

THE TORQUE GENERATOR OF WILLIAM F. SKINNER

IN 1939, WHICH WAS THE START OF WORLD WAR TWO, WILLIAM SKINNER OF MIAMI IN FLORIDA DEMONSTRATED HIS FIFTH-GENERATION SYSTEM WHICH WAS POWERED BY SPINNING WEIGHTS. HIS DEMONSTRATION CAN STILL BE SEEN AT <http://www.britishpathe.com/video/gravity-power> WHERE HE SHOWS HIS DESIGN POWERING A TWELVE FOOT LATHE, A DRILL PRESS AND A POWER HACKSAW, ALL SIMULTANEOUSLY.

THE NEWSREEL COMMENTATOR STATES THAT THE OUTPUT POWER WAS 1200% OF THE INPUT POWER, WHICH IS $COP=12$, BUT IT IS HIGHLY LIKELY THAT HE SHOULD HAVE SAID "TWELVE HUNDRED TIMES" RATHER THAN "1200%" BECAUSE HE THEN SAYS THAT WITH 746 WATTS OF INPUT POWER IT COULD POWER 3,500 HOMES. IF IT WERE $COP=12$, THEN EACH OF THOSE 3,500 HOMES WOULD RECEIVE LESS THAN 2.6 WATTS WHICH IS CLEARLY WRONG. AT THE MUCH MORE LIKELY $COP=1200$, EACH HOUSEHOLD WOULD RECEIVE ON AVERAGE, 255 WATTS, WHICH MIGHT JUST BE POSSIBLE IN 1939 WHEN FEW APPLIANCES WERE ELECTRIC.

ANYWAY, SKINNER'S IMPRESSIVE EQUIPMENT WAS BEING DRIVEN BY A SINGLE COTTON THREAD LOOP POWERED BY A 1/8 HORSEPOWER (93-WATT) ELECTRIC MOTOR, AND IT WAS POWERING HIS WHOLE WORKSHOP. IT LOOKED LIKE THIS :



THIS DESIGN HAS FOUR NEARLY VERTICAL SHAFTS, EACH BRACED TO GIVE ADDITIONAL RIGIDITY. THESE ROTATING SHAFTS PASS THEIR ROTATING POWER TO THE MECHANICAL OUTPUT DRIVE BELT SEEN ON THE LEFT. EACH OF THESE ROTATING SHAFTS HAS A HEAVY WEIGHT IN THE FORM OF A THICK, SHORT CYLINDER MOUNTED HIGH UP NEAR THE TOP OF THE SHAFT, AND WHAT IS PROBABLY AN EVEN HEAVIER WEIGHT IN THE FORM OF A LONG NARROWER CYLINDER ATTACHED NEAR THE BOTTOM OF THE SHAFT, AS SEEN JUST TO THE RIGHT OF THE OUTPUT DRIVE BELT. THESE FOUR IDENTICAL SETS OF SHAFTS WITH

THEIR PAIRS OF WEIGHTS, SPIN TWO OR THREE TIMES PER SECOND AND PRODUCE THE WHOLE OF THE OUTPUT POWER.



AS FAR AS I AM AWARE, SKINNER NEVER PATENTED HIS DESIGN OR DISCLOSED HOW IT WORKED. HOWEVER, THE OPERATING PRINCIPLE IS VERY SIMPLE INDEED ALTHOUGH IT MAY TAKE YOU A WHILE TO GRASP HOW IT WORKS. YOU CAN CHECK THIS OUT FOR YOURSELF QUITE EASILY IF YOU HAVE ACCESS TO AN OLD-FASHIONED CHAIR WITH FOUR RIGID LEGS LIKE THIS ONE :



IF YOU TILT THE CHAIR OVER SO THAT IT IS BALANCED ON ONE LEG, YOU WILL NOTICE THAT THERE IS ALMOST NO EFFORT NEEDED TO KEEP IT IN THAT POSITION AS ALL OF ITS WEIGHT IS SUPPORTED BY THE FLOOR THROUGH ONE OF THE LEGS. NOW MOVE THE TOP OF THE CHAIR BY A VERY SMALL AMOUNT AND KEEP IT IN THAT POSITION. YOU WILL NOTICE TWO THINGS, FIRST, VERY LITTLE EFFORT WAS NEEDED TO MAKE THAT MOVE AND SECOND, THE CHAIR NOW SWINGS ROUND AND BECOMES STATIONARY UNDER THE NEW POSITION OF THE TOP OF THE CHAIR.

NOTICE TWO OTHER THINGS: THE CHAIR SWUNG ROUND BECAUSE OF YOUR MOVING THE TOP SLIGHTLY, AND YOU DID NOT SWING IT AROUND. IF THE CHAIR IS HEAVY, THEN THE

AMOUNT OF ENERGY IN THE CHAIR SWINGING AROUND IS VERY MUCH GREATER THAN THE AMOUNT OF ENERGY WHICH YOU USED TO MOVE THE TOP OF THE CHAIR.

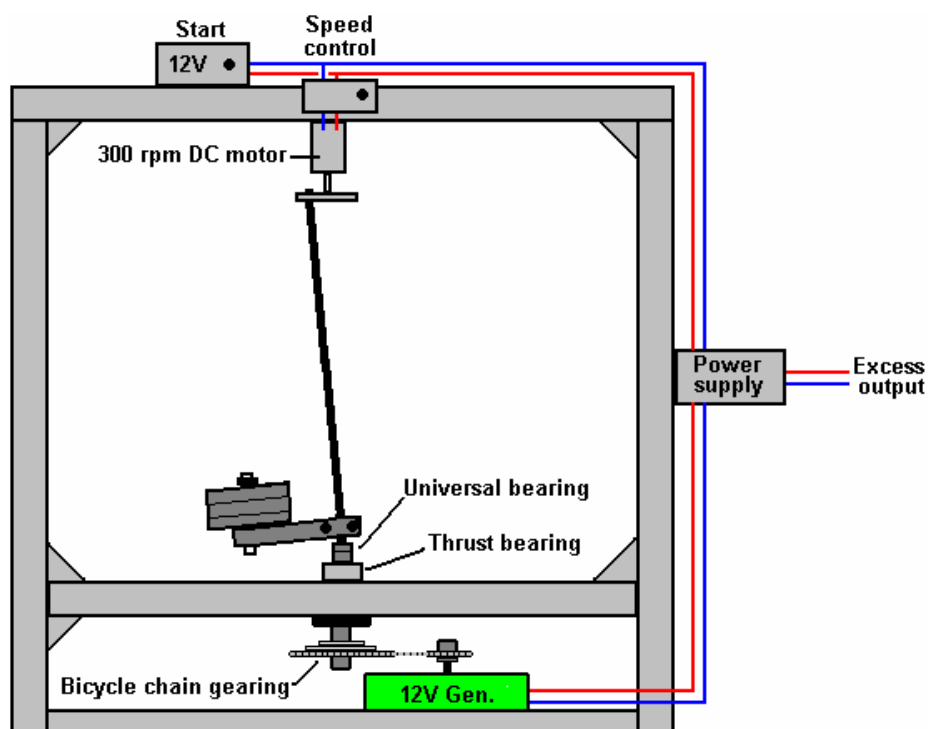
IF YOU KEEP MOVING THE TOP IN A TINY CIRCLE, THE CHAIR SPINS ROUND AS LONG AS YOU KEEP MOVING THE TOP. THE AMOUNT OF ENERGY IN THE SPINNING CHAIR IS VERY MUCH GREATER THAN THE ENERGY NEEDED TO MAKE IT SPIN. SO, WHERE IS THAT EXTRA ENERGY COMING FROM?

WHAT IS HAPPENING IS THAT THE CHAIR SWINGS ROUND UNDER GRAVITY. BUT BEFORE IT GETS THERE, YOU MOVE THE TOP OF THE CHAIR FURTHER AROUND AND SO THE CHAIR HAS TO SWING FURTHER,...BUT BEFORE IT GETS THERE YOU MOVE THE TOP FURTHER, NO MATTER HOW HEAVY THE CHAIR IS, VERY LITTLE EFFORT IS NEEDED TO MOVE THE TOP – TRY IT FOR YOURSELF IF YOU DON'T BELIEVE ME.

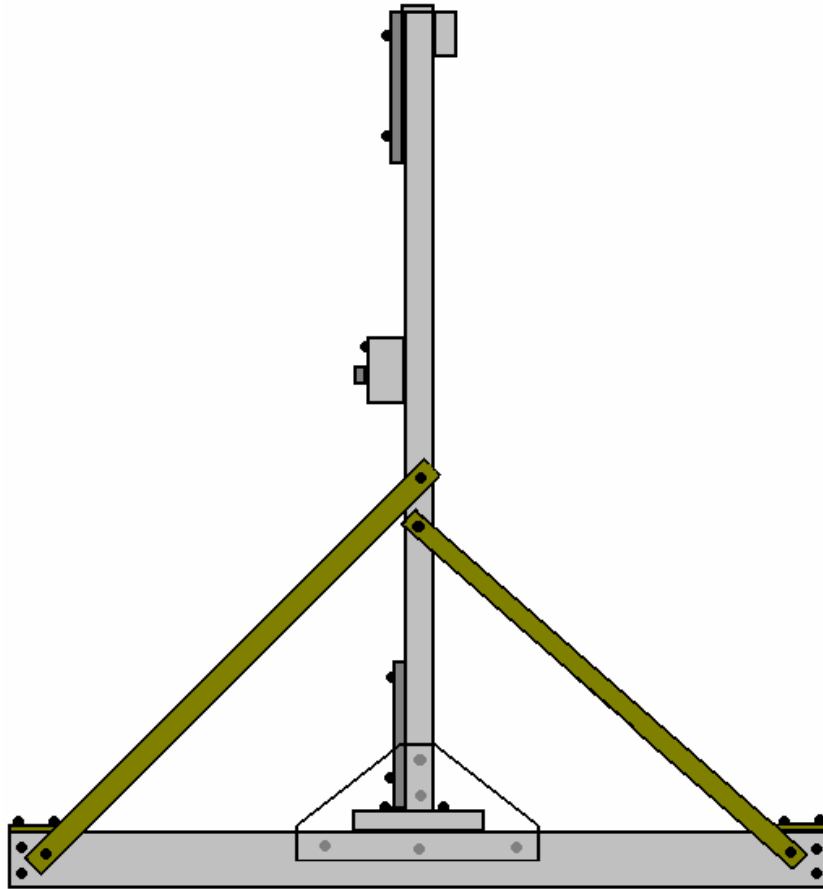
WILLIAM SKINNER HAD A MECHANISM AT THE TOP OF EACH OF HIS VERTICAL SHAFTS AND THAT MECHANISM KEPT MOVING THE TOP OF THE SHAFT IN A SMALL CIRCLE WHILE ALLOWING THE SHAFT TO ROTATE FREELY AT ALL TIMES. WHILE SKINNER USED A MOTOR OF ABOUT 100 WATTS, VERY LITTLE OF THAT MOTOR POWER WAS ACTUALLY USED AS THE DRIVE BAND WAS JUST A LOOP OF THREAD.

SKINNER'S DESIGN LOOKS COMPLICATED AND THAT IS BECAUSE HE KEPT RE-DESIGNING AND IMPROVING HIS DEVICE OVER AND OVER AGAIN. I THINK THAT THE FIRST THING THAT HE FOUND WAS THAT IF HE KEPT INCREASING THE SIZE OF THE WEIGHTS IN ORDER TO INCREASE THE OUTPUT POWER, THAT THE WHOLE STRUCTURE WOBBLLED, SO HE ADDED A SECOND SHAFT TO BALANCE OUT THE WOBBLING EFFECT. THEN IT OCCURRED TO HIM THAT HE COULD ADD ANOTHER TWO SHAFTS TO MAKE FOUR IN ALL, AND THAT WOULD DOUBLE THE OUTPUT POWER. THEN IT OCCURRED TO HIM THAT MOVING THE TOP OF A SHAFT WOULD BE EASIER IF THERE WAS AN INVERTED, BALANCING MECHANISM ABOVE THE TOP. THAT IS WHY THE DESIGN SHOWN IN THE VIDEO IS HIS FIFTH VERSION OF THE DEVICE.

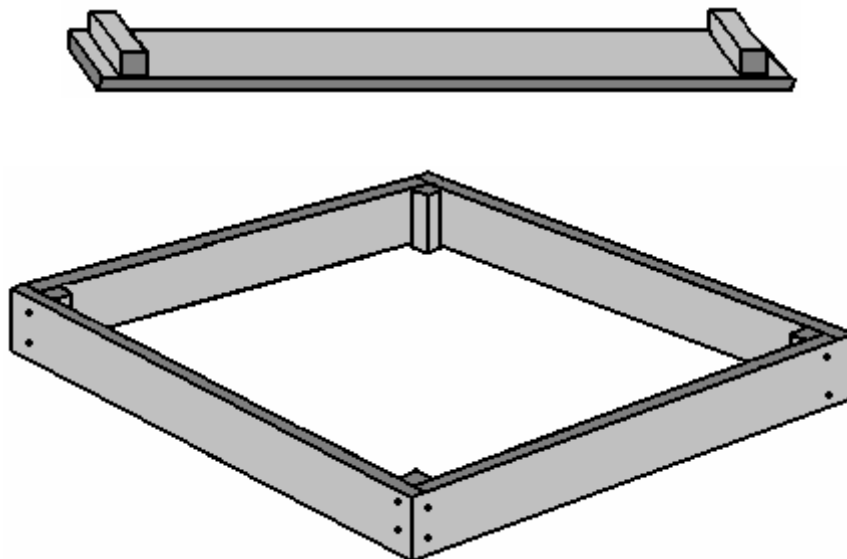
IT IS NOT NECESSARY TO TRY TO REPLICATE SKINNER'S FIFTH VERSION AS HIS FIRST VERSION IS PROBABLY QUITE ENOUGH TO BE USEFUL. I HAVE NOT BUILT ONE OF THESE, SO WHAT FOLLOWS IS JUST MY SUGGESTIONS ABOUT BUILDING SOMETHING WHICH MIGHT BE USEFUL. I WOULD SUGGEST SOMETHING LIKE THIS :

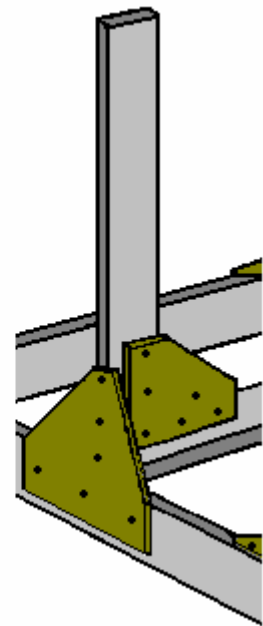
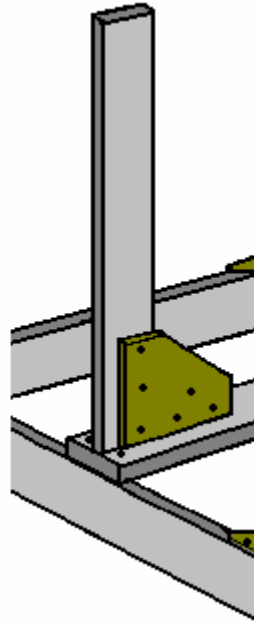
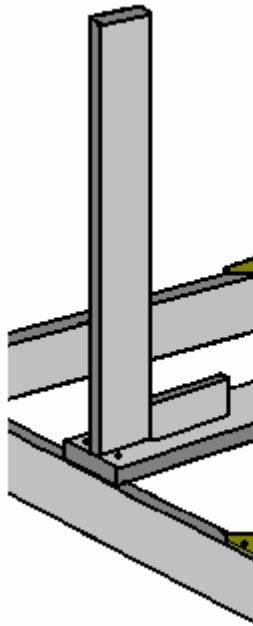
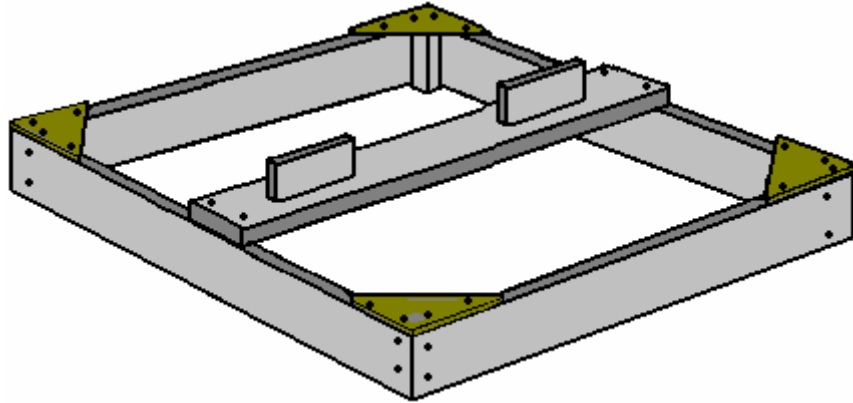
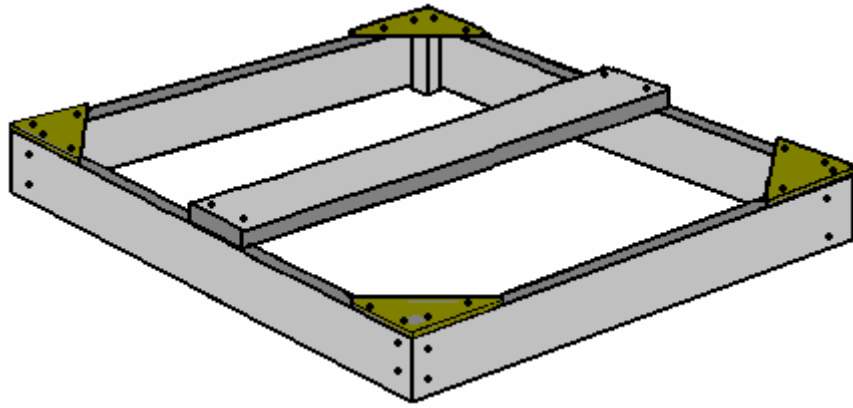


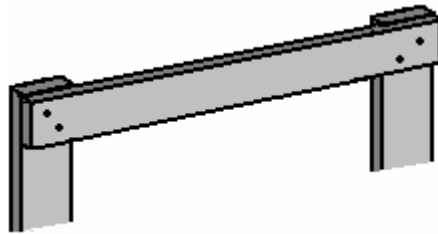
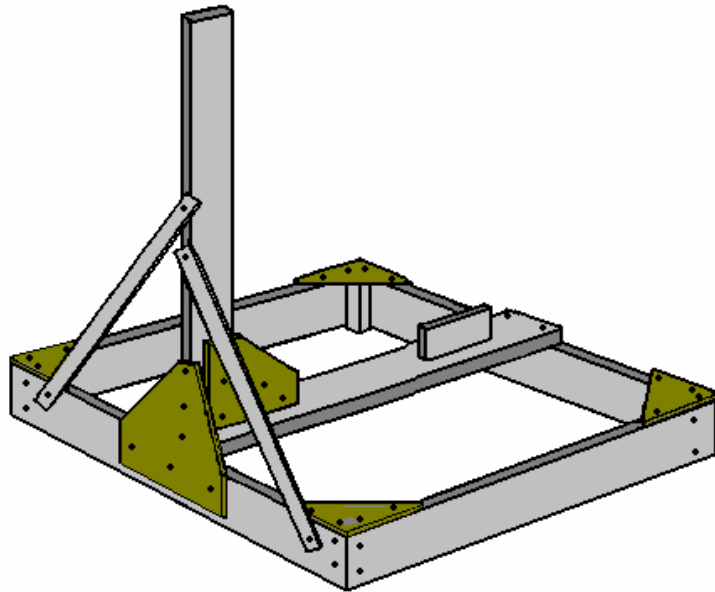
THE OBJECTIVE IS TO SPIN A GENERATOR TO PRODUCE AN OUTPUT WHICH IS LARGE ENOUGH TO POWER THE UNIT AND PROVIDE USEFUL EXCESS ELECTRICAL POWER TO OPERATE OTHER EQUIPMENT. FOR THIS, WE CAN BUILD A SIMPLE FRAME :



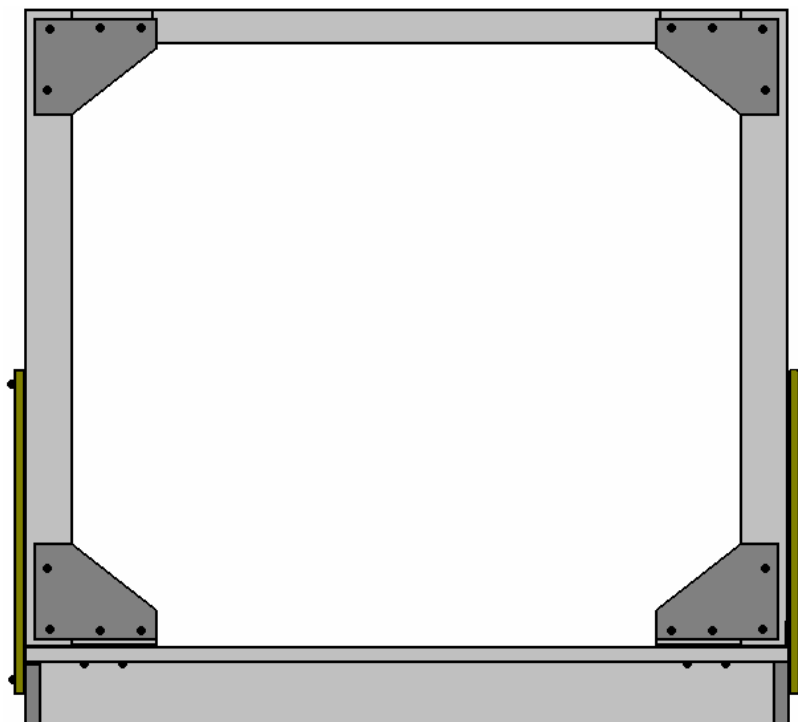
THE SUGGESTED MATERIALS AND DIMENSIONS ARE COVERED IN THE EBOOK WHICH IS AT <http://www.free-energy-info.com/PJKbook.pdf> BUT THE SUGGESTED CONSTRUCTION IS VERY SIMPLE :

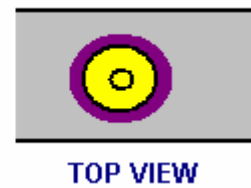
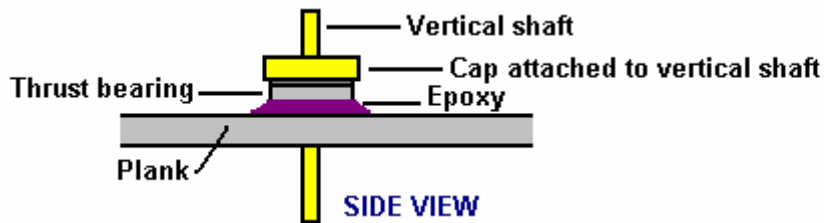
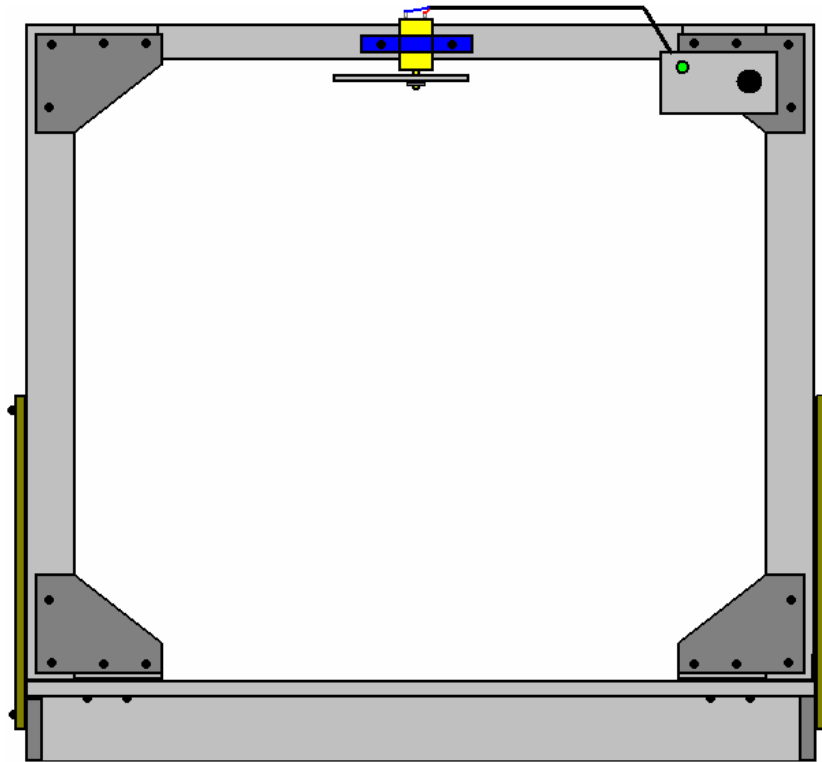






SEEN FROM ABOVE

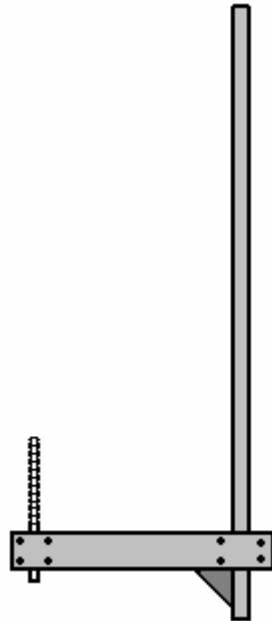




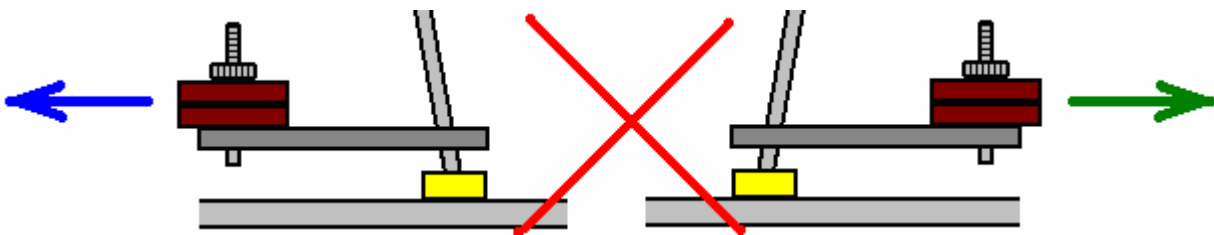
HOWEVER, WE NEED A CHEAP AND READILY AVAILABLE SERIOUS WEIGHT TO BE SPUN AROUND AND THOSE ARE AVAILABLE AS EXERCISE EQUIPMENT :



THEY CAN BE MOUNTED ON A STRONG ARRANGEMENT LIKE THIS :



I SUGGEST THAT THIS LEVER ARM IS MADE FROM STEEL BUT THAT IS CERTAINLY NOT ESSENTIAL. THERE IS A FEELING THAT A SPINNING WEIGHT WILL CAUSE A MAJOR SIDEWAYS FORCE LIKE THIS :

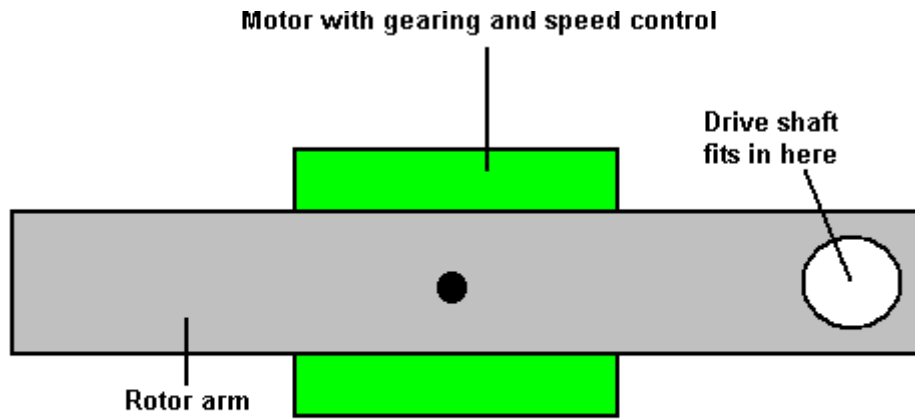


BUT THAT ONLY HAPPENS WHEN THE WEIGHT IS BEING SWUNG AROUND BY THE SHAFT. IN THIS CASE, THE WEIGHT IS ALWAYS 'FALLING' UNDER ITS OWN WEIGHT. THIS IS ACTUALLY QUITE DIFFICULT TO UNDERSTAND AS THE NORMAL REACTION IS THAT FOR SOMETHING TO FALL IT HAS TO GET CLOSER TO THE GROUND, BUT IN THIS CASE THE WEIGHT IS CONTINUOUSLY FALLING BUT IT FALLS SIDEWAYS RATHER THAN STRAIGHT DOWN.

TO GET THE TOP OF THE SHAFT TO ROTATE, A SMALL MOTOR CAN BE USED :

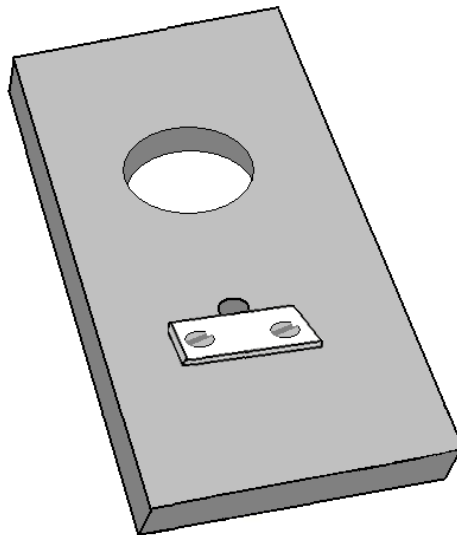


AND THAT MOTOR CAN TURN A SMALL ARM WHICH ATTACHES TO THE TOP OF THE DRIVE SHAFT LIKE THIS :



SEEN FROM UNDERNEATH

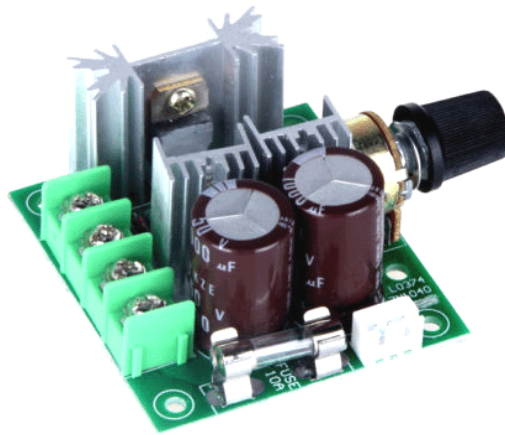
THERE IS NO NEED FOR A BEARING WHERE THE DRIVE SHAFT FITS INTO THIS DRIVE ARM AS THE ANGLE BETWEEN THE SLOPING DRIVE SHAFT AND THIS MOTOR ARM IS FIXED FOR ANY GIVEN SPEED OF ROTATION.



THE BOTTOM OF THE DRIVE SHAFT RESTS IN A THRUST BEARING AND A UNIVERSAL JOINT IS USED TO PASS THE TURNING POWER OF THE SLIGHTLY ANGLED DRIVE SHAFT THROUGH TO THE ELECTRICAL GENERATOR :



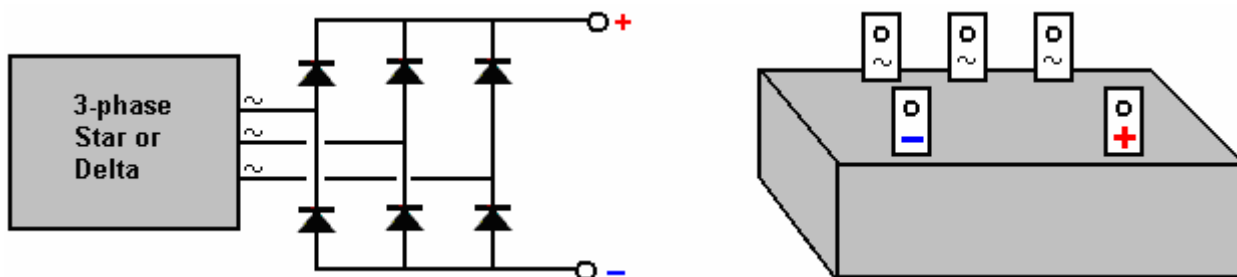
THE SPEED OF THE ROTATION OF THE TOP OF THE DRIVE SHAFT CAN BE CONTROLLED USING AN ORDINARY “DC MOTOR SPEED CONTROLLER” MODULE, AND THAT CAN TAKE THE STARTING SPEED GRADUALLY UP FROM STATIONARY TO THE DESIRED SPEED.



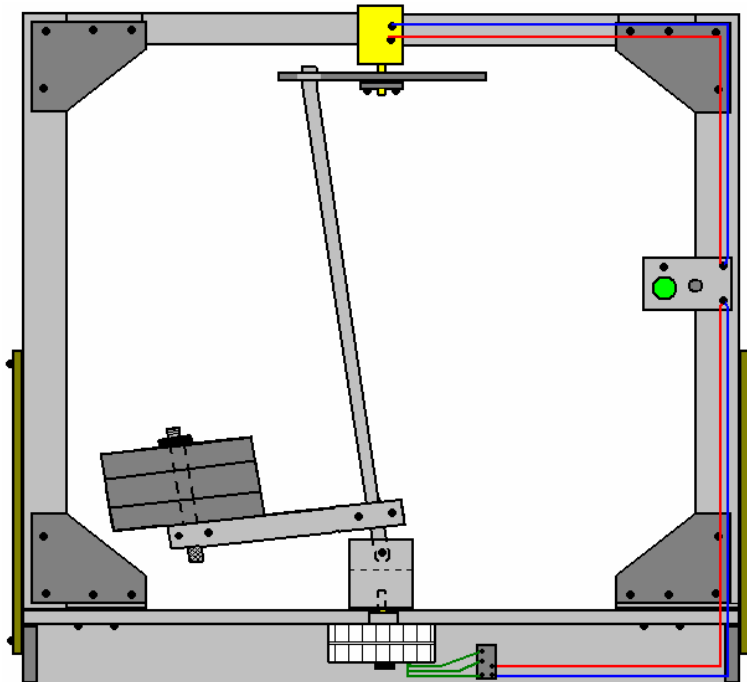
THE BEST GENERATOR IS PROBABLY ONE INTENDED FOR USE WITH A WIND-POWERED SYSTEM :



THIS ONE HAS A THREE-PHASE OUTPUT AND WHILE THAT SOUND A BIT DAUNTING IT IS EASILY HANDLED BY USING A THREE-PHASE DIODE LIKE THIS :

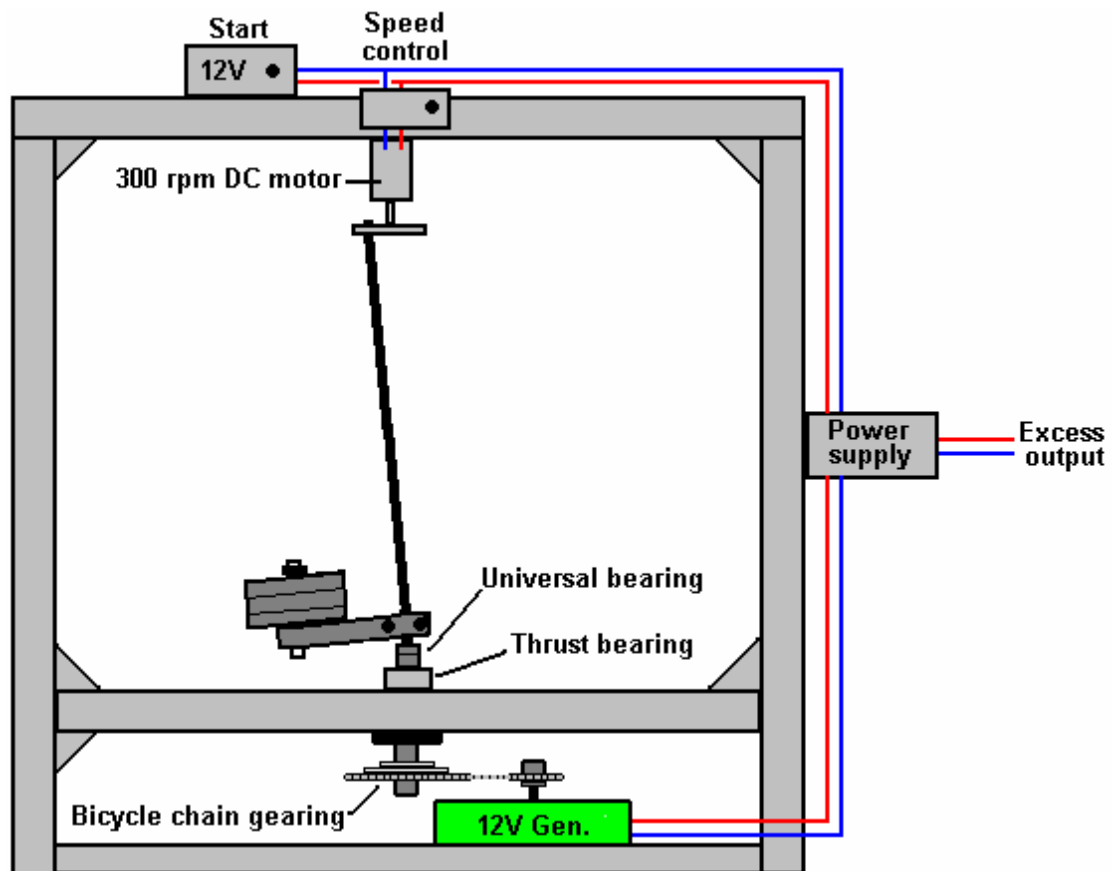


THREE-PHASE WIRING IS GENERALLY USED BECAUSE IT IS MORE EFFICIENT THAN THE MORE FAMILIAR SINGLE-PHASE SYSTEMS. IT CAN BE CONNECTED LIKE THIS :



THE GENERATOR OUTPUT PASSES TO THE DC SPEED CONTROLLER AND THEN ON TO THE SMALL MOTOR WHICH MOVES THE TOP OF THE DRIVE SHAFT.

HOWEVER, THE FASTER THE GENERATOR IS SPUN, THE GREATER THE ELECTRICAL OUTPUT, SO GEARING UP THE SPEED OF THE SHAFT ROTATION IS A GOOD IDEA, AND BICYCLE GEARING CAN BE USED FOR THAT :



THE SYSTEM NEEDS A BATTERY TO GET STARTED AS THE GENERATOR DOES NOT HAVE AN OUTPUT WHEN IT IS STATIONARY, SO A BATTERY BOX WITH TEN 1.2 NiMH AA-SIZE BATTERIES IN IT CAN BE USED.

PLEASE REMEMBER THAT THIS IS ONLY A SUGGESTION AND I PERSONALLY HAVE NOT BUILT AND TESTED A UNIT OF THIS TYPE.

NOTES : <http://www.free-energy-info.com/Skinner.pdf>

VIDEO : <https://youtu.be/YDMDZc8Trkc>