

Model "A" Andrew "All-in-Oil" Windmills
Timken Roller Bearings

Powerful, simple in construction with all of its principal working parts running in oil which, with Timken Roller Bearings, makes an easy running mill.

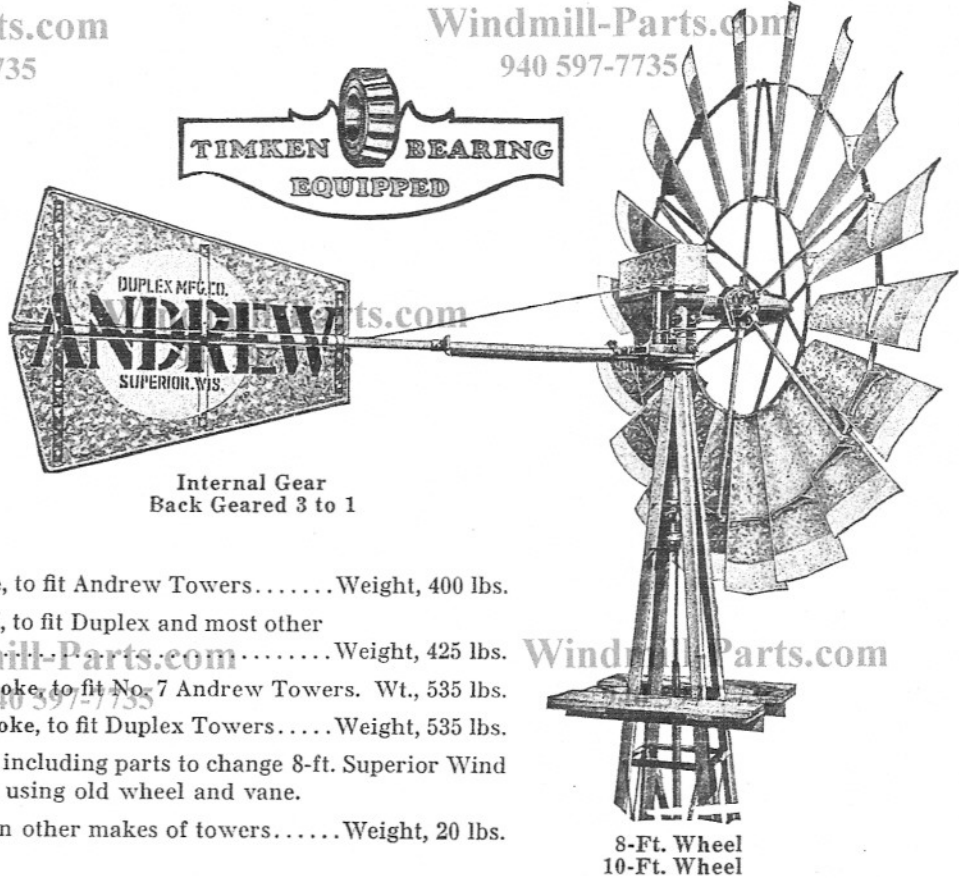
Many special features facilitate the setting up and erecting of both mill and tower.

Oiling system is positive and simple, not depending on an oil pump or drip oiling devices.

Oil tight with no leakage of oil at any point.

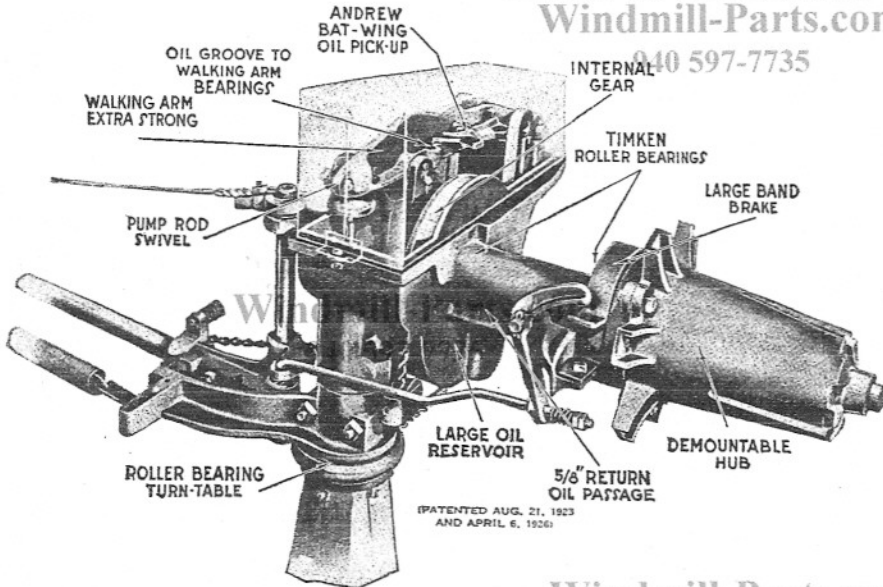
Quoted less Wood Pumping Rod, which, when ordered, will be charged extra.

- No. 14—8-ft. Steel Wheel, 6-in. stroke, to fit Andrew Towers Weight, 400 lbs.
- No. 15—8-ft. Steel Wheel, 6-in. stroke, to fit Duplex and most other towers Weight, 425 lbs.
- No. 16—10-ft. Steel Wheel, 7½-in. stroke, to fit No. 7 Andrew Towers. Wt., 535 lbs.
- No. 17—10-ft. Steel Wheel, 7½-in. stroke, to fit Duplex Towers Weight, 535 lbs.
- No. 18—8-ft. Andrew Head as packed including parts to change 8-ft. Superior Wind Motor Mills to "All-in-Oil" Type, using old wheel and vane.
- 3-ft. Steel Stub, for use in mounting on other makes of towers Weight, 20 lbs.



Internal Gear
Back Geared 3 to 1

Details of Construction



Equipped with Roller Bearing Turntable

The two main bearings are equipped with Timken Roller Bearings, assuring easy, smooth operation and a long life of economical service.

Internal gear and walking arm construction, no cross head used, reduces friction to a minimum. Direct lift with slow up stroke and quick return.

A large oil reservoir, capacity 3 quarts, together with a steel cover form a protective casing for the working parts. One filling of cold test oil will thoroughly lubricate the mill for one year.

The main gear revolves in oil. This is an internal gear with both sides practically closed, and will lift 4 times as much oil as an external gear. There being 39 teeth on this gear means that 39 little buckets each holding a tablespoonful of oil are carrying oil to the main pinion every stroke of the mill.

A grooved bat-wing oil pick-up attached to the walking arm picks up the oil from the surface of the main gear and directs it along the oil grooves to all the bearings on the walking arm. The

main Timken Roller shaft bearings are lubricated by a natural flow of oil which follows the action of the main shaft and the pumping and lifting action of the internal gear and pinion. From the shaft bearings the oil is returned to the reservoir through a hollow chamber in the head casting.

All working parts are continually flooded with oil while the mill is in operation.

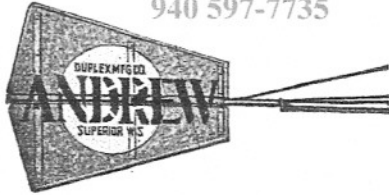
Specially made oil-slingers prevent leakage of oil through the bearing connections.

One can of cold test oil is shipped with each mill.

Model "A" Andrew "All-in-Oil" Windmills

Vane

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Galvanized sheet steel thoroughly stiffened around outside edge and through center. Three double cross straps thoroughly riveted give additional stiffness and also provide means for securely

attaching to tubular vane arm. A truss rod extending from top of working head prevents sagging.

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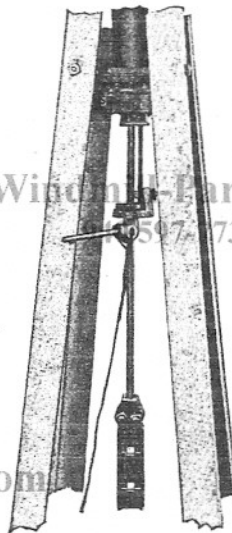


Sail Construction

Heavy galvanized sheet steel rigidly fastened to tires by heavy pressed steel brackets. Inside and outside tires are $\frac{3}{8}$ -inch, making an exceptionally strong wind wheel construction.

6 $\frac{1}{2}$ foot wind wheels have 12 sails; 8 ft. 18 sails and 10 ft. 24 sails.

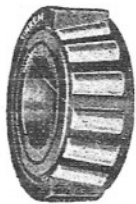
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Pull-Out-Wire Swivel

A simple and dependable device to prevent twisting of pull-out-wire when windmill swivels with change in direction of wind. Swivel is provided with stop rod which insures against sticking.



Timken Roller Bearings

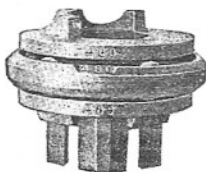
Carry the weight of the wheel shaft and also take the end thrust of shaft thus decreasing the wear and increasing the life of the mill.

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Roller Bearing Turntable

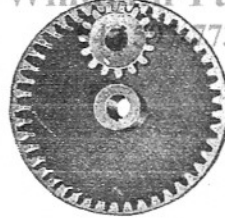
Tapered roller bearings enable the mill to swing or turn in the slightest wind.

Once oiled the turn table bearings will operate almost indefinitely.



Internal Gearing

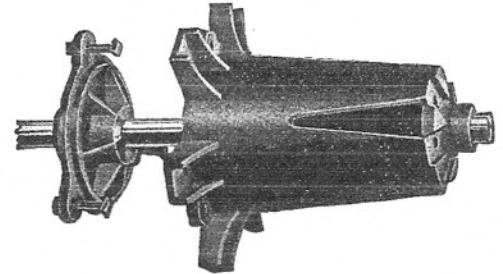
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Two cogs in mesh pulling together, resulting in less wear and greater power. When in place the crank case practically closes the open side of this gear.

The cog spaces act as little buckets to elevate the oil to the pinion and main shaft. Back geared 3 to 1.

Erecting the Windmill



Two-Piece Wheel Hub

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The erection of both mill and tower can easily be done by two men and in less time and with less expense than heretofore.

A Hoisting Mast, a small tackle block with 225 feet $\frac{1}{2}$ -inch rope, a few wrenches and pliers are all the equipment required to assemble and erect the Andrew Mill and Tower.

The only mill made which is erected in three complete units. First the head as factory assembled is hoisted to position, then the vane as factory assembled, and then the complete wind wheel is assembled on the ground and hoisted to position.

Wheel hub is made in two parts. One casting attached to the wheel shaft is the permanent hub. The removable hub is bolted to it, making it possible to easily attach or detach the removable hub.

Anyone who has stood out on a windmill platform bolting each section of the wheel to position will appreciate this advantage.

Andrew Hoisting Mast

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An erecting mast to simplify the erection of the Andrew Mill. Two castings are bolted on the top corner posts. Lower casting provides a socket for $1\frac{1}{4}$ -inch pipe while upper casting serves as a guide. A hook which is provided fits in the top of the pipe to which is attached a small tackle block. The two castings and hook are the only parts furnished as most erectors have a 9-foot piece of $1\frac{1}{4}$ -inch pipe, blocks and rope required.