

Robert Foulis's patent curling stone game

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ABSTRACT

The game of curling depended on the chance of frost of sufficient degree and duration to create a bearing skin of ice upon outdoor ponds. Several attempts were made in the second half of the 19th century to overcome this natural difficulty and invent a game like curling, but which could be played indoors. This paper describes the attempts by one inventor.

INTRODUCTION

By the beginning of the last quarter of the 19th century curling was undoubtedly Scotland's most popular game. The institution of the Royal Caledonian Curling Club in 1838 brought the game under national organization and royal patronage at a time when the means of travel were expanding rapidly. Curlers were able to travel further to play, and large numbers of curlers could gather on central lochs like Linlithgow Loch, Lochwinnoch Loch and Carsebreck (Perthshire) to participate in truly national matches, the North of Scotland against the South. In 1850, for example, the Lochwinnoch Match, with 127 rinks aside, and several thousand spectators, was a tremendous success.

The four decades from the inception of the Royal Club saw a great expansion of the game. In 1869 there were only 58 golf clubs in the whole of the United Kingdom, whereas there were 414 curling clubs — by far the majority in Scotland — affiliated to the RCCC, and many more that never bothered to join the mother-club. By 1879 only four Scottish counties lacked an affiliated club. These were Banff, Caithness, Nairn and Sutherland; but only 10 years later every county had at least one.

The game was played and patronized by all classes of Scots. The list of office-bearers of the Royal Club in the 19th century confirms the view that all ranks in society patronized the game. It was a focus of patriotism, for it was Scotland's Ain Game. The surviving medals and trophies are visual evidence of the esteem in which the game was held by all classes of society (Smith 1990).

The main problem was that despite the devotion of its votaries the game depended upon the chance of ice of sufficient strength to bear the curlers and their stones; and although the game had evolved in Scotland, the Scottish climate never guaranteed sufficient ice. Most curling took place on specially constructed shallow-water ponds, designed to produce bearing ice with the minimum of frost, but there were often winters when the ice never carried, as many a club minute book attests (Smith 1981, *passim*; Burnett 2000, *passim*; Smith 2000, 69–86).

The rest of this paper describes an ingenious attempt to overcome this difficulty.

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THE PATENT

In 1877 Robert Foulis of Cairnie Lodge, near Cupar, was awarded the patent for a curling stone substitute which was intended to be used indoors (AD 1877. April 12. No 1443). In the provisional specification Foulis wrote:

This Invention has for its object improvements in apparatus to be used in playing games similar to the game now known as 'curling'.

The game of curling is at present played on a surface of natural ice with weights, or as they are called 'stones', which are slidden along the ice towards a point marked upon the surface. In this form the game can only be played when a frozen surface is obtainable.

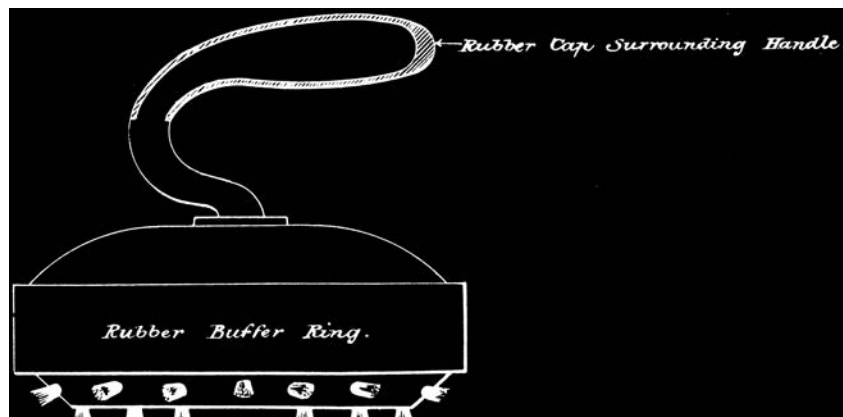
In order to admit of a similar game being played in a room or similar place with a smooth floor, I spread upon the floor a fabric similar to oilcloth, but somewhat lighter and having a smooth face.

The fabric known as 'marble baize' is that which I employ, but it requires preparation to render it suitable for use, and this preparation consists in rubbing the surface with a composition of wax and turpentine.

On this prepared surface, the peculiar 'stones' which I employ slide much as do the ordinary curling stones on a surface of ice.

A special peculiarity of my curling stones is that the bottom or frictional face of the stone is composed of short bristles, set as in a brush, so that the stone stands upon the ends of the bristles.

In the provisional specification Foulis had stated, 'I form the body of the stone of wood in two parts, an upper and a lower. These parts shut together box-wise, and between them I arrange a leaden disc of a size to give the requisite weight to the stone...' The final specification provided for a 'metal disc'. The patent specification demonstrates the principle in the accompanying drawing (illus 1).



ILLUS 1 Patent drawing for Foulis' curling stone

Until 1998 I had never seen such a stone: although the catalogue of the National Museums of Scotland recorded the ownership of a pair, periodic searches made on my behalf by staff had failed to locate them. However, in that year some of Foulis's stones appeared for sale in North Berwick, having been bought by the shop-owner at an auction sale in Perth. I bought the stones.

DESCRIPTION OF THE STONE

A central bolt, screwed into a fairly conventional cast-brass handle, holds four components in place. These are a circular disc of cast iron, with a convex bottom; a hollow wooden sole carrying row upon concentric row of tufts of bristle, which is located snugly on the convex side of the disc; a smaller circular casting of iron which fits into a circular hole in the top of the larger disc; and a convex top of wood, shaped to make the top look like a curling stone, and cleverly painted to counterfeit natural stone. (Two of the stones that I acquired were designed to resemble common Ailsa Craig stone, a greenish stone with black speckles, and the third, I think, Carsphairn red stone.) The smaller disc merely adds weight: it is missing in one of the stones. There was evidence that the stones had been used, for in one of them someone, to stop the smaller piece from clanking as the stone sped across the floor, had stuffed in a page of newspaper — from *The Scotsman* of 1879. (After the discovery of my stones another stone, without provenance, was found in the National Museums. It had inside it a piece of *The Scotsman* of 1877 used as packing. This example may be of Foulis's earlier design, for it has lead in the centre.) Round the widest part of the stone is a 'buffer ring' of india-rubber designed to allow the stones to rebound off each other in play as do real curling stones. Each handle, instead of having a conventional wooden grip, is neatly covered in hand-sewn leather. The heaviest stone, including the extra circular disc, weighs 12.7008 kg.

DIMENSIONS

The main iron disc is 205 mm in diameter. It is 35 mm in depth. Round this surface is attached the rim of india-rubber. In the centre of the disc is a depression 150 mm in diameter, 30 mm deep, of which the bottom surface is 135 mm in diameter; that is, the edges of the depression are slightly sloping. The smaller iron disc is about 148 mm in diameter and its other dimensions are such that it fits more or less snugly into the depression. The bottom of the main disc is convex with a depression in the centre at the bolt hole. There is a hole through the centre of each of these parts to accommodate the bolt that holds the whole stone together.

THE SOLE

The sole is turned of wood, apparently beech. At its greatest diameter it is 204 mm. It has a prominence that engages in the depression in the bottom of the main disc. From the outer surface protrude rows of tufts of bristle. There are 10 rows. The tufts become shorter towards the sole. The last five rows are of the same length, and set perpendicularly; they present an almost level face to the surface on which they are designed to run. In the middle is a rectangular rebate in which the bolt engages.

It is stated in a newspaper report of a demonstration of the game that 'Mr Wright, brushmaker, Greenside, prepares the brush-sole for the curling-stones, under the direction of Dr Foulis' (*The Scotsman*, July 1877).



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THE TOP

The top is also turned from wood. It is a shallow convex piece 205 mm in diameter. The surface has been painted in two patterns to enable stones of one team to be distinguished from those of the other. The grey stone closely resembles Common Ailsa stone. The red stone could be meant to represent Carsphairn red.

THE HANDLE

The handle is cast in one piece from brass to a design by Foulis. It is of similar shape and size to a conventional goose-neck curling stone handle, but the grip, instead of being fashioned from wood, has been covered in leather. It is obvious that this has been stitched in place after being put on the handle because, unlike the conventional handle, the grip bulges towards its open end. Between the base of the handle and the top is a leather washer which ensures that the handle, once screwed onto the bolt, remains tight.

MISCELLANEOUS

Foulis made considerable efforts to popularize his new-fangled sort of curling. It is, however, obvious from the great rarity of Foulis stones that his invention did not revolutionize the game of curling, in the way that sphairstike did tennis.

The publication of a brief article on the stones in *The Scottish Curler*, October 1998, by the present writer brought a remarkable response. Foulis's note book, inscribed on the title page, 'Robert Foulis./ His/ Notions/ &/ Mems', is still in existence. Amongst many notes and jottings about other matters Foulis had written down in this volume the rules for his new game; and made sketches of people playing it, and of components of the stones. I am extremely grateful to the owner for bringing it to my attention and for giving me a photocopy of the curling notes.

Demonstrations of the game are recorded in the press at the show of the Highland and Agricultural Society in the Meadows, Edinburgh, from 24 to 27 July 1877. Advertisements printed in the newspapers and preserved in Foulis's notebook attest that the well-known London firm of makers of croquet and tennis equipment, Jaques & Son, Hatton Garden, London, had 'secured Dr Foulis' patent', and 'that they will shortly produce the Game for House use'. The newspaper reports of daily demonstrations at the Highland Show in the Meadows, Edinburgh, and 'in one of the large barns at Lochrin Distillery [Edinburgh]', demonstrate that Foulis and Jaques had developed the original idea somewhat.

At both these places the game was played on a 'pond which is 76 feet long by 12 feet in width [23.16 by 3.65 m] ... constructed of pitch pine, formed into panels and laid on sleepers — no nails being used as the panels are made to dovetail into each other. A light framework of wood

ILLUS 2 The three types of Foulis's patent stone. (Photo: Trustees of the National Museums of Scotland)

ILLUS 3 The smallest size of stone. (Photo: Trustees of the National Museums of Scotland)

ILLUS 4 The medium size of stone. (Photo: Trustees of the National Museums of Scotland)

ILLUS 5 The medium size dismantled to show all its component parts. (Photo: Trustees of the National Museums of Scotland)

ILLUS 6 The largest type of stone. (Photo: Trustees of the National Museums of Scotland)

ILLUS 7 The largest type dismantled to show all its component parts. (Photo: Trustees of the National Museums of Scotland)

running round the edge represents the bank, and serves to keep the stones from toppling over. The wooden surface, which has been of course nicely smoothed to commence with, is coated over with a patent preparation, the invention of Dr Foulis, which gives it a fine polish, and at the same time an appearance closely resembling ice.’ Another report states that ‘the “stones” are thrown with as much ease as upon ice’.

After the Highland Show an attempt was made to sell Foulis’s ‘summer curling pond’ by auction at the showground ‘but no offer was tendered for it, though the representative of Mr Dowall, who officiated as auctioneer, indicated that the pond had cost little short of £80, and that half this sum might be accepted for it “with stones and all accessories complete”.’

In their advertisement Messrs Jaques assert: ‘The INDOOR CURLING POND is made on a prepared surface, which can be rolled up and put away like a map, and will be made in lengths from 15ft. to 30ft. [4.57 to 9.14 m] to suit rooms or corridors.’

In the preface to the *Annual* of the Royal Caledonian Curling Club for 1878 it is said, ‘Many Curlers will have seen Dr Foulis Summer Curling Pond, which was exhibited at the Highland and Agricultural Society’s Show, held in Edinburgh last Summer. We understand it has been improved by substituting steel plates instead of wood, as originally laid — which will afford a very good game during the Summer, although it is not to be expected that it will ever take the place of curling on ice.’ In July 1879 in a room adjoining the dining hall at the Royal Club’s AGM held in the Café Royal Hotel, Edinburgh, ‘Dr Foulis exhibited in the course of the day, the Parlour Curling Pond, and several games were played.’

OTHER FORMS OF FOULIS’S GAME

Along with the large stones the present writer bought a greater number of smaller ones. They are of basically the same design, but the central iron casting is only 145 mm in diameter and there are only seven rows of tufts. These smaller stones weigh about 2.5 kg.

The writer has also been given a ‘Parlour Curling Game’, as the legend on the side of the lidless box describes it, consisting of eight very small stones of iron and bristle. The importance of this is that the box also contains the ‘pond’, a roll of thin linoleum, 4.5 m long, with the curling rink marked on it at each end. The stones of this sort consist of a circular wooden body, which holds four rows of bristles, and to the top of which an iron plate and handle are screwed. Despite the insertion of some lead in the centre of the sole the total weight is only 0.567 kg.

THE RULES FOR FOULIS’S GAME.

There follow transcriptions of the relevant parts from Foulis’s notebook.

The Curling Rink

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The Game

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The Game consists in laying the greatest number of Stones beside the Tee; hence the object of each side is to slide their own or knock their partners stones as near the Tee as they can and to guard them from being displaced by those of the opposite party. Or on the other hand to knock out their opponents stones

Mode of Playing

Lay the Roller on the floor and roll out the cloth Ice evenly and smoothly. Place the Cushions on the Ice where marked

The stones are propelled towards the Tee from the Cushion (The Crampit) at the other end of the ice and they must always be played from the same point

Note In the large sized Rinks Tees are placed at each end & played to alternately

Curlers will prefer to stand in the ordinary position but for ladies & others not accustomed to Ice let the right knee be placed on the cushion and the left foot in the flat position (See Illustration)

The Players play in pairs, each pair being opponents One of the pairs generally the best players being chosen for Directors (Skips) who stand at the end played to and play themselves last

One stone is played by each side alternately, Thus,

If Grey plays first [This paragraph has been stroked through in the original]

Hold the Stone as shown, placing the handle parallel to the length of the Rink (the Ice) or if preferred the stone may be held with the handle across the rink turning the thumb outwards In either case hold the stone loosely-poised on the point of the fingers where the first and second joints meet

To deliver or propel the stone raise the arm backwards and without bending the elbow bring it down quickly relaxing the fingers as soon as the brush touches the ice taking care to sole the stone, as it is termed, parallel to the ice

Note As most players capsize the stone at first it is advisable for beginners to slide the stone only a few inches at first and gradually increase the propelling force till they can reach the Tee

The Players play in pairs, each pair being opponents. One of the pairs,—generally the best players being chosen for Skips (Directors) who stand at the end of the Rink played to and play themselves last

One stone is played by each side alternately. Thus

If the grey side plays first, Grey No 1 slides his first stone as near the Tee as he can (about 6 or 9 inches short of it is best) Red No I with his first stone then endeavours to knock grey away and lie in his place (chap and lie) Or if the Skip choose lays his stone near the Tee also. If he fail to displace his enemy, Grey then plays his second stone and endeavours to lay it in a position to Guard his first stone, that is in a line with it about 6 to 12 inches back, Red No I then plays his second stone

Grey & Red No II then play, and Draw or Chap or Inwick or Outwick or Guard according as it is for their interest so to do

Pair No111 then play their four stones

Lastly the Skips play being usually selected for their skill and much depends upon the last shots

During the progress of the end the Skips stand at the end played to and with their Cowe direct their respective sides to Draw (slide to the Tee) Guard (lay a stone to impede) Chap (or knock away) taking advantage of side stones belonging to either party called Inwicking and Outwicking to guide the running stone in Towards the Tee

At the conclusion of an end all the stones belonging to one side which lie nearer the Tee than any of the opposite Party, count

In a well contested end the one Party will seldom have more than one or two stones nearer than those of their opponents but of course it may happen that almost all the stones of one side are nearest

Rules

1. Four Players on each side form a full Rink but two or any even number can play
2. One side takes the grey stones; the other the red

3. Each player takes two stones of the same colour
4. One player from each side is chosen Skip to direct the play
5. The Skips fix the order of the players which order is adhered to throughout the game
6. Two (from opposite sides) play against each other & they play their stones alternately
7. When an end is finished "The Leader" (that is pair No 1) of the winning rink begins the next end and leads off as it is termed
8. If a stone does not cross the Hog Score (the waved line) it is removed off the ice for that end and the stone to be safe must entirely clear the straight score
9. All stones within the outer circle round the Tee count, but unlike the Hog Score a stone is reckoned in the House if it only touch the outer ring. The inner rings are merely to assist the eye in estimating which stones are nearest the Tee
10. No measurement of distances is allowed till the end is played out.
11. 31 is a full game but of course any smaller number may be fixed on, or a certain time may be chosen to play to
12. The Cowes are used by the Skips to point to stones and pull them off the ice at the conclusion of an end
13. The Stones must all be played from the same point (the side of the Cushion)

Glossary

The Rink.-The Ice

The Skips.-The Directors

The House.-within the outer circle

The Hog Score.-The waved line across

The Cowe.-The long brush

A Port.-An opening between two or more stones

A Pot Lid.-a stone covering the Tee.

Drawing.-Sliding a stone just the length of the Tee

Guarding.-Laying a stone in a straight line behind a winning stone to protect it

An Inwicking.-To make a running stone glide off a side stone in towards the Tee

Chap & Lie.-To knock a stone away & lie exactly in its place

Chap & Guard.-To knock a stone a little forward & lie in a line with it

Break an Egg.-To strike a stone as gently as possible & raise it an inch or two

Raising.-To strike a stone forwards

Roaring.-Playing too strong

Howe Ice.-Playing straight up the middle of the Ice

To Hog.-failing to pass the Hog Score

[Below these rules Foulis has written:]

'**Patent.** The preparation of wood, oiled cloth or other surfaces to imitate Ice (to diminish or lessen friction). The Application of Brush to prepared surface to imitate the action of stones upon Ice'

AN ACTUAL EXAMPLE OF FOULIS'S GAME?

Indirect evidence that Foulis's game was actually played appears in a poem, printed on a single sheet of paper, found in the Minute Book of Kirkoswald Curling Club. (The emphasis is the author's.)

"John Frost's" noo deid, and still's his heid
 In a cauld grave by the Pole,
 His hert it was "broke", though ne'er a word spoke,
 It was mair nor the auld man could thole.

To think when he cam', as brisk as a lamb,
 Tae veesit his freens by the shore,
 Tae be telt tae his cheek ither quarters tae seek,
 And ne'er show his face any more.

Yon folks at Culzean, wi' their new-fangled game -
 And fegs, it's the best e'er I saw, man,
They curl on a flair, tho' the sun's i' the air,
And hae white pouter'd stuff for their snaw, man.

At wickin' and drawin', at gybin' and blawin',
 It fair bates the real, out and out, man,
 Ye'd lauch like tae dee, gin the stanes ye could see,
Gang slidin' alang on a clout, man.

There's Kirkland and Currie, bold Robson and Murray,
 And mony mae hauns ye will meet, man,
 Gin ye gang tae Culzean, tae try their bit game,
 And it's weel worth a journey to see't, man.

Since the poem is entitled *Sixteen Years After* and is dated April 1898, it appears that the poet was describing a happening at Culzean about 1882, a time when Foulis's stones might well still have been the latest in curling fashion, and the owner of a big house willing to give the game a try. The finding of this poem also gives meaning to the name still in use to some extent for one of the upper halls in the steading at Culzean, The Curling Hall.

CONCLUSION

At the time when this experiment was made other developments meant that it was unlikely to succeed. In 1877 the first ice rink in Britain with machine-made ice using Professor Gamgee's principle was opened at Rusholme, Manchester. Shortly afterwards the Glaciarium was built at Southport. Crossmyloof ice rink in Glasgow began in 1907. Curling was played at each of these places. The future development of the game was to depend on artificially manufactured ice.

ACKNOWLEDGEMENTS

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