

Roller Bearing Manufacture

Description of a new Toronto Industry—
An Up-to-Date Plant.

Simultaneously with the great impetus which has characterized Canadian manufacturers during the past few years, and confident of the still greater development which the future has in store for us, it is interesting to note that our mechanical experts have not been idle, and the Henderson Roller Bearing Manufacturing Co., Limited, recently incorporated, is undoubtedly destined to occupy a very important place in the mechanical world.

To reduce friction is to create power, and that is just what the Henderson roller bearing has been designed to do and is doing. Most people are familiar with the fact that the great problem to be solved in connection with the running of any machinery is the reduction to a minimum of friction between wearing surfaces. For years past inventors have lain awake at nights thinking deeply, and then working hard during the day, to devise methods by which this could be done satisfactorily. The number of patents which have been issued on the strength of claims made by inventors in this connection is legion. Ball and roller bearings there are galore. Some good, some bad, some indifferent. A great many of these have been invented, used for a time, and after short existence, relegated to the scrap heap.

Recognizing this lack in the realm of mechanics, the Henderson Roller Bearing Manufacturing Co., Limited, was incorporated a few months ago, and is now actually engaged in the manufacture of roller bearings, which have overcome the weaknesses of all former bearings.

Before going into the construction and method of operation of this bearing, it may be of interest to give some description of the plant at which they are made. This is located at 66 West Esplanade, this city. There are three floors, each of them about 150 feet long. The light is excellent, a very important factor in the turning out of these bearings, because it is very necessary that the work be done with great precision, in order to secure the best results. On the first floor is to be found most of the automatic machine tools, some of which are almost human in their working. For instance, in the making of the rollers, a long bar of rough steel is fed to the machine; the roller is turned, the pintles put on, and when formed completely the roller is automatically cut off without a man touching the machine at all. So the work goes on till this long piece of rough material, perhaps 18 or 20 feet in length, is converted into rollers, ready to be sent upstairs to be case-hardened before being ground. The heavy turning is done on a Reed lathe. This machine weighs 5 tons and has a swing

of 3 feet. This floor also contains a number of smaller machines, such as grinders, emery wheels, buffers, etc.

After the various parts of the bearing are machined, they are taken to the top floor and there case-hardened. To perform this operation, a Brown & Sharpe case-hardening furnace is used. The pieces are then taken to the grinding machines. These are of the Landis and Brown & Sharpe types, and are the very latest in construction, in fact, there is not a machine in the shop but what is of the most improved type, and the whole establishment is thoroughly up-to-date. Of these grinders there are six in all. It is interesting in this connection to make some reference to the fact that the parts are first case-hardened, and then finished. This ensures a greater degree of truth, and prevents spring.

As one passes through the shop he is struck by the care with which the whole place has been laid out. There has been a good deal of thought in the planning of the shop, and there is no doubt that the manufacturers intend to give their patrons the best that mechanical skill can produce. Great care is taken with each part that goes to make up these bearings; precision is the watchword of the place, and that it pays is evidenced by the perfect satisfaction the bearings have given wherever used.

Regarding the bearing itself, it cannot be spoken of too highly as a saver of power. It also does away with one of the main difficulties found in all the bearings that have preceded it, i.e., the liability to get out of alignment. The roller in the Henderson bearing is held in alignment with the minimum amount of friction, while the end thrust is provided for by an almost frictionless, yet durable means.

As showing the ability of the bearing to sustain weight, it is interesting to state that tests have been made in the shops of the Grand Trunk Railway, at Stratford, where a heavy transfer table was equipped with these bearings, and has for several months past been in constant use, carrying up to 95 tons weight. With a weight of 64 tons upon the ordinary brass journal, 3,200 pounds power was required to start the transfer table, 2,012 pounds was required to keep it running; while the same table with the same weight, but mounted upon the Henderson roller bearings, required 960 pounds to start it, and only 300 pounds to keep it in motion, showing an average saving of more than 75 per cent. of power. The bearings referred to, after being in daily use for ten months, showed no wear whatever, thereby proving its wearing qualities, and no lubricant had been applied to the bearings since they had been installed. One can see at a glance what a saving this means. In fact, so pleased was the Grand Trunk Railway with this performance, that they are now intending to equip two similar tables at their Montreal shops and one at Fort Gratiot.

The various applications which can be made of these bearings is very wide indeed, from bearings suitable for a bicycle, to those large enough for the largest locomotive. The application of these bearings in many different fields of service have in every instance shown a remarkable saving of power. They can be applied with equally satisfactory results to rolling stock of railways, vehicles of all classes, stationary engines, mill shafting, hangers, in fact, to any form of journal whatever.

The Henderson Roller Bearing Mfg. Co., Limited, has been organized with a capital of \$1,000,000, divided into 10,000 shares of \$100 each, for the purpose of manufacturing extensively the said bearings in Canada. This Company has acquired the sole right in all Canadian patents for these bearings, which have been issued up-to-date, and those which may be issued hereafter as improvements, together with the right to use the End Thrust invention in connection therewith. Already several patents have been issued for Canada, and others will be issued in the near future. The company has already commenced to manufacture these bearings, and have now 25 men on the pay roll, thus meeting the steady demand for them. As the business increases, the manufacturing capacity of the Company will be enlarged, and the management are resolved to make this industry one of the most successful in our country.

When the opportunity was afforded the public of purchasing stock in the company, the response was encouraging in the extreme. Here is a concern which has been formed to fill a long-felt want in the mechanical world, and it is destined to yield large profits in the near future. While much of the stock has been disposed of, there is yet a limited quantity to be had at par. By communicating with the Henderson Roller Bearing Mfg. Co., Limited, Head Office, Temple Building, Toronto, full particulars and applications for stock may be secured.

A CLERK'S DREAM.

Employer—"James, you look all worn out. You have been working faithfully, but too much. Take a month and go to Mackinac at my expense."

Employee—"My dear employer, I do not feel equal to the strain that so extended a vacation will entail. If it will suit you just as well I will rest up this summer by starting work an hour earlier mornings, so as to have more time in which to attend the absorbing task of looking after your interests as I would my own"—(At this interesting point the clerk woke up, owing to the activity of a mosquito).

—"But," suggested the subtle sleuth, preparing to raid a gambling house, "suppose we can't catch any of the owners."

"Well," answered the sergeant, "take whomever you find, then, anybody will do in a pinch."—Punch Bowl.