"The Sprayer With the Trouble Left Out"

is the name of a new catalogue we want to get into your hands. Read this argument first, and then send for the catalogue and see how near we stick to facts. This will interest ***you,*** **MR. ORCHARDIST!**

You will admit that this is the day of specialists. It stands to reason that the manufacturer who devotes his entire time and attention to perfecting one single machine is going to show better results than the one who must divide his attention with a hundred other machines. Our **HARDIE POWER SPRAYER** is made by a manufacturer who does nothing but make spraying machinery. Can't he make a better machine than the one who makes plows and harrows and wagons and vehicles, and spends but little of his time on his sprayer?

In your investigation of sprayers this year, look well at the construction. Look to the lasting qualities. Look for the efficiency you expect to buy. You have to pay for it, so make sure you get it.

What shall I look for, you ask? Read this and see. Put these points down in your note book, and then use the book when you look at a sprayer.

PUMP——Is it a single or double or triplex pump? By that we mean has it one or two or three cylinders? Single cylinder pumps cannot possibly maintain an even pressure. For exactly half the time, there is no liquid being forced into your pressure tank to replace the liquid being discharged at the nozzles. On the downward stroke of the piston, you get sufficient power, but how about the pressure while the piston is going up? Nothing being forced into the pressure tank, but a continual stream being forced out, makes a variation of anywhere from 30 to 100 pounds on your guage. The same argument holds good on a two cylinder pump, for there is always a dead center at the beginning and end of each stroke. The two cylinder pump is way ahead of the single cylinder, and yet far from perfection. The triplex, or three cylinder pump overcomes all these difficulties by doing away entirely with the dead centers. The crank shaft being set on thirds, one cylinder is always forcing liquid into the pressure tank. This keeps the guage arrow perfectly steady, and delivers a smooth and even pressure at the nozzles. Is that clear? Then look for a sprayer with ***three*** instead of only one or two cylinders.

Speed is a vital factor in the life of a machine. You can perhaps lift two or three hundred pounds a few times, but to keep it up all day long would result in your undoing. The same holds good with a spray pump. Our triplex will deliver eight to ten gallons of spray per minute at a pressure of 200 pounds, when the pump is making 60 revolutions per minute. How many revolutions must a single or double cylinder pump make to deliver anywheres near this quantity? And how about the wear on the pump while doing it? And is the pump constructed so as to stand such required speed? And last but not least, will the pump ***deliver*** the 8 or 10 gallons per minute? The only way to prove this is to get a bucket and measure for yourself. Any sprayer salesman will furnish a bucket and lend you his watch to time the experiment if he has the confidence in his machine. Ask him to do it.

VALVES——Ask to see them. Some sprayers have a flat valve, some have a ball valve. Some valves are seated on rubber, some on a composition and some on a hard brass seat, ground to fit. And then there are some valves seated on supposition. On a flat valve, the wear comes entirely on one point. The hard and gritty particles in the liquid will soon ruin these valves. Same trouble with the seat. On the ball valve, the wear is distributed evenly. The wear is less on the brass than on any other metal, or on rubber. The ball works freely, and presents a new face to the valve seat at each stroke of the pump. A worn valve means expense to you in replacing, but greater still is the expense of lost time in replacing, and perhaps waiting for them to arrive. Our **HARDIE POWER SPRAYER** has bell metal ball valves, seated on a "ground-to-fit" hard brass seat. Never yet has one been replaced.

RELIEF VALVE——Aye, there's the rub with most of them. There's where the trick comes. Most of them will work very well as long as the spray is going out the nozzles. But how about it when you shut off both or even one line of hose? This is the function of the relief valve—to allow the liquid to flow back into the tank ***without*** allowing a dangerous pressure to accumulate. When you look at a machine, ask the demonstrator to shut off both lines of hose and watch the pressure guage. It will show an enormous pressure. This is dangerous. Look out for it. Then ask him to open up both lines of hose ***right quick,*** and watch the pressure drop way below what you want. This is all due to a poor relief valve. Now then, while you are watching the guage, see that the demonstrator keeps his hands off the relief valve. He can turn it up or down to suit the necessity, and show you how perfectly the thing works, but out in the field it would be an absolute failure unless you care to hire an extra man to take care of this. See that it is ***automatic*** and ***accurate.*** Consider, too, that clear water is going through this valve instead of spray material which is heavier than water. The only way to satisfy yourself on this point is to see the machine actually at work in an orchard.

AGITATOR——The importance of agitation needs no discussion. We will consider only the method. The **HARDIE POWER SPRAYER** of three years ago used what is known as a "paddle" agitator. This consisted of two paddles working back and forth in the spray tank. Theoretically, this was sufficient. It worked beautifully in clear water. Mix in the Arsenate of Lead, and the heavy particles sink to the bottom and there they stay. So much unfavorable comment and trouble was caused by this method of agitation that the present **ROTARY AGITATOR** was installed. The HARDIE MANUFACTURING COMPANY even went so far as to make the change in machines two and three years old without expense to the owners. The rotary agitator consists of paddles, very similar to the propellor on a motor boat, which revolve on a steel shaft running the entire length of the spray tank. No sediment can possibly stay at the bottom. The paddles are set to throw towards each other, causing the liquid to boil very much as water does in a whirlpool. This agitator feature alone sold over half our machines last year.

ENGINE——The engine is what appears to most people a "Chinese Puzzle." How often we hear the expression "I don't know anything about the gasoline engine." If you are in this class, you are just the man we want to see. We take particular delight in explaining this wonderful invention. We want to explain it to you from the beginning. Explain to you the theory; the working parts; the operation; the why and wherefore of the whole thing. And last, we want to show you ***why*** we have the best engine for the work required. Our engine has one advantage over all others which is most apparent. It can be used for other purposes just as well as for spraying without the removal of a single bolt or screw or cog wheel.

These points already mentioned should give you some idea of what to look for in a perfect sprayer. See that you find them—see to it for your own satisfaction and safety.

We invite your inspection of our machine, and are willing and ready to show you we can do more "stunts," more work and better work than any machine on the market. If necessary to prove the worth of our sprayer, we invite a competitive display. No sprayers barred.

GILBERT-VAUGHAN IMPLEMENT COMPANY

THAT'S ALL——THAT'S ENOUGH