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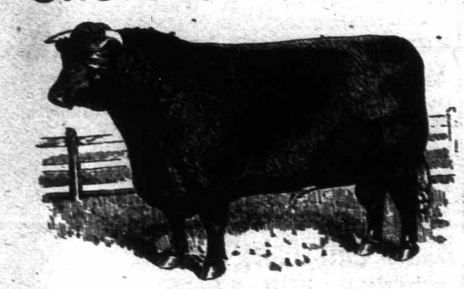
SCOTCH SHORTHORN BULLS AND HEIFERS
HERD ESTABLISHED IN 1872.
Such sires as imported Royal George and imported Warfare have put us where we are. Imported Blue Ribbon now heads herd.
A. & D. BROWN.
ELGIN COUNTY. -om IONA, ONTARIO.

H. SMITH, - Hay, Ont.
Shorthorn Cattle.
Two good roan bulls and a fine bunch of heifers FOR SALE.
Exeter Station on G. T R., half a mile from farm. om

W. D. FLATT,
Hamilton, Ontario, Can.,
Importer and breeder of
Shorthorn Cattle.



GOLDEN FAME (IMP.) —26056— (72610).
My herd is one of the largest in America, both imported and Canadian-bred. A very choice selection of both sexes always on hand for sale. Personal inspection invited. Address all communications:
JAMES SMITH, Mgr., Millgrove, Ont.
R. R. Station and Telegraph, Hamilton, on main line Grand Trunk RR. om

John Miller & Sons,
BROUGHAM P. O.
and TELEGRAPH OFFICE,
OFFER FOR SALE....
4 Imported Clydesdale Stallions.
10 Scotch-bred Shorthorn Bulls.
....PRICES REASONABLE.
Claremont Stn., C.P.R. **Pickering Stn., G.T.R.**
-om Correspondence Invited.

Bonnie Burn Stock Farm
Forty rods north of Stouffville station, Ont., offers for sale Shorthorn bull calves and yearling heifers, Shropshire lambs and shearlings (both sexes). om D. H. RUSNELL, Stouffville, Ont.

SPRINGBANK FARM.
Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale.
om JAS. TOLTON, WALKERTON, ONT.

HAWTHORN HERD
OF DEEP-MILKING SHORTHORNS.
We are offering 5 young bulls for sale, of first-class quality, and A1 breeding. -om
Wm. Grainger & Son, - Londesboro, Ont.

SPRING GROVE STOCK FARM
Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Topsman =17847=, champion at Winnipeg, Toronto, London and Ottawa, 1899. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns. Apply om

T. E. ROBSON, Ilderton, Ont.

SHORTHORNS.
One red bull, 21 months old; one 6 months old; also a number of heifers.
A. P. ALTON & SON, -o
Burlington Jct. Station. Appleby P. O., Ont.

PLEASE MENTION FARMER'S ADVOCATE.

NOTICE.

Windmill Bearings.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—We notice in your issue of May 15th a letter from Mr. Lawrence on the subject of windmill bearings, and, as we went into this subject very fully some years ago, are glad to give your readers the benefit of the result of our investigations as to whether roller bearings are or are not an improvement upon babbitt bearings. Let us say first, that we are thoroughly impartial in this matter. It is our interest to furnish, as it is the interest of every manufacturer, just exactly what the people want, always taking care that the machinery offered shall be in every particular the best of its class and most suitable for the work it has to do. Outside of this, there could be no possible reason on earth why any manufacturer should not furnish whatever class of goods are most in demand. The weak point about roller bearings is their inability to retain oil in a fluid state, and the necessity that consequently arises of frequently oiling them. Let us look into this further. If any of your readers will sketch a section of a roller bearing, he will see that the shaft is in contact with each roller at one point only, and that the rollers and the outer cases are also in contact at only one point in the circumference of each. Let us see how this works out in figures: Suppose a 1-inch shaft with 10-inch rollers, running in a 1½-inch case, the circumference of the shaft is 3¼ inches, and the ten rollers 7 6-7 inches, and of the outer case, 4 5-7 inches, makes a total of 15 5-7 inches. Now, the outer case has 10 points of contact, the 10 rollers have 20, and the shaft has 10, and assuming that 1-16 of an inch of the circumference is covered in each point of contact (it is really less than this), makes the circumferential measurement of the surfaces in contact 2½ inches, or a little less than 1-6 of the total of the bearing surface. In other words, 5-6 of the lubricated surfaces is exposed to the air to get dry, gum up, and stick. What sort of a bearing is this to put on a windmill? Compare this with a good Babbitt bearing, where all the surfaces are in close contact and the oil is absolutely protected from the air, and also remember that the leading feature about windmills, to make them serviceable and a comfort to their owners, is that they must not require to be oiled too often. Any windmill will run if it is kept swimming in oil—at least they ought to—but windmills have to work under conditions the reverse of ideal, subject to all variations of weather and degrees of attention, and to be popular and successful must be so designed as to fulfil every requirement under all circumstances.

A year ago one of our roller bearing competitors published the following, and the original of this will be shown to any enquirer: "The introduction of the roller bearings is one of our innovations, and this innovation, like the bearing itself, will last as long as windmills are used." This is taken from a publication issued in March, 1899, just one brief happy year ago, and by the time they got through their first winter's experience, they wrote as follows: "Roller bearing prove very satisfactory for light work, but our mill is such a powerful machine that our customers have gotten into the habit of using a large cylinder with a small pipe, thus making a great deal of strain on all the working parts. They have also been in the habit of letting our mill run without much oil, and the roller bearings had to be kept thoroughly oiled, otherwise they would run dry and pile up, causing trouble. Taking all into consideration, we find it necessary to make an improvement, subsequently substituted removable babbitt bushings for the roller bearings." Gymnastic records contain no example of such a prodigious flipflop as this.

A year ago we published the following: "The truth about roller bearings is, that when cleaned and nicely oiled they are very easy running, but when not oiled and after standing and the exposed surfaces getting dry and gummy, they run very stiff until oiled again. We can understand they would answer admirably on all farm machinery, where bearings are right under the hand of the operator and easily got at. In fact, in such circumstances they are excellent, but for a windmill that is required to get along with the least possible amount of attention for the longest possible time, babbitt bearings are preferable, because the bearing surfaces are not exposed to the air, and retain oil longer."

There is not a word of that sentence that is not as absolutely true to-day as it was when it was written, and we appeal to the intelligence and justice of your readers as to whether manufacturers, who are so careless as to confidently recommend one year what they are obliged to apologize for the next, deserve the confidence of the public sufficiently to entitle them to the slightest attention when they pronounce upon any question involving practical mechanical ability or honesty of purpose. It is hardly necessary to add that we have nothing to say on the subject of roller bearings when used in such a position that they are convenient of access to the operator and can be oiled frequently. It is quite probable that under such circumstances they are all that is claimed for them. But, the experience of hundreds, the spark of truth that shines out from that shifty, evasive and unsatisfactory statement—the second which we quoted—and the application of a little hard common sense, will all lead to the conclusion that the roller bearing is not wanted any more on windmills. A great many years ago we manufactured graphite bearings. Graphite, possibly, has a certain value as a safeguard to be relied on in case of emergency, but it is not fitted for use as a lubricant. Our conclusion on this subject, to which we have given much anxious thought and care, is that a babbitt bearing, carefully made of the best quality of metal, fitted with an oil cup of such a size as to insure an automatic supply of oil and to decrease the amount of attention required, is the surest, safest, easiest running, and the best fitted for hard work under all conditions. This has been our opinion in this matter for some years, but we fear it will take some time and the expenditure of a good deal of other people's money, not to speak of some of their own, to convince our competitors that our position in this respect is unassailable.

Thanking you for the space you have given us, and with best wishes for the success of your valuable publication, we remain,

Yours truly,
ONTARIO WIND ENGINE & PUMP CO., LTD.

H. CARGILL & SON,
CARGILL, ONTARIO.
The largest herd of Imported Scotch Shorthorn Cattle in Canada.

SEVENTY-SIX HEAD IMPORTED DURING 1899.

13 BULLS. 63 FEMALES.

ALL imported females of suitable age bred before leaving Scotland. Catalogue free. Correspondence or personal inspection invited. Address as above. Cargill Station half a mile from barns, on Grand Trunk Ry.; 70 miles north-west of Guelph. om

W. G. Pettit & Son,
FREEMAN, ONT.
IMPORTERS AND BREEDERS OF
Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE: 1 imported bull, extra good; 3 imported cows, with calves at their side and in calf again; 6 home-bred bulls, from 5 to 15 months; 40 home-bred cows and heifers. All of breeding age have been bred to imported bulls. Our Shropshires have wintered well, and our lambs this season are a strong, thrifty bunch. 5 rams carried over from last season are in good shape. Correspondence or a personal visit solicited. Catalogues on application.

Burlington Junction Station and Telegraph Office, G. T. R., within half a mile of farm. om

GOSSIP.

The F. W. Stone Stock Co. shipped on May 24th seventeen head of choice pure-bred Hereford bulls, cows and heifers to the Embar Cattle Co., Wyoming. These cattle were selected by Col. Jay L. Torrey, president of that company, during his two visits to Canada in May. The Stone Co. also shipped on June 5th to Qu'Appelle, N.-W. T., the Hereford bull, Gara Chief 4th. This is a very fine animal, and the kind suitable for the Northwest trade.

Alex. Hume & Co., Menie, Ont., write:—"One of the most important recent sales of Ayrshires was a lot of four cows to W. E. H. Massey, Dentonia Park Farm, Toronto, all deep milkers and breeders of prizewinners, viz., Lady McNeill, an 8-year-old cow, granddaughter of old Viola III. imp., the cow that won so much fame in her day in the hands of Jas. Drummond, Petite Cote, Montreal. She is a heavy milker, carrying an udder of unusual size, and dam of 1st-prize bull calf under six months last year at Toronto, Kingston, and elsewhere. She had just dropped a very fine bull calf at time of sale, which we reserved. White Queen, a 6-year-old cow; her two calves that have been exhibited at Toronto when six months old, both won first prize, and we have her calf just dropped the day before she was shipped, which promises to make as good as any calf she has had. Pearline, a 4-year-old cow, herself a prizewinner at Toronto every year, except last year, when she was dry, and we did not take her out. Her dam was a prizewinner at the World's Fair at Chicago; her calf we also reserved. Eva, a 6-year-old cow, large, and heavy milker, had calved about a week before being shipped, and we also have her last calf, which is nicely marked and a strong one. These were selected by Mr. Ketchen as being a useful lot, as well as of choice breeding, and we feel sure he made a good selection, as all are heavy milkers and good breeders.

A BIG IMPORTATION OF SHORTHORNS.

From our Old Country exchanges we learn that Messrs. W. G. Pettit & Son, of Freeman, Ont., have purchased in Scotland for importation, about 70 head of Shorthorns, selected from a number of well-known herds, including those of Messrs. Marr, Cairnbrogie; Young, Tillbouries; Wilson, Pieriesmill; Simmers, Whiteside; Merson, Craigwillie, and Law, New Keig. We hope to give fuller particulars in a future issue of this, one of the largest importations in recent years.

SHROPSHIRES AT HOME.

At the Shropshire County Show, held at Shrewsbury, May 23rd and 24th, the prizes for Shropshire sheep were awarded as follows: Shearling rams: 1 and 4, A. E. Mansell; 2 and *hc*, Mrs. M. Barrs; 3, R. P. Cooper; *r* and *hc*, W. F. Inge. Rams, any other age; 1, R. P. Cooper; 2 and *hc*, A. Mansell; *r*, A. S. Berry; *hc*, A. Bradburne, J. Harding; *c*, T. Fenn. T. S. Minton. Five shearling rams: 1, P. A. Muntz, M. P.; 2, W. F. Inge; 3, Mrs. Barrs; *r*, R. P. Cooper. Five shearling ewes: 1, W. F. Inge; 2, Mrs. Barrs; 3, A. Bradburne; 4, R. P. Cooper; *r*, P. A. Muntz, M. P. Five ram lambs: 1, A. Mansell; 2, J. Harding; 3, W. Thomas; *r*, G. L. Foster-Harter. Five ewe lambs: 1, G. L. Foster-Harter; 2, A. E. Mansell; *r*, J. Harding; *hc*, R. P. Cooper, W. Thomas.

A VALUABLE IMPORTATION OF SHORTHORNS.

Messrs. H. Cargill & Son, Cargill, Ont., write: "We landed safely at quarantine, Levis, Quebec, on the 17th May, 52 head of Scotch Shorthorns; 47 females and 5 bulls. They are a very promising lot, and we think probably the best we have imported. There are a number of prizewinners at the leading spring shows, both bulls and females. Their breeding is the best obtainable in Scotland, and all were selected by Sylvester Campbell, of Kinellar, a thorough judge of Shorthorns, both as regards individuality and pedigree. The following celebrated prizewinning bulls are represented in the lot, by their get or blood, viz.: Pride of Fame (73238), Marengo (69068), Prince of Rettie (71248), Clan Alpine (60495), Waverly (68072), Royal Star (71502), Brave Archer (70018), Prince of Archers (71240), Craibstone (66885), etc., etc. These cattle will reach home about 1st of August. Catalogues will be issued in due course, and will be mailed free to any address upon request.

PLEASE MENTION FARMER'S ADVOCATE.

Maple Lodge Stock Farm
ESTABLISHED 1854.
SHORTHORNS—An excellent lot of young bulls, and a special value in young cows and heifers in calf to our imported Knuckle Duster.
LEICESTERS—Imported and home bred—the best.
ALEX. W. SMITH,
-om MAPLE LODGE P. O., ONT.

SHORTHORN CATTLE AND LINCOLN SHEEP.
Imp. The Baron at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram.
J. T. GIBSON,
om DENFIELD, ONT.

FOR SALE: 50 Shorthorns of all ages and both sexes. Founded on good Scotch-bred cows, upon which have been employed Scotch bulls for 20 years. -o DAVID MILNE, ETHEL, ONT.

Scotch Shorthorns
FOR SALE.

100 head to select from; 15 grand young bulls by Valkyrie =21806=, and cows and heifers of all ages, of the most approved breeding, served by (imp.) Diamond Jubilee =28861=, now at the head of our herd.
T. DOUGLAS & SONS,
-om Strathroy Station and P. O.
Farm 1 mile north of the town.

Pure Scotch Shorthorns for Sale. Two bulls thirteen and fifteen months old, and three two-year-old and two one-year-old heifers. All right. Good ones. Meadowvale station, C. P. R. S. J. PEARSON & SON, Meadowvale. om

5--Shorthorn Bulls--5
From 9 to 15 months. Also a few choice yearling and 2-yr.-old heifers, among which are grand, thick-fleshed and choicely-bred animals, mostly solid red colors. Speak quick, for they will not last long. -om
STOUFFVILLE STATION, G. T. R. G. A. BRODIE, BETHESDA, ONT.

R. & S. NICHOLSON
SYLVAN P. O., PARKHILL STATION.
Scotch Shorthorns, imp. and home-bred.
The Imp. Clipper bull, Chief of Stars, heads the herd. Eight extra good 2-year-old heifers for sale, in calf to Chief of Stars (72215). Inspection Invited. -om

JAS. DORRANCE,
SEAFORTH, ONTARIO,
BREEDER OF
Shorthorn Cattle and Berkshire Pigs
Young stock always for sale. -om

8 Scotch-topped SHORTHORN BULLS 8
And a few females, sired by Revenue and Bonnie Lad, a son of (imp.) Blue Ribbon.
ROBT. DUFF,
G. T. R. and C. P. R. -o Myrtle, Ont.

PLEASE MENTION FARMER'S ADVOCATE.