

Repairing and Rewinding Wurlitzer Magnets

by Ben Levy

Conclusion

Soak the defective coil in alcohol, pull off the wire and let the paper coil form dry a few minutes. Leave the lower paper collar in place. Mount a 5/32" drill in the chuck of the egg beater and slip the coil form over it, the end with the paper collar going on first. It will be a loose fit; to keep it from turning on the drill, slip a short piece of string or wire into a drill groove from the chuck end, letting the end stick out toward the chuck. Push the coil form toward the drill shank until it binds on the string or wire. A layer of Scotch tape will also work.

With the tension motor turned off, pull some wire off the spool and fasten the end with a bit of tape to the coil form about 1/4" from the end near the drill tip. Now wind 5 or 6 turns around the coil form, keeping the wire tight by hand and the turns touching each other. The wire must come onto the top of the coil form where you can see it.

Refer again to Fig. 5 for the general arrangement. Take all the slack out of the wire and turn on the torque motor. The motor will pull on the wire, but will not break the wire, nor will it unwind the coil, if the tension has been adjusted correctly. Take a comfortable seat and start turning the crank.

There is only one proper way to wind the coil, and this is also the easiest way. All turns must be laid smoothly beside each other, from one end to the other, for all ten layers. This is surprisingly easy. While turning the crank, guide the oncoming wire gently with a finger to make a slight angle "against the grain"; in other words, slightly back toward the beginning of the winding. Don't grasp the wire; remember that the tension is being furnished by the motor. Just use a fingertip. If the angle is too shallow, space will appear between turns; if too acute, the wire will cross over the previous turn and start

winding in the reverse direction. In either case, reverse the direction of cranking, letting the tension motor unwind the coil until the flaw is removed, and then start forward again. Try not to allow any spaces between turns. With just a little practice you will be winding as fast as you care to turn the

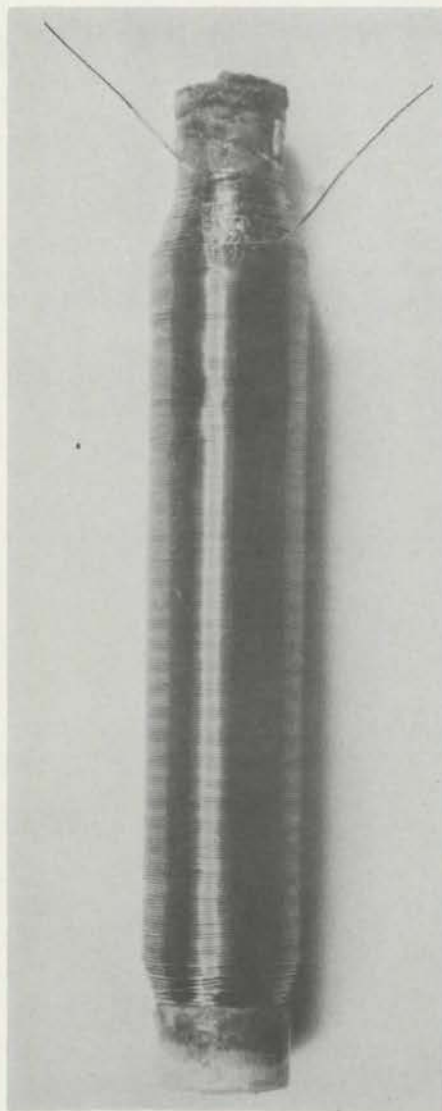


Figure 6. Photograph of a new magnet coil wound on an original coil form.

crank, getting a layer wound in less than a minute.

When you get near the end of the coil form or down to the collar, guide the wire until it crosses over the last turn and starts off in the reverse direction. Immediately reverse the guiding direction so that the wire winds evenly in the opposite direction toward the beginning of the first layer, again making sure no spaces or cross-overs are allowed.

Stop winding the second layer three or four turns from the end of the first layer, cross the wire over again and start down the third layer. Follow this procedure throughout the ten layers, stopping each layer three or four turns before reaching the end of the preceding layer. This eliminates the need for flanges or coil-form ends, and results in a neat, precise job. The finished coil has a spindle-like shape with beveled ends which will not unravel easily.

Wind ten layers in this fashion; you will of course find yourself back at the end where the first layer began. Try not to allow any spaces in any layer; if you do, you will have trouble at this spot in each succeeding layer. Small kinks in the wire or dirty wire are the chief cause of spaces that can't be removed. Try pulling the wire between your fingers to straighten it.

When you get to the end of the tenth layer stop winding but do not turn off the torque motor. Put a tiny dot of household cement at the point where the wire leaves the coil. Also remove the tape and similarly cement the first turn of the first layer to its neighbors and the coil form. Wait a few minutes for the cement to dry.

While you are waiting, strip the enamel from the end of the wire and from about 1/2" of the wire leading off the last layer, at a point about 2" from the coil. Measure the coil resistance with the ohmmeter. It should be about 90 ohms, of course. Turn off the torque motor, clip the wire in the middle of the bare spot and your coil is finished. After installing it on the magnet and connecting up, dip the whole length in lacquer. Do not dip the Bakelite.

Don't try random-winding the coils. It results in a sloppy-looking job, takes up much more space (you may not be able to get enough turns on the coil and still be able to install the coil on the pole piece beside the other one), and you have to count turns. There are about 2700 turns, and it's much easier to count ten layers!

If you must make a new coil form, cut a soda straw to length with a razor blade. The plastic ones are about the



Figure 7. Photograph of repaired Wurlitzer magnet having one new and one original coil.

right inside and outside diameter, but are too flexible and tend to dissolve in lacquer. The can be used, however. Paper ones are much better, but in this area at least their outside diameter is too small. Wind the straw with Scotch electrical tape (black) to correct this. Wind the tape edge-to-edge with no overlap. If you use the straw as is without correcting the diameter, the number of turns will be correct but the wire length will be much shorter, resulting in a coil with a lower than normal electrical resistance, which might tend to burn contacts.

The described winding technique is crude for this mechanized age, but it is effective and if you are like most of us you don't have sophisticated machinery in your basement. It isn't particularly tiresome; I wind 8 or 10 coils at a sitting, and this supply lasts for many months, because it is not necessary to replace coils very often.

To measure the tension of the torque motor, extend the shaft of the motor with the reel of wire on it over the edge of the table and hang some coins from the wire, putting them in a light plastic sandwich bag. Four 25c pieces plus one penny is an ounce, so the load which should just counterbalance the motor's pull is \$2.02 (8 quarters and two pennies).

A final word: Experiment on a few magnets until you get the hang of it before you go into the repair business wholesale, because if you are like me you'll ruin one or two to start with. Good luck and happy windings! □

DUNSTEDTER A SENSATION IN LOS ANGELES

by Stu Green

Los Angeles—By 9:00 A.M. on June 22, the line waiting to get into the Wiltern theatre stretched far down Wilshire Boulevard. It was a warm Sunday morning and the crowd was in a good humor; this was to be something very special, a rare concert by Eddie Dunstedter.

More than 950 attended the show, the largest Sunday morning crowd in the history of the LA Chapter's sponsorship of its concert project.

At the appointed hour of 9:30, the PA announced "Mr. Pipe Organ—Eddie Dunstedter"—and the magic started. Eddie came up on the big white console playing his familiar theme of many years, "Open Your Eyes," and the first phrase generated a burst of applause. There would be lots more within the next two hours.

Eddie sailed into "Brazil" still accompanied by the bird whistle which he had used during his theme, and he had a few anxious moments trying to shake the bird. After that, "Brazil" was straight ahead, spirited and rhythmic.

The rhythm with which Eddie backed "Poinciana" started as a slow and sinuous bolero which soon segued into an accompaniment device of the type one associates with "Wagon Wheels," then back to the bolero. Eddie is an organist who prefers a rich mix of voices, and he found them on the Kimball. When he finds a combination he likes, he's in no hurry to change it before a half chorus goes by.



— Stufoto

A WELL-FILLED THEATRE — The large audience enjoys the rare treat of hearing Eddie "in person". The 4/37 Kimball responded beautifully to his manual and pedal caresses.



EDDIE IN THE SPOTLIGHT — His supply of his new recording (*Over 200*) was sold out ten minutes after the end of his concert. "And I'll bet I autographed them all", claimed Eddie, indicating a slight case of writer's cramp.

He closed the "first half" with selections from "My Fair Lady."

The "second half" was composed of selections from Eddie's latest recording, "Eddie Dunstedter Plays Requests," which is discussed in "Record Reviews" so we will not duplicate here. Needless to say, Eddie put the same craftsmanship and loving care into his tunes at the Wiltern which make the recording a joy. When the last majestic chords of Wagner's "Pilgrims' Chorus" had thundered out, the audience very understandably wanted more, even though time was running out (the theatre was getting ready to open). Eddie offered an encore of Gershwin selections, closing with an upbeat "I Got Rhythm" which brought down the house. There was no time for more but on his way down into the pit, Eddie made a melodic promise, "I'll Be Seeing You." There was an audible, many-throated sigh as it ended. □



— Stufoto

EARLYBIRDS — Part of the crowd lined up along famed Wilshire Boulevard for the Dunstedter concert.