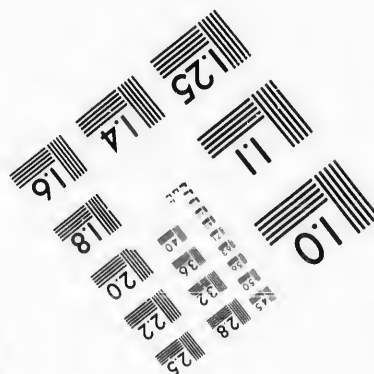
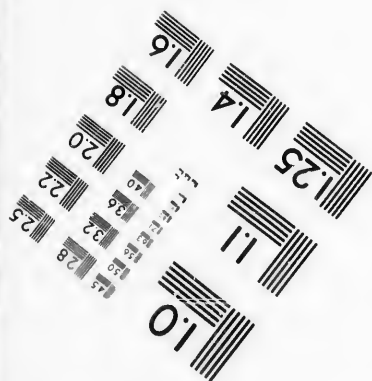
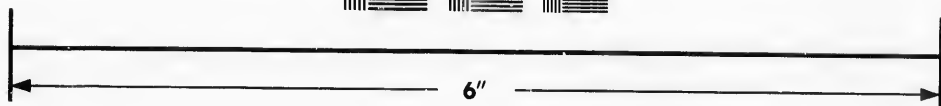
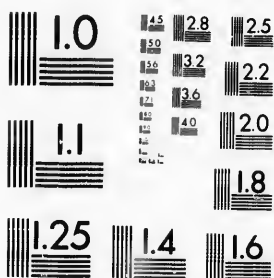


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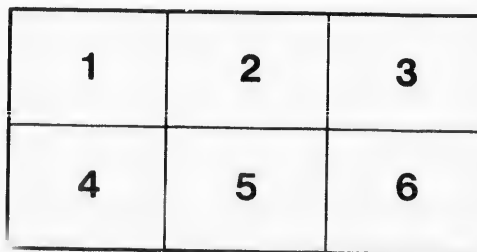
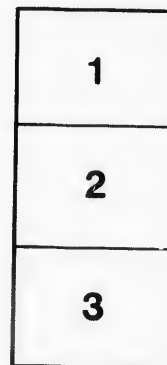
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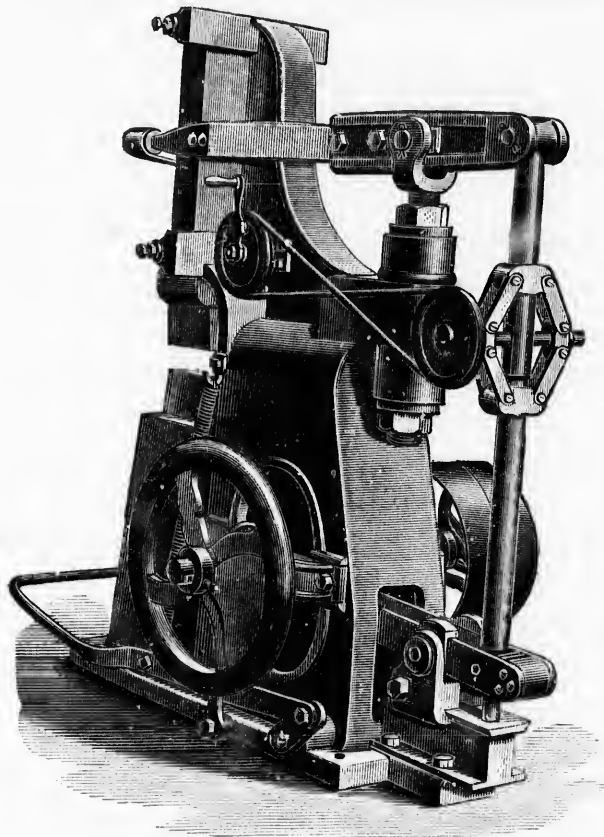
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The "Optimates" Power Hammer.

Patented in the United States, Canada and England.



WM. H. LAW,
INVENTOR.

MANUFACTURED BY

THE CENTRAL BRIDGE AND ENGINEERING COMPANY (LTD).

PETERBOROUGH, ONTARIO,
CANADA.

The "Optimates"

This invention is the result of thirty-five years experience, close observation and special study into the principal defects in the forging of metals by the different kinds of hammers in use, both on this continent and in Europe, whether operated by steam, air or otherwise.

In the introduction of this Hammer it is intended to overcome the principal defects in previous inventions of Power Hammers and produce a machine that, whilst under the control of one man, will give blows of varying force, without any change in the number of blows given. Also give the full length of stroke, when required, for any thickness of metal the Hammer will admit, all the operations being under easy control by one person. Besides ; the normal position of the ram over the anvil when at rest, can be set any height required, enabling the workman to place the metal on the anvil before setting the Hammer in motion.

The plan generally adopted in previous inventions of Power Hammers—driven by belts to give motion to the ram—has been to have, either a tightening pulley acting on the driving belt, or a friction clutch, to be thrown in or out of contact, both systems generally operated by the foot of the workman, though treadle attachments connected to the tightner or friction clutch.

In the first case the workman presses the tightner against the belt which sets the Hammer in motion. The tighter he presses the belt to the pulley, the greater the number of revolutions are made (until the maximum number is reached) and the heaviest blows given off. Light blows are obtained by allowing the belt to slip on the pulley, more or less, at the same time decreasing the number of blows, which are also given very irregular and uncertain in force. Therefore the heaviest blows are given when the hammer is running at its maximum velocity and light blows when running slow, a result contrary to general principles in the forging of metals.

The clutch operation produces similar results to the belt. Besides; in these same Hammers the velocity of the ram in its upward and downward motion is nearly equal.

With the "Optimates" Hammer the velocity of the ram in its downward stroke is considerably accelerated thereby giving a much sharper and heavier blow, resulting in a nearer approach to the action of a blow stricken by a blacksmith's

hammer than has ever before been accomplished with a "Power Hammer."

These "Optimates" Power Hammers have several novel advantages over the Steam Hammer in the forging of springs, files, hay forks, spades, shovels, axes, and die work; also in light stamping, planishing silver and copper, flattening, riveting, welding, tilting steel and general blacksmith work. They do not require any costly boilers or extra attendant to run them. They can be run by belt or rope from the line shaft. At the same time the first cost is much less.

Another instance of great importance is the following; In the case of a steam hammer having a stroke of say twelve (12) inches, if the operator wishes to forge a piece of metal three (3) inches thick, the fall of the ram would be but nine (9) inches unto the metal, giving a much lighter blow than would have resulted under the full fall of (12) twelve inches.

With an "Optimates" Hammer, having a fall of twelve inches, the ram can be made to give the full length of stroke during all operations, or the fall of the ram or the force of the blow can be changed at the will of the operator. The blows can be varied in force between several thousand pounds and a few ounces and a greater number of blows obtained in the same period of time than can be got from a Steam Hammer.

The Hammer can also be set to give any desired force of blow continuously.

All the changes to be made, for the different thickness of metal, length of stroke and force of the blow can be made almost instantaneous whilst the hammer is in motion and without the operator leaving the anvil.

The Hammer can be operated to give any length of stroke desired between "Full" stroke and "Zero" or it can be made give full length of stroke for any thickness of metal to be operated upon, from "tin foil" up to the full thickness the hammer is designed to receive or forge.

If at any time it is found necessary to use dies deeper than those in ordinary use, the ram would require rising, perhaps, several inches. This can be met by unscrewing the lower nut below the cushion and screwing up the top nut above the cushion until the proper height is reached. Both nuts are again screwed up until the necessary amount of elasticity in the cushion is obtained.

The Hammers are strongly built, compact and of neat design, the different parts being made from the most suitable materials for the work they have to do. All the wearing surfaces are large. In fact the whole of the machines are designed for wear and heavy work and are warranted to give better results than any other "Power Hammer" in the market.

Five Standard Sizes will be kept in stock, the weights of the rams being 60lb., 80lb., 100lb., 120lb., and 150lb.

Heavier or Lighter sizes will be made as required, from 10lb. to 1000lb. weight of ram.

The 150lb. Hammer is the most suitable for general blacksmith work and would be a profitable tool in any shop having two or more forges.

These Hammers are not merely useful for the roughing out of work but any piece of work however fine and delicate, can be finished under the hammer with greater accuracy and less time than it can be done by any other means.



The
"Optimates"
Power
Hammer

Vol. 27, cat. 6


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