

ROBERTSON'S POWER HACK SAW.

The accompanying illustration is of Robertson's No. 3 Power Hack Saw, manufactured by the Robertson Mfg. Co., 1848 Niagara St., Buffalo, N.Y. The photograph was taken while the machine was making a cut down the arm of a gas engine crank shaft. The opening between arms of the cranks being $\frac{1}{2}$ inch too narrow, this method was employed instead of turning it out in a lathe. The machine completed eleven of these cranks, taking off $\frac{1}{4}$ inch off each side, 22 cuts, 3 inches deep x $2\frac{1}{4}$ inches wide and cut off at the bottom by holding the crank upright in the vise, in $12\frac{1}{2}$ hours with one blade, while to do the same work on a lathe would take at least 28 hours. This is only one of the many special jobs that can be done on these machines. Many concerns purchase machines to do some special job, claiming that the machine paid for itself in a few cuts. The fact of the Robertson machines being sold in every country on the globe is evidence of their

true $\frac{1}{64}$ inch thick have been taken off a $2\frac{1}{2}$ inch bar.

In addition to this type of saw they also manufacture circular metal saws, emery grinders, gas and gasoline, stationary and marine engines, etc.

The company are establishing a branch works at Bridgeburg, Ont., to meet the demands of the Canadian trade.

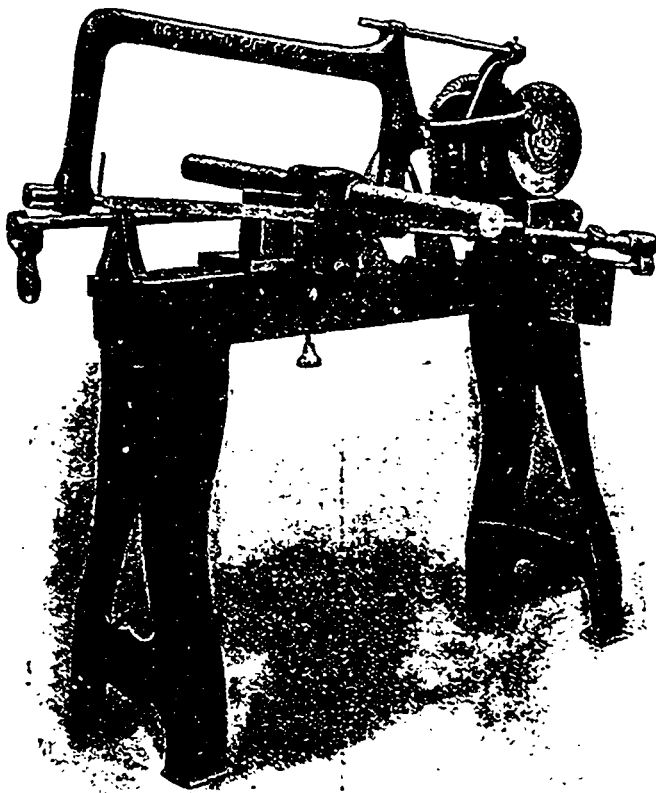
For further information, catalogues, price lists, etc., address the company at Buffalo.

ELECTRICAL SUPERVISION.

The Electrical Supervision Society Toronto, advise us that their system of Electrical engineering has been received very favorably throughout Ontario. A number of prominent men who were consulted on the subject before the society was formed, expressed a doubt as to whether the idea would be successful, but now that the scheme is in practical operation, the results have shown that the field for the

very much higher than it should have been for a first-class equipment. Now the object of that man was to save money—but he failed. Why?

"If people would only look at the matter from a common sense standpoint, they would understand. If one has some legal work to do, would he attempt to attend to it himself? Of course not! That is the lawyer's work. This company's work is engineering, and they do not profess to know anything concerning law, and therefore they put their legal matters into the hands of a lawyer who has the ability to dispatch them properly. But electrical



Robertson Power Hack Saw No. 3.

real merit and economy. They are manufactured in four sizes from 4x4 to 8x15 inches. The No. 1 and 2 machines are belt driven direct on the crank shaft. No. 1 has vise stationary on the bed; while No. 2 has a moveable vise, arranged to swivel for angle or bevel cutting. No. 4 is similar to No. 3 except its capacity is up to 8x15 inches, designed for I beam cutting, etc., and is mounted on low legs. All four sizes of machines are fitted with gravity hold up lever with automatic stop and quick acting starting clutch. The feed is gravity, which can be varied by moving the weight forward or back.

A very prominent and important feature on this construction is the relief on the return stroke. The action of the crank lifts the blade, thus avoiding drag and unnecessary wear on the teeth. The blade is secured in the centre of the frame in true line with the crank and connecting rod, as also is the sliding bars, thus insuring a perfect true stroke, while the blade is cutting. Discs perfectly

new work is not only very broad, but also that this branch of consulting engineering has not heretofore received the attention it requires.

Mr. K. L. Aitken, chief engineer of the Society, remarked in a recent interview, "The buyers of electrical apparatus in Canada have not yet been educated to the point where they appreciate the fact that a little knowledge, especially if it pertain to engineering, is a very dangerous thing. The average man who thinks he knows a great deal about the subject generally knows but little, and when you meet a man of this sort, it is usually a delicate matter to endeavor to convince him of his ignorance. In The Electrical Age is an article entitled, Costly Amateur Electric Engineering, which hits the nail right on the head. It is the story of a man who thought he knew, and who went ahead and bought things, the immediate result being that he got a plant which contained a lot of scrap machinery which cost an immense amount to operate and maintain, and the first cost of which was



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Chief Engineer, The Electrical Supervision Society, Toronto.

engineering is frequently considered a simple subject, though it is not.

"In the United States, even the biggest manufacturers of goods other than electrical, when they are about to purchase as much as a small motor, will call in expert advice, get an opinion, have the engineer direct the purchase, and last but not least, see that they get what they have bought. But in Canada? Every Tom, Dick and Harry, who has wired up a burglar alarm, thinks that he is quite capable of buying motors or generators, and also, that if it came to a pinch, he could make a very fair job of laying out a long distance transmission. What could be more simple than a row of poles, each containing cross-arms, pins, and insulators, and supporting a few wires? Ask any transmission engineer and he will tell you that his troubles are more numerous than the sands of the sea shore. He is right. In the long distance line, there are problems of which the layman never dreams, and the existence of which he cannot appreciate.

"It is to be sincerely hoped that this sort of thing will soon disappear, and that in time the conditions will change for the better."

Figures have been given out at Ottawa showing that the use of acetylene gas as an illuminant for gas buoys and automatic lights was cheaper than gas or coal oil. The former gave over six times the light that gas did for the same money. The power of penetration was also more than double. It was the intention of the department to gradually substitute acetylene gas for the present illuminants.