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THE DOMINION BUREAU OF STATISTICS  
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AGRICULTURAL IMPLEMENTS  
FOR THE YEAR 1957

## THE AGRICULTURAL IMPLEMENTS INDUSTRY

1957

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DOMINION BUREAU OF STATISTICS

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## NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Bureau of Statistics are divided into 3 volumes, as follows: **Volume I** — The Primary Industries, including mining, forestry and fisheries; **Volume II** — Manufacturing; **Volume III** — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries or provinces which they comprise.

Volume II consists of the following parts, the first two of which deal with manufacturing as a whole and the balance with the major manufacturing groups.

- I — General Review of the Manufacturing Industries
- II — The Manufacturing Industries of Canada, (7 sections, as follows:)
  - Section A. Summary for Canada
  - Section B. Atlantic Provinces
  - Section C. Quebec
  - Section D. Ontario
  - Section E. Prairie Provinces
  - Section F. British Columbia
  - Section G. The Manufacturing Industries of Canada, Regional Distribution
- III — Foods and Beverages
- IV — Tobacco and Tobacco Products
- V — Rubber Products
- VI — Leather Products
- VII — Textile Mills
- VIII — Knitting Mills
- IX — Clothing
- X — Wood and Paper Products
- XI — Printing Trades
- XII — Iron and Steel Products
- XIII — Transportation Equipment
- XIV — Non-ferrous Metal Products
- XV — Electrical Apparatus and Supplies
- XVI — Non-metallic Mineral Products
- XVII — Products of Petroleum and Coal
- XVIII — Chemicals and Allied Products
- XIX — Miscellaneous Manufactures

The present report belongs in Part XII, Iron and Steel Products. It is punched to permit of filing in a ring binder along with others of the group. The reports in this group are:

- A — General Review
- B — The Agricultural Implements Industry
- C — The Boilers and Plate Work Industry
- D — The Bridge Building and Structural Steel Industry
- E — The Hardware, Tools and Cutlery Industry
- F — The Heating and Cooking Apparatus Industry
- G — The Machinery Industry
- H — The Machine Shops Industry
- I — The Iron Castings Industry
- J — The Primary Iron and Steel Industry
- K — The Sheet Metal Products Industry
- L — The Wire and Wire Goods Industry
- M — The Miscellaneous Iron and Steel Products Industry

*Prices of most reports released after January 1, 1959 have been increased. Information on the new prices of particular issues is available on request from the Information Services Division of the Dominion Bureau of Statistics.*

## THE AGRICULTURAL IMPLEMENTS INDUSTRY 1957

The Agricultural Implements Industry covers those firms which produced agricultural implements as their main product. However, some firms, which are classified to other industrial groups, produced agricultural implements as a minor part of their production. Tables 5 to 16 attempt to gather together production data from all industrial groups for the specified commodities.

Factory shipments reported by establishments which have been classified to the Agricultural Implements Industry were valued at \$122,528,538 in 1957, a slight decline from the \$122,681,025 reported in the previous year. The output of farm equipment in this industry amounted to \$114,545,989 in 1957, \$114,822,734 in 1956 and \$106,732,479 in 1955; the remainder of the output of the industry in each year was made up of miscellaneous types of machinery and parts. In other industries there was a small production of farm machinery amounting to \$2,614,000 in 1957, \$2,833,000 in 1956 and \$2,969,000 in 1955.

Seventy factories were included in the Agricultural Implements Industry in 1957, there being

27 in Ontario, 15 in Manitoba, 8 in each of Quebec and Alberta, 7 in Saskatchewan and 5 in British Columbia. The works in Ontario accounted for 90 per cent of the total output.

The industry employed a total of 10,271 workers during the year, the 2,524 salaries employees being paid \$11,233,752 and the 7,747 wage-earners, \$28,044,364. The total of \$39,278,116 for salaries and wages was 7 per cent greater than the amount distributed to the 9,839 employees in 1956.

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**Note:** Due to lack of inventory data, figures for value added by manufacture prior to 1954 were obtained by subtracting the cost of materials used, including fuel and electricity, from the total value of factory shipments. In 1954 and 1955 the "Value added" adjustment incorporated the increase or decrease to shipments values resulting from changes in the value of inventories over the period. For these two years, the adjustments that were made used only the change in finished product inventory owned by manufacturers. Beginning with 1956 the calculation of the "Value added" figure was further adjusted to take into account the "Goods in process" as well as the finished goods held at plant or plant warehouse.

TABLE 1. Principal Statistics of the Agricultural Implements Industry, Significant Years, 1929-1957,  
and by Provinces, 1956 and 1957

Year and province	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost of materials at plant	Value added by manufacture <sup>1</sup>	Gross selling value of products <sup>1</sup>
number							
1929 .....	62	11,408	14,775,889	799,634	19,016,981	20,842,864	40,659,479
1933 .....	40	3,039	3,047,501	283,748	2,215,031	2,827,637	5,326,416
1937 .....	37	6,446	7,350,043	567,240	9,319,032	9,075,122	18,961,394
1939 .....	36	5,306	6,024,720	449,158	6,672,529	8,913,536	16,035,223
1944 .....	39	14,053	25,469,083	1,086,700	25,165,749	34,846,344	61,098,793
1946 .....	51	13,866	25,475,108	1,162,059	32,852,259	29,224,224	63,238,542
1949 .....	79	17,074	44,219,589	2,092,645	95,685,026	79,192,612	176,970,283
1953 .....	80	14,161	50,302,007	1,824,514	90,344,539	79,100,472	171,269,525
1954 .....	76	11,805	40,224,971	1,741,790	66,712,190	49,240,666	119,006,228
1955 .....	77	11,753	41,929,040	1,749,126	59,283,305	54,464,347	113,923,309
1956							
Quebec .....	7	262	693,698	43,112	690,648	1,036,584	1,899,858
Ontario .....	28	8,861	33,686,124	1,683,317	58,215,977	46,659,425	111,059,789
Manitoba .....	15	490	1,492,451	86,372	4,972,987	2,515,440	7,508,539
Saskatchewan .....	7	36	94,979	11,726	93,158	170,020	298,399
Alberta .....	9	145	611,755	36,939	636,276	950,249	1,506,481
British Columbia .....	5	44	124,571	10,760	177,234	142,621	407,959
Canada .....	71	9,838	36,703,578	1,872,226	64,786,280	51,474,339	122,681,025
1957							
Quebec .....	8	250	724,916	35,482	728,729	1,065,913	1,821,291
Ontario .....	27	9,249	35,964,156	1,626,147	53,743,532	51,823,318	110,310,047
Manitoba .....	15	525	1,731,666	94,681	4,387,715	3,902,455	7,976,629
Saskatchewan .....	7	33	99,991	9,050	108,168	239,995	354,335
Alberta .....	8	165	605,931	37,575	640,873	775,640	1,464,139
British Columbia .....	5	49	151,456	10,080	246,754	367,012	601,567
Canada .....	70	10,271	39,278,116	1,813,015	59,855,771	58,174,333	122,528,538

<sup>1</sup> See footnote to text.

Note: Profits or losses cannot be calculated from the above figures as data are not available for general expense items, such as interest, rent, depreciation, taxes, insurance, advertising, etc.

TABLE 2. Inventories,<sup>1</sup> 1957

		Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
dollars					
Opening:					
Quebec .....		332,122	104,457	257,010	693,589
Ontario .....		14,071,446	11,800,702	13,674,019	39,546,167
Manitoba .....		725,058	367,018	417,836	1,509,912
Alberta .....		337,911	111,747	556,995	1,006,653
Other provinces .....		116,357	39,034	107,666	263,057
Canada .....		15,582,894	12,422,958	15,013,526	43,019,378
Closing:					
Quebec .....		345,936	122,067	248,233	716,236
Ontario .....		9,156,527	14,135,490	8,222,181	31,514,198
Manitoba .....		842,405	585,420	607,656	2,035,481
Alberta .....		377,041	111,272	547,439	1,035,752
Other provinces .....		128,133	43,506	127,801	299,440
Canada .....		10,850,042	14,997,755	9,753,310	35,601,107

<sup>1</sup> (a) Book value of all manufacturing inventories owned and held at plant and plant warehouses.

(b) Beginning with 1954, information on the value of year-end inventory holdings at plant and plant warehouses is being collected as part of the annual Census of Industry. These data were formerly collected by a separate survey. The summarized results for the Agricultural Implements Industry for the year under review are shown in the above table.

(c) The opening inventory for 1957 does not necessarily agree with the closing inventory for 1956 because of revisions such as the addition of new plants, the transfer of plants to other industries and plants going out of business, etc. However, the value added figures for the previous year have not been recalculated to allow for the revisions, mentioned above.

TABLE 3. Products of the Agricultural Implements Industry, 1956 and 1957

Product	1956		1957	
	Number	Value of factory shipments	Number	Value of factory shipments
		\$		\$
<b>Planting, seeding and fertilizing machinery:</b>				
Corn planters—horse and tractor drawn and tractor mounted .....	1,352	218,472	2,079	454,278
Transplanters .....	772	181,744	221	45,624
Grain and fertilizer drills (combination) .....	10,451	5,040,697	9,071	4,725,928
Grain drills—plain and press .....	1,024	439,171	994	497,724
Seed boxes for harrow-plows, one-way discs and tiller-combines .....	2,303	458,957	2,702	463,391
Manure spreaders .....	4,531	1,591,328	3,643	1,347,669
Manure loaders .....	205	55,596	130	46,659
All other planting, seeding and fertilizing machines .....	—	31,495	—	53,206
<b>Plows:</b>				
Walking plows:				
1-furrow .....	22	808	905	21,298
2-furrow .....	133	5,531	127	4,724
Riding gang plows—2-furrow .....	149	26,634	805	165,569
Mouldboard plows—tractor-drawn or tractor mounted .....	16,782	2,500,378	10,582	1,560,411
Disc plows—tractor-drawn .....	1,417	623,875	1,029	463,621
Harrow-plows, one-way discs, tiller-combines .....	4,392	2,678,895	4,043	3,140,278
All other plows .....	846	109,721	400	53,482
<b>Tilling, cultivating and weeding machine:</b>				
Harrows:				
Drag (sections) .....	28,790	254,267	35,345	364,388
Spring-tooth (sections) .....	5,085	167,919	5,690	301,535
Disc—horse or tractor drawn:				
Under 12' .....	1,115	191,933	1,686	439,690
12' or over .....	1,272	671,013	1,213	642,864
Tandem tractor disc .....	7,567	1,635,176	5,668	1,366,657
Land rollers .....	1,662	95,549	1,621	105,941
Soil packers .....	1,348	88,937	2,094	124,476
Scufflers and horse hoes .....	374	9,613	248	6,703
Corn cultivators:				
Horse and tractor drawn .....	—	—	—	—
Tractor-mounted .....	—	—	—	—
Field cultivators:				
Horse and tractor drawn .....	10,749	2,852,040	8,662	2,706,634
Tractor-mounted .....	1,198	240,912	845	144,401
Rod weeders .....	1,072	175,846	1,446	268,713
Blade weeders .....	505	138,297	549	161,948
Other tilling, cultivating and weeding machines .....	—	850,373	—	1,301,042
<b>Haying machinery:</b>				
Mowers:				
Horse-drawn .....	547	96,461	272	54,549
Tractor-drawn or mounted .....	14,129	3,397,727	11,953	2,948,773
Hay loaders .....	304	63,975	212	54,052
Dump rakes .....	864	86,064	472	50,628
Side rakes and tedders .....	6,089	1,066,706	6,729	2,028,907
All other haying machinery (including hay balers, hay carriers, etc.) .....	—	4,865,630	—	7,714,567

TABLE 3. Products of the Agricultural Implements Industry, 1956 and 1957 — Concluded

Product	1956		1957	
	Number	Value of factory shipments	Number	Value of factory shipments
		\$		\$
Harvesting machinery:				
Combine reaper-threshers and stationary threshers .....	10,736	36,496,084	9,630	34,139,440
Swathers and windrowers .....	8,719	8,964,055	8,744	10,073,542
Pick-up attachments for combines .....	3,362	731,211	4,761	1,038,311
Grain binders:				
Ground-drive .....	312	142,723	63	12,266
Power take-off drive .....	—	—	2	378
Corn binders:				
Ground-drive .....	—	—	—	—
Power take-off drive .....	—	—	—	—
Potato diggers — horse or tractor drawn .....	33	11,095	26	11,669
All other harvesting machines (including headers, push harvesters, barge elevators, etc.) .....	—	952,092	—	1,137,610
Machines for preparing crops for market or use:		see "Harvesting machinery"		
Stationary threshers .....	86	43,720	35	21,098
Ensilage cutters .....	126	3,875	—	—
Corn shellers .....	2,595	140,834	2,160	117,109
Grain grinders .....	8	620	10	1,000
Rollers or crushers .....	—	—	—	—
Pulpers .....	1,562	361,326	1,378	411,744
Fanning mills or grain cleaners .....	201	38,753	353	69,111
Hammermills .....	109	16,998	124	18,494
Feed mixers .....	6,218	1,164,722	6,182	804,985
Grain loaders and elevators .....	—	132,505	—	41,364
All other machines for preparing crops for market or use .....	—	—	—	—
Tractors and engines:				
Garden tractors (including motor tillers) .....	—	—	100	10,000
Spraying and dusting equipment:				
All types (including attachments) .....	—	904,047	—	1,122,903
Farm wagons, trucks and sleighs:				
Wagon boxes .....	815	148,787	929	174,676
Wagon gears (standard) .....	2,149	224,292	1,942	231,780
Farm trucks (low wheel — steel or wood) .....	31	3,778	29	4,183
Rubber-tired gears or trailers .....	3,334	321,077	4,057	402,189
Sleighs .....	150	12,750	171	13,021
All other farm wagons, sleighs and trucks .....	—	176,715	—	180,472
Domestic water systems and pumps:				
Domestic water-pressure systems and power-pumps .....	1,061	73,242	1,226	79,063
All other systems and pumps .....	—	274	—	—
Dairy machinery and equipment, including cream separators, milking machines, etc. .....	—	3,154,244	—	2,938,846
Miscellaneous farm implements and machinery .....	—	10,663,082	—	7,200,001
Parts and accessories for farm implements and machinery .....	—	19,028,093	—	20,460,403
<b>Total farm machinery and parts .....</b>	—	<b>114,822,734</b>	—	<b>114,545,989</b>
Amount received for custom work and repairs .....	—	371,332	—	375,388
All other products .....	—	7,486,959	—	7,607,163
<b>Total all products .....</b>	—	<b>122,681,025</b>	—	<b>122,528,538</b>

TABLE 4. Materials Used in the Agricultural Implements Industry, 1956 and 1957

Material	1956		1957		
	Quantity	Total cost at works	Quantity	Total cost at works	
		\$		\$	
Iron:					
Pig iron, all grades .....	ton	11,213	624,182	8,489	509,957
Castings (rough and semi-finished received from foundry):					
Iron (gray and malleable) .....	"	25,081	5,873,086	17,227	4,269,099
Steel .....	"	572	191,503	703	252,701
Steel, hot or cold rolled (except special alloy steel):					
Bars .....	"	49,869	6,778,015	40,181	6,049,238
Plates .....	"	4,999	673,601	4,625	666,670
Sheets, plain .....	"	23,525	3,000,226	25,562	3,497,312
Sheets, galvanized .....	"	4,346	688,021	4,932	860,291
Tin plate .....	"	1	307	1	280
Strip .....	"	4,647	699,024	4,302	697,847
Structural shapes (angles, channels, etc.) .....	"	13,068	1,746,095	11,949	1,759,378
Wire .....	"	717	124,652	354	61,007
Scrap iron and steel of all kinds .....	"	14,752	716,476	9,845	502,911
Pipe, tubing and fittings of iron and steel .....	-	-	1,660,270	-	1,800,285
Other iron and steel (except finished parts) .....	-	-	1,255,190	-	526,107
Alloy steel:					
Carbon and alloy tool steels, including high-speed .....	-	-	104,853	-	96,289
Stainless steels .....	-	-	395,660	-	366,354
Other alloy steels .....	-	-	160,821	-	324,651
Ferro-alloys .....	-	-	107,587	-	64,654
Non-ferrous metals (all forms, including scrap):					
Aluminum — Castings .....	pound	385,216	105,517	352,383	191,771
Sheet .....	"	6,074	3,621	26,497	14,450
Other forms .....	"	175,310	52,153	61,585	23,238
Brass and bronze .....	"	232,439	121,603	180,620	86,090
Copper — Sheet .....	-				
Wire .....	pound	5,737	2,758	3,392	1,610
Other forms .....	"	-	-	-	-
Lead .....	"	10,821	1,935	53,649	8,233
Nickel .....	"	84,514	46,906	81,079	45,014
Tin .....	"	13,093	13,227	2,882	3,086
Zinc .....	"	67,494	9,504	210,726	38,614
Babbitt metals and solder .....	"	23,931	18,720	25,530	18,367
Other non-ferrous metals .....	-	-	67,295	-	15,098
Other materials and supplies:					
Paints, oils and varnishes .....	-	-	863,430	-	806,758
Cotton, duck and other textiles .....	-	-	252,640	-	724,039
Foundry coke (used in cupola, not for heat or power) ....	ton	5,683	172,075	4,278	135,903
Moulding sands .....	"	4,253	34,316	2,150	24,030
Core sands .....	"	4,787	37,066	3,855	19,920
Other foundry sands .....	"	573	5,214	291	2,825
Lumber .....	M ft. b.m.	9,836	1,034,954	6,828	709,548
Fireclay .....	ton	556	9,485	545	9,763
Cupola blocks and firebrick .....	-	-	42,001	-	42,029
Core oil .....	Imp. gal.	13,834	17,564	8,350	10,921
Shipping containers .....	-	-	306,902	-	348,493
All other materials and supplies .....	-	-	36,767,825	-	34,270,940
<b>Total</b> .....	-	-	<b>64,786,280</b>	-	<b>59,855,771</b>

## IRON AND STEEL PRODUCTS

TABLE 5. Production of Plows,<sup>1</sup> 1948-1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	69,446	7,217,103	1953 .....	21,577	4,402,949
1949 .....	48,848	7,767,151	1954 .....	15,443	2,979,804
1950 .....	41,709	7,918,510	1955 .....	24,210	4,163,342
1951 .....	44,446	8,916,831	1956 .....	19,573	3,272,497
1952 .....	39,902	9,285,252	1957 .....	13,848	2,269,105

<sup>1</sup> Not including harrow-plows, one-way discs or tiller-combines. Factory shipments since 1952.

TABLE 6. Production<sup>1</sup> of Mowers, 1948-1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	21,428	2,835,300	1953 .....	13,930	2,717,178
1949 .....	28,187	3,880,013	1954 .....	7,006	1,389,653
1950 .....	16,658	2,708,979	1955 .....	19,579	4,988,324
1951 .....	16,540	2,617,253	1956 .....	14,739	3,497,691
1952 .....	22,050	4,013,947	1957 .....	12,225	3,003,322

<sup>1</sup> Factory shipments since 1952.

TABLE 7. Production<sup>1</sup> of Harrows, 1948-1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	93,701	3,681,893	1953 .....	88,906	6,069,265
1949 .....	121,371	5,439,217	1954 .....	65,365	2,676,529
1950 .....	97,047	5,290,631	1955 .....	50,352	3,058,704
1951 .....	72,068	6,802,840	1956 .....	44,016	2,943,638
1952 .....	85,643	6,983,941	1957 .....	49,602	3,115,134

<sup>1</sup> Factory shipments since 1952.

TABLE 8. Production<sup>1</sup> of Grain Binders, 1948-1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	18,025	6,359,954	1953 .....	1,763	800,916
1949 .....	12,615	5,123,012	1954 .....	320	163,082
1950 .....	6,147	2,306,723	1955 .....	94	64,805
1951 .....	3,557	1,409,554	1956 .....	312	142,723
1952 .....	5,398	2,347,188	1957 .....	65	12,644

<sup>1</sup> Factory shipments since 1952.

TABLE 9. Production<sup>1</sup> of Threshers and Reaper-Threshers, 1948 - 1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	19,005	39,528,632	1953 .....	21,870	61,825,147
1949 .....	23,859	53,374,814	1954 .....	12,891	37,433,104
1950 .....	18,973	41,449,898	1955 .....	11,621	36,465,347
1951 .....	22,384	56,212,282	1956 .....	10,742	36,506,209
1952 .....	24,562	69,632,328	1957 .....	9,669	34,186,270

<sup>1</sup> Factory shipments since 1952.TABLE 10. Production<sup>1</sup> of Seed Drills, 1948 - 1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	7,939	2,795,642	1953 .....	7,669	3,164,105
1949 .....	8,301	2,845,541	1954 .....	3,848	1,617,099
1950 .....	11,704	4,247,621	1955 .....	1,881	775,703
1951 .....	11,902	5,597,882	1956 .....	1,024	439,171
1952 .....	10,629	4,671,475	1957 .....	994	497,724

<sup>1</sup> Factory shipments since 1952.TABLE 11. Production<sup>1</sup> of Cream Separators, 1948 - 1957 (From all industries)

Year	300 pounds and under		Over 300 pounds		Total	
	Number	Selling value at works	Number	Selling value at works	Number	Selling value at works
		\$		\$		\$
1948 .....	3,728	147,473	7,955	748,819	11,683	896,292
1949 .....	1,605	69,520	6,637	791,597	8,242	861,117
1950 .....	336	7,884	3,331	403,943	3,667	411,827
1951 .....	577	24,413	5,291	730,004	5,868	754,417
1952 .....	656	29,398	5,632	692,304	6,288	721,702
1953 .....	—	—	3,426	389,292	3,426	389,292
1954 .....	—	—	3,227	373,580	3,227	373,580
1955 .....	—	—	1,600	180,774	1,600	180,774
1956 .....	184	15,814	511	52,241	695	68,055
1957 .....	351	44,740	—	—	351	44,740

<sup>1</sup> Factory shipments since 1952.TABLE 12. Production<sup>1</sup> of One-way Discs, Harrow-Plows and Tiller-Combines, 1948 - 1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	33,259	10,371,290	1953 .....	17,073	7,914,542
1949 .....	39,868	13,051,057	1954 .....	8,006	4,048,150
1950 .....	29,498	10,083,519	1955 .....	3,279	1,719,731
1951 .....	23,102	8,819,419	1956 .....	4,392	2,678,895
1952 .....	21,034	9,958,121	1957 .....	4,403	3,140,278

<sup>1</sup> Factory shipments since 1952.

**TABLE 13. Production<sup>1</sup> of Cultivators, 1948-1957 (From all industries)**

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	26,174	3,404,697	1953 .....	13,558	3,466,288
1949 .....	27,118	3,758,130	1954 .....	9,649	2,566,451
1950 .....	27,999	5,115,228	1955 .....	12,870	2,809,700
1951 .....	28,318	4,836,787	1956 .....	13,726	3,752,537
1952 .....	28,429	5,361,483	1957 .....	11,222	3,627,464

<sup>1</sup> Factory shipments since 1952.**TABLE 14. Production<sup>1</sup> of Weeders and Corn Planters, 1948-1957 (From all industries)**

Year	Weeders		Corn planters	
	Number	Selling value at works	Number	Selling value at works
	\$			\$
1948 .....	3,171	569,495	8,207	601,175
1949 .....	4,548	867,278	2,770	416,833
1950 .....	2,157	419,867	151	27,865
1951 .....	2,515	475,197	3,133	342,496
1952 .....	2,105	436,855	2,238	184,314
1953 .....	2,206	474,441	1,850	132,173
1954 .....	2,216	607,541	1,201	164,804
1955 .....	1,658	480,158	1,608	223,120
1956 .....	1,577	314,143	1,352	218,472
1957 .....	1,995	430,661	2,079	454,278

<sup>1</sup> Factory shipments since 1952.**TABLE 15. Production<sup>1</sup> of Hay Loaders and Hay Rakes, 1948-1957 (From all industries)**

Year	Hay loaders		Hay rakes, including combination side rakes and tedders	
	Number	Selling value at works	Number	Selling value at works
	\$			\$
1948 .....	7,401	1,089,616	14,429	1,315,875
1949 .....	6,502	1,005,490	20,474	2,309,973
1950 .....	6,674	1,079,047	15,943	2,303,098
1951 .....	6,467	1,119,685	16,298	2,497,341
1952 .....	6,019	1,175,843	18,744	3,211,930
1953 .....	4,755	954,059	11,539	2,280,599
1954 .....	1,674	398,565	7,773	1,790,724
1955 .....	1,272	286,545	9,937	2,184,269
1956 .....	304	63,975	6,987	1,155,490
1957 .....	212	54,052	7,204	2,079,695

<sup>1</sup> Factory shipments since 1952.

TABLE 16. Production<sup>1</sup> of Manure Spreaders, 1948-1957 (From all industries)

Year	Number	Selling value at works	Year	Number	Selling value at works
		\$			\$
1948 .....	9,561	1,733,361	1953 .....	11,821	3,954,225
1949 .....	13,199	2,013,387	1954 .....	6,024	2,148,507
1950 .....	7,000	1,493,878	1955 .....	5,276	1,782,546
1951 .....	8,769	2,260,385	1956 .....	4,531	1,591,328
1952 .....	8,440	2,600,927	1957 .....	3,643	1,347,669

<sup>1</sup> Factory shipments since 1952.

TABLE 17. Production, Imports and Exports of Agricultural Implements and Parts, 1948-1957

Year	Production	Imports	Exports
		dollars	
1948 .....	139,079,000	139,993,000	73,760,000
1949 .....	169,617,000	177,210,000	92,527,000
1950 .....	141,674,000	161,642,000	87,811,000
1951 .....	162,349,000	195,082,000	106,438,000
1952 .....	194,688,000	197,266,000	105,408,000
1953 .....	159,851,000	209,143,000	74,316,000
1954 .....	113,089,000	143,163,000	76,771,000
1955 .....	109,701,000	178,248,000	76,010,000
1956 .....	117,656,000	232,148,000	67,477,000
1957 .....	117,896,000	202,222,000	65,153,000

Note: In Table 17 production values are computed at factory selling prices, the import values are based on fair market prices in countries of origin, and export values represent the amounts actually received for goods, exclusive of freight, insurance and other handling charges. Details of imports and exports are shown in Tables 25 and 26.

TABLE 18. Sales of Agricultural Implements and Equipment, by Provinces, 1953-1957

Province	1953	1954	1955	1956	1957
	dollars				
Newfoundland .....	281,712	269,246	343,876	439,871	5,295,899
Maritimes .....	7,563,698	4,987,275	6,485,628	6,984,186	
Quebec .....	20,587,165	16,942,850	21,713,939	23,325,374	23,841,645
Ontario .....	45,442,835	39,360,291	43,819,906	42,902,342	38,581,835
Manitoba .....	28,030,312	15,538,264	15,652,835	18,588,098	14,713,559
Saskatchewan .....	80,333,503	37,371,962	33,113,149	40,748,641	32,137,391
Alberta .....	51,302,523	28,017,559	28,800,919	32,686,198	30,934,663
British Columbia .....	4,508,606	4,215,248	5,185,630	5,092,745	3,804,730
Canada .....	238,050,354	146,702,695	155,115,882	170,767,455	149,309,722

Note: In Table 18 the values are based on distributors' wholesale prices. The details of sales are given in a separate report which may be obtained by applying to the Dominion Bureau of Statistics, Ottawa, Canada.

TABLE 19. Number of Specified Machines on Farms, 1951 (According to last Decennial Census)

Province	Auto-mobiles	Motor trucks	Tractors	Gasoline engines	Threshing machines	Grain binders	Grain combines	Mowing machines	Milking machines	Electric motors
number										
Newfoundland .....	185	507	126	136	5	4	—	737	66	131
Prince Edward Island	4,147	1,679	2,776	3,813	2,973	5,956	18	7,720	454	1,754
Nova Scotia .....	6,970	5,687	4,307	2,178	826	2,101	16	16,114	1,903	3,861
New Brunswick .....	7,999	4,786	5,221	2,439	2,450	4,149	211	16,288	1,901	3,471
Quebec .....	41,602	19,167	31,971	30,692	30,360	43,467	420	103,936	18,238	43,638
Ontario .....	114,870	41,486	105,204	20,243	15,946	85,135	10,031	112,567	38,740	84,679
Manitoba .....	32,060	21,163	50,984	17,370	9,425	31,410	15,268	37,856	2,302	18,850
Saskatchewan .....	62,963	52,626	106,664	55,763	19,221	70,584	42,997	63,838	2,330	12,711
Alberta .....	46,314	39,723	79,282	46,003	14,768	57,930	20,852	53,468	4,469	20,925
British Columbia ....	12,557	9,291	13,148	4,407	717	2,638	687	10,743	3,788	6,661
Yukon .....	—	7	3	7	—	—	—	5	—	—
Canada .....	329,667	196,122	399,686	183,051	96,691	303,374	90,500	423,272	74,191	196,681

TABLE 20. Principal Statistics of the Agricultural Implements Industry, Classified According to Type of Ownership, 1956 and 1957

Type	Establishments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
number					
1956					dollars
Individual ownership .....	14	48	103,126	134,631	327,933
Partnerships .....	4	29	68,017	127,300	220,027
Incorporated companies .....	52	} 9,761	36,532,435	64,524,349	122,133,065
Co-operatives .....	1				
Total .....	71	9,838	36,703,578	64,786,280	122,681,025
1957					
Individual ownership .....	14	43	102,691	109,686	311,422
Partnerships .....	3	24	68,020	128,502	222,311
Incorporated companies .....	52	} 10,204	39,107,405	59,617,583	121,994,805
Co-operatives .....	1				
Total .....	70	10,271	39,278,116	59,855,771	122,528,538

**TABLE 21. Principal Statistics of the Agricultural Implements Industry in Canada, Grouped According to Value of Factory Shipments, 1956 and 1957**

Establishments reporting value of factory shipments	Establishments	Employees	Salaries and wages	Cost at plant of materials used	Selling value of factory shipments
1956		number		dollars	
<b>Under \$10,000</b>					
\$10,000 to \$24,999	6	10	18,295	19,873	30,881
\$25,000 " \$49,999	8	19	39,665	58,442	113,587
\$50,000 " \$99,999	10	52	116,780	143,967	343,380
\$100,000 " \$199,999	12	131	334,974	382,575	885,765
\$200,000 " \$499,999	8	190	421,016	421,997	1,059,241
\$500,000 " \$999,999	8	254	701,787	1,142,504	2,531,456
\$1,000,000 " \$4,999,999	10	600	2,055,626	3,503,964	7,449,197
\$5,000,000 and over	5	1,181	4,128,125	8,847,257	14,266,661
Head offices	—	4	7,396	28,826,853	50,265,701
<b>Total</b>	<b>71</b>	<b>9,838</b>	<b>36,703,578</b>	<b>64,786,280</b>	<b>122,681,025</b>
1957					
<b>Under \$10,000</b>					
\$10,000 to \$24,999	4	5	12,315	12,240	27,006
\$25,000 " \$49,999	12	32	78,786	65,829	187,273
\$50,000 " \$99,999	8	42	99,314	101,465	274,596
\$100,000 " \$199,999	11	120	306,267	375,334	842,165
\$200,000 " \$499,999	9	214	533,418	493,647	1,225,371
\$500,000 " \$999,999	6	158	464,024	1,011,981	1,841,710
\$1,000,000 " \$4,999,999	10	670	2,327,413	2,766,103	7,324,167
\$5,000,000 and over	6	1,119	4,199,301	7,468,990	14,978,678
Head offices	—	4	7,905	31,180,675	47,560,182
<b>Total</b>	<b>70</b>	<b>10,271</b>	<b>39,278,116</b>	<b>59,855,771</b>	<b>122,528,538</b>

**TABLE 22. Capital and Repair Expenditures in the Agricultural Implements Industry, 1953-1957**

Year	Capital expenditures		Sub-total	Repair and maintenance expenditures		Sub-total	Total capital and repair expenditures
	Construction	Machinery and equipment		Construction	Machinery and equipment		
thousands of dollars							
1953	1,175	3,051	4,226	1,083	3,561	4,644	8,870
1954	627	2,378	3,005	635	3,357	3,992	6,997
1955	737	1,665	2,402	748	2,205	2,953	5,355
1956	1,329	2,126	3,455	787	1,928	2,715	6,170
1957	2,244	3,512	5,756	826	3,132	3,958	9,714

Note: Figures for the current year are preliminary.

**TABLE 23. Employees and their Earnings in the Agricultural Implements Industry,  
by Provinces, 1956 and 1957**

Province	Number of employees				Earnings			
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	
	Male	Female	Male	Female				
dollars								
<b>1956</b>								
Quebec .....	36	10	214	2	262	169,586	524,112	693,698
Ontario .....	1,890	483	6,412	76	8,861	9,832,914	23,853,210	33,686,124
Manitoba .....	62	21	399	8	490	444,857	1,047,594	1,492,451
Saskatchewan .....	11	2	22	1	36	38,314	56,665	94,979
Alberta .....	35	5	104	1	145	258,722	353,033	611,755
Other provinces .....	9	3	31	1	44	32,098	92,473	124,571
<b>Canada</b> .....	<b>2,043</b>	<b>524</b>	<b>7,182</b>	<b>89</b>	<b>9,838</b>	<b>10,776,491</b>	<b>25,927,087</b>	<b>36,703,578</b>
<b>1957</b>								
Quebec .....	47	10	188	5	250	222,642	502,274	724,916
Ontario .....	1,805	489	6,848	107	9,249	10,074,297	25,889,859	35,964,156
Manitoba .....	66	20	428	11	525	548,689	1,182,977	1,731,666
Saskatchewan .....	9	1	23	—	33	30,197	69,794	99,991
Alberta .....	53	9	103	—	165	314,830	291,101	605,931
British Columbia .....	12	3	34	—	49	43,097	108,359	151,456
<b>Canada</b> .....	<b>1,992</b>	<b>532</b>	<b>7,624</b>	<b>123</b>	<b>10,271</b>	<b>11,233,752</b>	<b>28,044,364</b>	<b>39,278,116</b>

**TABLE 24. Production Workers, by Months, 1956 and 1957**

Month	1956			1957		
	Male	Female	Total	Male	Female	Total
number						
January .....	8,878	102	8,890	7,459	105	7,564
February .....	9,351	98	9,449	8,946	133	9,079
March .....	9,453	100	9,553	9,409	143	9,552
April .....	8,948	100	9,048	9,090	130	9,220
May .....	8,357	99	8,456	8,619	126	8,745
June .....	8,350	92	8,442	8,209	135	8,344
July .....	7,814	87	7,901	7,163	132	7,295
August .....	3,920	61	3,981	4,728	81	4,809
September .....	3,696	64	3,760	5,847	118	5,965
October .....	4,890	81	4,971	6,451	125	6,576
November .....	5,995	85	6,080	7,507	124	7,631
December .....	6,467	96	6,563	8,036	123	8,159
<b>Average</b> .....	<b>7,182</b>	<b>89</b>	<b>7,271</b>	<b>7,624</b>	<b>123</b>	<b>7,747</b>

TABLE 25. Imports of Agricultural Implements, 1956 and 1957

Item	1956		1957	
	Quantity	Value	Quantity	Value
Cream separators .....	No.	\$		\$
Cream separators .....	11,530	1,461,017	8,029	1,110,526
Cream separator parts .....	-	144,672	-	142,450
Milk clarifiers and complete parts .....	-	53,357	-	40,019
Milking machines, and attachments therefor; centrifugal machines for testing butter fat, milk or cream, and complete parts of articles specified in this item .....	-	1,905,004	-	1,793,935
Pasteurizers for dairying purposes, and complete parts .....	No.			
Pasteurizers for dairying purposes, and complete parts .....	665	642,526	-	399,126
Dairy machinery, viz: power churns, power milk coolers, power fillers and cappers, power ice-cream mixers, power butterprinters, power cream savers, power bottle sterilizers, power brine tanks, power milk bottle washers, power milk can washers; ice-breaking machines, valveless or centrifugal milk pumps, sanitary milk and cream vats; none of the foregoing machinery to include motive power .....	-	1,912,086	-	2,679,711
Forks, pronged .....	doz.	10,550	113,538	7,240
Harvesters, self-binding or not, and binding attachments and parts .....	No.	2,265	2,919,704	2,103
Hay loaders and parts .....	"	555	125,654	478
Hay tedders and parts .....	"	1	208	-
Mowing machines and parts .....	"	8,906	2,626,552	8,525
Potato diggers and planters, and parts .....	"	1,343	507,478	962
Rakes, horse or power, and parts .....	"	9,048	2,494,888	10,877
Rakes, n.o.p. .....	doz.	29,025	163,142	29,192
Reapers and parts .....	-	-	-	-
Scythes .....	doz.	5,416	81,289	3,440
Sickles or reaping hooks .....	"	1,750	12,101	1,142
Cultivators, horse hoes, scufflers, weeders, and parts .....	-	-	3,003,383	-
Drills, seed, garden seeders, and parts .....	-	-	1,195,899	-
Harrows, disc, and parts .....	-	-	1,193,866	-
Harrows and parts n.o.p. .....	-	-	396,090	-
Hoes .....	doz.	4,278	38,198	3,152
Plows, disc, and parts .....	-	-	780,030	-
Plows and parts, n.o.p. .....	-	-	2,248,112	-
Rollers, farm, field, lawn or garden, and soil packers, and parts .....	No.	2,302	71,432	2,366
Fanning mills, peaviners and corn-husking machines, and parts .....	"	1,581	1,181,091	772
Harvesters in combination with threshing machine separators, and complete parts .....	"	3,135	15,222,762	2,675
Threshing machine separators .....	"	83	35,780	76
Threshing machine separators, parts of, including weighers, wind stackers, baggers and self-feeders and parts .....	-	-	316,773	-
Equipment for generating electric power for farm purposes only, viz.: engine, gas tank, generator, storage battery and switchboard, and complete parts .....	-	-	72,993	-
Fodder, feed or ensilage cutters, and parts .....	No.	449	265,339	355
				226,361

TABLE 25. Imports of Agricultural Implements, 1956 and 1957 — Concluded

Item	1956		1957	
	Quantity	Value	Quantity	Value
Fruit and vegetable grading, grating, washing and wiping machines, and combination bagging and weighing machines, and complete parts thereof; machines for topping vegetables, and machines for bunching and tying cut flowers, vegetables and nursery stock, and complete parts thereof; machines for making or lidding boxes for fruit or vegetables; egg-graders and egg-cleaners and complete parts thereof; apparatus for sterilizing bulbs; pressure-testing apparatus for determining maturity of fruit, and parts .....	—	590,176	—	626,335
Grain crushers and grain or hay grinders, and parts .....	No. 2,129	594,847	1,725	486,233
Hay presses and parts .....	" 9,660	11,934,801	9,288	11,525,028
Manure spreaders and parts .....	" 4,792	1,644,893	6,042	2,000,562
Post hole diggers and parts .....	" 3,101	171,920	3,910	133,800
Spades and shovels, of iron or steel, n.o.p. ....	doz. 13,020	159,982	10,316	130,387
Spraying and dusting machines and parts, including hand sprayers and parts .....	—	2,142,570	—	1,796,102
Stumping machines and complete parts .....	—	—	—	—
Traction ditching machines (not being plows), and parts .....	No. 122	1,426,784	150	1,644,334
Tractors, internal combustion (for farm and other purposes) .....	" 35,674	108,999,659	30,352	82,968,977
Tractors, internal combustion, parts of; traction attachments and parts (for farm and other purposes) .....	—	50,626,426	—	44,688,982
Windmills and complete parts, not including shafting .....	—	7,831	—	6,758
Pruninghooks and shears and animal dehorning instruments .....	—	131,904	—	144,458
Agricultural implements and parts, other .....	—	12,531,648	—	13,047,098
Total imports .....	—	232,148,405	—	202,221,611

TABLE 26. Exports of Agricultural Implements, 1956 and 1957

Item	1956		1957	
	Quantity	Value	Quantity	Value
Cream separators and parts .....	—	—	—	\$ 8,357
Milking machines and parts .....	—	—	—	1,350,532
Harvesters and binders .....	No. 1	1,659,276 200	1	1,395
Hay rakes .....	" 4,119	1,023,478	3,538	1,022,385
Mowing machines and reapers .....	" 8,104	2,337,074	7,063	2,101,030
Reaper-threshers .....	" 7,211	24,422,207	7,094	27,140,728
Cultivators .....	" 4,076	1,067,024	3,030	796,017
Drills and sowers .....	" 8,532	2,986,059	7,322	2,626,132
Harrows, disc, and parts .....	—	—	—	2,805,766
Harrows and parts, n.o.p. ....	—	—	—	86,529
Plows, disc, and parts .....	—	—	—	2,891,164
Plows and parts, n.o.p. ....	—	—	—	3,255,729
Planters .....	No. 399	90,492	516	64,260
Threshing-machine separators and parts .....	—	250,318	—	21,725
Garden and farm tools .....	—	—	—	99,226
Spades and shovels, and parts .....	doz. 1,596	30,981	1,606	34,164
Garden tractors .....	No. 2	545	—	—
Farm tractors .....	" 1,989	3,538,990	1,098	2,337,126
Attachments for agricultural implements .....	—	—	—	1,043,564
Farm implements and machines, n.o.p. ....	—	—	—	5,186,153
Parts of farm implements and machines, n.o.p. ....	—	—	—	12,280,992
Total exports .....	—	—	67,476,731	65,152,974

TABLE 27. Fuel and Electricity Used in the Agricultural Implements Industry, 1956 and 1957

Kind		1956		1957	
		Quantity	Cost at works	Quantity	Cost at works
Bituminous coal (a) From Canadian mines .....	ton	16,442	161,068	11,076	114,599
(b) Imported .....	"	25,111	256,723	33,043	342,619
Sub-bituminous coal from Alberta mines .....	"	218	2,145	34	389
Anthracite coal .....	"	10,594	119,144	6,187	76,011
Lignite coal .....	"	501	3,935	360	3,065
Coke .....	"	540	15,480	54	1,397
Gasoline, including gasoline used in cars and trucks .....	Imp. gal.	483,815	159,215	391,947	143,461
Kerosene .....	"	1,100	521	230	62
Fuel oil .....	"	2,178,424	293,410	2,037,894	273,269
Wood .....	cord	261	2,945	246	3,287
Gas (a) Liquefied petroleum gases .....	Imp. gal.	19,572	4,124	76,337	9,348
(b) Other manufactured gas .....	M cu. ft.	264,185	161,875	234,571	145,586
(c) Natural gas .....	"	22,263	19,959	35,602	31,944
Other fuel .....	—	—	4,770	—	2,849
Electricity purchased .....	kwh.	66,169,942	666,912	64,804,931	665,129
<b>Total</b> .....	—	—	<b>1,872,226</b>	—	<b>1,813,015</b>

## List of Firms in the Agricultural Implements Industry, 1957

Name of firm	Address
<b>Quebec:</b>	
Banyville & Pils Enrg.	St-Octave de Metis
Desjardins Limitée	St-André de Kamouraska
Dion Frères Inc.	St-Thérèse de Blainville
Gaudreau, J.E. Enrg.	Rue St-Jean Baptiste, Montmagny P.O.
La Compagén Jutras Limitée	Victoriaville
Ledoux, V., Manufacturing Reg'd.	St-Hyacinthe
Laperle, Louis, Enrg.	St-Ours
Machineries Pont Rouge Ltd.	Pont Rouge
<b>Ontario:</b>	
Bari Crop Dusters	Corinth
Canadian Potato Machinery Co., Ltd.	17 Jarvis St., Galt
Cockshutt Farm Equipment Limited	66 Mohawk St., Brantford
Deere, John, Welland Works of	P.O. Box 430, Welland, Ont.
DeLaval Company Limited	115 Park St. S., Peterborough
Delhi Foundry & Farm Machinery Co.	191 King St., Delhi
Delhi Ornamental Iron	Delhi
Ebersol Farm Equipment Co. Limited	Milverton
Ernst Bros. Company Limited	Durham St., Mount Forest
Gray-Snyder Ltd.	Hillsburgh
Herrgott Thresher Co. Limited	Main St., St. Clements
International Harvester Company of Canada, Limited	Sherman Ave. N., Hamilton
Jacksons Mfg. & Machinery Ltd.	Tillsonburg
Kelsey Manufacturing Co.	Waverley St., Delhi
Lewis, Clarence W., & Son, Limited	8 Patton St., Grimsby
Lobsinger Bros. Ltd.	Mildmay
McKee Bros. Ltd.	Union St., Elmira
Massey-Harris-Ferguson Ltd.	915 King St. W., Toronto
Massey-Harris-Ferguson Ltd.	645 Dundas St., Woodstock
Massey-Harris-Ferguson Ltd.	Market St. and Canal Road, Brantford
Otaco Limited	West St., Orillia
Rittehouse, M.K., & Sons	Jordan Station
Sedore, Ernest, & Son	Mount Albert
Serviss Industries	61 Wigle St., Leamington
Smith Brothers (Camden)	R.R. No. 1, Thamesville
Spramotor Ltd.	1099-1105 York St., London
Tac-lite Limited	131 Grand Ave. S., Galt
White, Geo., & Sons Co., Ltd.	Cabell Ave., London

**List of Firms in the Agricultural Implements Industry, 1957 – Concluded**

Name of firm	Address
<b>Manitoba:</b>	
Bobrowski Mfg. Co. Ltd.	901 Madison Street, St. James
Canadian Co-operative Implements Ltd.	601 Bowman Ave., Winnipeg
Cancade Brothers Ltd.	12th & Richmond Ave., Brandon
Derby Manufacturing Co.	414 Osborne St., Winnipeg 13
Forever Industries Limited	115 Robinson St., Winnipeg
Hart-Emerson Company Limited, The	1425 Whyte Ave., Winnipeg
Hydraulic Engineering Co.	Partridge & Aikins Sts., Winnipeg
Inland Steel & Forgings Limited	675 Washington Ave., Winnipeg
Killberry Industries Ltd.	631 Ferry Road, Winnipeg
Machine Industries Ltd.	Berry St. & Elice Ave., Winnipeg
Malmgren Implement Mfg. Co. (Man.) Ltd.	753 Marion St., St. Boniface
Markwill Industries Ltd.	450 Youville St., St. Boniface
Northern Equipment Limited	277 Madison St., St. James
Plett's Industries	Rosenort
Standard Gas Engine Works	Morden
<b>Saskatchewan:</b>	
Brandt Electric Ltd.	1101 Winnipeg St., Regina
Brown Industries	Drinkwater, Sask.
Flexi-coil Land Packers Limited	1025 Ave. P. South, Saskatoon
Morris Rod Weeder Co. Ltd.	62 Argyle St., Yorkton
Nodge Manufacturing Co.	140-9th St. West, Swift Current
Sakundiak Farm Equipment	130 Dewdney Ave., Regina
Shaunavon Industries	Shaunavon
<b>Alberta:</b>	
Calgary Farm Machinery Ltd.	507-2nd St. East, Calgary
Ferguson, E.C., Co.	9027-111th Ave., Edmonton
Golden Arrow Sprayers Ltd.	1439-10th Ave., E., Calgary
Kirchner Machine Co.	2005-2nd Ave. South, Lethbridge
Noble Cultivators Ltd.	Nobleford
Robinson Machine & Supply Co. Ltd.	50th Ave. & 1st St. S., Calgary
Samson Rotary Rod Weeder Ltd.	1019-10th Ave. W., Calgary
Victory Equipment Ltd.	321-13th St. N., Lethbridge
<b>British Columbia:</b>	
Farm and City Service Co. Ltd.	133 Westminster Ave. W., Penticton
Okanagan Turbo Sprayers, Ltd.	145 Winnipeg St., Penticton
Rain Bird Sprinkler Mfg. Co. (Canada) Ltd.	54E Cordova St., Vancouver
Swanson Sprayers Ltd.	1658 Pendozl St., Kelowna, B.C.
Trump Limited	Penticton St., Oliver

the movement of the body and the resulting force produced  
is proportional to the rate of change of velocity. This is known as  
Newton's second law of motion. The force of gravity acts  
downwards and is proportional to the mass of the object. This  
is known as Newton's law of gravitation. The force of  
attraction between two objects is proportional to their  
masses and inversely proportional to the square of the  
distance between them. This is known as the law of  
universal gravitation.

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