

INSTRUCTIONS FOR ASSEMBLING THE AUTO-OILED AERMOTOR

All parts of this mill are made to gauge and will fit if proper care is used in putting them together. The working parts of the mill have been operated and inspected.

If these directions are carefully followed you will have no trouble in assembling the mill.

DIRECTIONS

1. Remove the Helmet, or galvanized steel cap, by taking off the nut at the top of it and take out the loose parts inside the Helmet. Open the bolt box and check on the checklist its contents.

2. Put the Mill Pipe into the top of the tower and put a short bolt in the base on the corner post to which the furl handle at the foot of the tower is to be attached. With the two long bolts attach the supporting angles of the furl lever one on which the furl the furl wire will pull clear the inner edge of

3. Remove the washer from the top of the motor in place with under it. Put the Locknut and Washer in place again and tighten the

Remove the Round Bar from the tailbone through the lugs on main casting No. 612 Spring Brackets No. head of one of the furl and put it on the pivot the arm which carries cotter pin below it and the head of the other put it on the lower end tailbone pivots. Push the lower lug of the in this position hooking rod into the hole rods which operate the be perfectly straight. been bent in shipping should be straightened place. All of these easily without bending or straining if properly done.

Attach the Vane to the tailbone using the bolts provided for that purpose.

Put on the tailbone, attaching it to the pivot bar in the same manner as when received. Work the furling device up and down and make sure that everything moves freely.

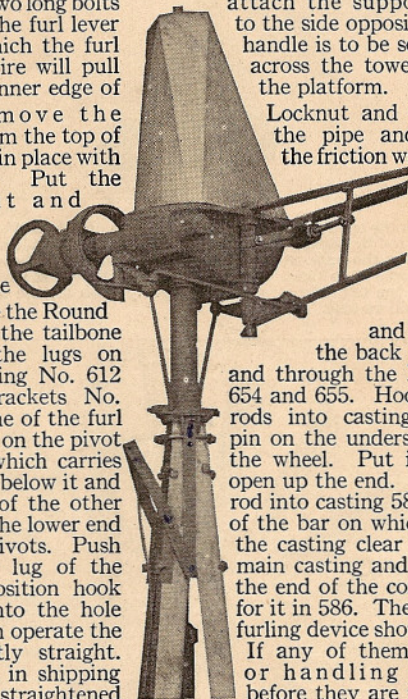
4. Screw the Spring Holder into the hole between the tail pivot and the buffer spring. When tight is should stand with the open side away from the tailbone. Hook the Regulating Spring into one of the holes in the tailbone and

attach the supporting to the side opposite the handle is to be so that across the tower and the platform.

Locknut and Lock- the pipe and put the friction washers

nut. Pivot and put it the back of the and through the Buffer 654 and 655. Hook the rods into casting 586, pin on the underside of the wheel. Put in the open up the end. Hook rod into casting 585 and of the bar on which the the casting clear up to main casting and when the end of the connect- for it in 586. The three furling device should all

If any of them have or handling they before they are put in parts can be put on



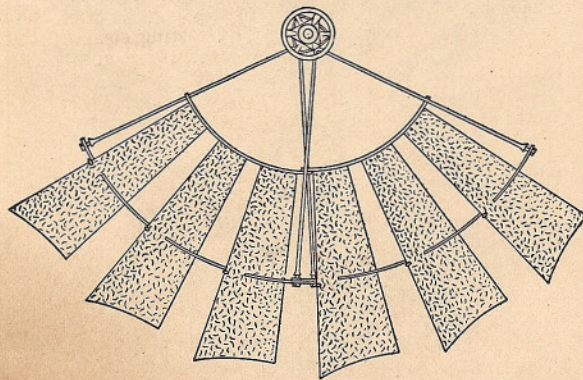
the other end into the Spring Holder. The end of the spring with the long hook goes in the tailbone with the open end of the hook up. Ordinarily the spring will give enough tension when hooked into the first or second hole in the tailbone.

5. Attach the furl wire to the end of the furl lever and bring it down through the platform and across the tower to the furl handle on the opposite corner of the tower. When put on 4-post towers in this way the wire will clear both the platform and pump pole. On 3-post towers put a loop of wire around the furl wire and corner post between the platform and the platform bolt to hold the furl wire away from the pump pole. Adjust the furl handle so that the arms of the furl lever will bear on the nuts of the bolts which hold the supporting angles when pulled all the way down. Pull the mill out of the wind and make the furl handle secure against flying up while the rest of the mill is being assembled.

6. Put on the wheel, noting carefully the instructions given on the other side of this sheet. If the tower stands erect, the wheel can be best assembled as shown in the illustrations. If the tower is lying on the ground, it is best, for 8 and 10-foot mills, to block up under the platform high enough so that the wheel will not strike the ground when assembled in a vertical position. Turn the vane so that the spring will be on the under side when the vane is blocked up in a horizontal position. This will bring the spider into a horizontal position also so that the wheel can be assembled just as described on the front of these instructions.

When wheels 12 feet or larger are to be assembled before the tower is raised, it will usually be more convenient to allow the wheel to lie horizontal in assembling. In that case, six short pieces of wood should be used, one under each lap at the outer bands, to prevent the weight of the sections from straining or bending the arms. These pieces should be of such length that the shoulders of the two arms which connect to each joint or lap on the outer band will be equally distant from the band. Do not lean on the wheel while assembling. A wheel with tension arms which will stand great strain after being drawn up tight will be badly warped if strained while arms and bands are loose.

7. Pass the U-shaped wheel arms through the hub of the wheel so that each pair of arms will enclose one of the arms or spokes on the cast iron hub. Put the U Bolts in



the hub at the point of the arms and draw the nuts up tight. These U Bolts are very necessary for the strength and durability of the wheel. Notice that the threaded part of

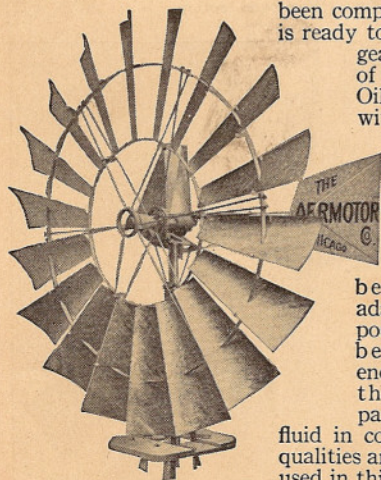
the arm is bent slightly out of line. The arms should be so turned before being passed through the hub as to make this threaded part point forward on the three pairs at the front of the hub and backward on the three pairs at the back of the hub; arranged in this manner these threaded ends will all be in line pointing radially outward when ends are brought near together to be passed through the bands. Looking at the edge of the wheel, the threaded ends of the arms will stand exactly in the same plane and appear parallel. Please do not undertake to bend these arms, or the threaded portion at the end. They were made properly, and if properly put together, will be right without bending. Don't forget that **THREADED ENDS** of the piece that constitutes two arms **GO THROUGH THE END HOLES** of the **OUTER BAND**. Bear in mind that when we say, "the end holes of the outer band of the same section," that is just what we mean.

8. Put the arm crosses on the wheel arms with the four teeth on the crosses facing outward.

After the wheel bolts have been tightened the ends of the crosses should be closed up so that they will grip the arms tightly.

9. Bolt the inner bands together by bolt passing through the arm cross, and notice that the small points which are turned up on the arm cross fit down snugly over the band. This must be done so that these arm crosses will remain perpendicular to the face of the wheel. Should any accident occur which would strain the wheel before it is drawn up tight, causing it to be out of true, loosen up all the bolts on the wheel and strain the part which is out of line in the direction which it should go to bring it in line. Then tighten up the bolts again.

10. When everything has been completed and the outfit is ready to run, pour into the gear case the contents of the can of Aermotor Oil which was shipped with the mill. This supply will be enough to keep the mill thoroly oiled for a year. When more oil is needed, use Aermotor Oil, because it is best adapted to the purpose. It is best adapted because it is thin enough to flow freely through all the oil passages, and remains fluid in cold weather. These qualities are essential in the oil used in this mill.



11. Put on the Helmet and be sure that it fits well down over the gear case. Use care in putting on the helmet and see that the inner flange does not get caught on the rim of the gear case. It should fit down on the inside of the casting to keep the oil from splashing out. Use the nut on top of the helmet to hold it in place and keep out rain.

12. Under ordinary conditions this mill should run for a year with the gear case filled with Aermotor Oil.

13. See that the Turntable and Furl Swivel are well oiled, and that they are reoiled when necessary.

14. Keep all Bolts and Nuts tight.

15. Before starting the windmill, connect it to the pump and turn the wheel around by hand a few times to make sure that the pump will give a clear stroke as long as that of the mill. If the cylinder or pump is not suitable for use with this windmill, you should get a new one at once and have everything just right. Our Table of Pumping Capacities will show you what size of cylinder to use with each size of Aermotor for any elevation.

AXIOMS ON ERECTING

1. The Aermotor and tower must stand plumb. (If the Aermotor does not stand plumb, it will not regulate well and cannot face the wind properly.)

2. The pump must stand in line with the pump pole. (If it does not, it will run hard, will fail to work in a light wind, wear rapidly, break and give trouble.)

3. The plunger must not strike the top or bottom of the cylinder. (If it does, it will cause endless wear, constant breakage and annoyance.)

4. If your pump has a handle, do not leave the handle connected and start the mill. Few pumps have a hand stroke as long as the windmill stroke and the two should never be connected at the same time.

5. Your windmill should be at least 20 feet above the highest surrounding objects, or you will not get a good wind exposure. It will not run in a light wind, and the irregular gusts around obstructions will endanger your outfit. We would rather not sell an outfit than to have it put up where it will not give satisfaction. Don't be afraid of getting your tower too high.

6. The cylinder should not be larger nor the pipe smaller than the size designated for your depth of well in our table of capacities. (If the cylinder is larger and the pipe smaller your wheel will not run in a light wind.)

7. In a steel tower the corner posts, girts and braces must be straight and all girts and braces must be in place. The anchor posts must stand in line with the corner posts. (If a girt or brace is omitted for a single day, you are liable to lose your windmill. They are absolutely essential to the strength of the tower.)

If any of the foregoing instructions are violated by the party erecting your job, write us and we will use our influence to see that the job is promptly righted; but if you do not write us at once, we assume no responsibility for the satisfactory working of the outfit.

BOLT CHECKLIST FOR AUTO-OILED ASSEMBLED MOTOR FOR STEEL TOWER—4-POST

	6-Foot	8-Foot	10-Foot	12-Foot	14-Foot	16-Foot
Bolt with Lock Washer for Vane.....	1 $\frac{3}{8} \times \frac{7}{8}$ in.	1 $\frac{3}{8} \times 1$ in.	1 $\frac{3}{8} \times 1 \frac{1}{4}$ in.	1 $\frac{3}{8} \times 1 \frac{1}{4}$ in.	1 $\frac{3}{8} \times 1 \frac{1}{2}$ in.	1 $\frac{1}{2} \times 1 \frac{3}{4}$ in.
Bolt for Pipe Base and Supporting Angle	2 $\frac{3}{8} \times 1 \frac{3}{4}$ in.	2 $\frac{3}{8} \times 1 \frac{3}{4}$ in.	2 $\frac{1}{2} \times 1 \frac{3}{4}$ in. 2 $\frac{1}{2} \times 2$ in.	2 $\frac{1}{2} \times 2 \frac{1}{4}$ in.	2 $\frac{1}{2} \times 2 \frac{1}{2}$ in.	2 $\frac{5}{8} \times 3 \frac{1}{2}$ in.
Spring Holder.....	1 X-580	1 A-580		1 B-580	1 D-580	1 E-580	1 F-580
Tower Clamp, complete.....	1 T-177	1 T-177	1 T-179 $\frac{1}{2}$	1 T-277	1 T-274	1 T-777
Can of Oil.....	1 1-Quart	1 2-Quart	1 2-Quart	.....	.....	.....
*Arm Crosses.....	.....	6 A-314	.....	6 D-314	.....	6 F-314
U Clamp for Wheel Hub.....	6 X-632	6 A-632	6 B-632	6 D-632	.....	.....

*Used only with motors to replace 1897 model mills.

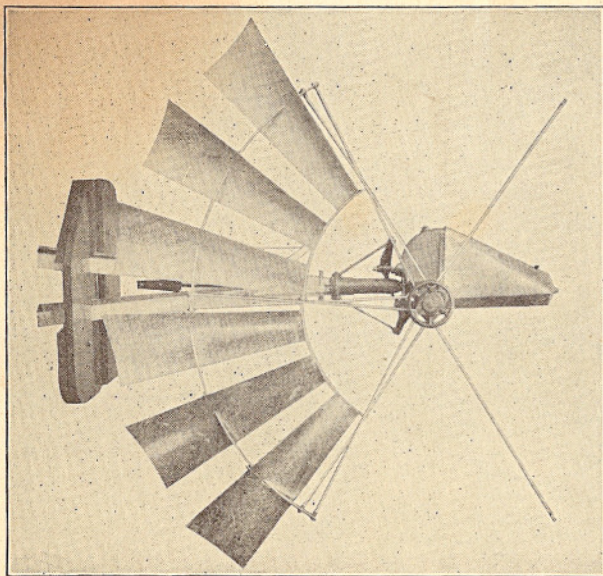
If you find any errors or shortages, return this checklist with your complaint so that we may be able to identify the person responsible for the mistake.

AERMOTOR CO., CHICAGO

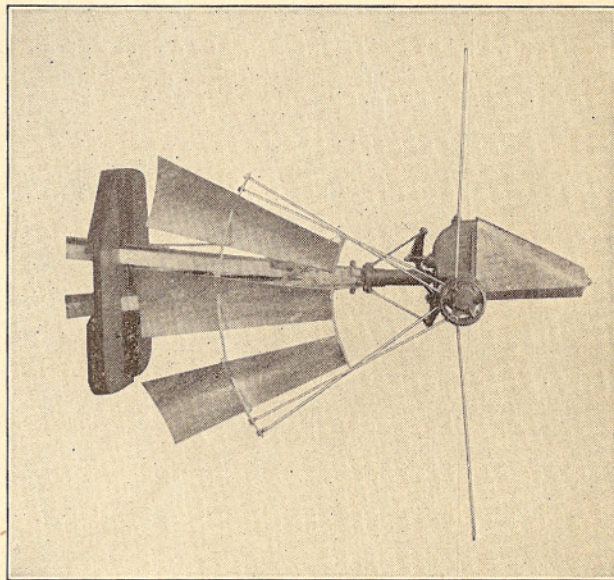
Packed by _____

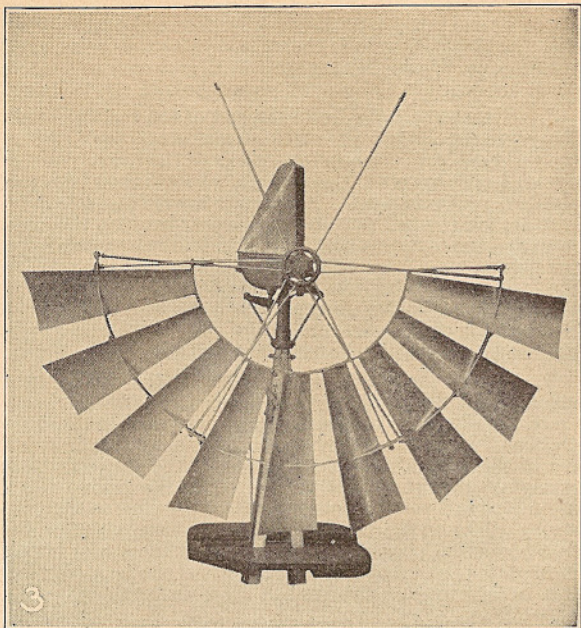
Date **AUG 28 1929**

7-15-27



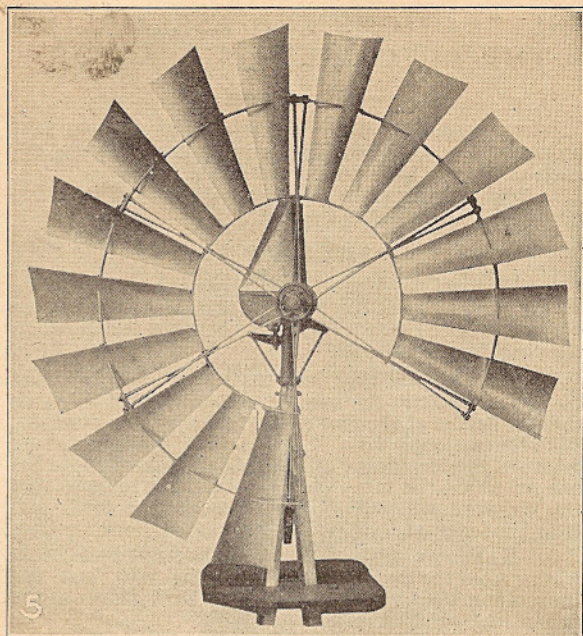
These cuts show how to assemble the wheel on a stub tower or standing tower. Read carefully Paragraph 7 on the other side and then put in all of the arms. Put in the U bolts which clamp the arms to the hub and draw the nuts up tight. Turn the hub until one of the front arms points downward and put in the first section of sails with the concave side toward the front. Be sure that the ends of the front arm go to the outer holes of this section. Turn the wheel to the left and put on another section. The rear arm should go to the outer holes of the second section.





When the third section is on, turn that half of the wheel up so it will balance easily.

Turn the nuts on the ends of the arms only two or three threads when putting on the sections. If you screw the nuts up before the wheel is all together you will throw the wheel out of true and you will not be able to get in the last section.



When the sections are all in, bolt the arm crosses to the inner bands as directed in paragraphs 8 and 9. After these are all in place begin tightening the nuts on the ends of the arms, giving them only two or three turns at a time. By going around the wheel several times to tighten the nuts the strain comes evenly upon all the arms and the wheel will be true.

