

THE EYE AND THE MIND.

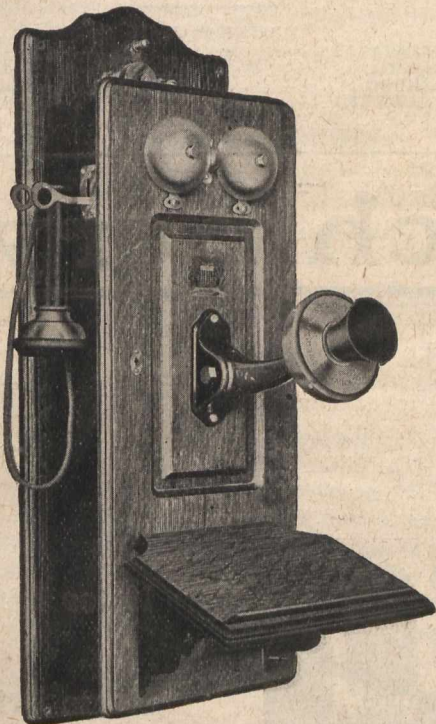
"The effect of the practical school training upon an engineer is well shown in the following instance: The engineer referred to sent a drawing of an intricate forging to a firm in one of the Southern States. The manager sent it back, saying 'The piece cannot be made.' The engineer, thinking that the other had misunderstood the drawing, made a wooden model of the exact shape he wished the finished piece to have. This he carried over to the works in person. The manager said, 'Not only are we unable to make this piece, but the man does not live who can make it.' The engineer said, 'May I have the use of a forge?' This was granted, and all the expert blacksmiths of the place gathered around him to see this greenhorn of an amateur make a fool of himself. He worked through his task logically step by step, and brought out the finished piece just like the wooden model. He was then asked by the manager, 'Did you ever see one made?' 'No.' 'Did you ever see one like it?' 'No.' 'How did you know one could be made, and where were you taught to make it?' 'I was taught the principles on which everything is made at the

Massachusetts Institute of Technology in Boston.' At this reply the manager said, 'I don't believe a word of it.'

"The above is a very good illustration of the different ways in which the two classes of minds look at things. The trained scientific mind is ready to undertake anything. The rule of thumb man will go as far as he sees, but his imagination fails him. The former can mentally analyze and reconstruct, while the latter can do only what he has been taught.

"The use of the shop for the development of skill and imagination is well illustrated in this way: The teacher of forging shows the pupil in successive lessons how to draw a piece of iron, how to make a piece round or square, how to punch an eye, how to make a weld, how to make an offset and a rivet. He then asks his pupil to make a pair of blacksmith's tongs. The answer comes: 'But I can't. I never did such a thing in my life.' The teacher is inexorable, and the pupil begins. He finds to his surprise that the task before him is simply a grouping together of a series of steps, each of which he has already mastered. The first tongs a good student makes will compare well with the work of an average country blacksmith who has had years of experience.—"Machinery."

"HERCULES"



No. 99.

SERIES OR BRIDGING.

Swedish-American Telephones

ALWAYS SATISFY

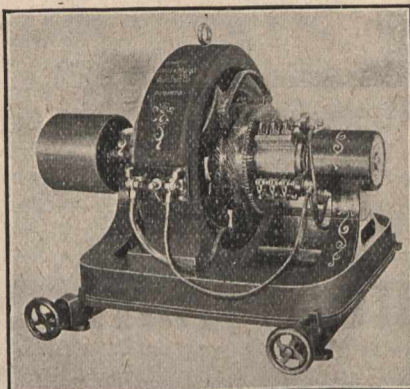
Instrument illustrated herewith is being used by hundreds of successful exchanges and rural telephone organizations. Is furnished in either series or bridging. Bridging Instruments wired with Non-interfering, ring through or any circuit that will most practically meet your requirements.

This Instrument is also wired for use on GROUNDING LINES whereby one Subscriber can ring central office without ringing any other Subscriber on the line. If you want to accomplish any particular thing in Telephony, write us.

Swedish-American Telephone Co.,

Manufacturers of Superior Telephone Equipment,

CHICAGO - ILL.



**JONES & MOORE
ELECTRIC CO.,**

LIMITED.
294-300 Adelaide St. W.
TORONTO.

**MANUFACTURERS
OF
Dynamos & Motors**

FOR LIGHT AND POWER

**2,000 Machines
now in use.**

SUPPLIES AND REPAIRS FOR ALL SYSTEMS.



Armstrong Tool Holders

Patented Feb. 28, 1893.

COST LESS

than the steel and
first dressing
in a forged
tool.

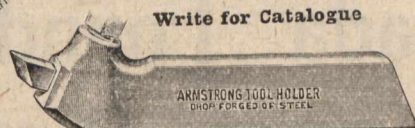
SAVE

All forging and
tempering,
70% grinding
90% tool
steel.



Make
One lb. of
Tool Steel Equal
Ten lbs. in Forged Tools

Write for Catalogue



ARMSTRONG BROS. TOOL CO.

107 N. Francisco Ave., Chicago, U.S.A.
"The Tool Holder People"

