

OUTGEAR LEVER

To attach the outgear lever, select the corner of the tower it is to be attached to and see that swivel at upper end of the pump pole is set to accommodate a straight pull from the swivel to the lever, attach the lever to the corner of the tower with the crook in the lever down. Now throw the lever up and securely attach the furl wire to the pin on one side of the lever. Throw the lever down, and if it does not fold the wheel parallel with the vane move the lever further down until it does. If the lever is properly put on, and the handle thrown down, it will strike against the inside of post and form a lock, preventing the lever from throwing up and the wheel from going into gear until the lever is thrown up by hand.

LUBRICATION

The main bearings are fitted with compression grease cups by means of which grease can be forced into the bearings. To fill these cups, remove the plugs and caps and fill the cups and caps with grease, then replace the caps and metal plugs and screw them down until the grease is forced into the bearings, after which they should be given a turn or two from time to time as the use of the mill requires. All other working parts, such as the pivot bearing on the tower top, the pole swivel, the rod guide, chain sheaves and vane gate bearings, should be oiled frequently.

EXPORT

When packed for export, the vane, wheel sections and pivot are partly dismantled in order to economize in ocean shipping charges, and care must be taken in reassembling these parts.

In putting the wheel shaft and spider in pivot, be sure the babbitted bushings in wheel arm are in place, and after pinion is screwed on shaft, replace the steel pin which is provided to keep pinion from unscrewing, and bend or rivet both ends of pin so it cannot work out.

Now put sheave arm 26 and attached parts in place as shown in Figures "BB" and "CC." Sheave arm should be bolted to the lugs on upper and lower end of the pivot casting, the bolts being inserted so that the heads are on top.

The band brake No. 7 after being passed around the wide flange on spider No. 4 should have its free end bolted on under side of ear at end of crank shaft arm. These parts are in proper adjustment when they leave the factory, but may become displaced in shipping. The band brake should not touch the wheel spider when the mill is running, and its tension on the spider when the mill is out of gear can be regulated by means of the adjusting nuts on eye bolt.

The wheel sails or fans should be fastened to the rims or girts by means of galvanized bolts, which will be found packed in the box of parts. These bolts are provided with double nuts and care must be taken to fasten all of these securely. Tighten the first nut, then follow with the second nut and as additional security, rivet the end of the bolt.

The inner girt should pass between the ears on the inner end of the sail, while the outer girt passes through the holes in the sail. See Cut Fig. W6611.

The bolts for fastening the vane sheets to vane ribs should be inserted and tightened with the same care as that used on the wheel bolts.

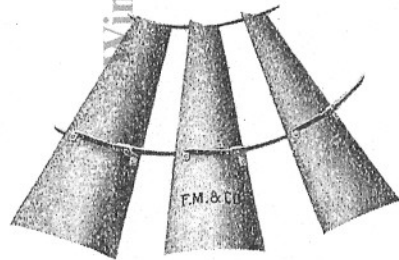


Fig. W6611

NOTE

This machine is sold and guaranteed only on condition that these directions are strictly observed in erecting it, and we will not hold ourselves responsible for any damage or expense resulting from any neglect of their observance, as these directions form a part of our guarantee. Please preserve this for future reference.

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INSTRUCTIONS No. 2117-F

FOR ERECTING

**FAIRBANKS - MORSE
STEEL WINDMILLS**

CAUTION—In erecting this windmill remember that cast iron is easily broken by sharp blows of a hammer or wrench. You will save yourself time and expense by carefully inserting the bolts rather than by hammering, for cast iron breaks before springing.

THE MOTOR

Having put the tower together, place the pivot bearing washers on the pivot pipe and insert the pipe into the tower collar. Let the pipe project through tower step and put on the step bushing with the flange side toward the end of the pipe, so that the lug on the bushing will enter the slot in the step. Put the lower guide on the end of the pipe and adjust so that it will hold the step bushing in place and allow the piston rod to run through it freely. Then tighten up the bolts and set screw so that the guide will clamp the end of the pipe firmly.

THE VANE

Bolt the vane blade and brace to the vane bar. Bolt the brace to the vane with the hook bolt, and bolt the vane bar to the gate, putting the bolt heads on the inside. Use two nuts on each bolt throughout to prevent nuts working loose. Fasten the brace to the upper lug of pivot by means of the hinge pin and see that all cotter pins are spread sufficiently to avoid any possibility of their working out. Hook the governor spring into the end of the steel arm which operates the band brake and fasten the other end to the clip on vane bar with eyebolt and adjust by means of nut on eyebolt to suit speed and power required. For ordinary work the nut should be tightened up to about the middle of the eyebolt.

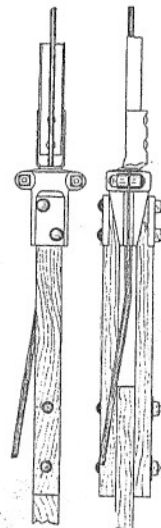
THE WHEEL

Bolt the short end of the wheel arms on the large end of the spider, and after the wheel sections have been bolted together, and to arms, bolt the long ends of arms to the hub end of spider. Bolt the outside girts of two sections to the end of one arm and the inner girt outside the cross piece. The free ends of the girts should be in a similar position on all of the arms, that is, one end of the inside and outside girts of each section should lap over the next set in the same manner all around the wheel. All of the bolts should be in place with one nut on before any of them are tightened. After all the wheel bolts are in place the long end of the arms should be bolted to the hub.

All the bolts in the wheel and arms should then be drawn up very tight and then the second or lock-nut put on each bolt to prevent the first nuts working loose. As an extra precaution each bolt should be riveted over. The heads of the bolts in the outer girts should be inward and the nuts outward. On the inner girts they should be reversed, the heads outward and the nuts inward.

ATTACHING POLE, PULL ROD AND PUMP POLE SWIVEL

Pass the pull-out chain through the sheaves, with the pull-out rod and small swivel extending downwards through the pivot pipe and out through the side hole in the lower guide at bottom of pivot pipe. See that the rod goes straight down the pipe without passing around the piston rod. Attach the end of pull-out chain to vane bar by closing the open link in one end of the chain into the hole in bar. Pass the pull-out rod between the two halves of the swivel and bolt swivel together. The upper pump pole has end pieces bolted on either side, slip these into the swivel, putting the steel clips on either side as shown to keep the pump pole from cracking, cut the pole to fit clips, bore holes in the pole pieces to fit swivel to take 3/4-inch carriage bolts, insert the bolts and tighten up, see figures A and B. Be sure that the pull-out rod comes out on the side on which the pull-out lever and reel is to be attached to the tower as shown in figure A. Keep swivel and pull-out rod well oiled.

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