

February 14, 1932.

Mr. A. W. Hecker,
1976 East 66th Street,
Cleveland, Ohio.

Dear Mr. Hecker:-

We have your letter of the 11th and certainly appreciate the interest you are taking in helping us solve the problems on our wrench.

The selection of the proper steel is of vital importance, but we believe a decision can be reached without the delay and expense of further experiments. After all, our requirements are not so very exacting -- we simply need a good tough steel that can be tempered sufficiently hard without the necessity of case hardening. The steel should be rust resisting and subject to hardening without developing flaws and cracks. No doubt there are dozens of steels on the market which would prove entirely satisfactory.

We are investigating steels through several methods and will advise our findings within a few days. The proper heat treatments is of about as much importance as the steel itself, but we feel sure that there are firms in Cleveland whom you can get to help us decide on that as soon as we decide on the steel to use. Our understanding is that competing wrenches are made from a good high carbon steel, but we prefer using a somewhat better grade than they are using.

There are a few changes we should like to make in the design of the two jaws if these changes will not cost too much. The enclosed blueprints and rough sketches will indicate what we have in mind.

The gripping teeth are too small. You will note that we have indicated the size we want by changing the scale of gripping teeth details from 5" equals 1" to 3" equals 1". This will make the teeth a little less than twice as large as they now are. We feel that this change should reduce the cost of manufacturing some and give better results.

The head of the movable jaw does not seem to have quite enough metal in it. We suggest adding a little on the outside lower half and to the entire head by decreasing the size of the depressed areas both in size and depth. These changes will require work on the forge dies, but we believe this work can be done without much expense. Our idea is based on getting the additional strength in the head with the easiest possible changes in the dies.

The stationary jaw is rather weak, especially so with the larger gripping teeth cut in it. The present jaws are 10 degrees out of square -- this is a little too much and we prefer reducing this to 5 degrees by putting additional metal in these jaws. If we correctly understand the method you are using in manufacturing these stationary jaws, the method we have indicated of putting more metal at the bottom front and top back will offer the best possible solution to the problem. The top back edge should be beveled down so that the rack teeth will not hang there.

The above suggestions are offered for your consideration. What we want is more strength in both jaws and larger gripping teeth -- all we expect is to get the desired results as cheaply as possible.

Please wire at our expense how much the changes in dies will cost us and also quote on 1000 each of the movable and stationary jaws made from S A E #3155 and a suitable heat treatment to be decided on. By the time we receive this telegram, we will probably know definitely what steel and treatment we will want to use and will wire you to proceed to make up the lot of jaws as quickly as possible.

You may expect to receive our check for the larger lot of wrenches within the next few days.

All of the hundred wrenches which passed inspection have been shipped out, and we are anxiously awaiting the results. The probabilities are that the case hardened jaws will not prove satisfactory, and it will be necessary for us to put new jaws in all of the 1000 wrenches we have made up. In case we do not use up all the 1000 new jaws this way, we can use them on the next lot we get made.

Thanking you for a prompt quotation on the jaws with revised design, and with kindest regards, we are,

Yours very truly,
THE HARRIS WRENCH COMPANY, INC.

General Manager

3.10.1938

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