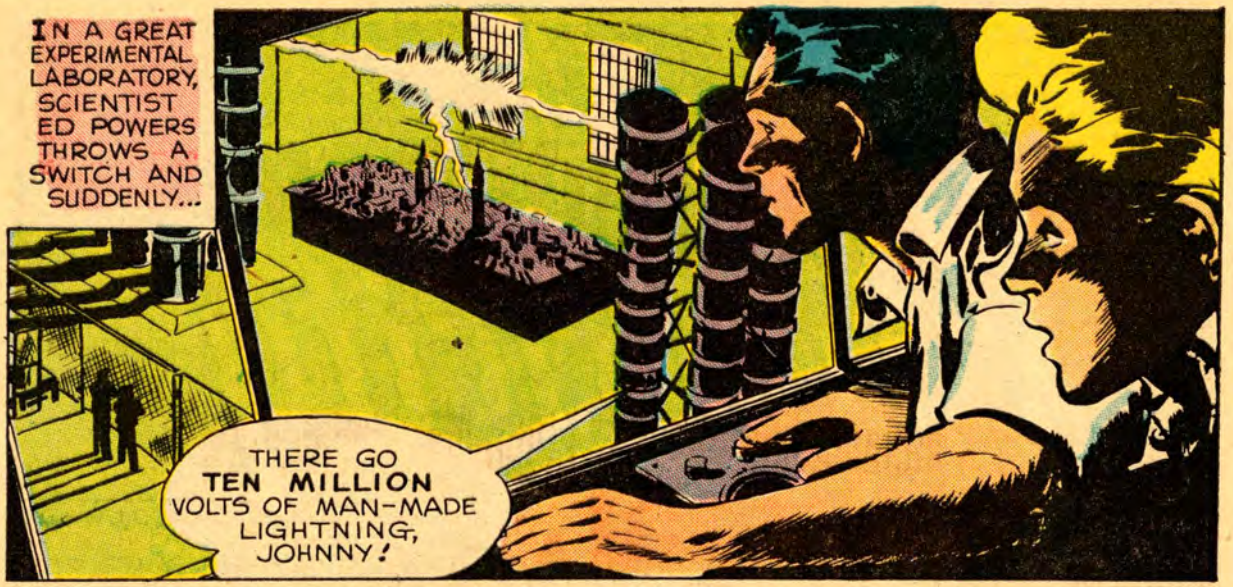
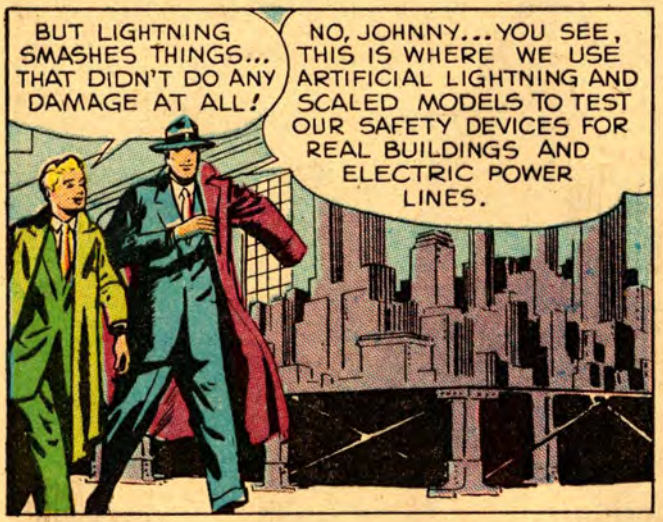
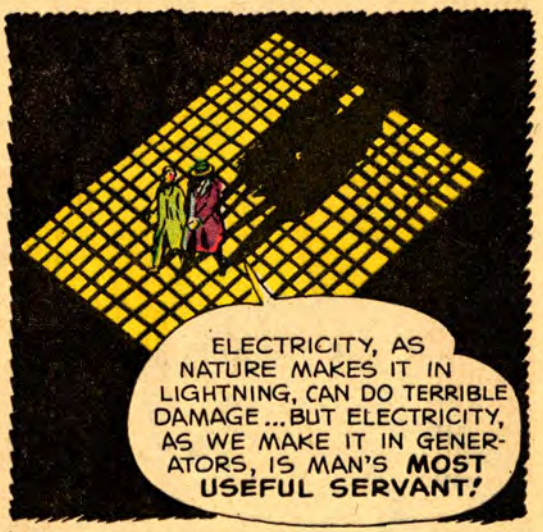
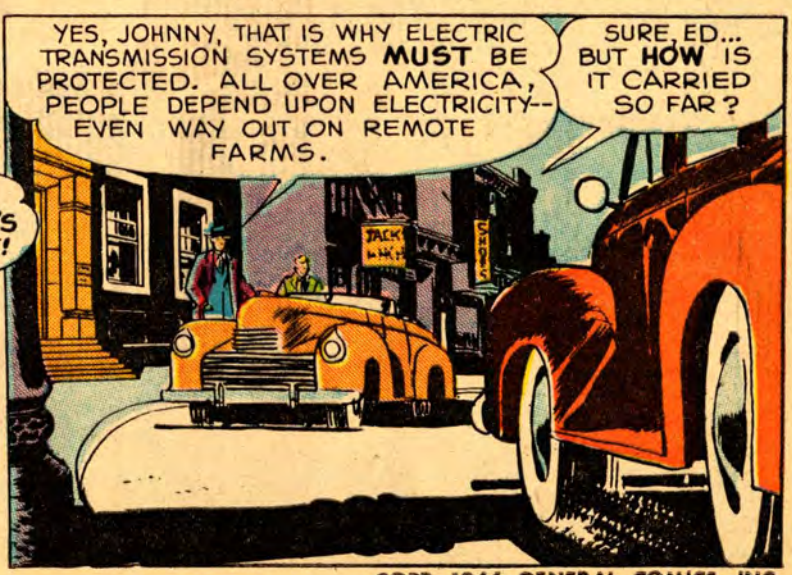

ADVENTURES in Electricity
NUMBER THREE
ADVENTURE SERIES
Prepared for GENERAL ELECTRIC COMPANY
By GENERAL COMICS Inc
ACROSS ALL AMERICA SPREAD THE GREAT TRANSMISSION AND DISTRIBUTION SYSTEMS WHICH CARRY ELECTRICITY TO FACTORIES AND HOMES, STORES AND SCHOOLS, CITIES AND FARMS. SPANNING WIDE RIVERS, DEEP CHASMS, BROAD PRAIRIES AND TOWERING MOUNTAINS, ELECTRIC POWER LEAPS TO YOUR SERVICE IN A FRACTION OF A SECOND AS YOU FLIP A SWITCH OR PRESS A BUTTON. HERE IS THE THRILLING STORY OF
AMERICA'S VITAL
NETWORK OF POWER
DISTRIBUTION OF ELECTRICITY

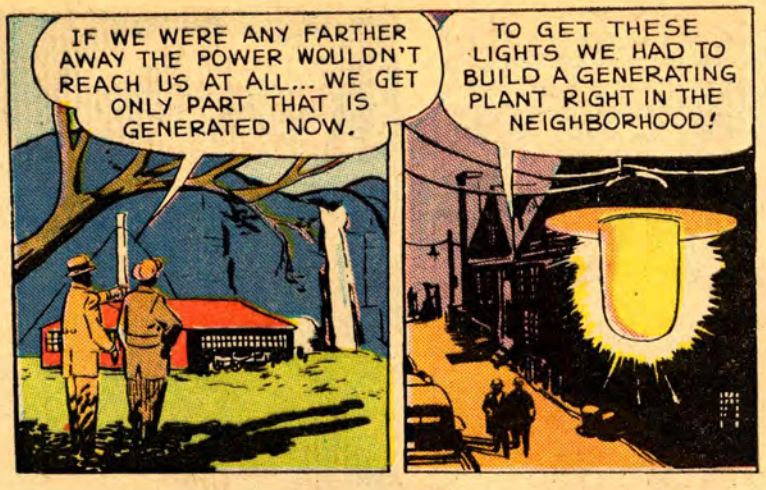




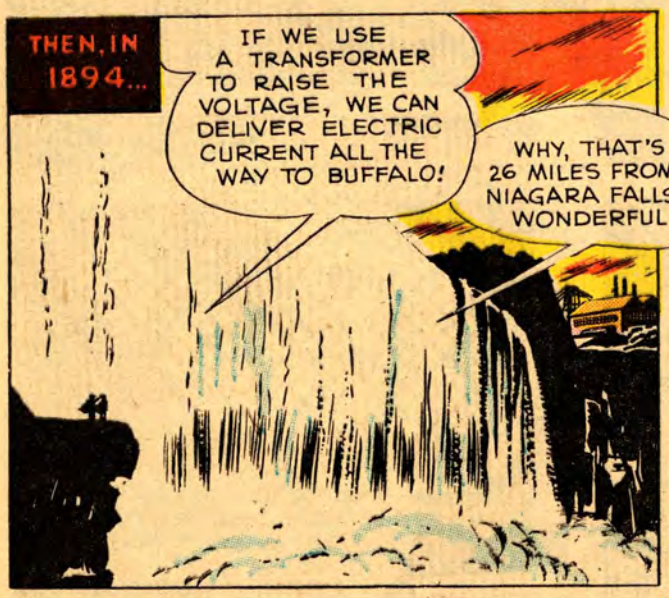


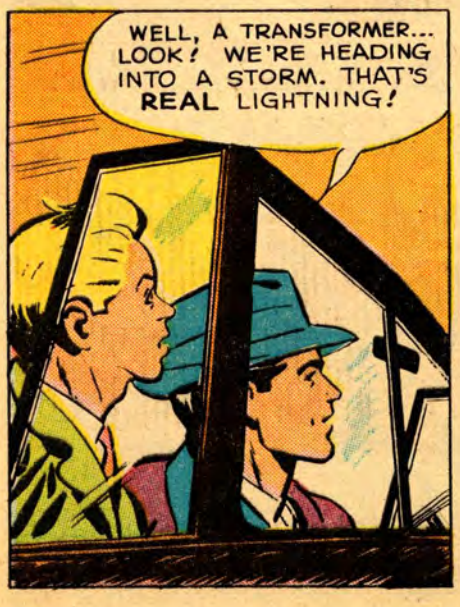


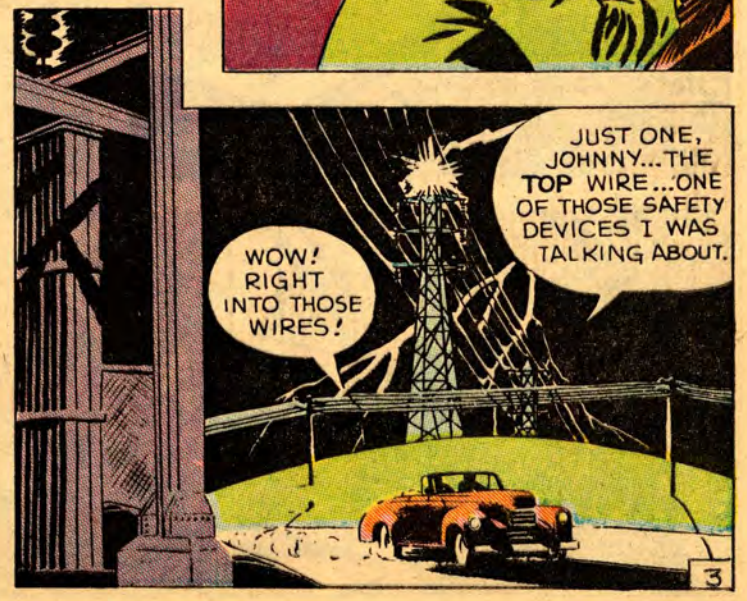
"WELL, IT'S THIS WAY... BACK IN 1886, LONG AFTER FARADAY DISCOVERED HOW TO GENERATE ELECTRICITY, WILLIAM STANLEY ESTABLISHED A LOCAL LIGHTING SYSTEM USING THE FIRST COMMERCIALLY DEVELOPED TRANSFORMER.

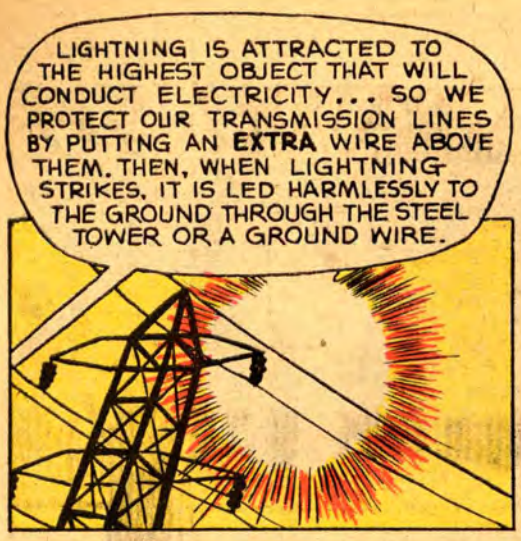


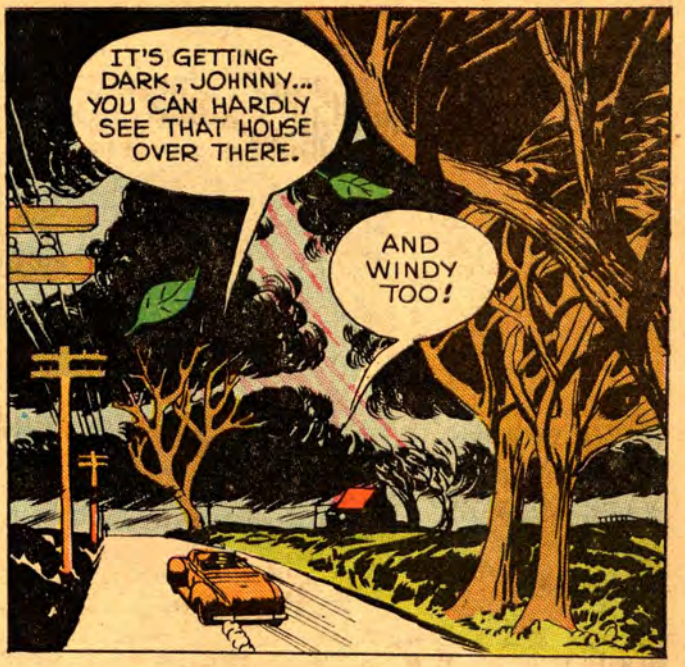
"EVEN THEN, IT WAS POSSIBLE TO USE ELECTRICITY ONLY NEAR THE GENERATING PLANT."



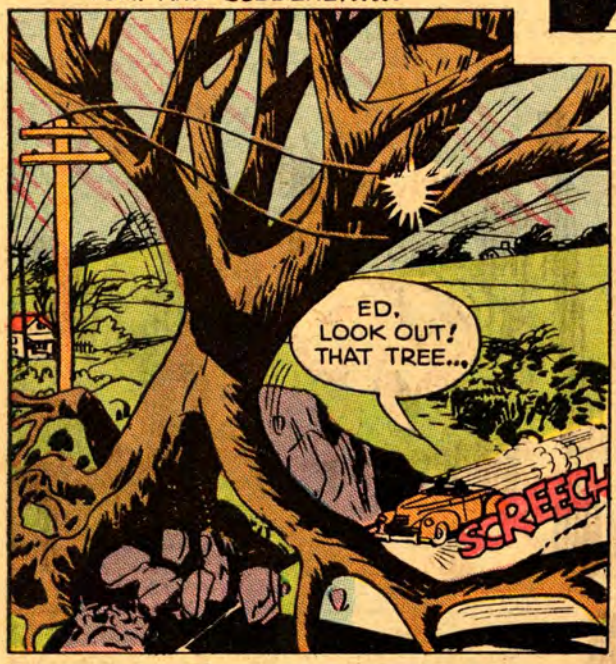


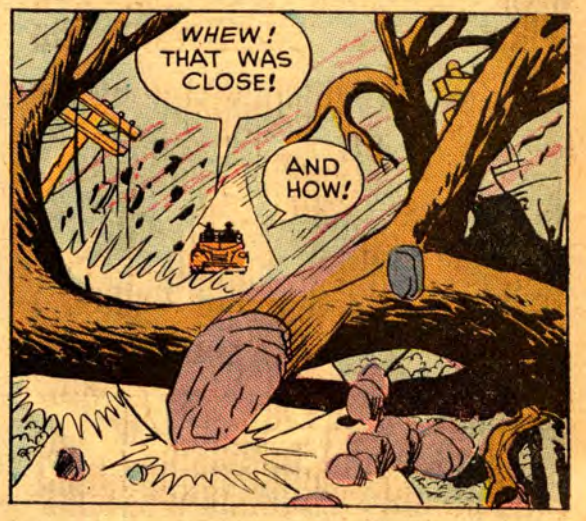


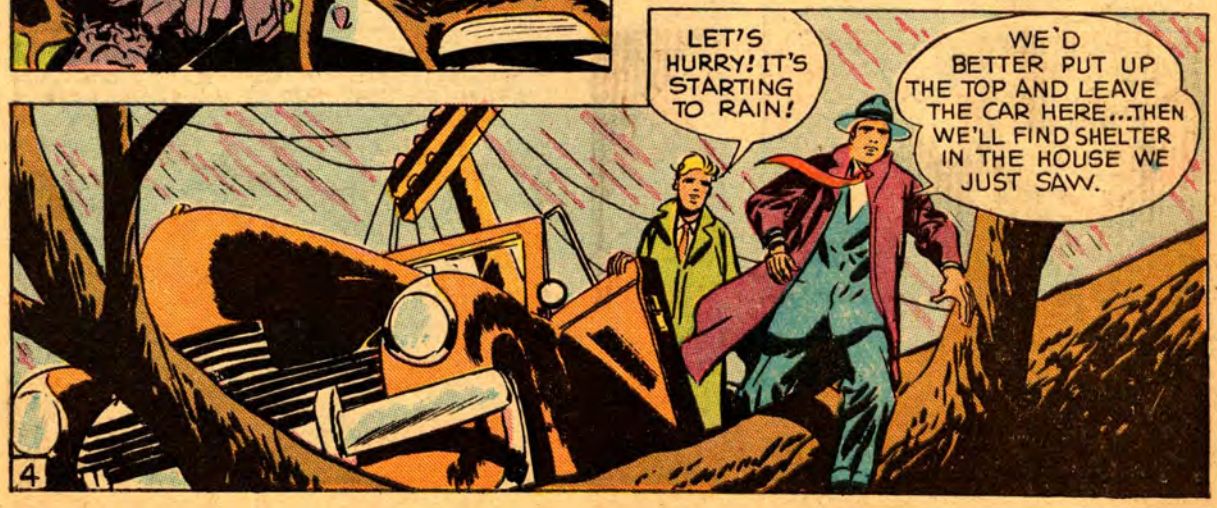


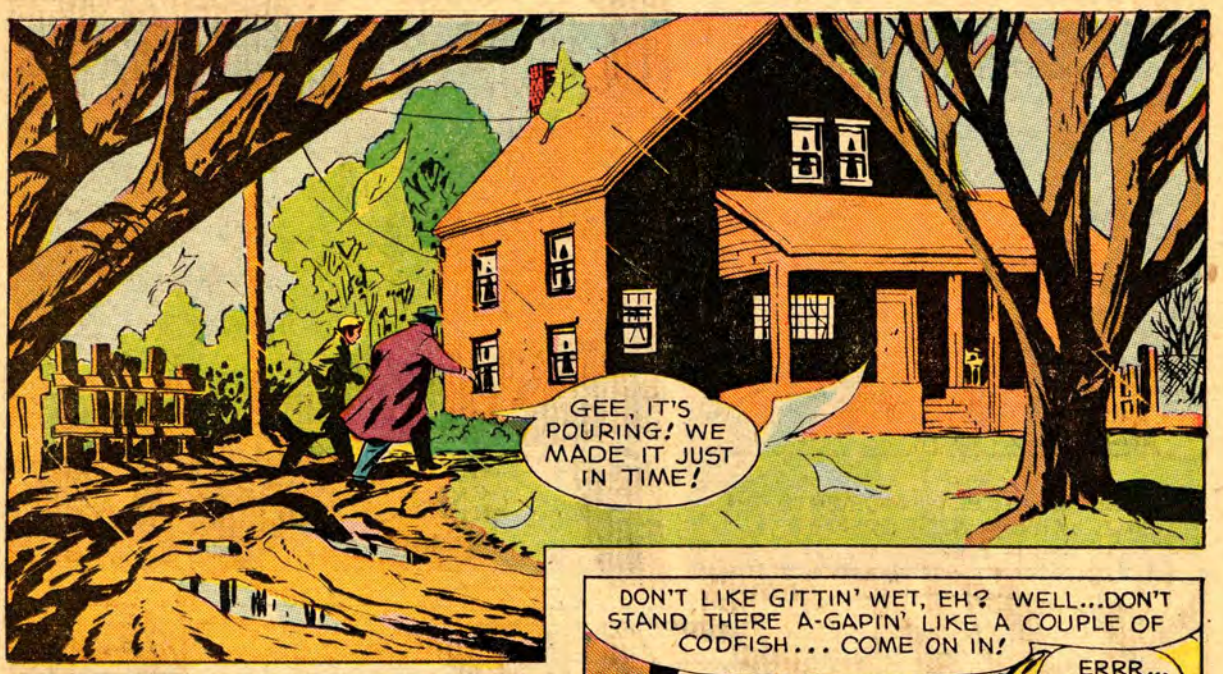


IN THE NEXT FEW MOMENTS, THE GALE HOWLS WITH GREATER FURY AND SUDDENLY.....








GEE, IT'S POURING! WE MADE IT JUST IN TIME!


I HEAR SOMEONE COMING, ED!
KNOCK!
KNOCK!


DON'T LIKE GITTIN' WET, EH? WELL...DON'T STAND THERE A-GAPIN' LIKE A COUPLE OF CODFISH... COME ON IN!
ERRR... THANKS!


'LECTRIC LIGHTS JUST BLINKED OUT... PUST TIME IN THUTTY YEARS!
GOSH! YOU'VE LIVED HERE THIRTY YEARS!
NIGH ON SEVENTY! I WAS BORN HERE!

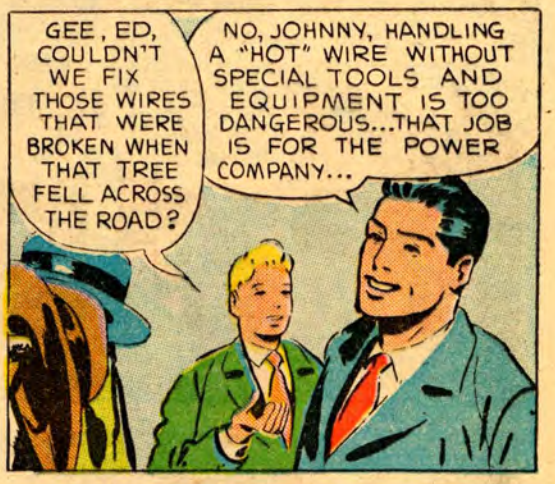

G-GOSH, IT'S LIKE ANCIENT HISTORY----I MEAN, EXCUSE ME, I MEAN ...SEVENTY YEARS IS A L-LONG T-TIME!
WHAT'S THE MATTER, JOHNNY... CHILLY?


K-KIND OF! AND IT'S SPOOKY IN HERE, TOO! WISH WE HAD AN ELECTRIC HEATER, AND MAYBE A RADIO!
THEY WOULDN'T DO US MUCH GOOD WITHOUT ELECTRICITY!
THAT'S RIGHT... I KEEP FORGETTING. I'M SO USED TO JUST TOUCHING A SWITCH, AND GETTING LIGHT, AND HEAT, AND A GOOD PROGRAM...
YOU'RE SPOILED, YOUNG FELLER!
NO, HE'S JUST USED TO THE CONVENIENCE OF ELECTRICITY... NOTHING WRONG WITH THAT!
UNEXPECTEDLY...
SOMEBODY ELSE CAUGHT IN THE STORM!
KNOCK KNOCK
SOUNDS LIKE THEY'RE IN A MIGHTY BIG HURRY, TOO!
JEHOSHAPHAT! THIS PLACE IS GITTIN' RIGHT POP'LAR!
WELL, WE DON'T HAVE MUCH CHOICE...THIS MAN NEEDS AN OPERATION AT ONCE!
6


WE WERE ON OUR WAY TO THE HOSPITAL WHEN WE FOUND A TREE ACROSS THE ROAD...
...SO WE CAME HERE... WE HAVE TO DO SOMETHING, QUICK!

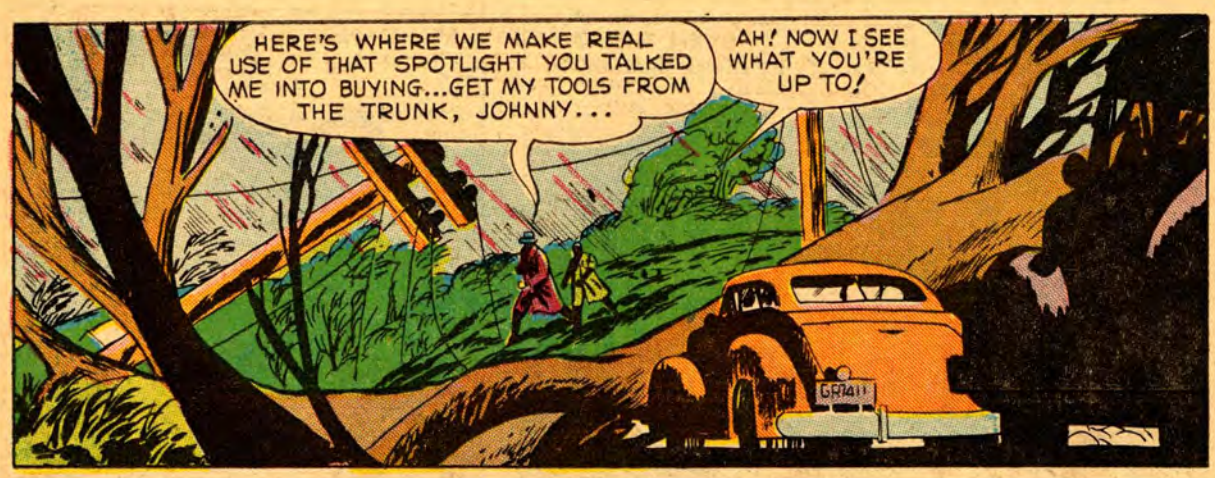

YES, I'M AFRAID I'LL HAVE TO OPERATE HERE... BUT I CAN'T DO IT IN THIS POOR LIGHT!


RECKON YE'LL HAVE TO, THOUGH... THEY'S NOTHIN' ELSE TO DO!
BUT THERE MUST BE SOMETHING!
OH, PLEASE HURRY!

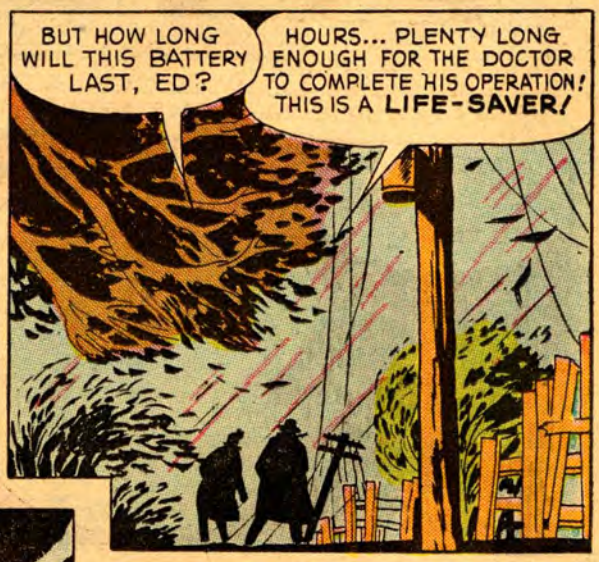

GEE, ED, COULDN'T WE FIX THOSE WIRES THAT WERE BROKEN WHEN THAT TREE FELL ACROSS THE ROAD?
NO, JOHNNY, HANDLING A "HOT" WIRE WITHOUT SPECIAL TOOLS AND EQUIPMENT IS TOO DANGEROUS... THAT JOB IS FOR THE POWER COMPANY...


...AND THEY'LL HAVE A REPAIR CREW HERE IN NO TIME!


BUT IT MIGHT BE TOO LATE WHEN THEY GET THIS LINE FIXED!
I'VE GOT IT DOCTOR. YOU CAN GET YOUR PATIENT READY NOW... WE'LL HAVE AN ELECTRIC LIGHT FOR YOU IN TEN MINUTES. C'MON, JOHNNY!


HERE'S WHERE WE MAKE REAL USE OF THAT SPOTLIGHT YOU TALKED ME INTO BUYING...GET MY TOOLS FROM THE TRUNK, JOHNNY...
AH! NOW I SEE WHAT YOU'RE UP TO!

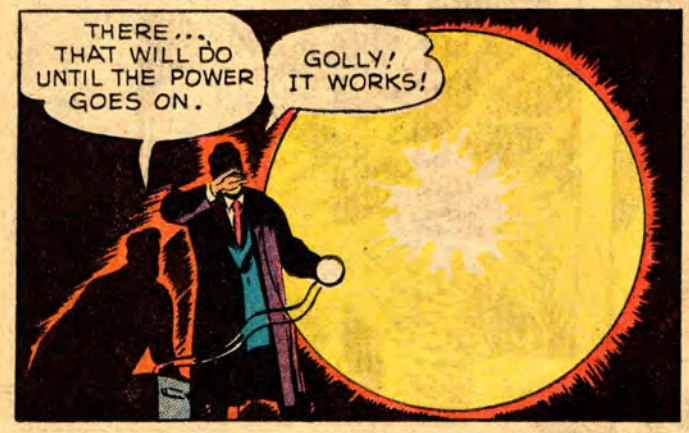

HERE'S THE SPOTLIGHT... NOW TO GET THE BATTERY!


BUT HOW LONG WILL THIS BATTERY LAST, ED?
HOURS... PLENTY LONG ENOUGH FOR THE DOCTOR TO COMPLETE HIS OPERATION! THIS IS A LIFE-SAVER!

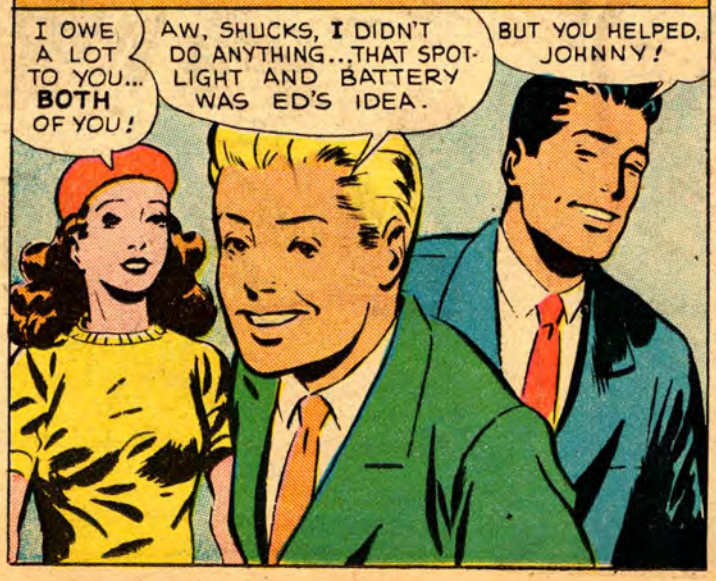

WHILE ED AND JOHNNY WORK, THE STORM GATHERS STRENGTH AND FURY EVERY MOMENT. SOME MILES SOUTH...
8


... RAIN SWOLLEN STREAMS SWEEP OVER THEIR BANKS...

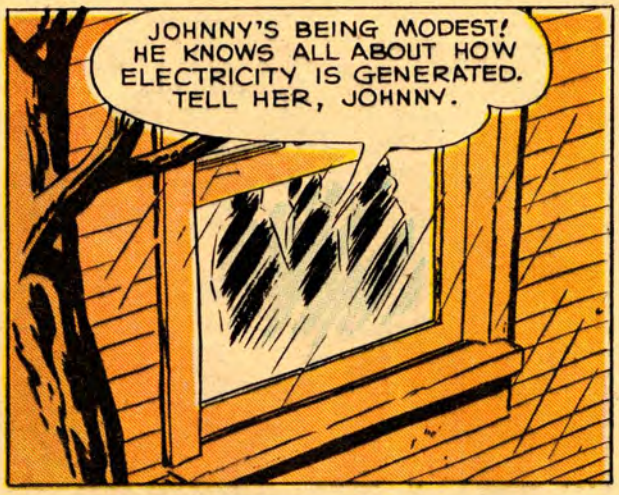
MEANWHILE, UNAWARE OF THE WIDESPREAD DEVASTATION THE STORM IS CAUSING, ED AND JOHNNY CONTINUE THEIR RACE AGAINST TIME...



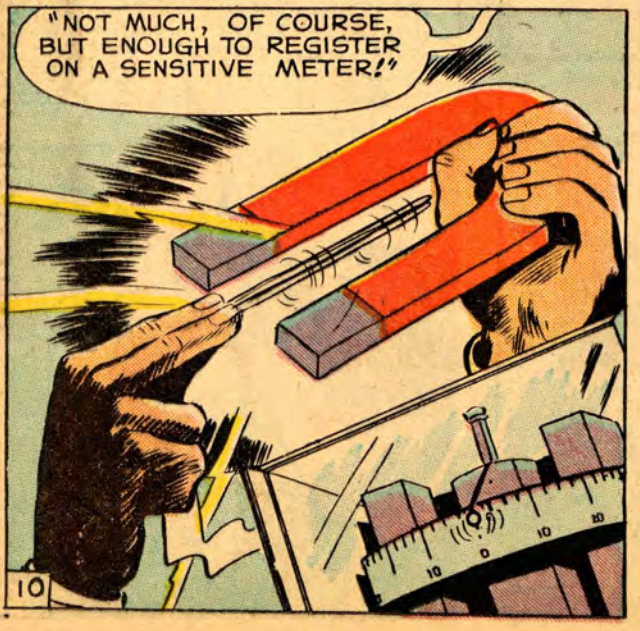
AS THEY AWAIT THE OUTCOME OF THE DOCTOR'S FIGHT TO SAVE A LIFE...




GOODNESS, YOU TWO KNOW A LOT ABOUT ELECTRICITY, DON'T YOU?
NOT ME! ED IS THE EXPERT!


JOHNNY'S BEING MODEST! HE KNOWS ALL ABOUT HOW ELECTRICITY IS GENERATED. TELL HER, JOHNNY.


WELL, IT'S SIMPLE! WHEN YOU SPIN A COIL OF WIRE WITH YOUR FINGERS BETWEEN THE ENDS OF A MAGNET, YOU GET AN ELECTRIC CURRENT IN THE WIRE!


"NOT MUCH, OF COURSE, BUT ENOUGH TO REGISTER ON A SENSITIVE METER!"
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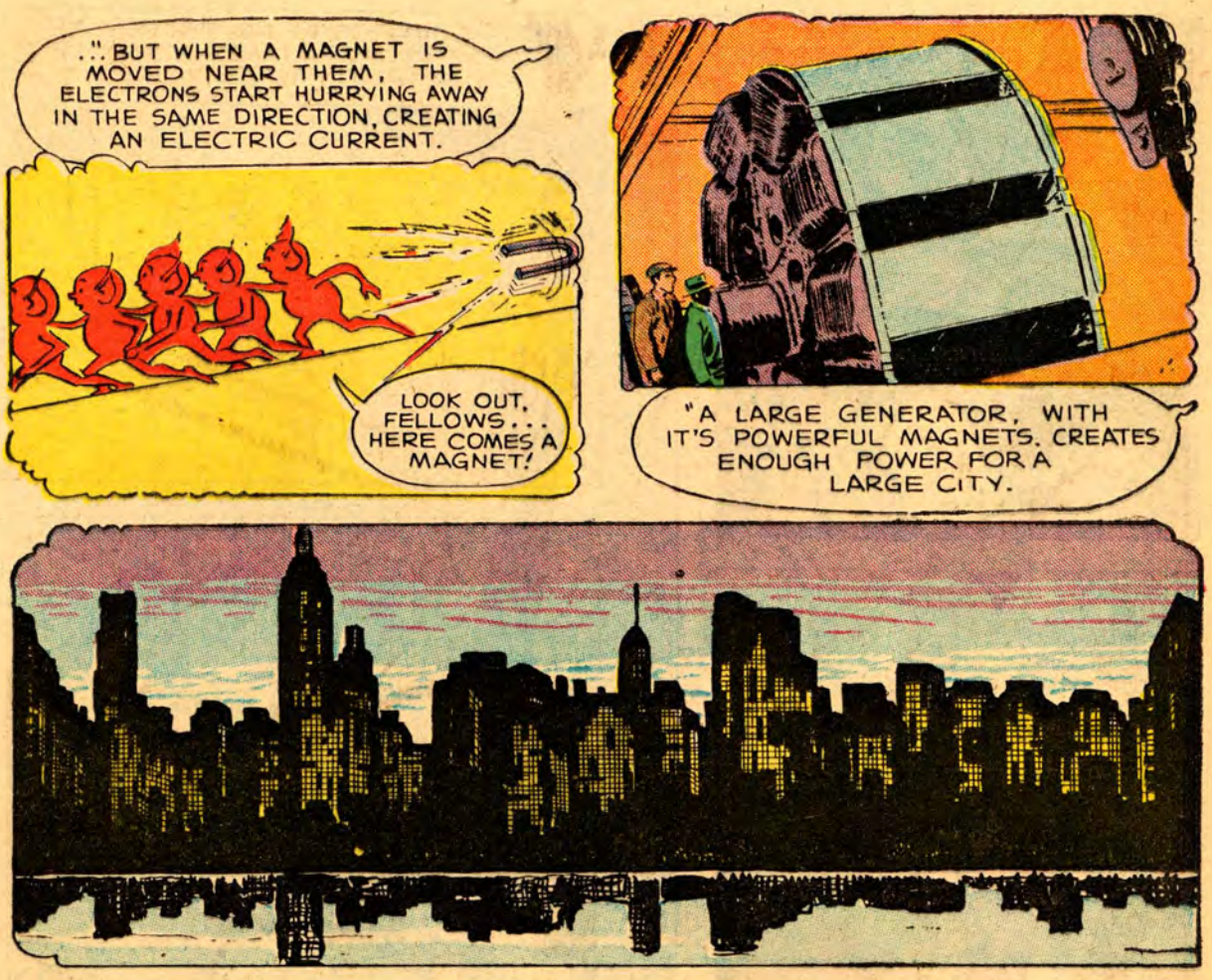
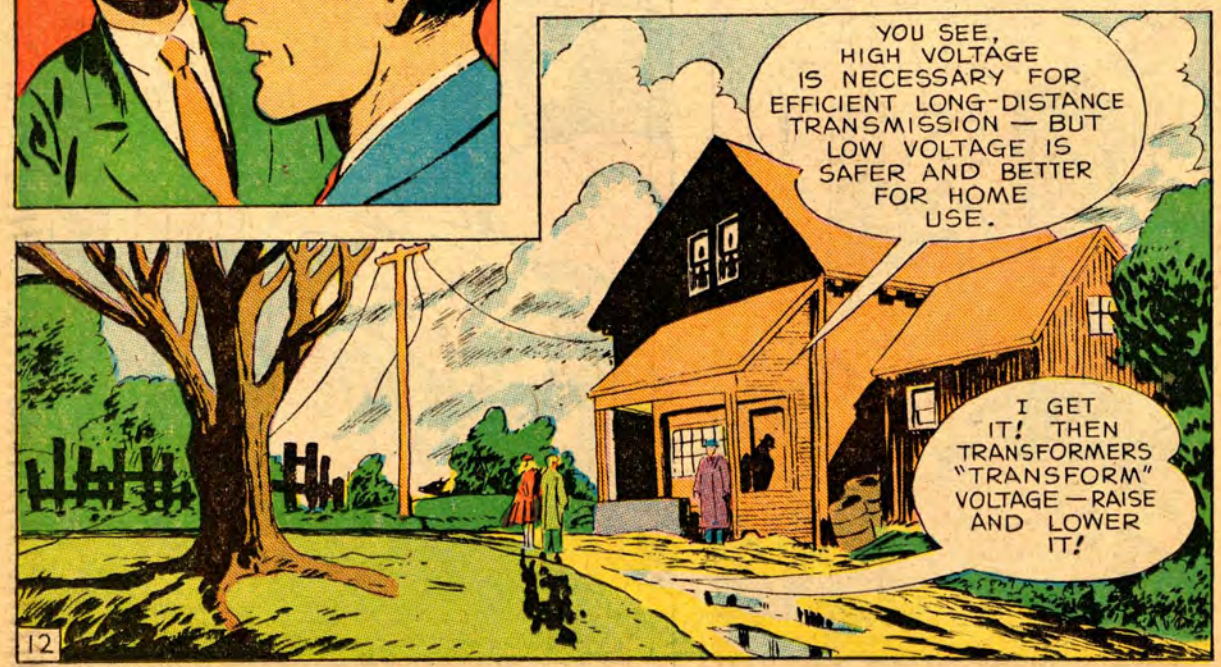
"YOU SEE, IN THE WIRE ARE BILLIONS OF TINY ELECTRONS WHICH ARE ALWAYS SHIFTING AROUND...
GEE, IT'S PEACEFUL HERE.


...BUT WHEN A MAGNET IS MOVED NEAR THEM, THE ELECTRONS START HURRYING AWAY IN THE SAME DIRECTION, CREATING AN ELECTRIC CURRENT.
LOOK OUT, FELLOWS... HERE COMES A MAGNET!
"A LARGE GENERATOR, WITH IT'S POWERFUL MAGNETS, CREATES ENOUGH POWER FOR A LARGE CITY.

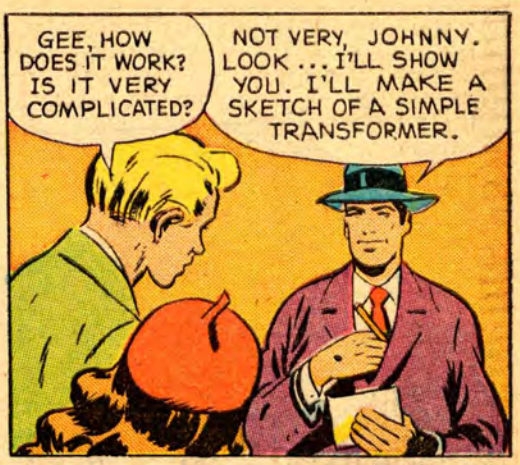

IT'S AS SIMPLE AS ALL THAT!
MY, IT DOES SOUND SIMPLE WHEN YOU TELL IT... BUT IT'S WONDERFUL, TOO!

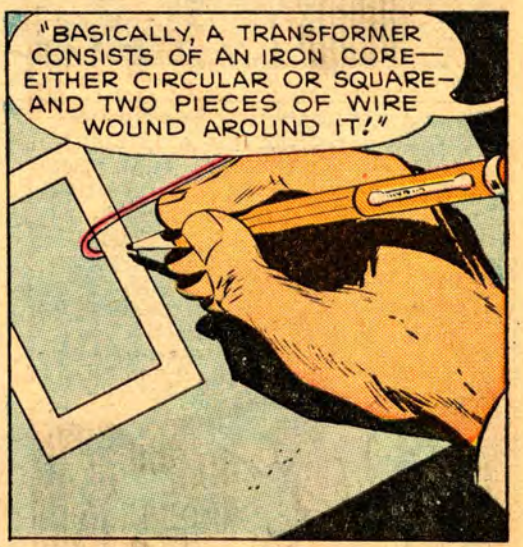

SUDDENLY...
OH... AT LAST!
THE OPERATION IS OVER... AND A SUCCESS! ALL WE NEED NOW IS THE REGULAR HOUSE CURRENT TO MAKE ICE IN THE REFRIGERATOR.

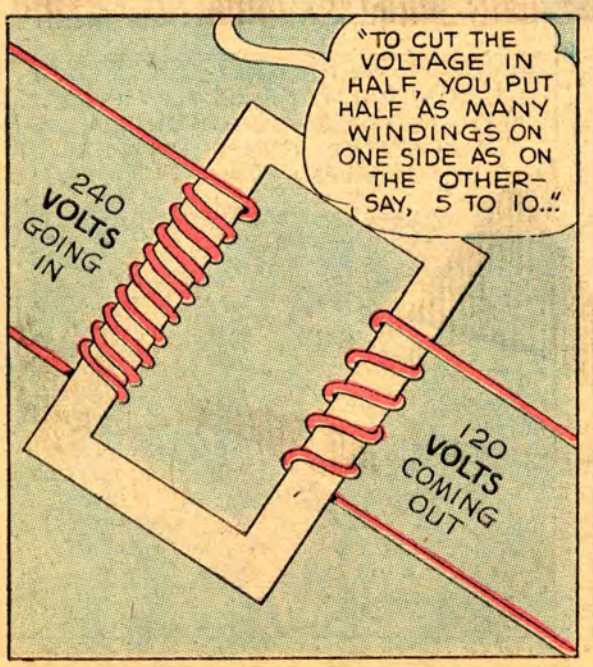
SURE ENOUGH, THE POWER COMPANY'S CREW-MEN ARE ON THE JOB... REPAIRING THE BROKEN WIRES...

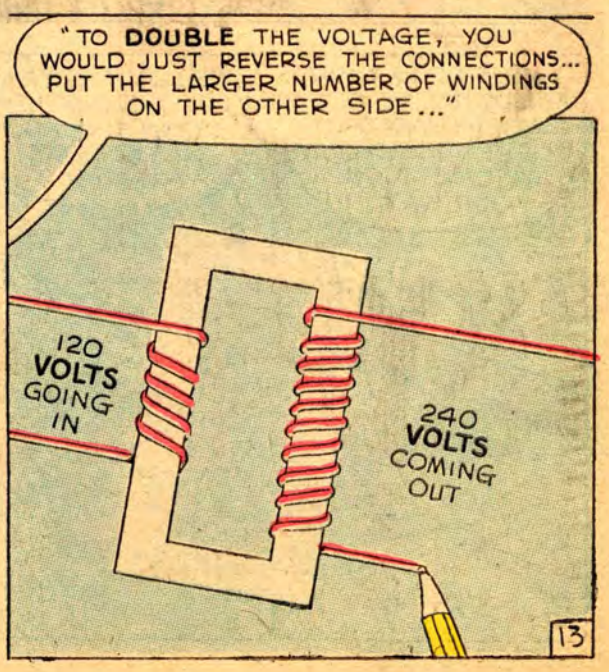



RIGHT! THAT TRANSFORMER DOWN THERE, FOR INSTANCE, CHANGES THE PRESSURE FROM 2400 TO 240 OR 120 VOLTS FOR HOUSEHOLD USE.


GEE, HOW DOES IT WORK? IS IT VERY COMPLICATED?
NOT VERY, JOHNNY. LOOK ... I'LL SHOW YOU. I'LL MAKE A SKETCH OF A SIMPLE TRANSFORMER.


"BASICALLY, A TRANSFORMER CONSISTS OF AN IRON CORE— EITHER CIRCULAR OR SQUARE— AND TWO PIECES OF WIRE WOUND AROUND IT!"


"TO CUT THE VOLTAGE IN HALF, YOU PUT HALF AS MANY WINDINGS ON ONE SIDE AS ON THE OTHER— SAY, 5 TO 10..."
240 VOLTS GOING IN
120 VOLTS COMING OUT


"TO DOUBLE THE VOLTAGE, YOU WOULD JUST REVERSE THE CONNECTIONS... PUT THE LARGER NUMBER OF WINDINGS ON THE OTHER SIDE..."
120 VOLTS GOING IN
240 VOLTS COMING OUT


THEN, TO INCREASE THE PRESSURE TEN TIMES, YOU'D...
JUST PUT TEN TIMES AS MANY WINDINGS ON ONE SIDE AS THE OTHER — SAY 200 TO 20! I GET IT!
LOOK! THE LIGHTS ARE ON!
GOOD... NOW THE PATIENT CAN HAVE ICE PACKS AS LONG AS THEY'RE NEEDED.
HMM... SORRY TO INTERRUPT THE BEGINNING OF A BEAUTIFUL FRIENDSHIP, JOHNNY, BUT THE HIGHWAY PATROL IS CLEARING THE ROAD.
AND SO...FAREWELL!
THANKS SO MUCH FOR YOUR HELP!
SHUCKS, WISH WE DIDN'T HAVE TO GO!
BY CRACKY, THE PLACE WILL BE LONELY WITHOUT YE!
THIS IS GOOD TIMING. AS SOON AS WE GET THE BATTERY AND SPOT-LIGHT HOOKED UP, WE CAN BE ON OUR WAY.
WE MIGHT AS WELL PUT THE CAR TOP DOWN TOO, ED... THE STORM'S OVER!
RIGHT! AND ON THE WAY HOME I'LL SHOW YOU HOW ELECTRICITY IS CARRIED FROM THE GENER-ATING STATION TO YOUR READING LAMP.
NOW WE'RE ALL SET ...LET'S GO!
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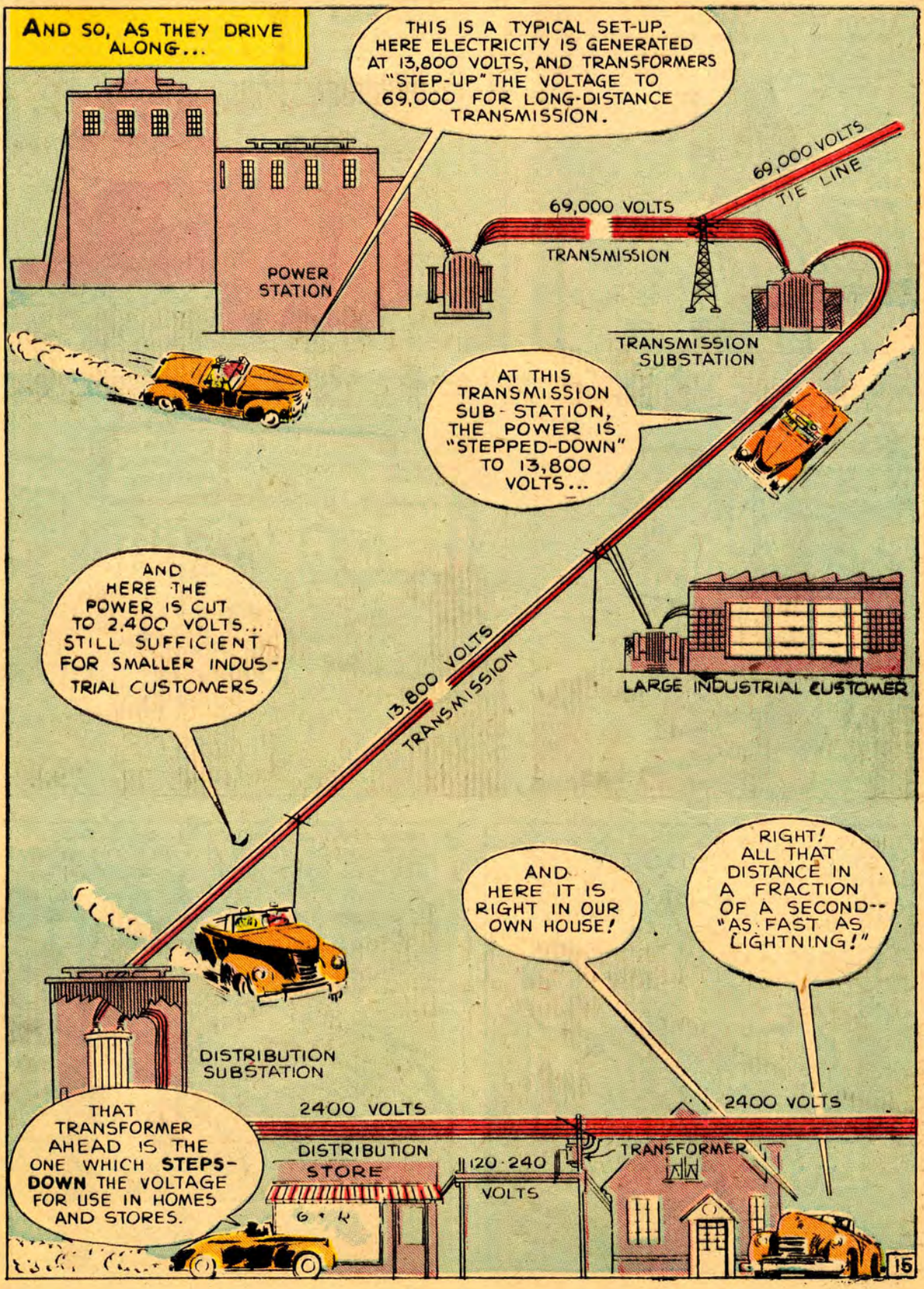
AND SO, AS THEY DRIVE ALONG...
THIS IS A TYPICAL SET-UP. HERE ELECTRICITY IS GENERATED AT 13,800 VOLTS, AND TRANSFORMERS "STEP-UP" THE VOLTAGE TO 69,000 FOR LONG-DISTANCE TRANSMISSION.
POWER STATION
69,000 VOLTS
TRANSMISSION
69,000 VOLTS
TIE LINE
TRANSMISSION SUBSTATION
AT THIS TRANSMISSION SUB-STATION, THE POWER IS "STEPPED-DOWN" TO 13,800 VOLTS...
AND HERE THE POWER IS CUT TO 2,400 VOLTS... STILL SUFFICIENT FOR SMALLER INDUSTRIAL CUSTOMERS
13,800 VOLTS
TRANSMISSION
LARGE INDUSTRIAL CUSTOMER
AND HERE IT IS RIGHT IN OUR OWN HOUSE!
RIGHT! ALL THAT DISTANCE IN A FRACTION OF A SECOND-- "AS FAST AS LIGHTNING!"
DISTRIBUTION SUBSTATION
2400 VOLTS
2400 VOLTS
THAT TRANSFORMER AHEAD IS THE ONE WHICH STEPS-DOWN THE VOLTAGE FOR USE IN HOMES AND STORES.
DISTRIBUTION STORE
120-240 VOLTS
TRANSFORMER
15


AND THE REPAIR CREW IS ALMOST AS FAST... WHY, I'LL BET THE LINES ARE ALREADY BACK IN OPERATION EVERYWHERE!
YES, WHEREVER THE VIOLENCE OF THE STORM WAS FELT, EMERGENCY REPAIR SQUADS HAVE RUSHED IN...
THIS BREAK IS FIXED.... WHERE DO WE GO NEXT?
WITH POWER RESTORED, LIFE RETURNS TO THE SMALL TOWN...
...SUNNY WAY... JOHN SMITH in ADVENTURER
..SUNNYWAY.. JOHN SMITH in ADVENTURER
CAFE
GOSH, I NEVER REALIZED BEFORE HOW IMPORTANT IT IS TO GET ELECTRICITY TO PEOPLE!
YES, SOMETIMES IT SEEMS JUST A CONVENIENCE... BUT OFTEN IT'S A MATTER OF LIFE OR DEATH.
AND WHAT A LOT OF HARD WORK THERE IS BEHIND SOMETHING THAT LOOKS SO EASY!
ISN'T THAT ALWAYS TRUE, JOHNNY?
ADVENTURES
GENERAL ELECTRIC
Schenectady, New York

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