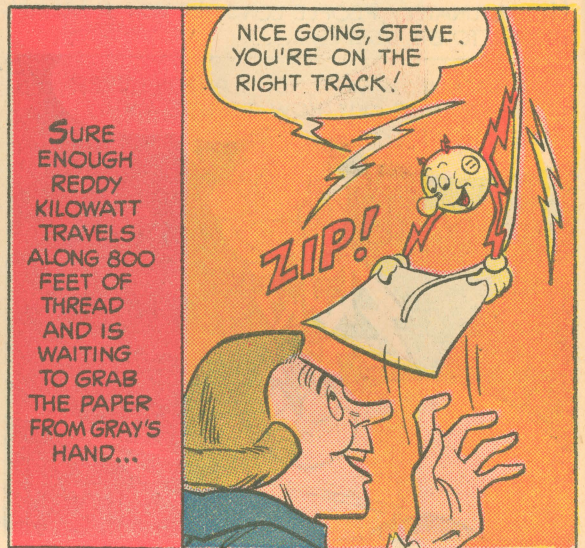
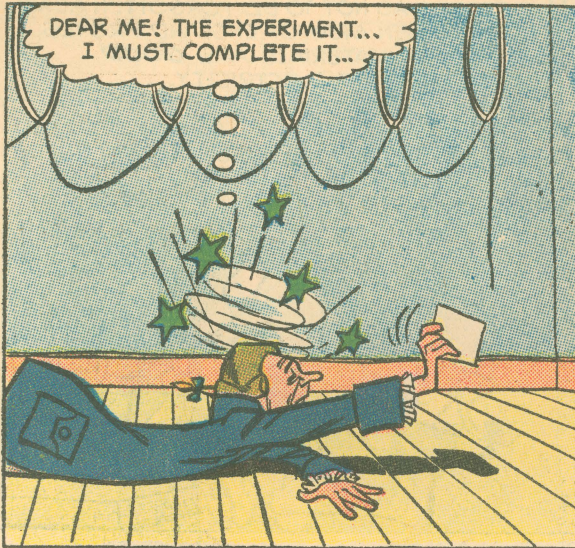
THEN AS HE TOUCHES THE CHARGED ROD TO THE THREAD...

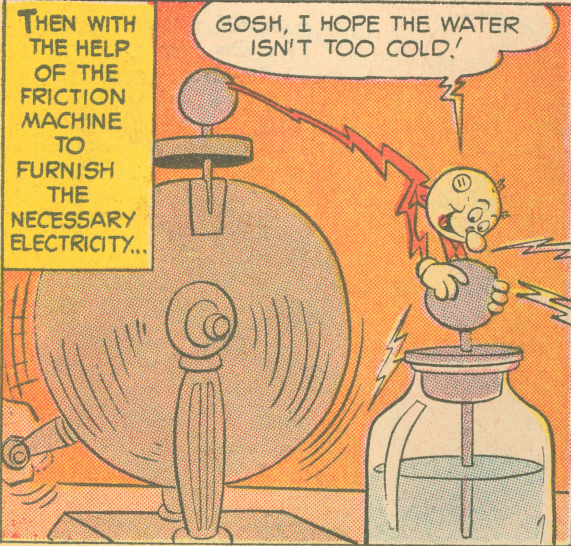
SMART THINKING, STEVE. NOW I'LL SHOW YOU HOW FAST I CAN TRAVEL!



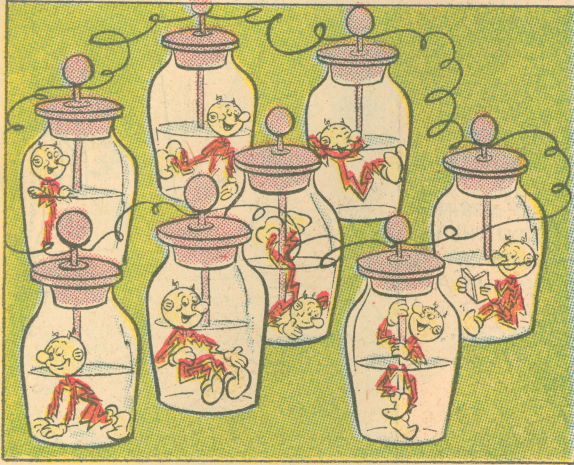
NOW I'VE GOT TO RUN ACROSS THE ROOM TO THE OTHER END OF THE THREAD WITH THIS PAPER.



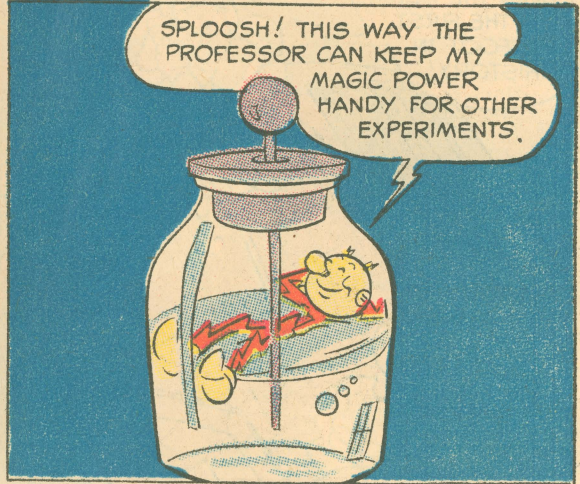




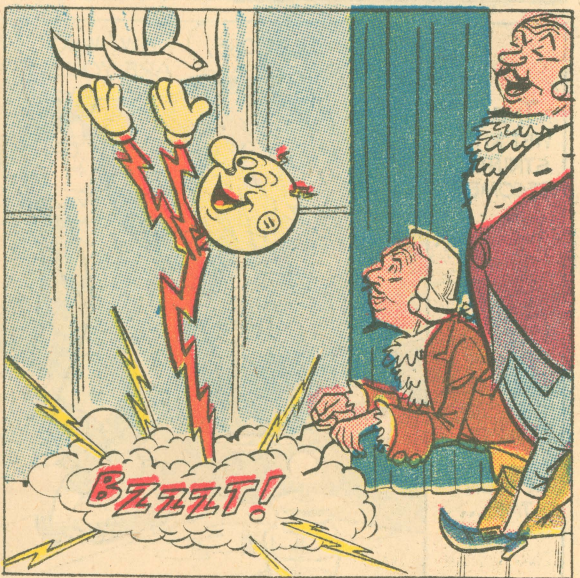
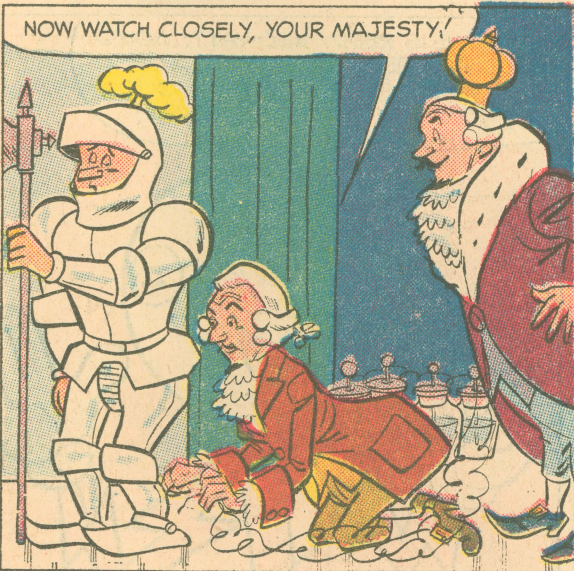
WHEN A NUMBER OF THESE "LEYDEN" JARS ARE GROUPED TOGETHER, A CONSIDERABLE AMOUNT OF ELECTRICITY CAN BE ACCUMULATED...



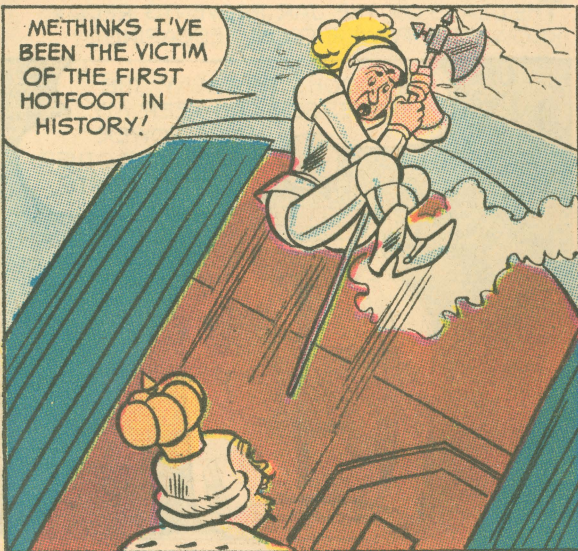
THE GLASS OF THE JAR PREVENTS REDDY KILOWATT'S POWER FROM "ESCAPING"!



AND DEMONSTRATES ONE DAY TO THE KING OF FRANCE.



METHINKS I'VE BEEN THE VICTIM OF THE FIRST HOTFOOT IN HISTORY!

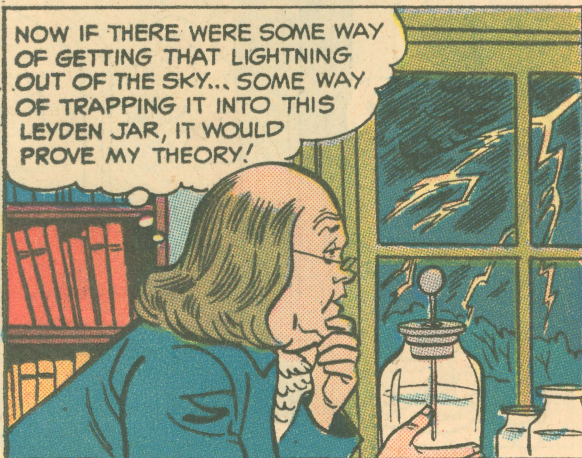


BY NOW SCIENTISTS THROUGHOUT EUROPE WERE EXPERIMENTING WITH ELECTRICITY. ACROSS THE ATLANTIC BENJAMIN FRANKLIN IS CONDUCTING EXPERIMENTS OF HIS OWN ...

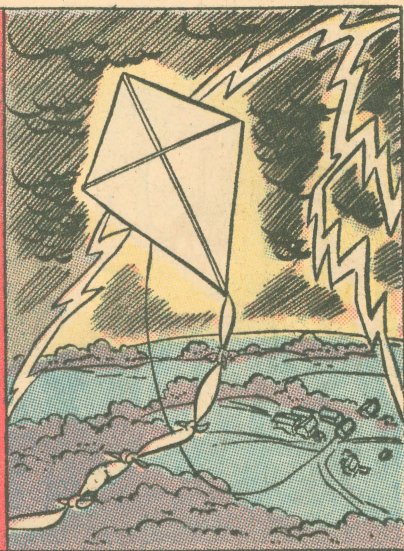


WITH HIS KEEN SCIENTIFIC MIND FRANKLIN REASONS THAT LIGHTNING AND THE ELECTRICITY FORMED BY FRICTION ARE ONE AND THE SAME ...

NOW IF THERE WERE SOME WAY OF GETTING THAT LIGHTNING OUT OF THE SKY... SOME WAY OF TRAPPING IT INTO THIS LEYDEN JAR, IT WOULD PROVE MY THEORY!



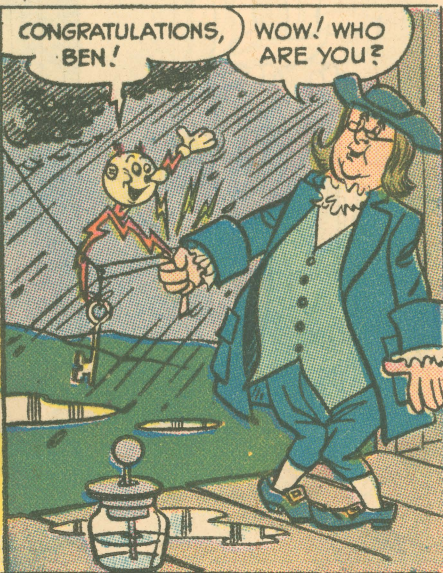
IN 1752, TO TEST HIS THEORY, BEN TIES A METAL KEY TO ONE END OF A KITE STRING AND THEN FLIES THE KITE IN A THUNDER STORM.



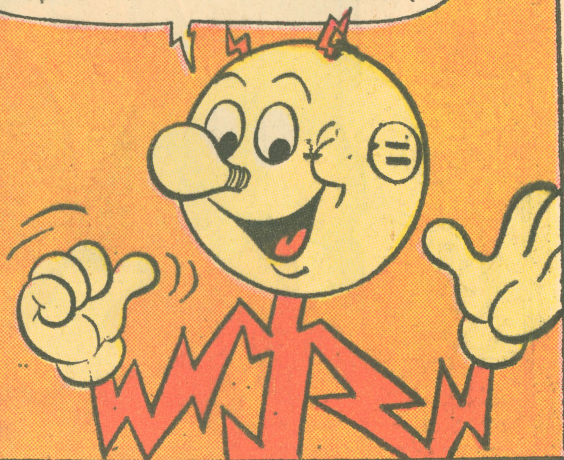
THE WET KITE STRING BECOMES A CONDUCTOR THAT DRAWS REDDY KILOWATT DOWN FROM THE SKY TO CHARGE THE LEYDEN JAR...

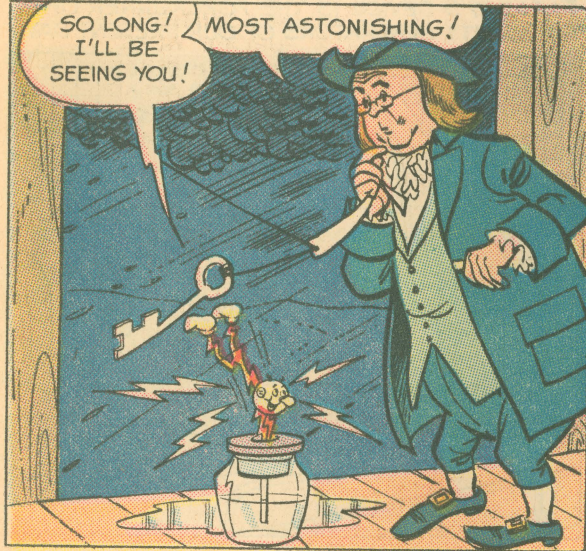
CONGRATULATIONS, BEN!

WOW! WHO ARE YOU?



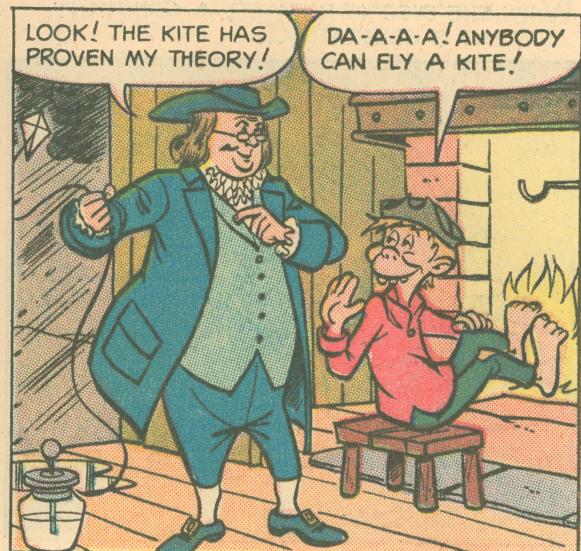
MY NAME IS REDDY KILOWATT! YOU'D BE SURPRISED AT ALL I'VE GOT AND ALL THE THINGS THAT I CAN DO IF PUT TO WORK BY MEN LIKE YOU!





SO LONG!  
I'LL BE  
SEEKING YOU!

MOST ASTONISHING!



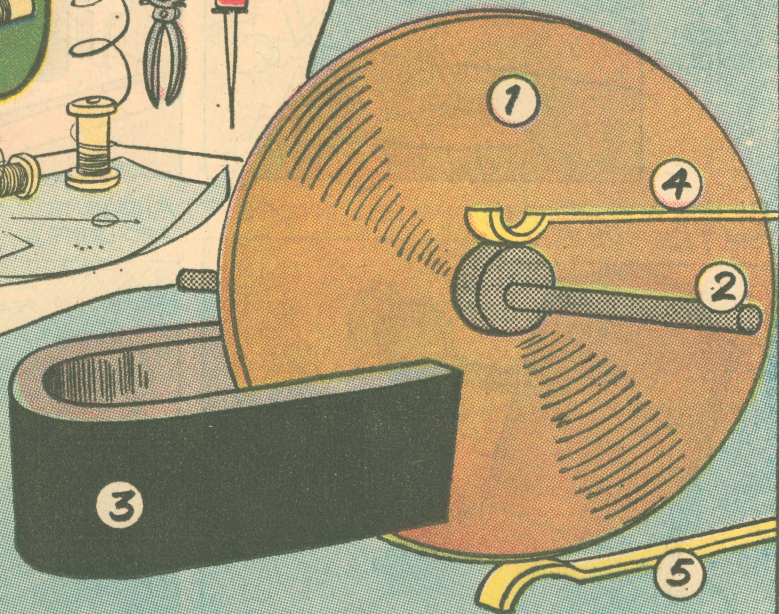
LOOK! THE KITE HAS  
PROVEN MY THEORY!

DA-A-A-A! ANYBODY  
CAN FLY A KITE!

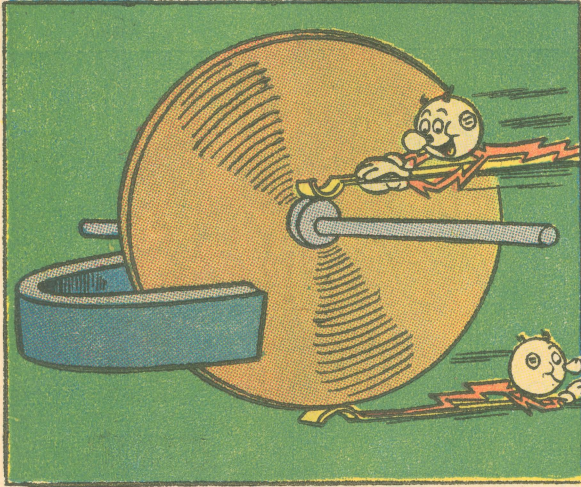
FRANKLIN'S EXPERIMENTS HELP MICHAEL FARADAY,  
AN ENGLISHMAN, DISCOVER HOW TO PRODUCE A  
CONTINUOUS ELECTRICAL CURRENT. THIS IS IN 1831...



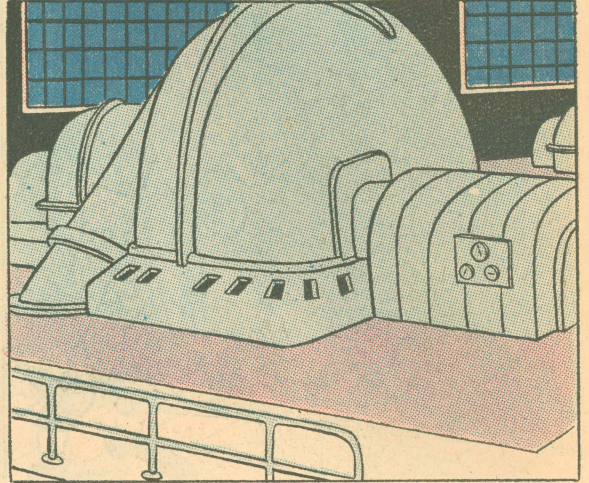
FARADAY MOUNTS A COPPER DISC ①  
ON A ROTATING SHAFT ② THEN HE  
PLACES THE DISC BETWEEN THE  
POLES OF A HORSESHOE MAGNET  
③. A WIRE IS ARRANGED TO TOUCH  
THE SHAFT ④ AND ANOTHER TO  
TOUCH THE OUTER EDGE OF THE  
DISC ⑤.



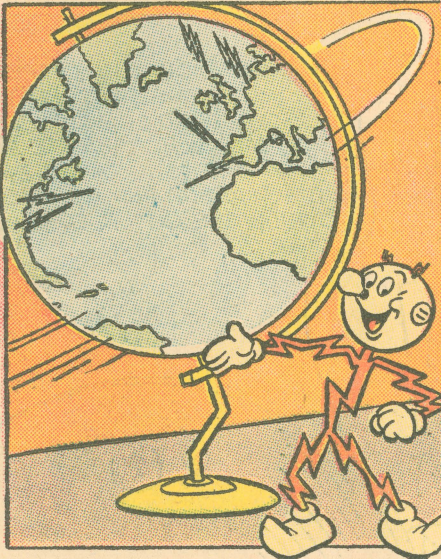
WHEN THE DISC IS ROTATED, A CONSTANT CURRENT IS GENERATED...



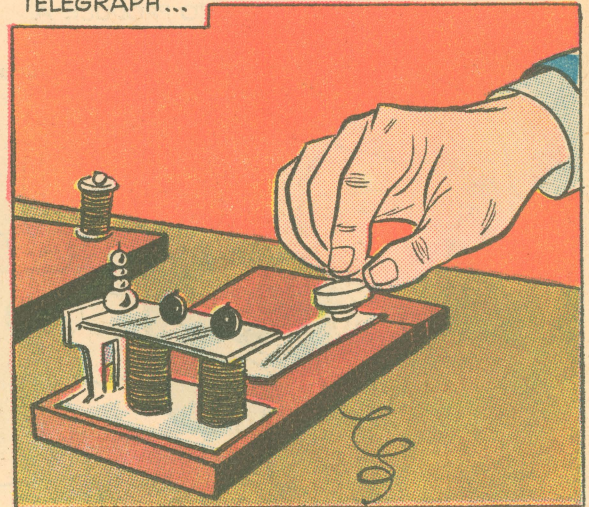
FARADAY'S DEVICE IS THE FORERUNNER OF THE MIGHTY GENERATORS OF OUR PRESENT DAY...



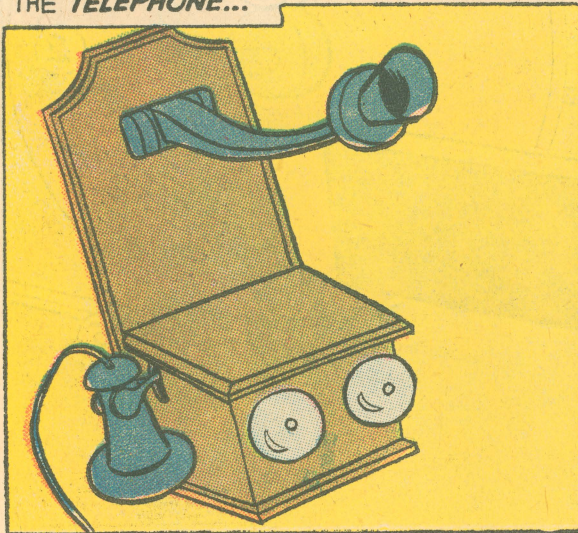
By THIS TIME SCIENTISTS THE WORLD OVER ARE APPLYING REDDY KILOWATT'S AMAZING POWERS TO PRACTICAL INVENTIONS.



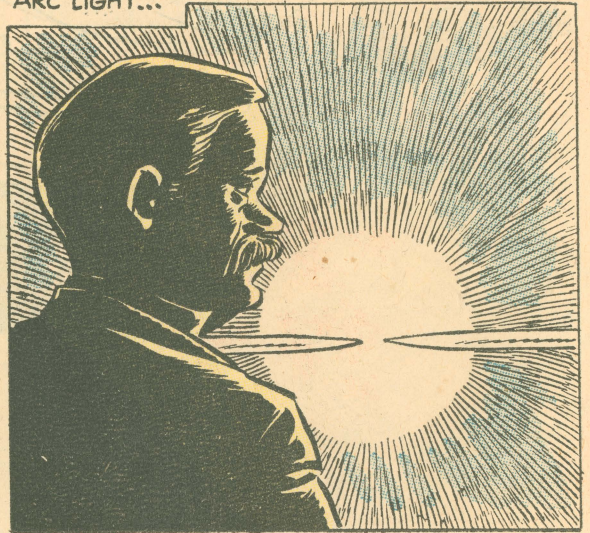
IN 1837 SAMUEL MORSE INVENTS THE ELECTRIC TELEGRAPH...



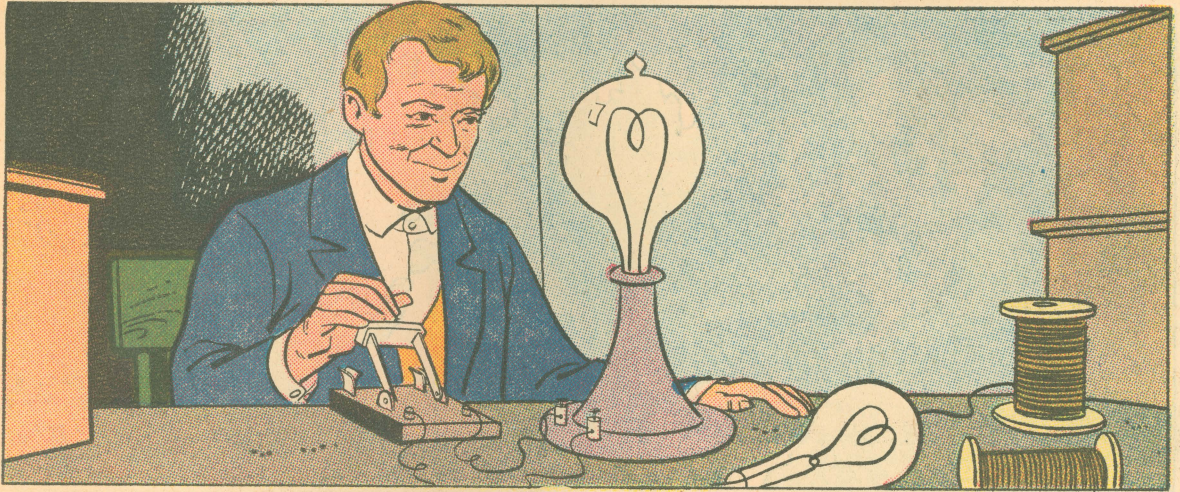
By 1876 ALEXANDER GRAHAM BELL INVENTS THE TELEPHONE...



AND IN 1879 CHARLES BRUSH DEVELOPS THE ARC LIGHT...

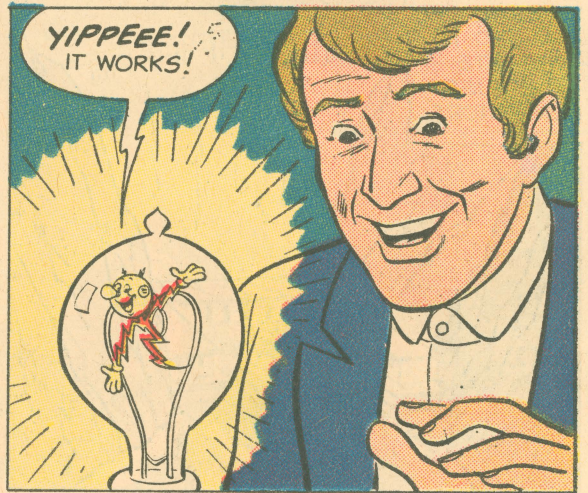
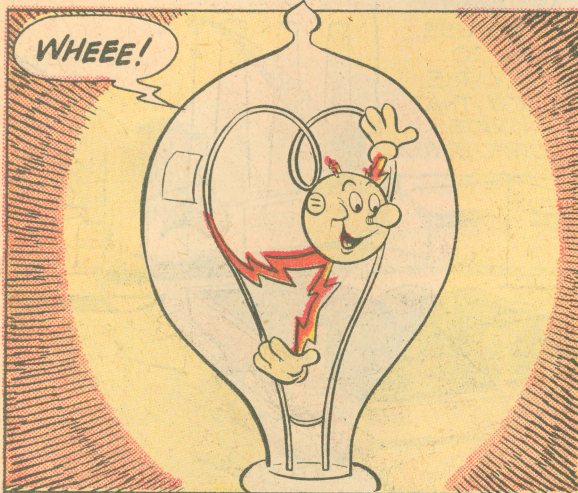


PERHAPS THE GREATEST SINGLE STEP IN ELECTRICAL PROGRESS IS MADE IN 1879 WHEN THE FIRST SUCCESSFUL **LIGHT BULB** IS DEVELOPED BY **THOMAS A. EDISON**...



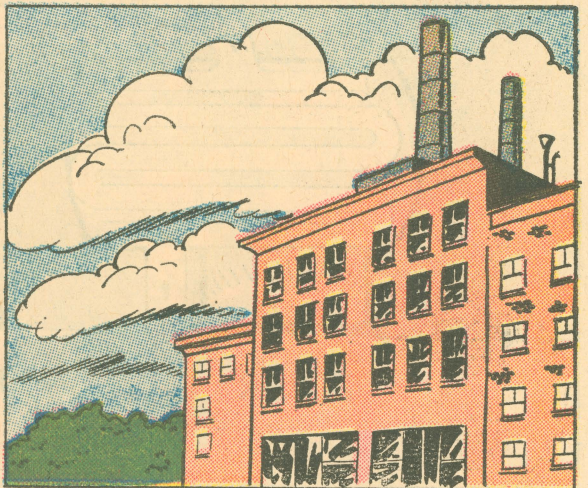
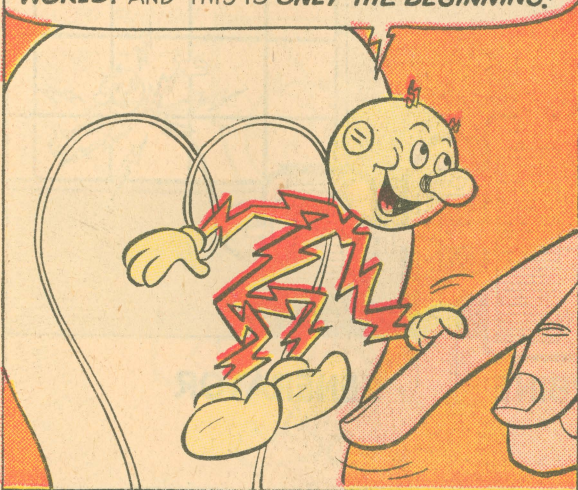
AS EDISON THROWS THE SWITCH REDDY FLASHES INTO ACTION...

HE CHARGES THROUGH THE WIRES UNTIL THEY ARE WHITE-HOT AND THE BULB LIGHTS UP...

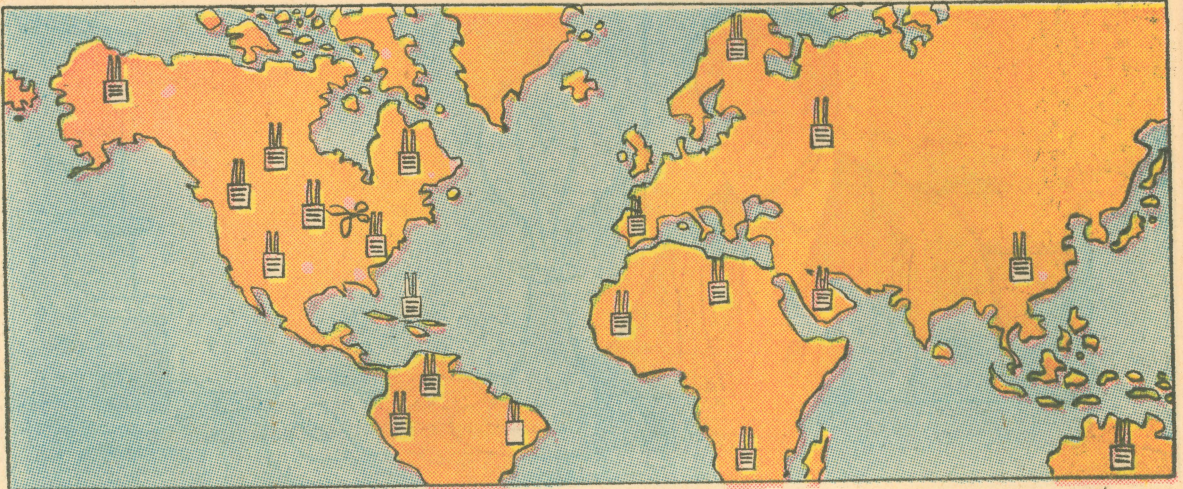


CONGRATULATIONS, MR. EDISON, YOU'VE MADE IT POSSIBLE FOR ME TO **LIGHT UP THE WORLD**. AND THIS IS **ONLY THE BEGINNING!**

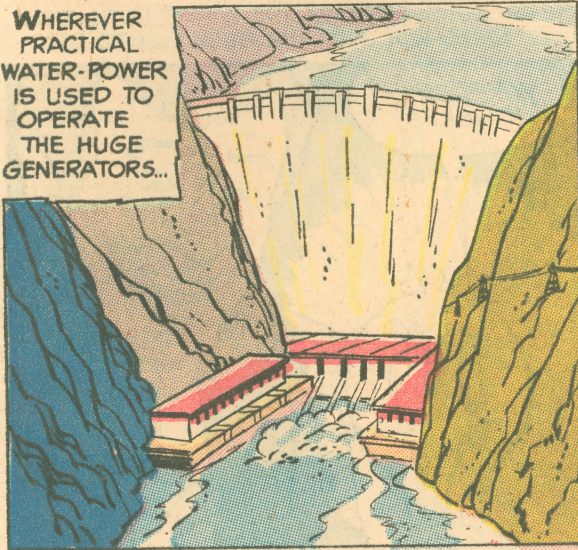
EDISON BUILDS THE FIRST SMALL POWER STATION IN NEW YORK CITY IN 1882, AND SO BEGINS THE ELECTRIC LIGHT AND POWER INDUSTRY...



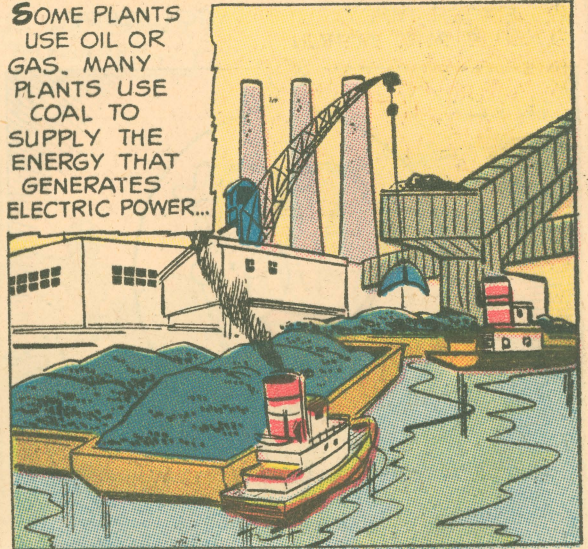
ELECTRIC PLANTS SPRING UP THROUGHOUT THE UNITED STATES AND OTHER COUNTRIES. TODAY THERE ARE THOUSANDS OF ELECTRIC PLANTS ALL OVER THE WORLD...



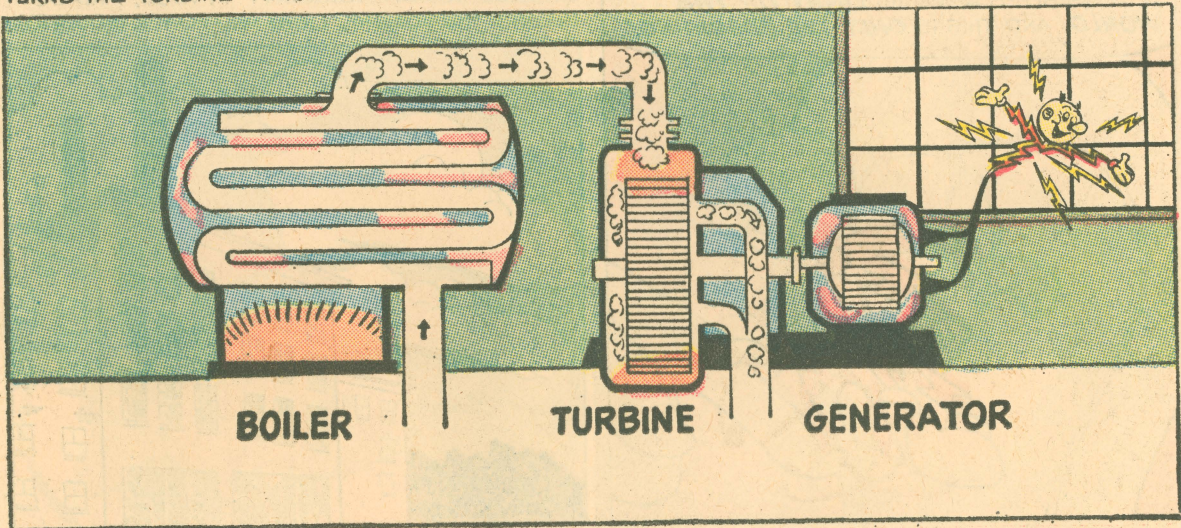
WHEREVER PRACTICAL WATER-POWER IS USED TO OPERATE THE HUGE GENERATORS...



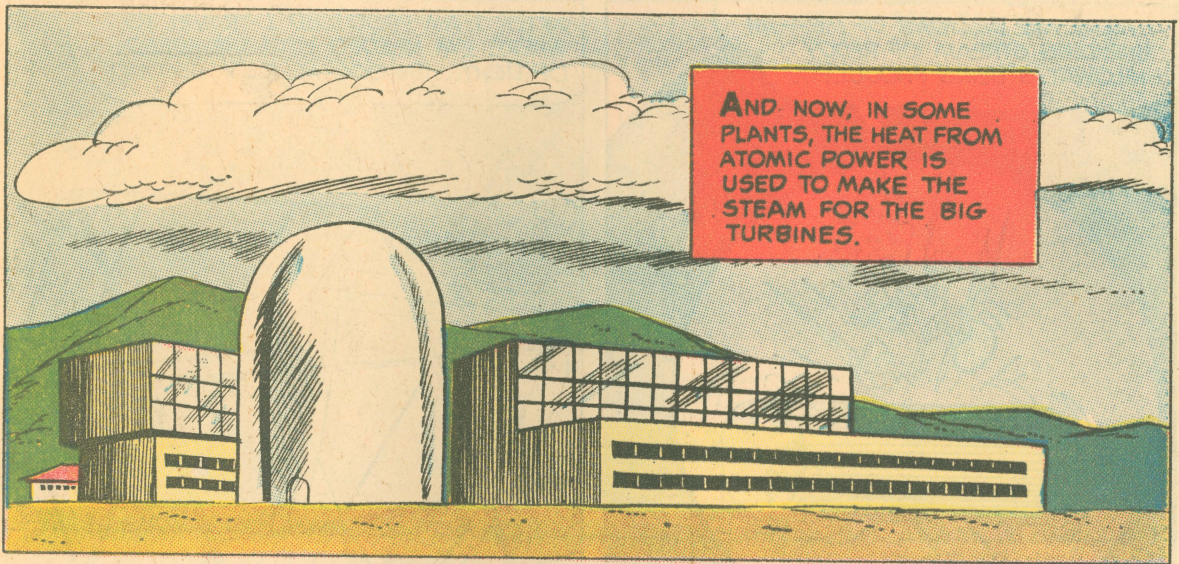
SOME PLANTS USE OIL OR GAS. MANY PLANTS USE COAL TO SUPPLY THE ENERGY THAT GENERATES ELECTRIC POWER...



BUT NO MATTER WHAT FUEL IS USED, HERE'S WHAT HAPPENS...THE HEAT MAKES STEAM, THE STEAM TURNS THE TURBINE WHICH DRIVES THE GENERATOR -- TO PRODUCE THE ELECTRICITY...

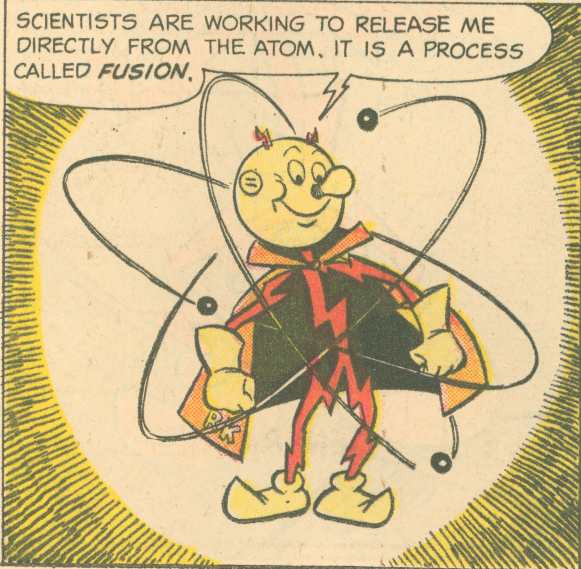
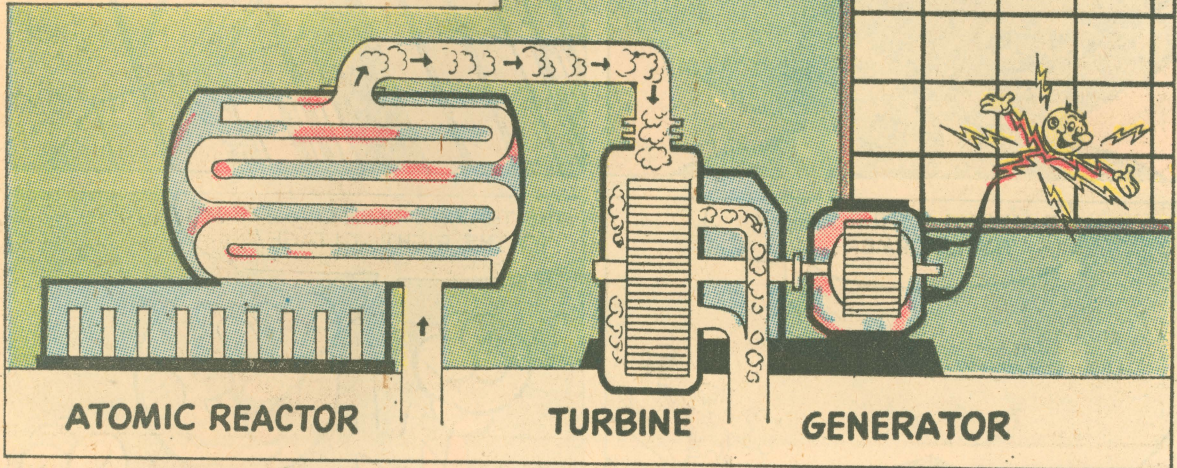




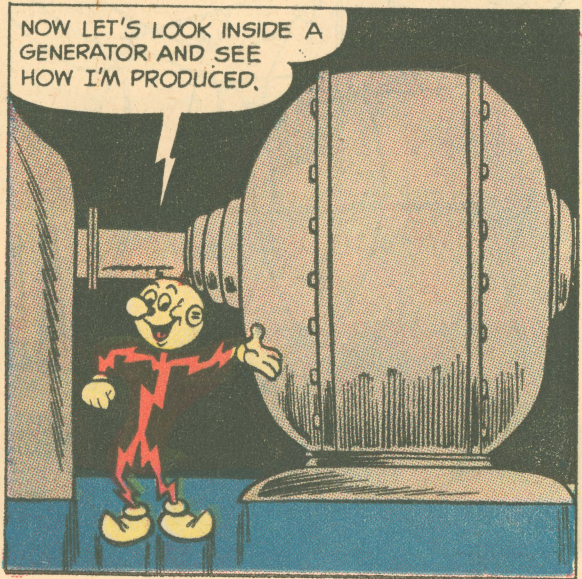


AND NOW, IN SOME PLANTS, THE HEAT FROM ATOMIC POWER IS USED TO MAKE THE STEAM FOR THE BIG TURBINES.

WHEN **ATOMIC ENERGY** IS USED AS A **FUEL**, A CONTROLLED SPLITTING OF THE ATOMS SUPPLIES THE HEAT...

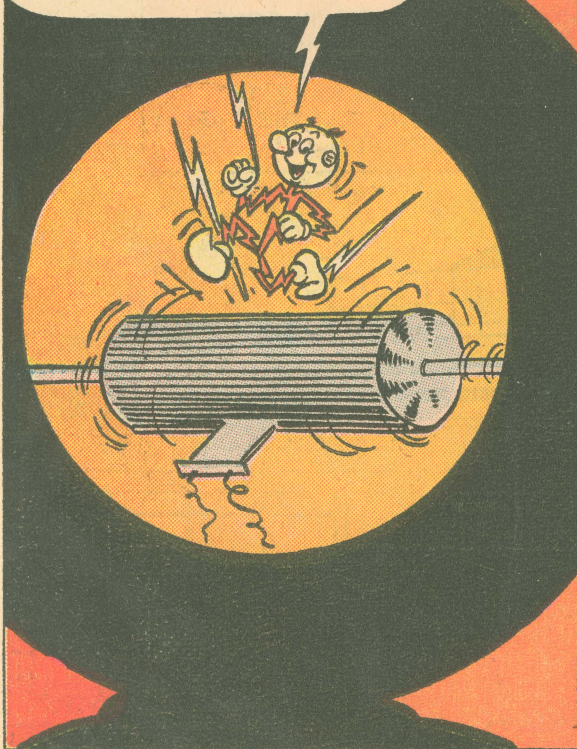


SCIENTISTS ARE WORKING TO RELEASE ME DIRECTLY FROM THE ATOM. IT IS A PROCESS CALLED **FUSION**.

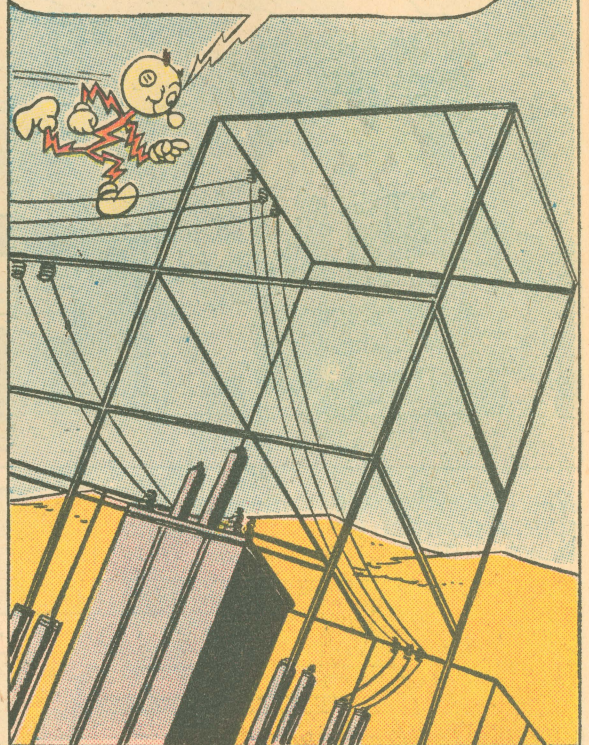


NOW LET'S LOOK INSIDE A GENERATOR AND SEE HOW I'M PRODUCED.

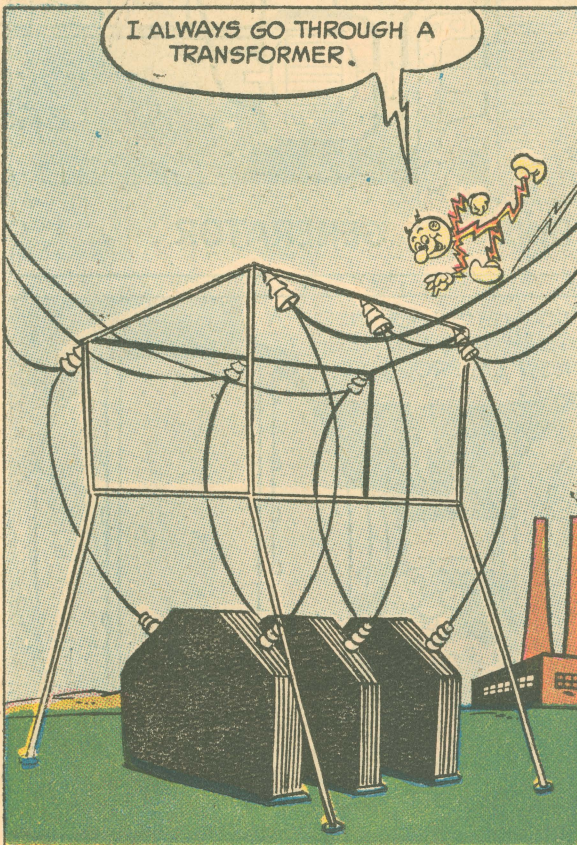
THERE ARE **ZILLIONS** OF ME — AN UNENDING STREAM OF REDDY KILOWATTS BEING PRODUCED.



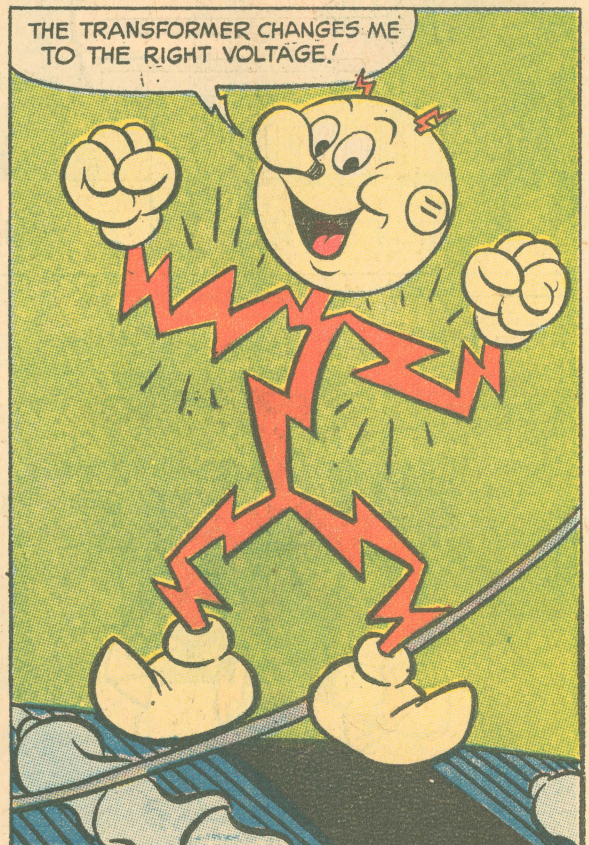
AFTER I AM PRODUCED I TRAVEL TO WHERE I'M NEEDED WITH THE SPEED OF LIGHT... 186,000 MILES A SECOND!

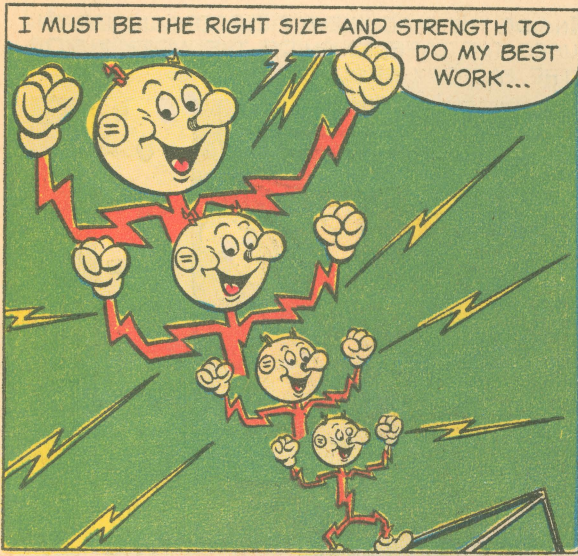


I ALWAYS GO THROUGH A TRANSFORMER.

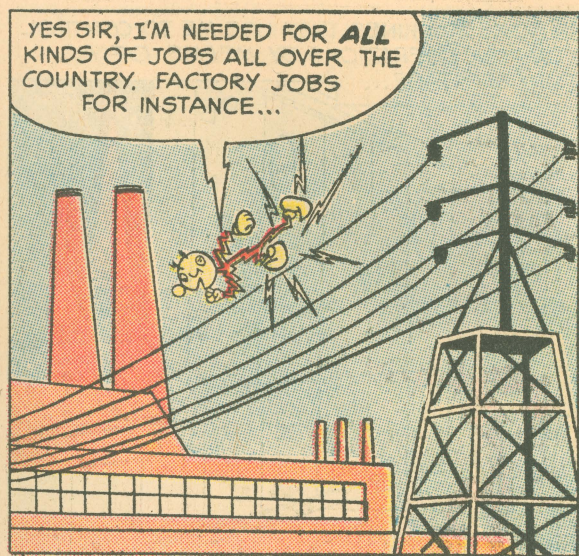


THE TRANSFORMER CHANGES ME TO THE RIGHT VOLTAGE!

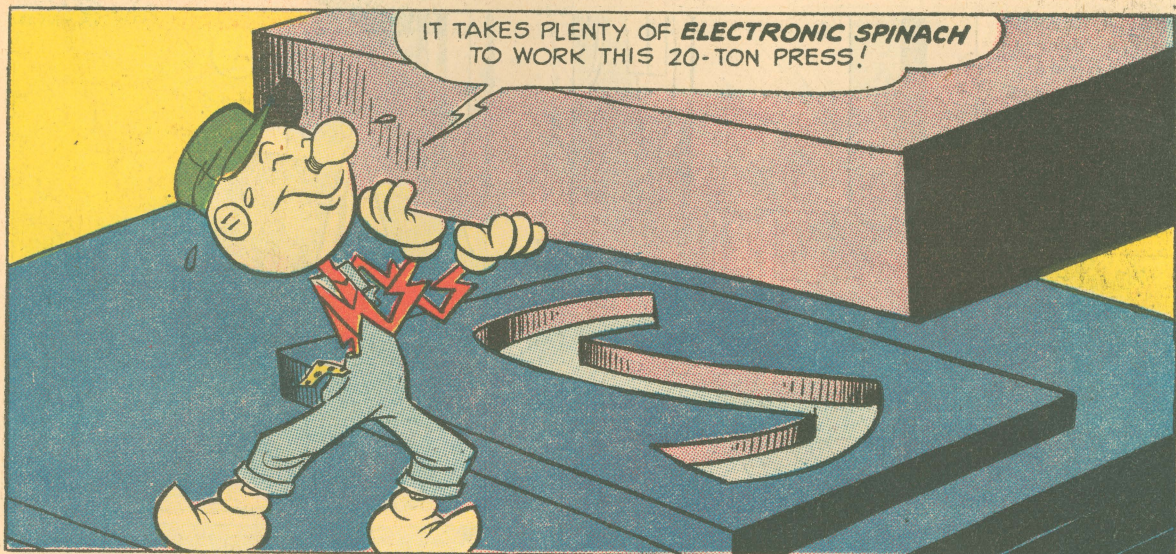




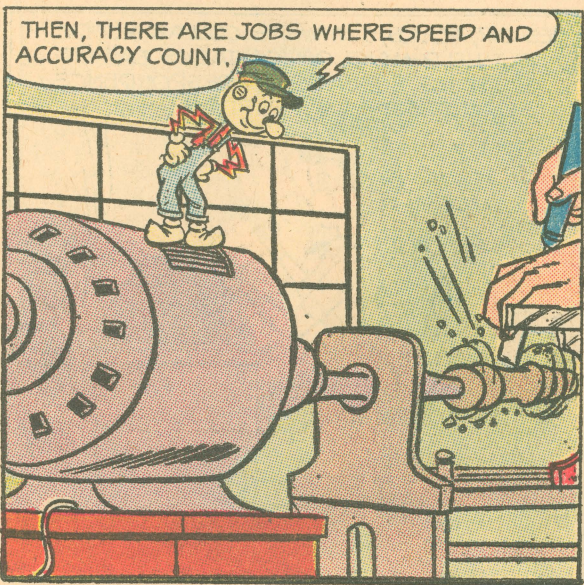
I MUST BE THE RIGHT SIZE AND STRENGTH TO DO MY BEST WORK...



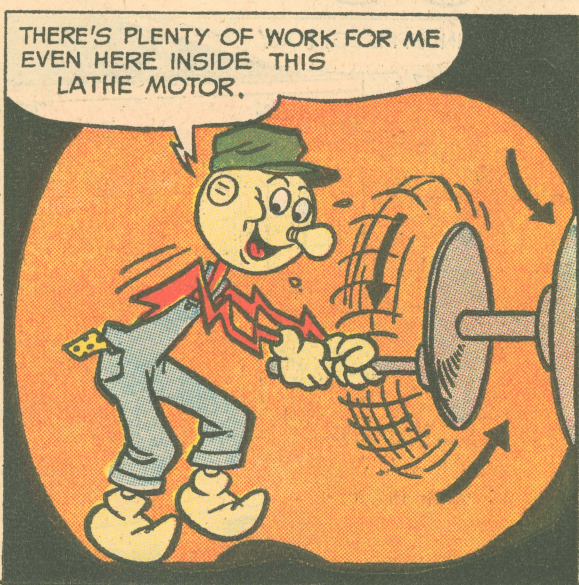
YES SIR, I'M NEEDED FOR **ALL** KINDS OF JOBS ALL OVER THE COUNTRY. FACTORY JOBS FOR INSTANCE...



IT TAKES PLENTY OF **ELECTRONIC SPINACH** TO WORK THIS 20-TON PRESS!

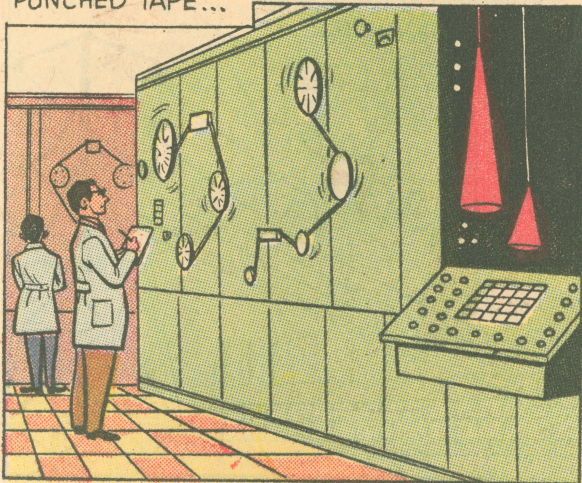


THEN, THERE ARE JOBS WHERE SPEED AND ACCURACY COUNT.

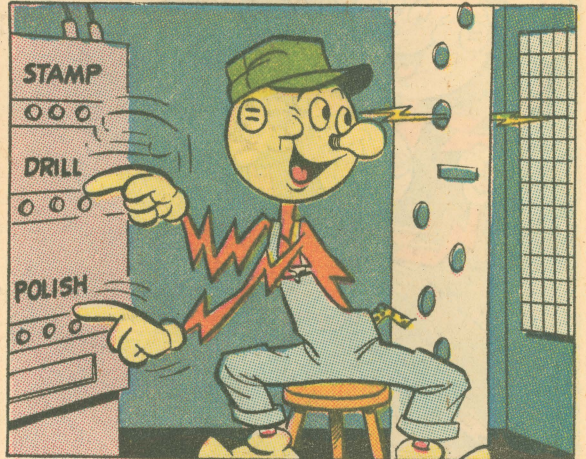


THERE'S PLENTY OF WORK FOR ME EVEN HERE INSIDE THIS LATHE MOTOR.

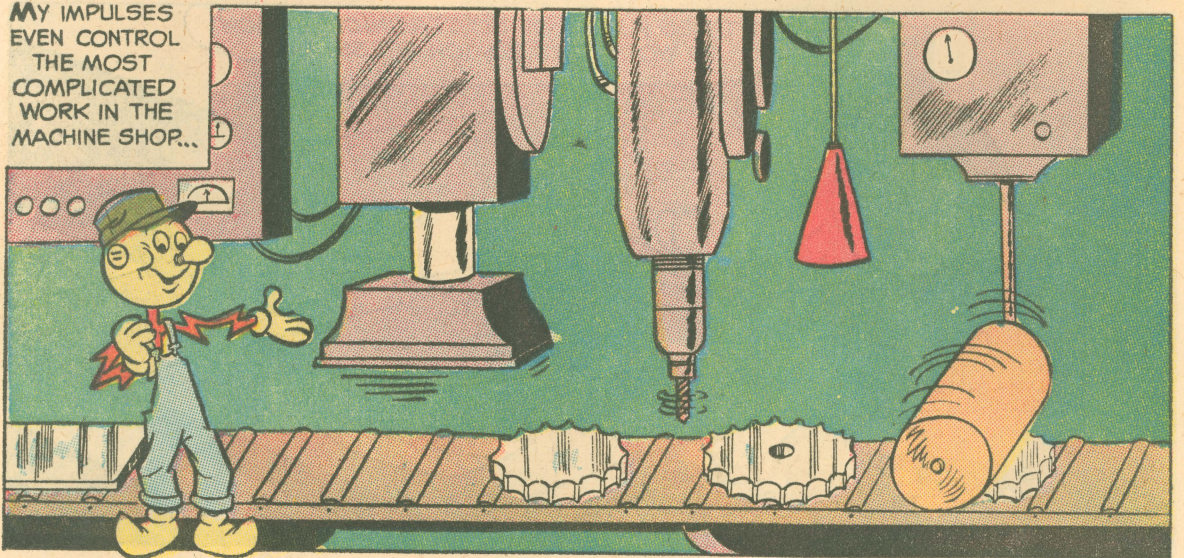
IN SOME MACHINES THEY USE ME TO CONTROL COMPLEX OPERATIONS BY MEANS OF A PUNCHED TAPE...



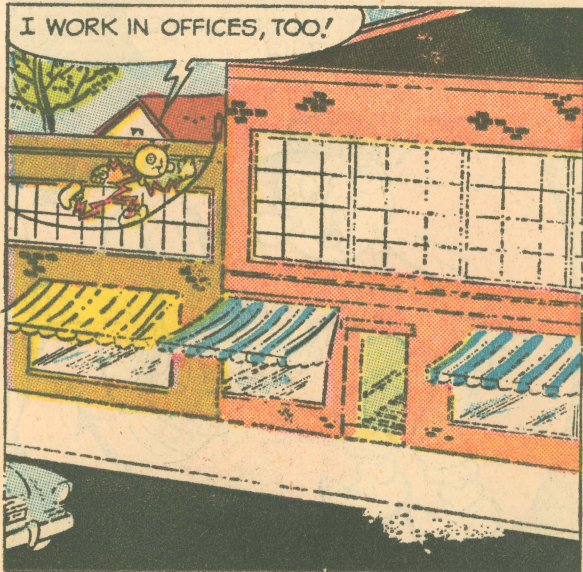
INSIDE THE MACHINE MY ELECTRONIC BRAIN USES THE TAPE TO GUIDE THE WORK INSIDE THE FACTORY PRODUCTION LINES...



MY IMPULSES EVEN CONTROL THE MOST COMPLICATED WORK IN THE MACHINE SHOP...



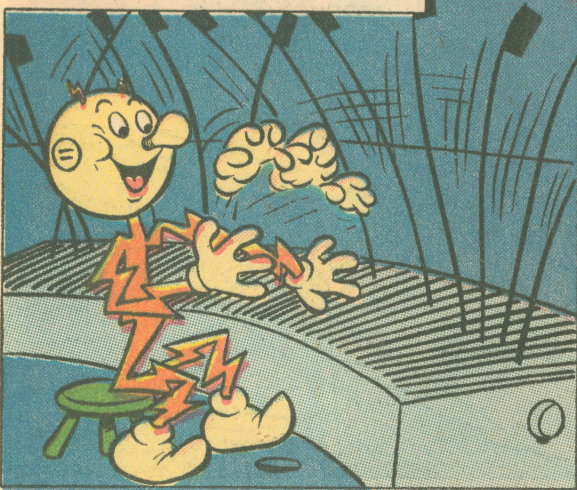
I WORK IN OFFICES, TOO!



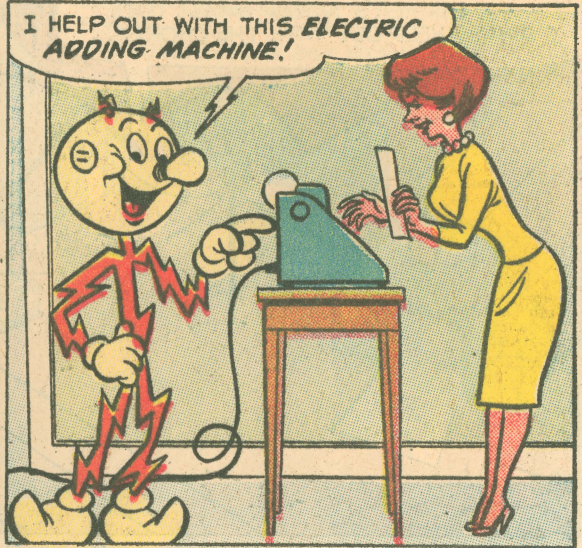
YES SIR, FOLKS, I'M WHITE-COLLAR REDDY AND I HELP MAKE OFFICE TASKS EASIER... LIKE TYPING BUSINESS CORRESPONDENCE WITH AN ELECTRIC TYPEWRITER.



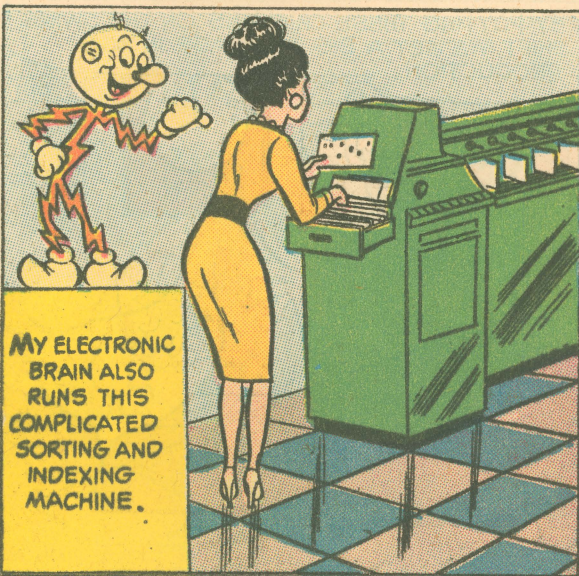
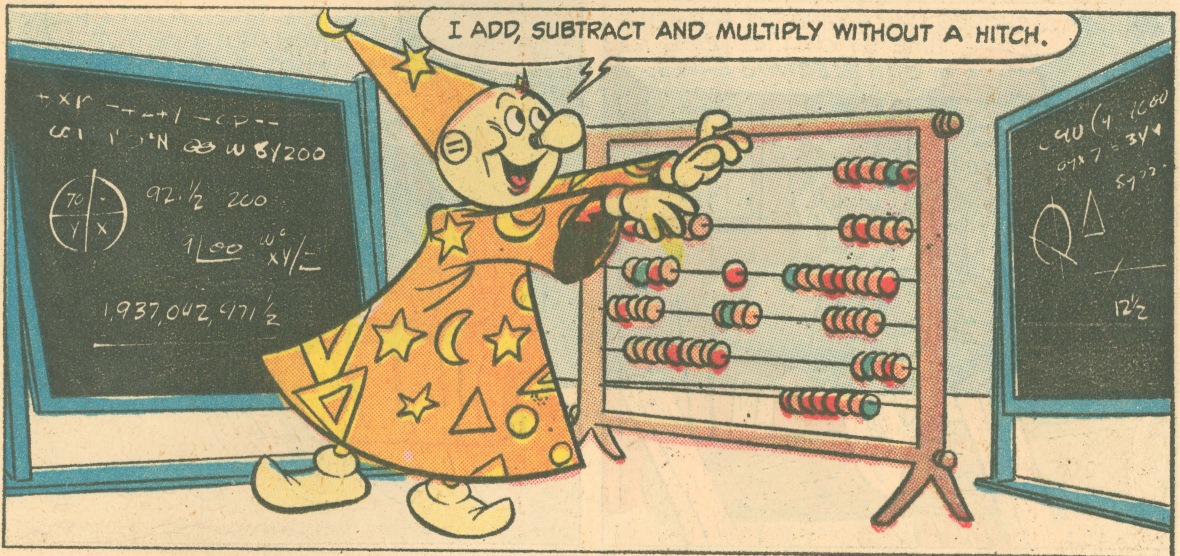
WITH REDDY TO HELP, THE TYPING IS DONE WITH SPEED AND ACCURACY...



I HELP OUT WITH THIS ELECTRIC ADDING MACHINE!

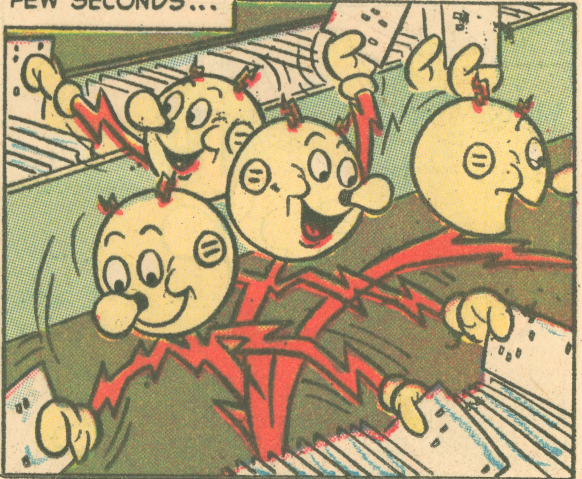


I ADD, SUBTRACT AND MULTIPLY WITHOUT A HITCH.

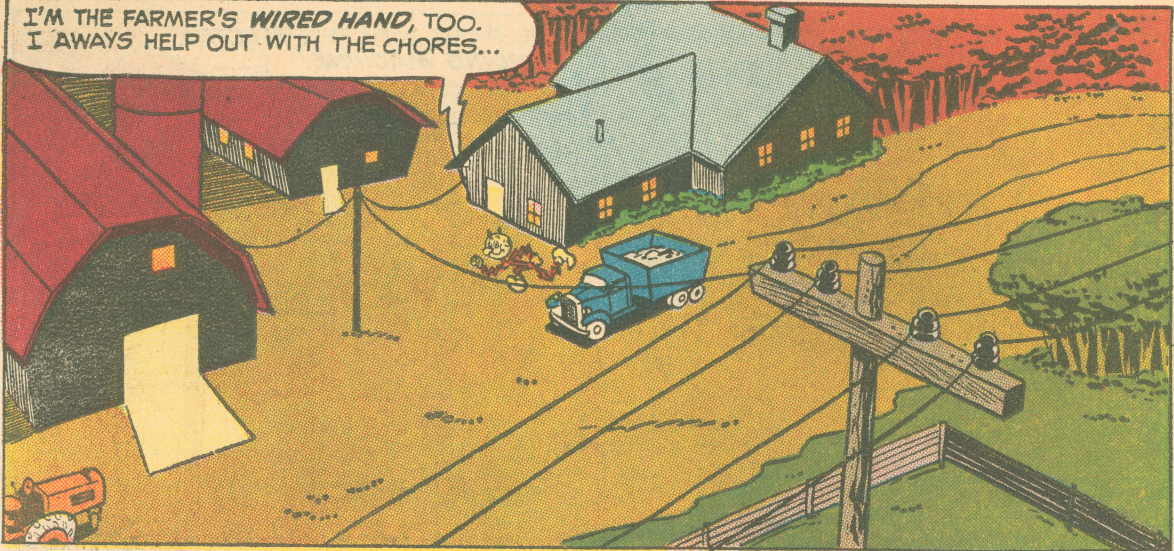


MY ELECTRONIC BRAIN ALSO RUNS THIS COMPLICATED SORTING AND INDEXING MACHINE.

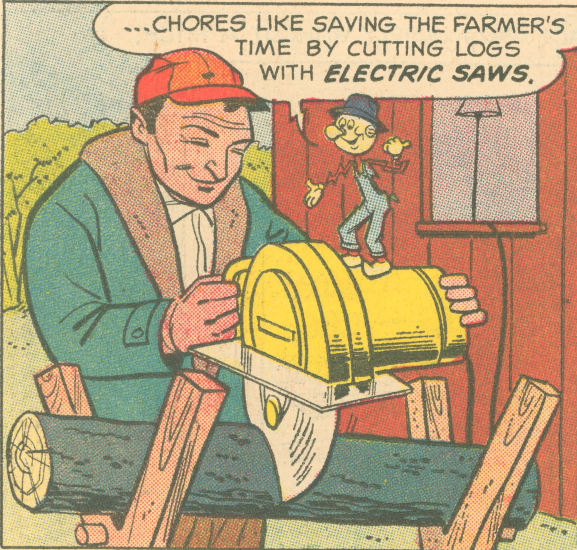
GREAT INDUSTRIES USE THESE MACHINES TO KEEP THEIR ACCOUNTS AND RECORDS STRAIGHT. ANY INFORMATION NEEDED IS AVAILABLE IN A FEW SECONDS...



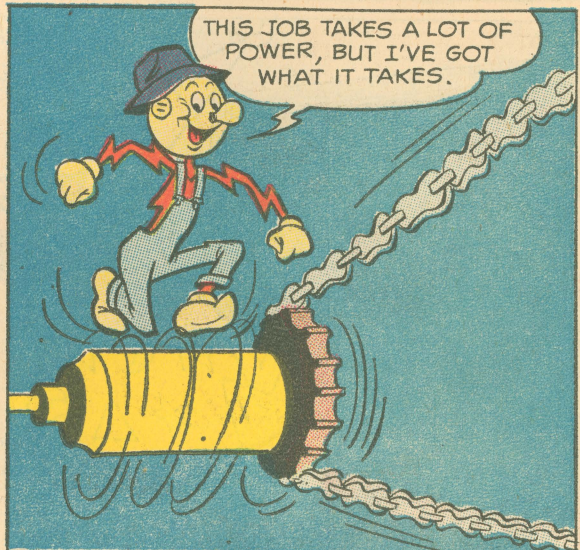
I'M THE FARMER'S *WIRED HAND*, TOO.  
I ALWAYS HELP OUT WITH THE CHORES...



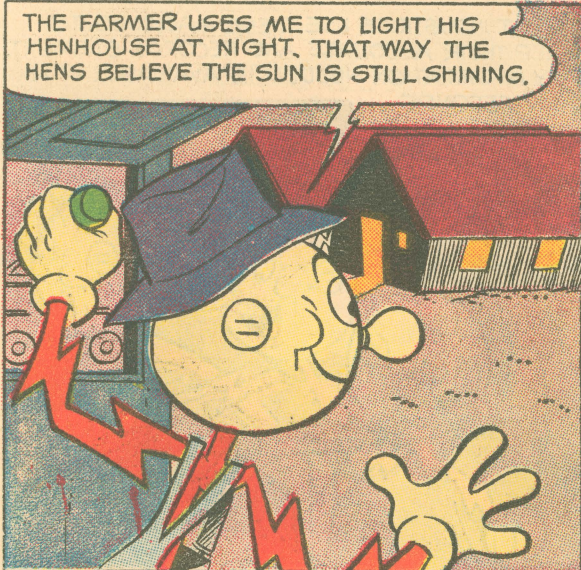
...CHORES LIKE SAVING THE FARMER'S  
TIME BY CUTTING LOGS  
WITH *ELECTRIC SAWS*.



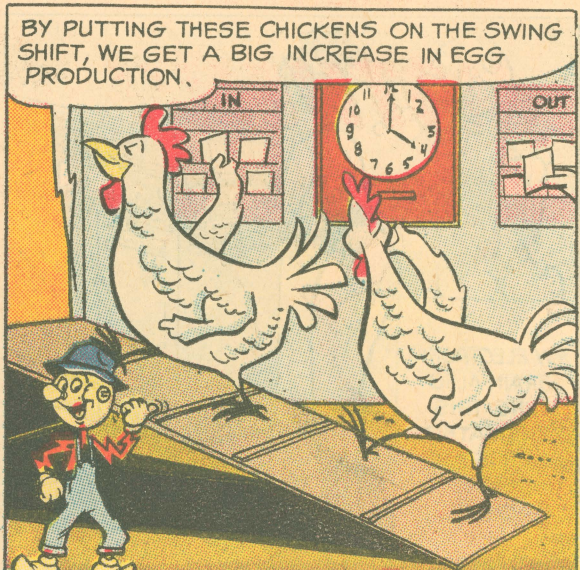
THIS JOB TAKES A LOT OF  
POWER, BUT I'VE GOT  
WHAT IT TAKES.

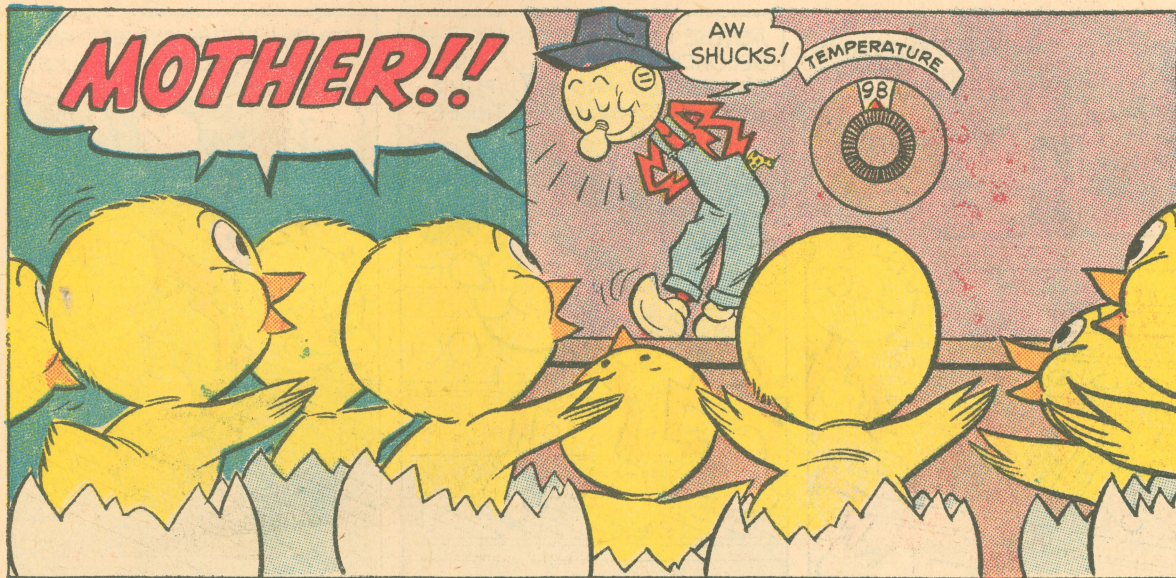
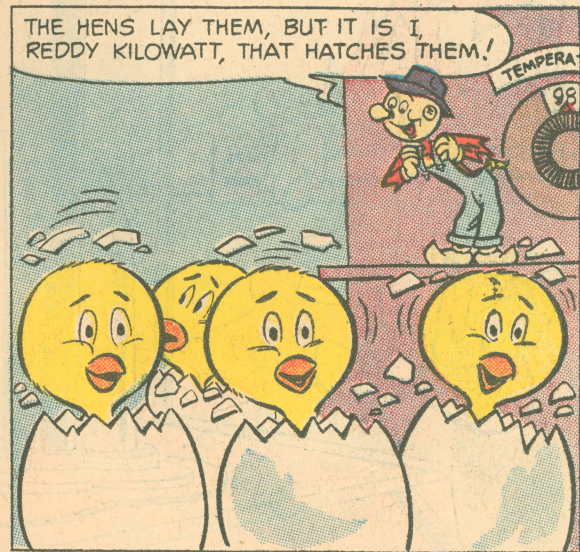
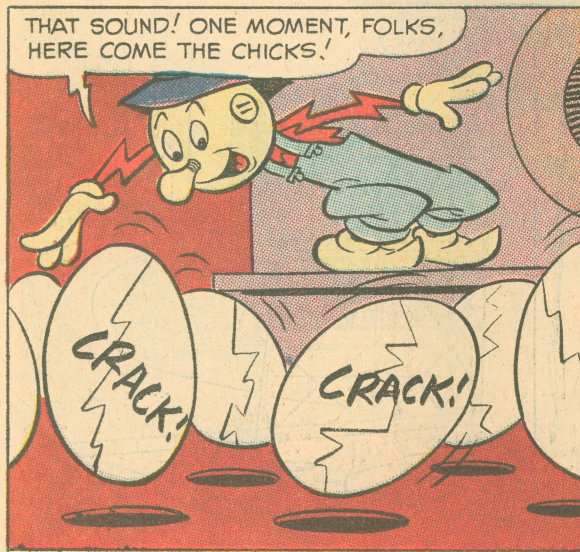
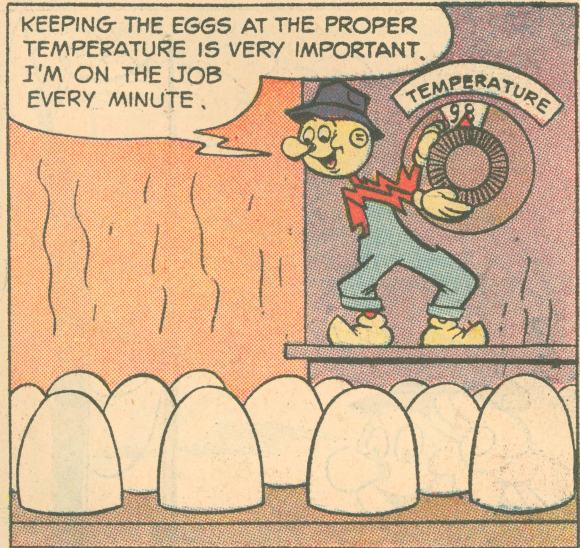
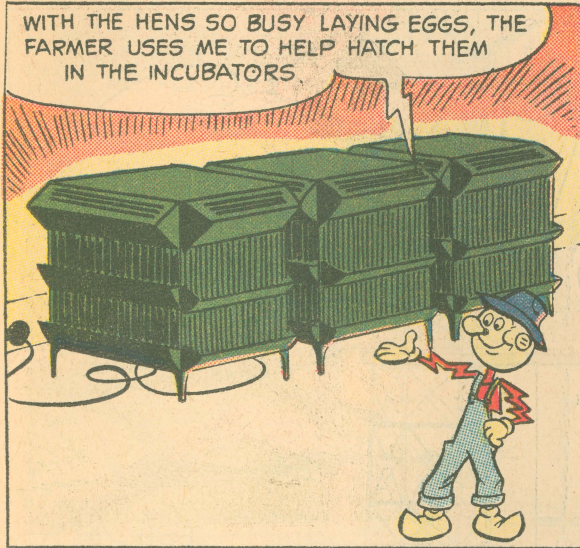


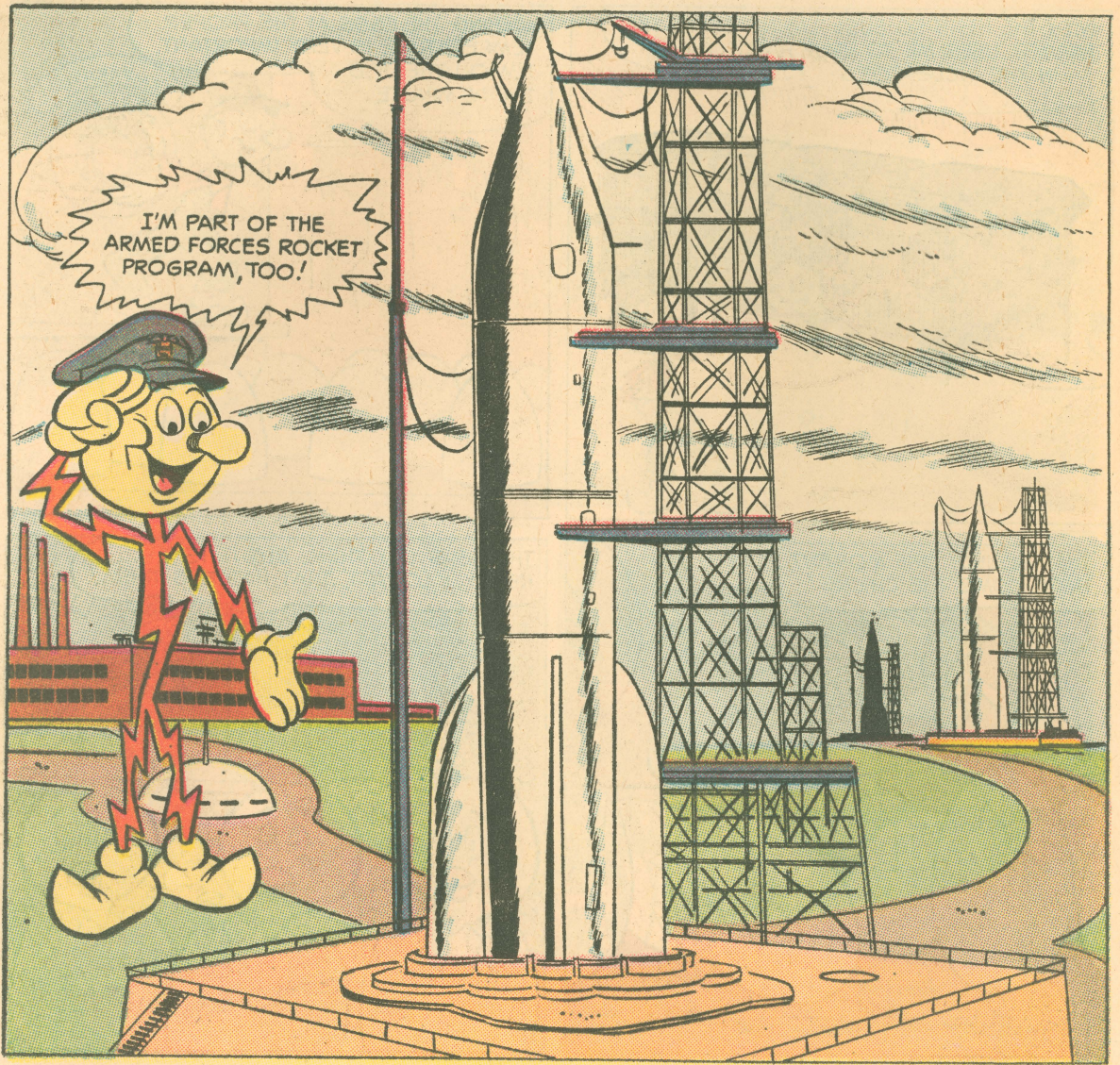
THE FARMER USES ME TO LIGHT HIS  
HENHOUSE AT NIGHT, THAT WAY THE  
HENS BELIEVE THE SUN IS STILL SHINING.



BY PUTTING THESE CHICKENS ON THE SWING  
SHIFT, WE GET A BIG INCREASE IN EGG  
PRODUCTION.

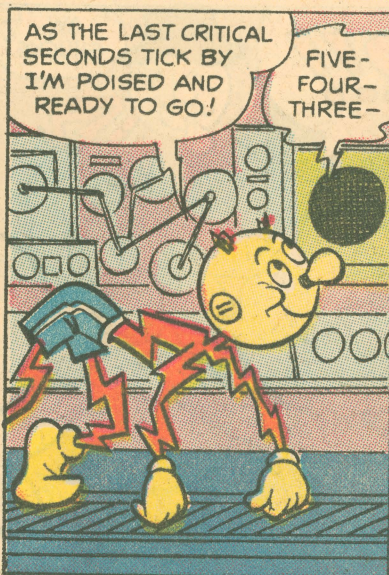
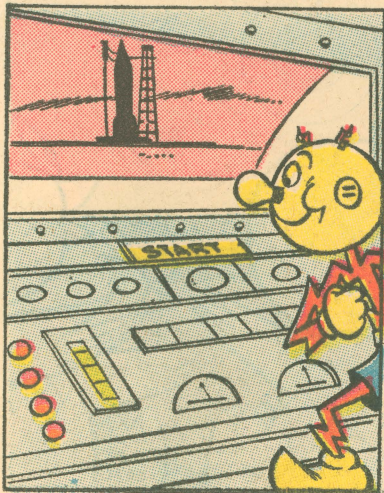






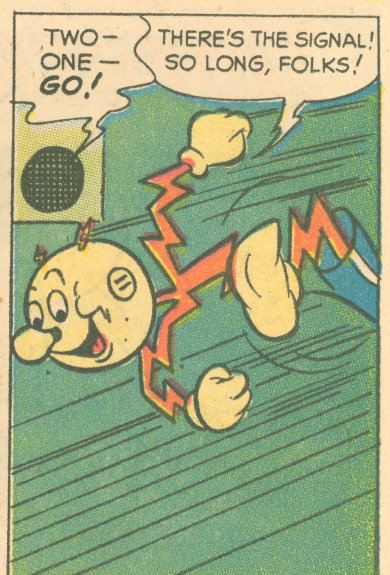
I'M PART OF THE  
ARMED FORCES ROCKET  
PROGRAM, TOO!

FROM THE MOMENT THE FINAL  
COUNT-DOWN BEGINS EVERYTHING  
IS UNDER ELECTRONIC CONTROL.



AS THE LAST CRITICAL  
SECONDS TICK BY  
I'M POISED AND  
READY TO GO!

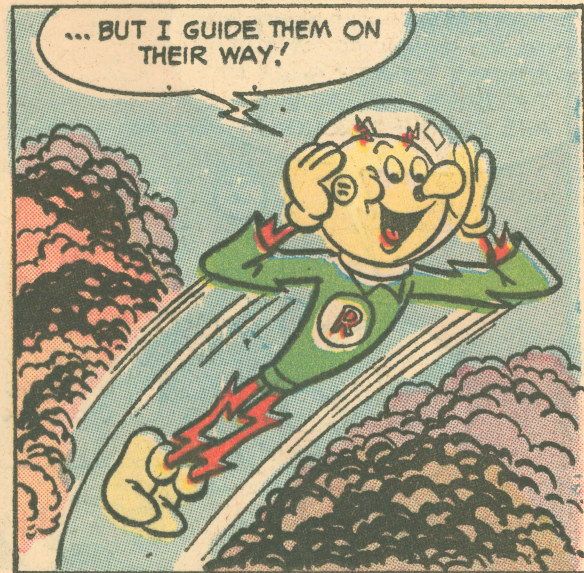
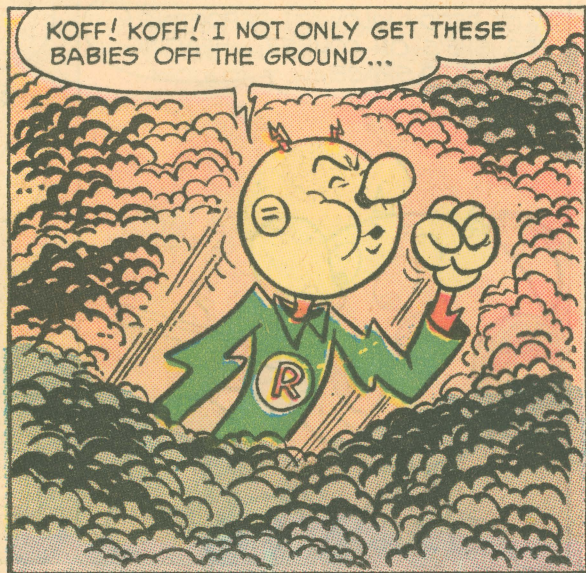
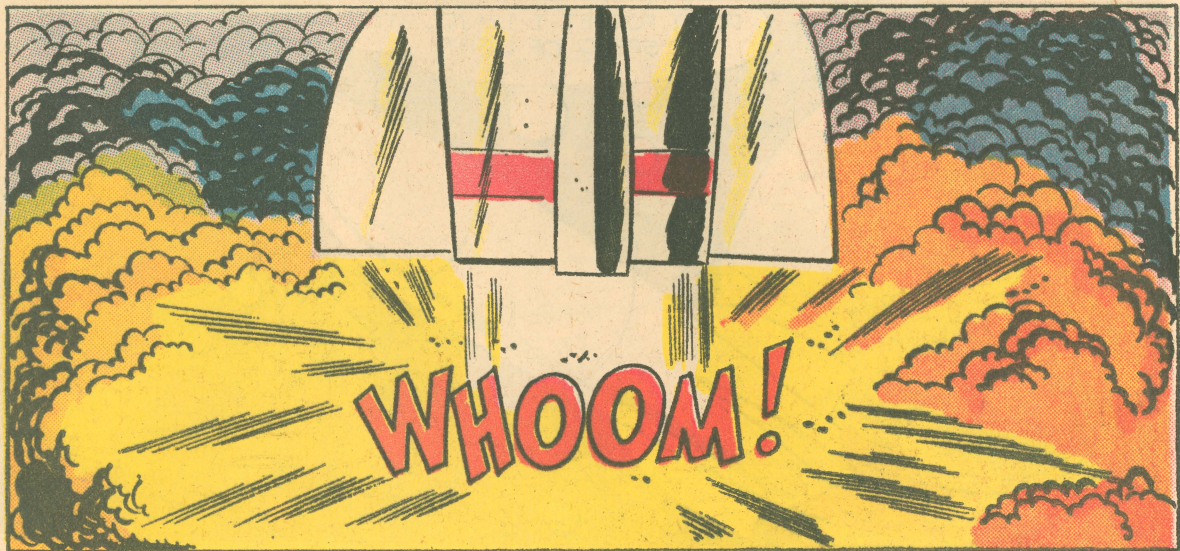
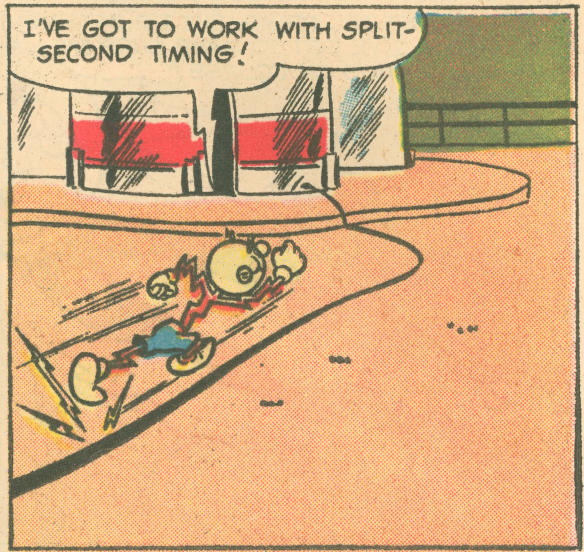
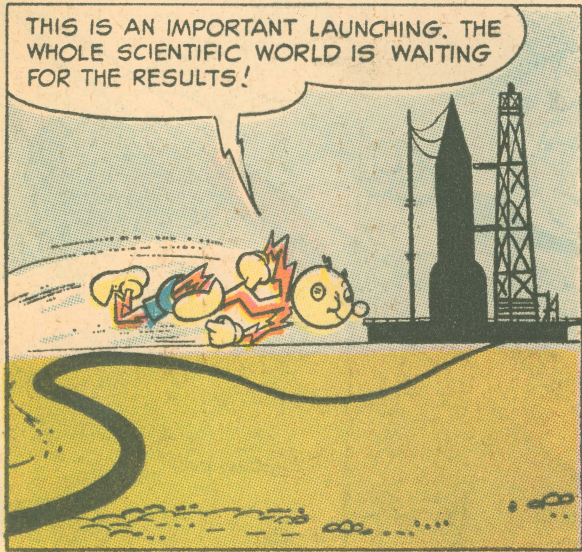
FIVE-  
FOUR-  
THREE-

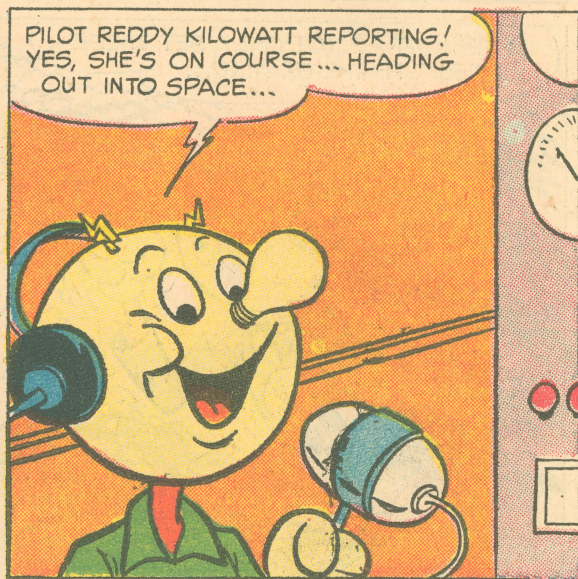
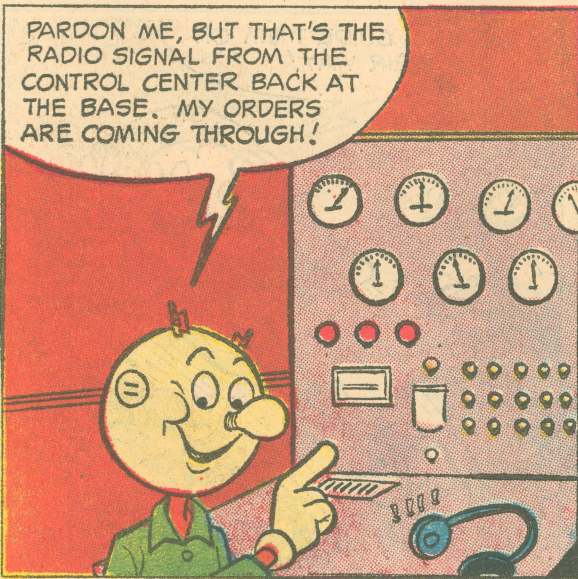
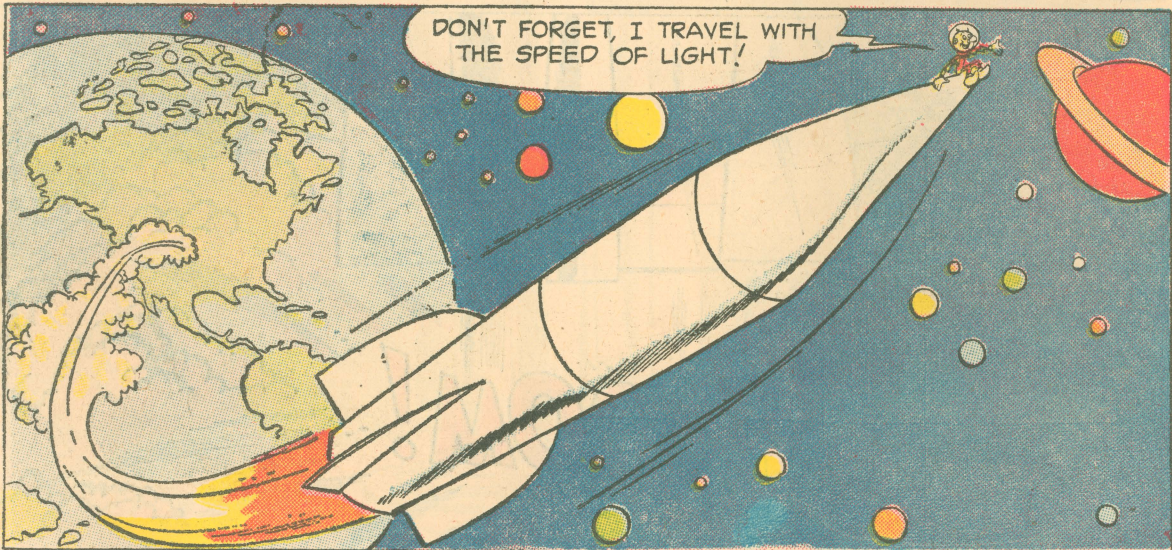
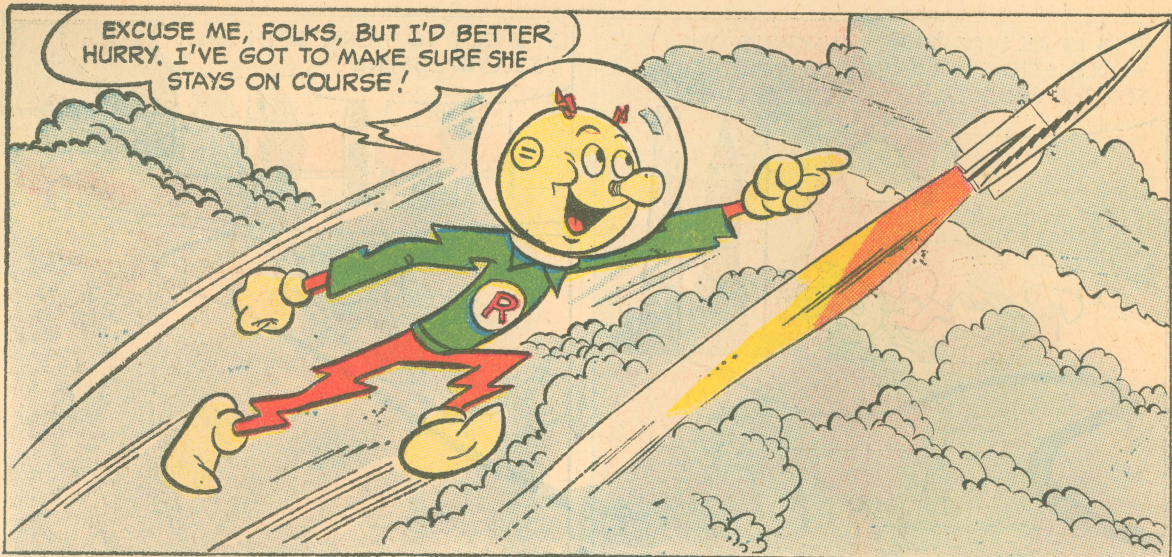


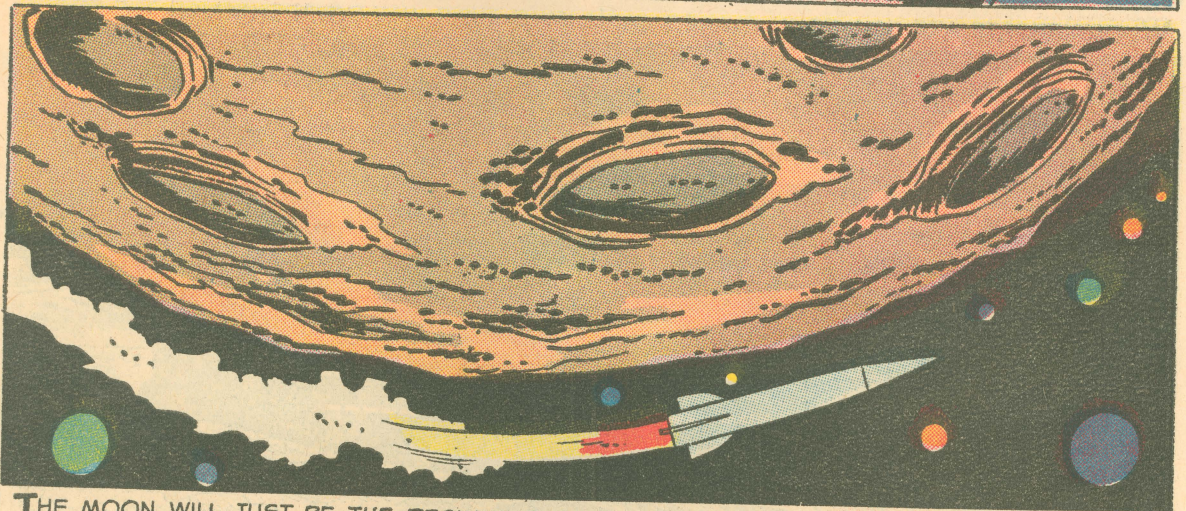
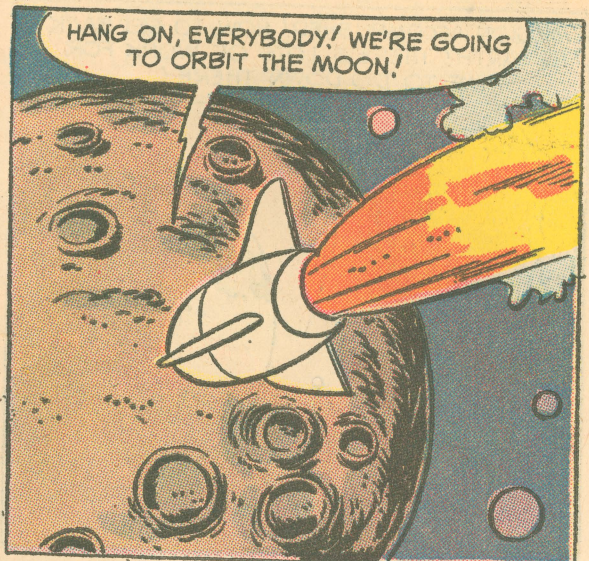
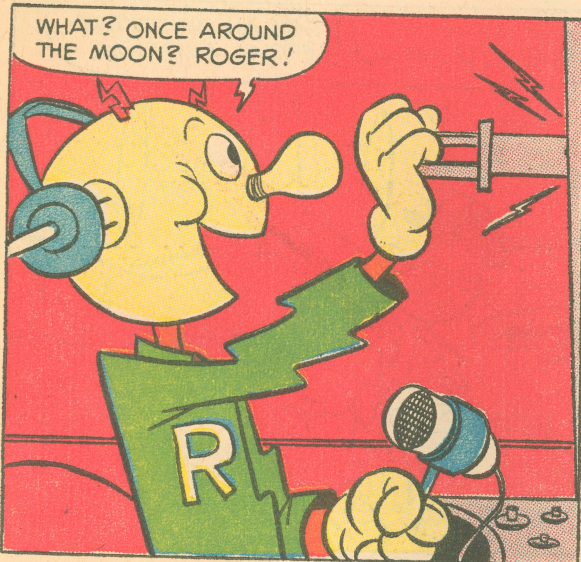
TWO -  
ONE -  
GO!

THERE'S THE SIGNAL!  
SO LONG, FOLKS!

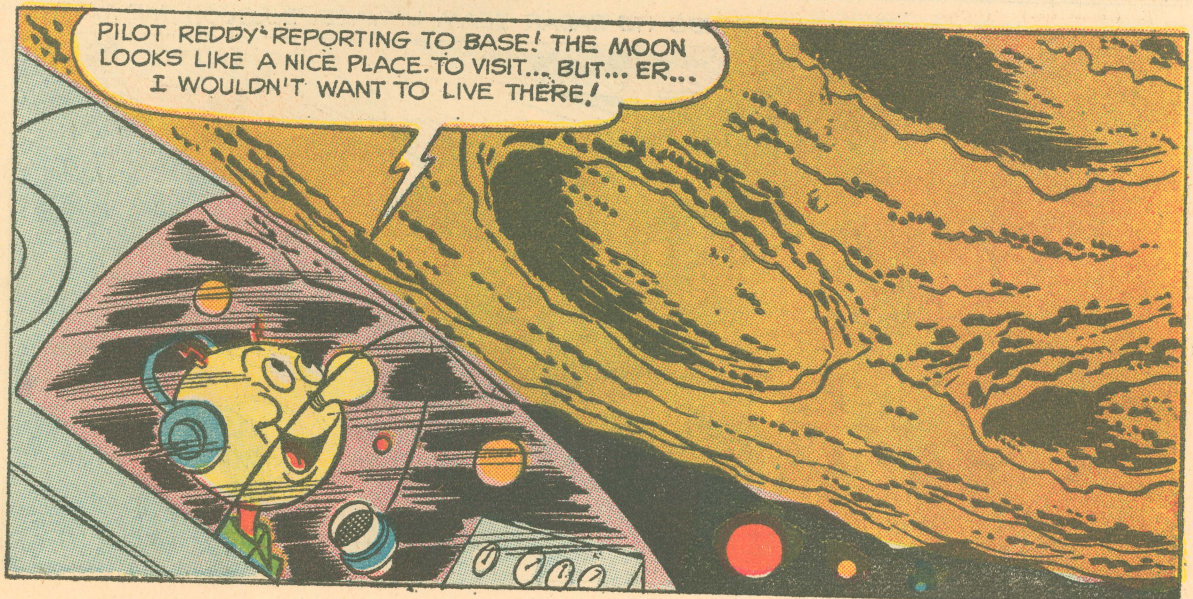


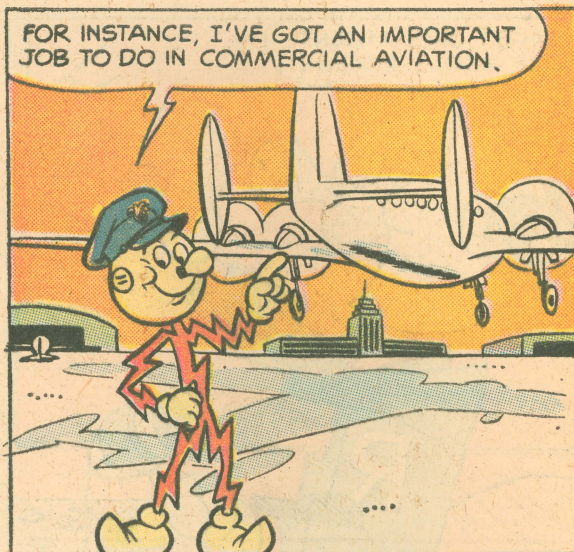
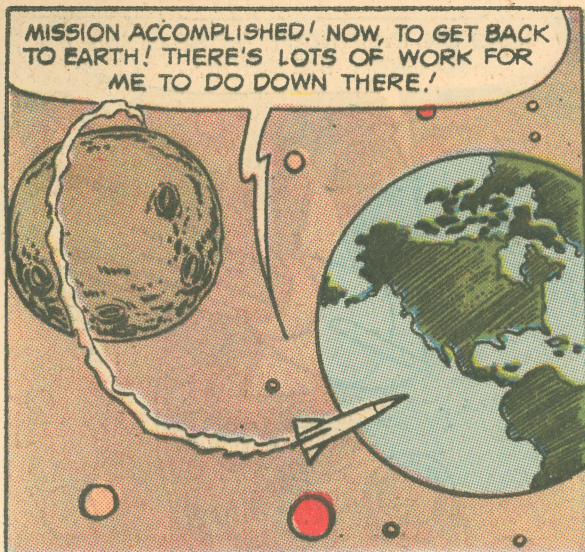




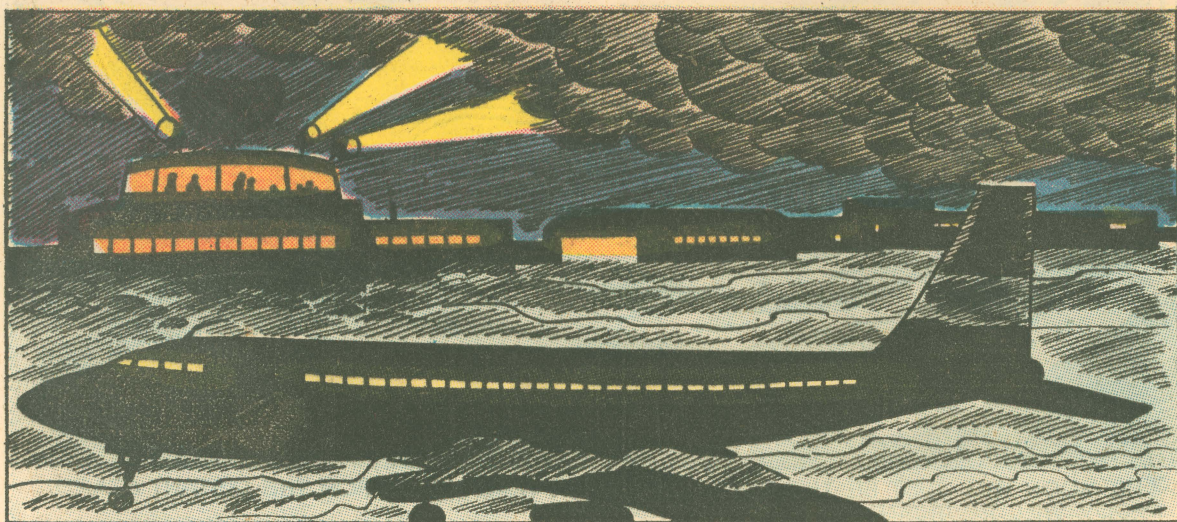


THE MOON WILL JUST BE THE BEGINNING. WHEN MAN HEADS FOR THE DISTANT STARS, REDDY WILL BE THERE TO GUIDE HIM, TOO.

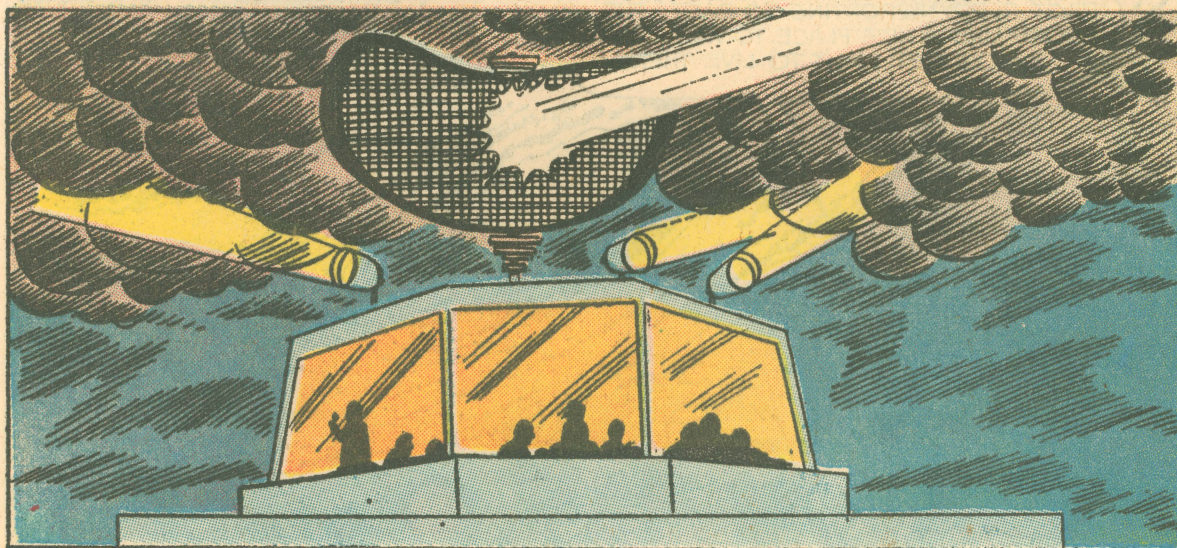




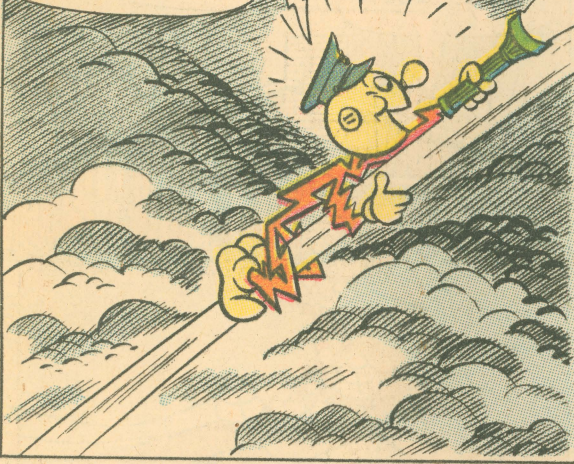
WHEN AIRPORTS ARE SOCKED IN PLANES CAN'T FIND THEIR WAY DOWN THROUGH THE FOG...



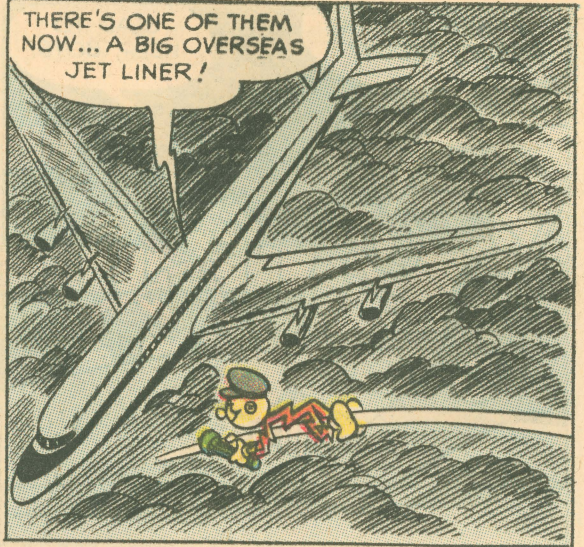
THAT'S WHEN THE CONTROL TOWER SENDS ITS RADAR BEAM UPWARD THROUGH THE MIST...



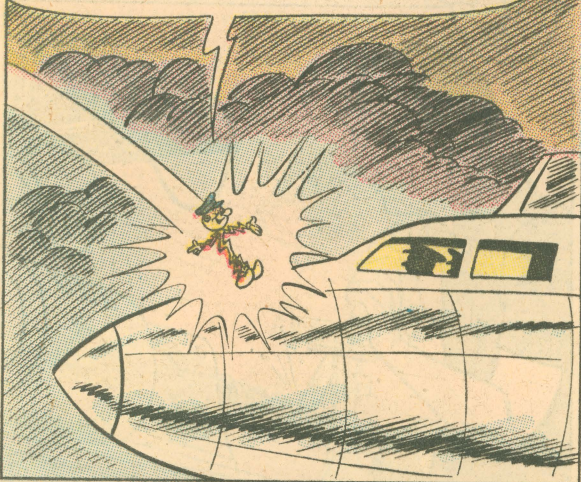
RIDING THAT RADAR BEAM I HELP LOCATE THE FOG BOUND PLANES CIRCLING OVER THE AIRPORT...



THERE'S ONE OF THEM NOW... A BIG OVERSEAS JET LINER!

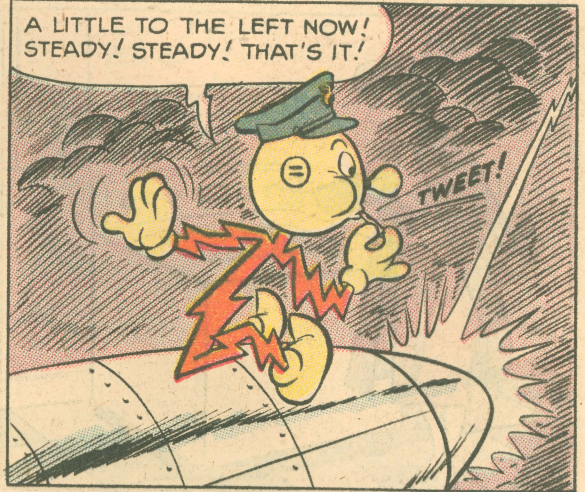


HEY, FELLAS! EVERYTHING'S OKAY! JUST FOLLOW ME DOWN ALONG THE BEAM!



RIDING THE RADAR BEAM ANY PLANE CAN MAKE A SAFE LANDING, EVEN IN THE HEAVIEST FOG...

A LITTLE TO THE LEFT NOW! STEADY! STEADY! THAT'S IT!



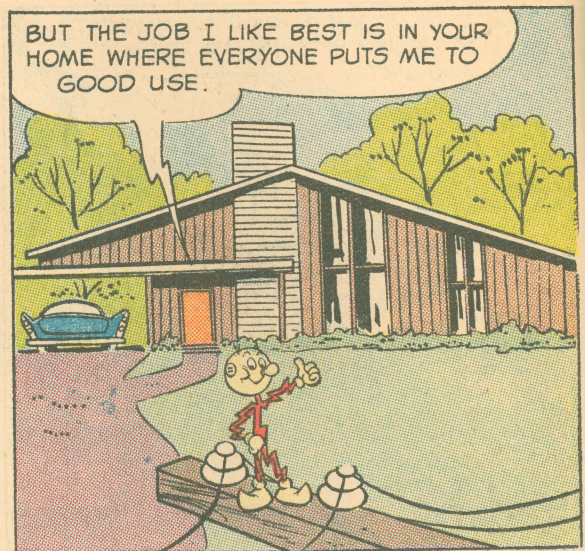
THERE'S THE RUNWAY JUST BELOW. THEY'VE GOT IT LIT UP WITH SPECIAL LANDING LIGHTS! WE'RE GONNA MAKE IT, FELLAS!



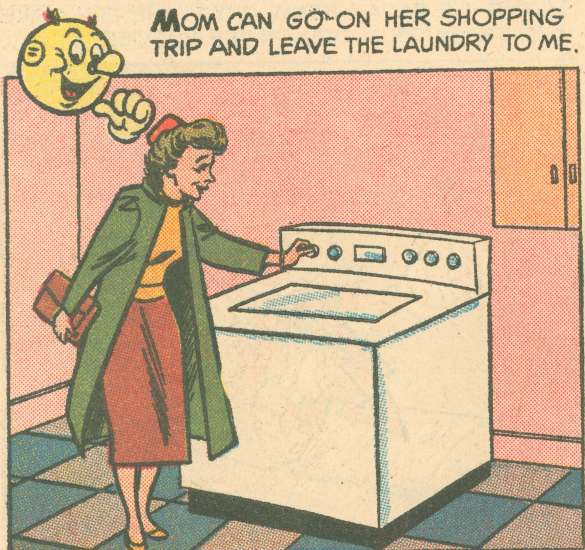


THANKS FOR THE ASSIST, REDDY!

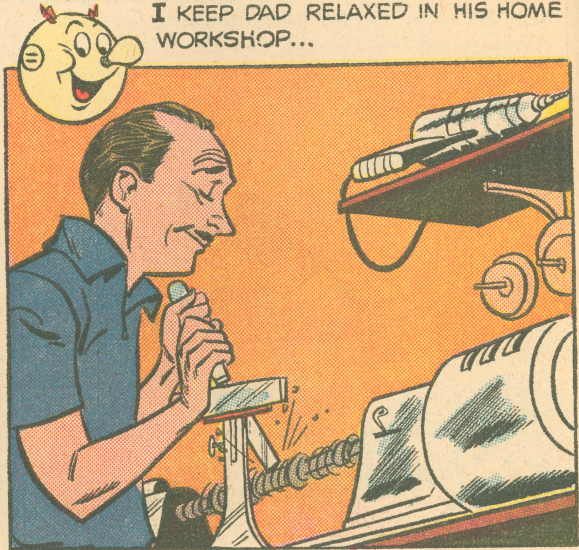
GLAD TO HELP, BOYS!



BUT THE JOB I LIKE BEST IS IN YOUR HOME WHERE EVERYONE PUTS ME TO GOOD USE.



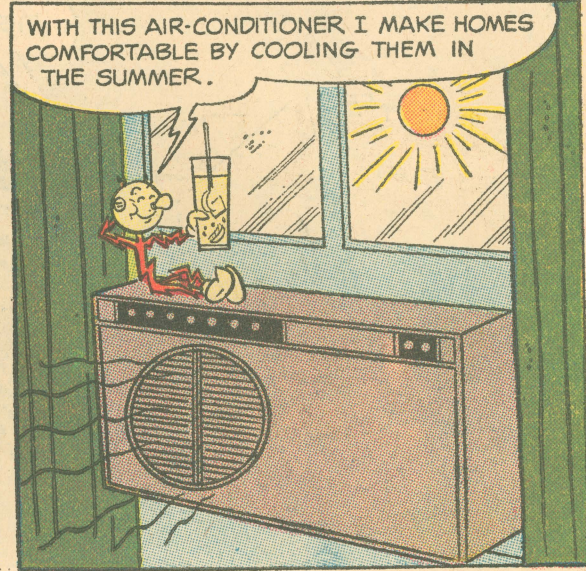
MOM CAN GO ON HER SHOPPING TRIP AND LEAVE THE LAUNDRY TO ME.



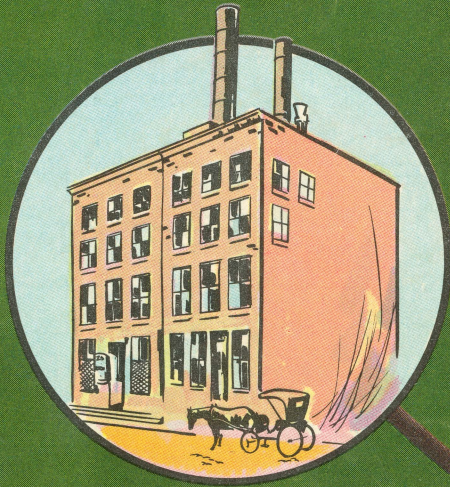
I KEEP DAD RELAXED IN HIS HOME WORKSHOP...



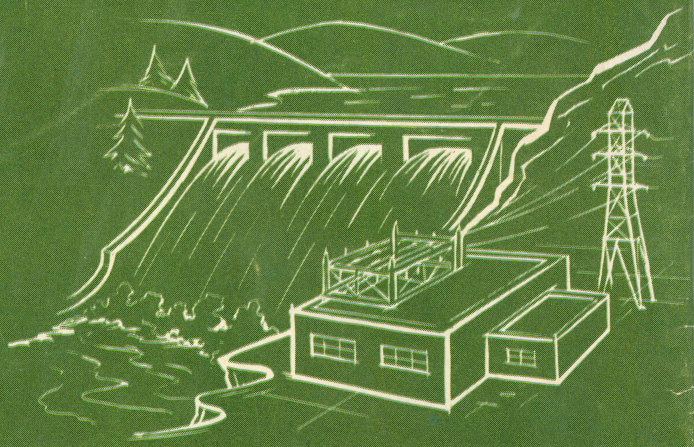
I HELP KEEP THE YOUNGSTERS ENTERTAINED BY OPERATING THEIR ELECTRIC TRAINS.



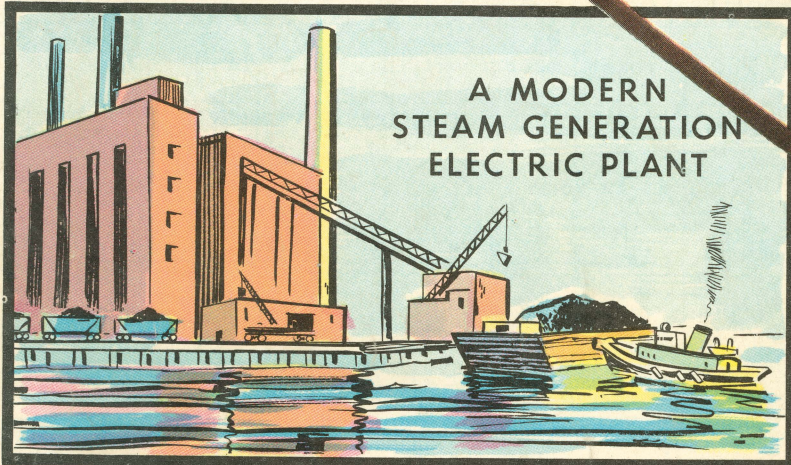
WITH THIS AIR-CONDITIONER I MAKE HOMES COMFORTABLE BY COOLING THEM IN THE SUMMER.



EDISON'S FIRST PLANT 1882



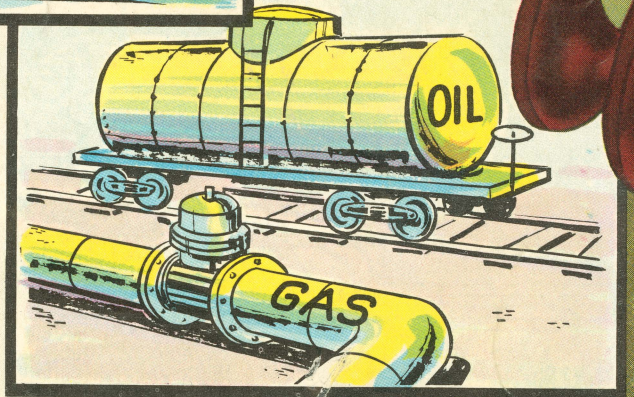
A MODERN  
HYDRO PLANT



A MODERN  
STEAM GENERATION  
ELECTRIC PLANT

USING COAL FOR FUEL

TODAY'S ELECTRIC PLANTS  
ARE HELPING PEOPLE  
**LIVE BETTER**  
THAN EVER BEFORE.



OIL AND GAS ARE ALSO USED FOR FUEL