

comb-like bar in front, which stripped off the ears of wheat and delivered them into a box. After the lapse of eighteen centuries the principle of this machine has been re-invented, and is now in use in the headers which harvest the enormous crops of wheat of Canada, the United States, and other parts where only the grain is gathered, leaving the straw to be burned. The problem of developing the primitive sickle and scythe into the most useful and available machines for harvesting the grass and grain crop of the world has long engaged the attention of man, but it was not until comparatively recent times that the practical results showed any great efficiency. During the nineteenth century, however, the mower, the reaper, and the binder have come into existence, and have passed through many stages of shape and principles of construction and operation into their present state of perfection. These time and labour saving machines are now deemed indispensable by all who raise hay and grain, and their production has alone rendered possible the opening up to settlement and agricultural development of the prairie districts of America, Australia, Russia, Siberia, South America, and Africa, in all of which parts Canadian-made harvesting machinery is now in every-day use.

Both mowers and binders are exhibited by the Massey-Harris Co., the Frost and Wood Co., the Noxon Co., and David Maxwell and Sons. While the principles of operation and the results obtained are the same in all, the mechanical methods of obtaining this result and the devices by which the different machines meet the varying conditions imposed upon them are different, and each firm claims superior advantages for its own construction, which it is not the purpose of this Paper to discuss.

For harvesting the hay crop, four machines are used. The grass is cut by the mower, turned for drying by the tedder, gathered by the rake, and loaded on the waggon by the loader. Rakes are shown by three firms, tedders by two, and the loaders by only one.

*Mowers, Plate 2.*—On the Mower a solid and heavy tubular cast-iron frame is used, as this secures a more perfect and permanent alignment of the running gear and shafting than a steel frame, which must be

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