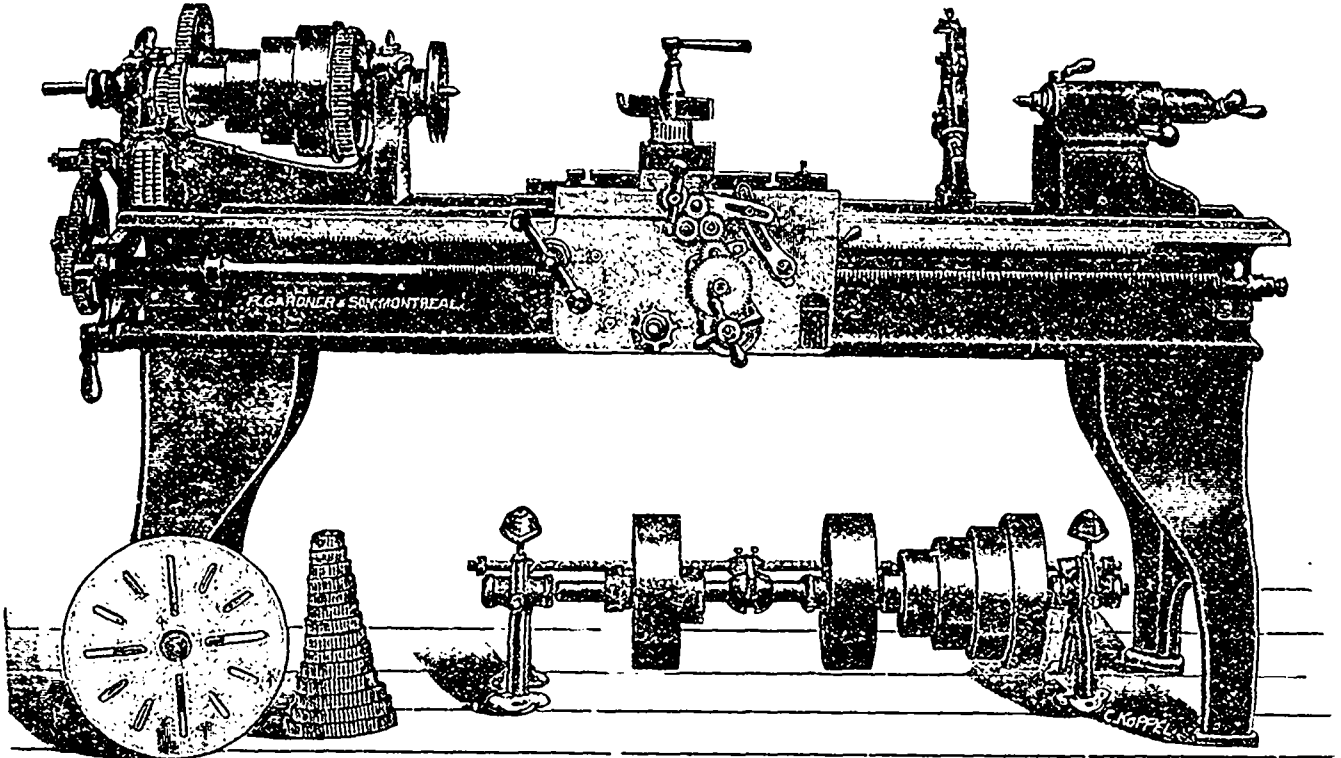


LATHE WITH TAPER ATTACHMENT.

The lathe here illustrated is manufactured by Robert Gardner & Son of Montreal, and has been patented in the United States and Canada. Every one who is conversant with lathe turning knows the difficulty of producing taper work, and the time lost in accomplishing or rather attempting to make a taper plug or shaft to fit a corresponding taper aperture or hole. Before the era of taper attachments as applied to self-acting or engine lathes, the old-fashioned slide rest was used, the moving head of lathe set away off the centre of lathe—the centres all wore on one side. The device before us differs from any taper attachment used, and, as may be inferred from the illustration, its action and work are positive. A series of gears are affixed to the apron or rest, and in conjunction with the ordi-



nary feed, which produces the parallel or straight turning. The cross feed is at the same time working cross ways, the taper being altered at will by placing the proper gear on the series of gearing. An index is provided showing the gear to be used, similar to the screw cutting index used on all modern lathes, therefore to produce any desired taper a reference to the index shows what gears are to be used.

This is a machine well suited for a tool room in any well regulated establishment, or for ordinary use when tapers are required, and where is it they are not?

One of these lathes has been selected for use in the engineering building of McGill College, Montreal.

BOILER INSPECTION LEGISLATION.

The subject of inspection of steam boilers has recently had the attention of the Legislatures of the Provinces of Quebec and Manitoba.

In Quebec, the Factory Act was amended a few years ago, and one of the amendments made it compulsory for the owners of such steam boilers as were under the Act, to have them inspected each year by some *competent person*.

This worked satisfactorily so far, except in the one

point that it was left open to the Factory Inspector to have something to say as to the meaning of the term "*competent person*."

In order to get over any difficulty on this point the Legislature during last session passed an Act providing for the appointment of a Board of Examiners to examine and grant certificates to persons acting as inspectors of boilers in the province. They also made provision for a better understanding of what was meant by *inspecting* steam boilers.

These new arrangements are now in force, but apply only to boilers in premises which come under the Factory Act. There is nothing arbitrary or unduly stringent in these arrangements, and no doubt they will be found to be in the interests of the general public, as well as for the protection of the employees in factories.

In Manitoba, in March last, "The Steam Boiler Inspection Act" came into force.

Under this Act *all* steam boilers in the Province come under inspection of Government inspectors.

Some of the provisions of the Act have the appearance of being rather arbitrary, and it reads as if prepared by some one who was quite satisfied that he was able to instruct engineers, and tell them how to build steam boilers and how to use them.

Section 12 says: "Every person who constructs a boiler or steam pipe of iron or steel plates known to be faulty or imperfect; or who drifts any rivet hole to make it come fair; or who delivers any such boiler for use knowing it to be imperfect in its flues, flanges, riveting, bracing, or in other of its parts, shall be liable to a fine of two hundred dollars."

Boiler makers had better beware; if *drifting* a rivet hole costs two hundred dollars, the price of boilers will surely have to be advanced. The provisions for the duties of the Government inspectors are in keeping with this. Then if an inspector says he thinks a boiler unsafe, the owner must at once cease to use it; but if he does use it, he is to pay one hundred dollars.

According to this, using a boiler pronounced by the inspector to be unsafe, is only half as bad as drifting a rivet hole while making a new boiler!