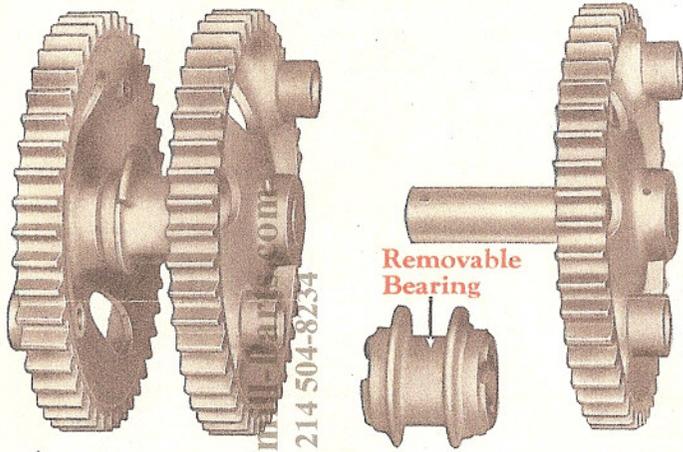


LARGE GEARS AND PITMAN



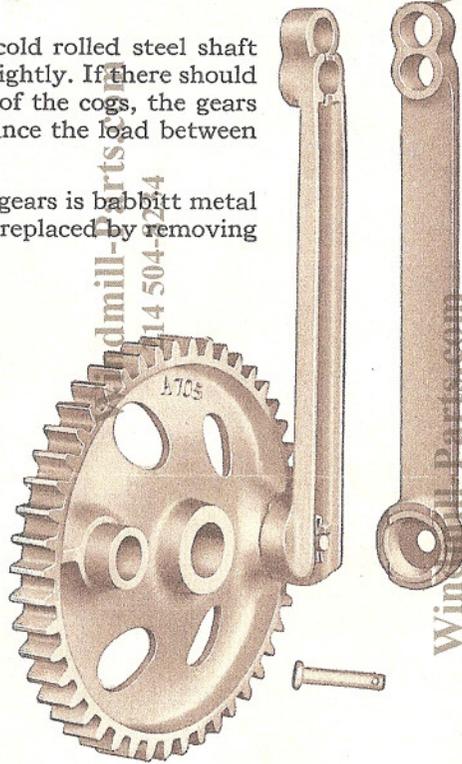
THE LARGE GEARS are gray iron castings made with great accuracy on molding machines. Every set of gears is fitted together and tested before assembling in the mill. They must run freely and fit closely to insure quiet operation.

These Gears are carried on a cold rolled steel shaft on which they fit closely but not tightly. If there should be the slightest variation in any of the cogs, the gears adjust themselves to exactly balance the load between the two pairs of gears.

THE BEARING for the large gears is babbitt metal cast in an iron sleeve. It is easily replaced by removing one of the gears from the shaft.

THE LOWER END OF THE PITMAN is carried on a finished boss which is cast solid with the gear. There is no crankpin to work loose or get out of line. The small bolt, shown at the right, simply serves to hold the pitman on the gear. Two lengths of stroke are provided for on every set of gears and pitmen.

THE LOWER PITMAN BEARING is babbitted into the enlarged lower end. There are two holes in the upper end so that the change of stroke can be easily made.



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BRANCH HOUSES

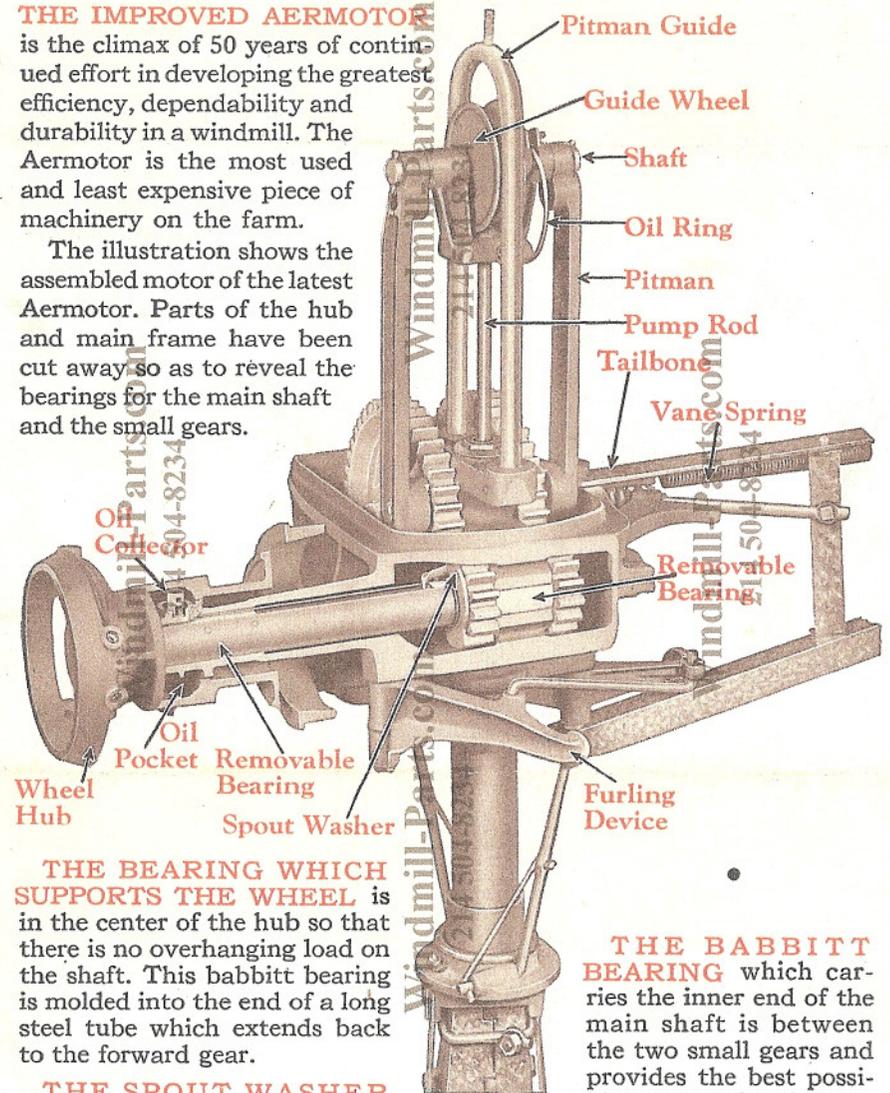
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IMPROVED AERMOTOR DETAILS OF CONSTRUCTION

• SHOWN IN SECTIONAL VIEWS •

THE IMPROVED AERMOTOR is the climax of 50 years of continued effort in developing the greatest efficiency, dependability and durability in a windmill. The Aermotor is the most used and least expensive piece of machinery on the farm.

The illustration shows the assembled motor of the latest Aermotor. Parts of the hub and main frame have been cut away so as to reveal the bearings for the main shaft and the small gears.



THE BEARING WHICH SUPPORTS THE WHEEL is in the center of the hub so that there is no overhanging load on the shaft. This babbitt bearing is molded into the end of a long steel tube which extends back to the forward gear.

THE SPOUT WASHER scrapes oil from the small gear and pours it into the tube to oil the outer bearing. This is a simple and unfailling device.

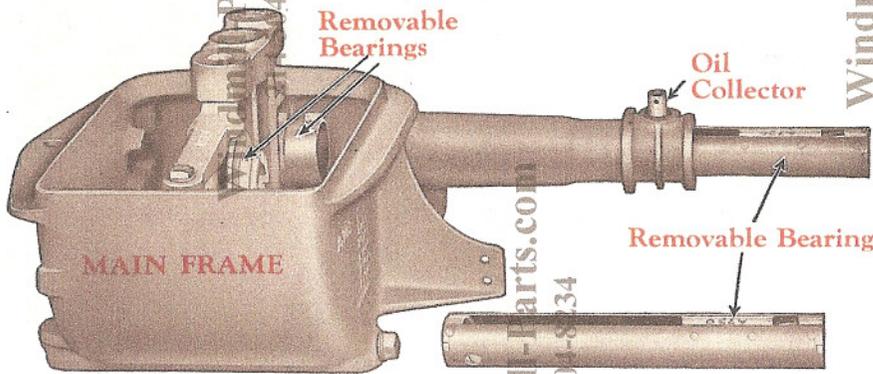
THE BABBITT BEARING which carries the inner end of the main shaft is between the two small gears and provides the best possible support for them.

ALL OF THE IMPORTANT FEATURES, indicated by arrows, should be carefully examined.

MAIN FRAME AND BEARINGS

THE MAIN FRAME of the Aermotor is one solid, substantial casting. There are no brackets, or lugs, or arms bolted on. The long arm which supports the wheel, the lugs which carry the vane, the lug for the brake band and the pillar which supports the pump rod guide are all integral parts of the main frame. There are no small pieces to work loose and cause trouble.

UNUSUAL EQUIPMENT. Without the facilities which are provided in the great Aermotor factory it would be extremely difficult to make these Main Frames as we make them. But with the molding machines which we have, and the complete equipment of tools and jigs for finishing these castings, we are able to produce them with speed and accuracy.



THE LONG BEARING which supports the wind wheel is a very ingenious device. The picture shows the bearing protruding from the arm of the main frame so that we can explain more easily how it functions. The arm of the main casting is bored out smooth and true. The steel tube into which the babbitt bearing is cast is made accurately to size so that it slips easily into the arm. It should be noted that the tube is open on top and the babbitt metal is depressed except at the outer end. The socket for the Oil Collector extends down into this slot and holds the tube so that it will not turn in the arm. The full babbitt metal on the outer end stops the tube at just the right position.

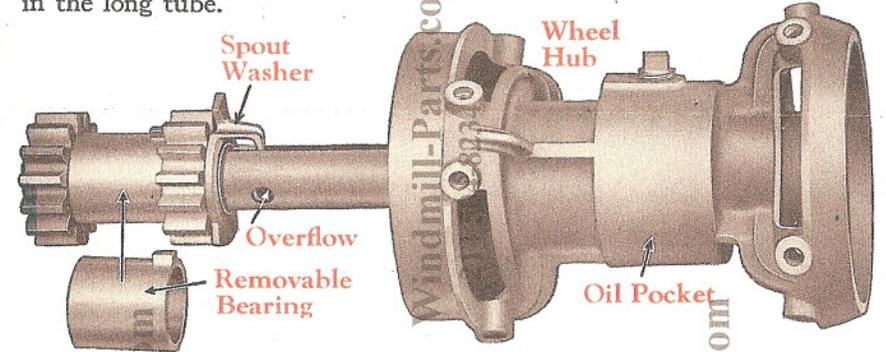
The picture of the complete bearing shows the babbitt which is molded into the inner end of the tube to hold the oil always at the level of the bottom of the shaft. The surplus oil overflows thru the hole in the tube and goes back into the gear case.

CONSTANT LUBRICATION. When the wheel is running, oil constantly works out thru the bearing and drips into the oil pocket in the hub. Another ingenious device, the Oil Collector shown on top of the outer end of the arm, gathers up this oil and returns it to the tube so that there is never an overflow of oil from the hub.

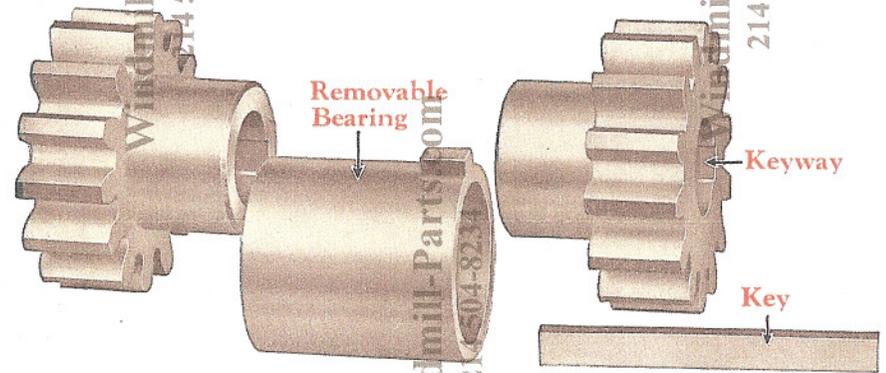
THE REMOVABLE BEARING for the Small Gears, which is seen protruding from its socket, and the bearing for the large gears are shown and described on the following pages.

HUB, SHAFT AND SMALL GEARS

THE HUB OF THE WHEEL has a large cold rolled steel shaft pressed into it and securely keyed so that it will not work loose. This shaft extends thru the tube which contains the outer bearing and thru the two small gears. The enlarged central part of the hub is the oil pocket which catches the oil which works out thru the bearing. This oil is gathered up by the Oil Collector shown on the opposite page and returned to the oil cavity in the long tube.



THE SPOUT WASHER, which supplies oil for bearing within the hub, is clearly shown here. It bears lightly against the face of the gear and catches a steady stream of oil which it pours into the long tube to provide constant lubrication for the bearing. The surplus oil flows out of the hole in the tube and goes back into the gear case.



THE BEARING FOR SMALL GEARS is a removable Babbitt Bushing which fits nicely in the socket bored for it in the main frame. The lug keeps it from turning in its socket. If it should ever become worn it is easily replaced, but this contingency is very remote since it is liberal in size and is constantly flooded with oil.

THE SMALL GEARS, shown above, are cut from solid steel bars. They have long hubs which meet in the center of the bearing and provide ample support for the gears. The long key is driven tightly thru both gears and holds them so securely to the shaft that they can never work loose.

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