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for
the braiding artisan

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A Braiding Project — A walking stick with knots

We shall continue our walking stick project in Issue No. 57 with some knot examples.

With braided synthetic round cord as the braiding material, the minimum helix angle for an acceptable appearance of the braid is about 45°. Hence for braided synthetic round cord with a diameter d of 2 mm., the maximum number of bights b around a diameter D of 25 mm. is about $\frac{\pi \times (D+2d) \times \cos 45°}{d} = \frac{\pi \times (25+4) \times \cos 45°}{2} = 32$, while the maximum number of bights b around a diameter D of 19 mm. is about $\frac{\pi \times (D+2d) \times \cos 45°}{d} = \frac{\pi \times (19+4) \times \cos 45°}{2} = 25$. These maximum bight numbers should be taken into account when a section of a knot gets interbraided so that this section contains a greater number of bights than other sections of the knot.

With braided synthetic round cord as the braiding material, the maximum helix angle for an acceptable appearance of the braid should in general not exceed 75°. For braided synthetic round cord of $d = 2$ mm. diameter, the minimum number of bights b around a diameter D of 25 mm. is about $\frac{\pi \times (D+2d) \times \cos 75°}{d} = \frac{\pi \times (25+4) \times \cos 75°}{2} = 12$, while the minimum number of bights b around a diameter D of 19 mm. is about $\frac{\pi \times (D+2d) \times \cos 75°}{d} = \frac{\pi \times (19+4) \times \cos 75°}{2} = 9$.

For a good appearance of the braided knot it is very important that the visible parts of the string(s) lie tight against each other and that the intersection-columns are parallel to the centre-line, hence do not describe a helix.

Knot 1.

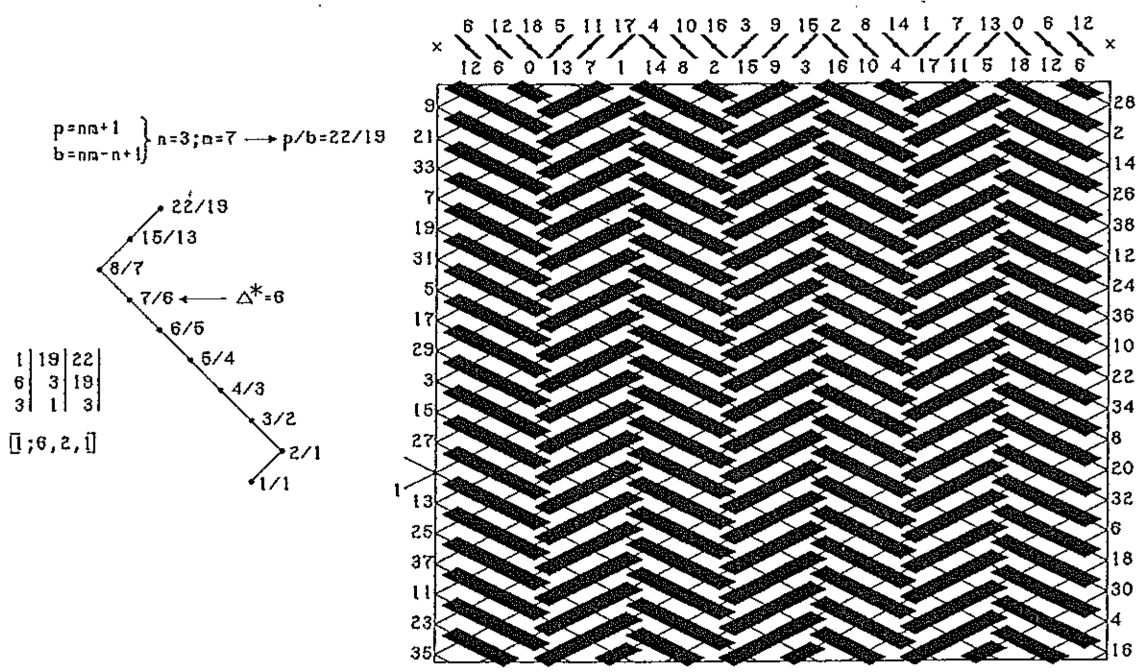

Fig. 1122 — Knot 1.

This is the knot discussed in *The Braider*, Issue No. 57, pp. 1365–1366; it belongs to the set iii of knots discussed in that Issue on pp. 1357–1366. It can readily be braided to its weaving-pattern. However, for those who prefer to braid knots to their half-cycle braiding algorithms, its half-cycle braiding algorithms for braiding it by starting from the centre of the string-length are as follows (associated grid-diagram is depicted in Fig. 1123):

1.		:	Free run.
2.	$(i = 0)$	:	$(s)o$.
3.	$(i = 0)$	:	u.
4.	$(i \leq 1)$	:	$(s)u - o$.
5.	$(i \leq 1)$	:	$o - u$.
6.	$(i \leq 2)$	:	$(s)o - u - o$.
7.	$(i \leq 2)$	:	$u - o - u$.
8.	$(i \leq 3)$	:	$(s)u - o - u - o$.
9.	$(i \leq 3)$	:	$o - u - o - u$.
10.	$(i \leq 4)$	:	$(s)o - u - o - u - o$.
11.	$(i \leq 4)$	:	$u - o - u - o - u$.
12.	$(i \leq 5)$	:	$(s)u - o - u - o - u - o$.
13.	$(i \leq 5)$	:	$o - u - o - u - o - u$.
14.	$(i \leq 6)$	:	$(s)o - u - o - u - o - u - (1,s)2o$.
15.	$(i \leq 6)$	:	$u - o - u - o - u - o - 2u$.
16.	$(i \leq 7)$	:	$o - u - o - u - o - (1,s)2u - 2o$.
17.	$(i \leq 7)$	:	$u - o - u - o - u - 2o - 2u$.
18.	$(i \leq 8)$	:	$o - u - o - u - (1,s)2o - 2u - 2o$.

The end of half-cycle 18 is the Standing End associated with the half-cycles 19–38.

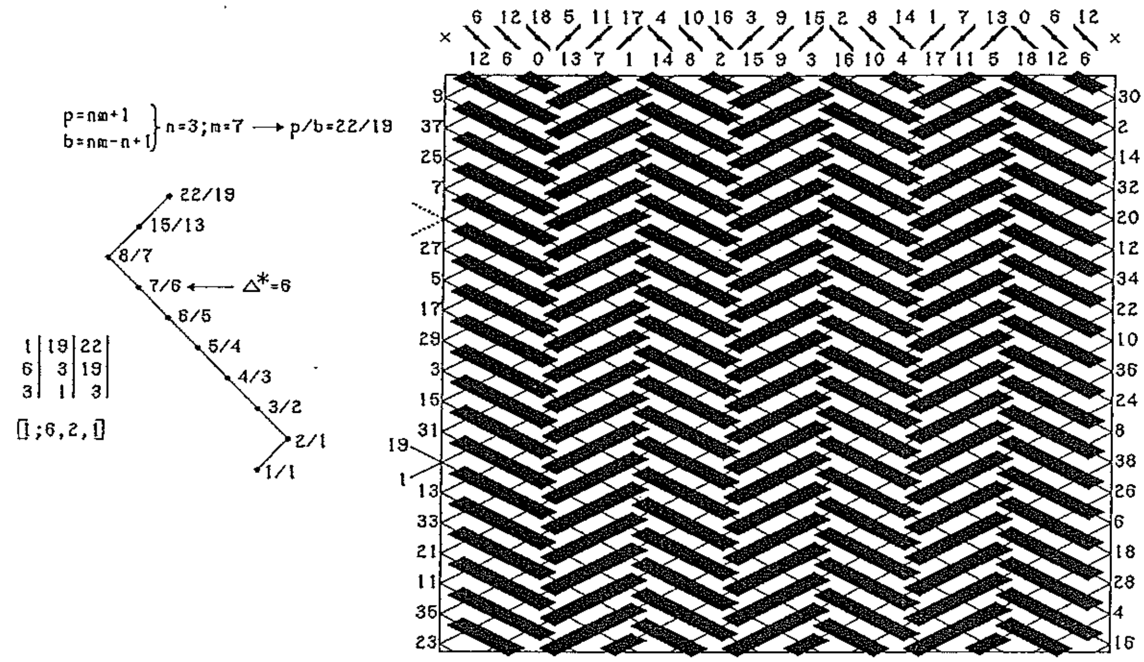

Fig. 1123 — Knot 1. Braiding process starting at centre of string-length.

19.	$(i \leq 8)$	:	$o - u - o - u - 2o - 2u - 2o$.
20.	$(i \leq 9)$	:	$u - o - u - (1,s)2o - 2u - 2o - 2u$.
21.	$(i \leq 9)$	:	$o - u - o - 2u - 2o - 2u - 2o$.
22.	$(i \leq 10)$	:	$u - o - (1,s)2u - 2o - 2u - 2o - 2u$.
23.	$(i \leq 10)$	:	$o - u - 2o - 2u - 2o - 2u - 2o$.
24.	$(i \leq 11)$	:	$u - (1,s)2o - 2u - 2o - 2u - 2o - 2u$.

25. $(i \leq 11)$: $o - 2u - 2o - 2u - 2o - 2u - 2o$.
26. $(i \leq 12)$: $(1, s)2u - 2o - 2u - 2o - 2u - 2o - (2, s)3u$.
27. $(i \leq 12)$: $2o - 2u - 2o - 2u - 2o - 2u - 3o$.
28. $(i \leq 13)$: $2u - 2o - 2u - 2o - 2u - (2, s)3o - 3u$.
29. $(i \leq 13)$: $2o - 2u - 2o - 2u - 2o - 3u - 3o$.
30. $(i \leq 14)$: $2u - 2o - 2u - 2o - (2, s)3u - 3o - 3u$.
31. $(i \leq 14)$: $2o - 2u - 2o - 2u - 3o - 3u - 3o$.
32. $(i \leq 15)$: $2u - 2o - 2u - (2, s)3o - 3u - 3o - 3u$.
33. $(i \leq 15)$: $2o - 2u - 2o - 3u - 3o - 3u - 3o$.
34. $(i \leq 16)$: $2u - 2o - (2, s)3u - 3o - 3u - 3o - 3u$.
35. $(i \leq 16)$: $2o - 2u - 3o - 3u - 3o - 3u - 3o$.
36. $(i \leq 17)$: $2u - (2, s)3o - 3u - 3o - 3u - 3o - 3u$.
37. $(i \leq 17)$: $2o - 3u - 3o - 3u - 3o - 3u - 3o$.
38. $(i \leq 18)$: $(2, s)3u - 3o - 3u - 3o - 3u - 3o - 3u$.

Knot 2.

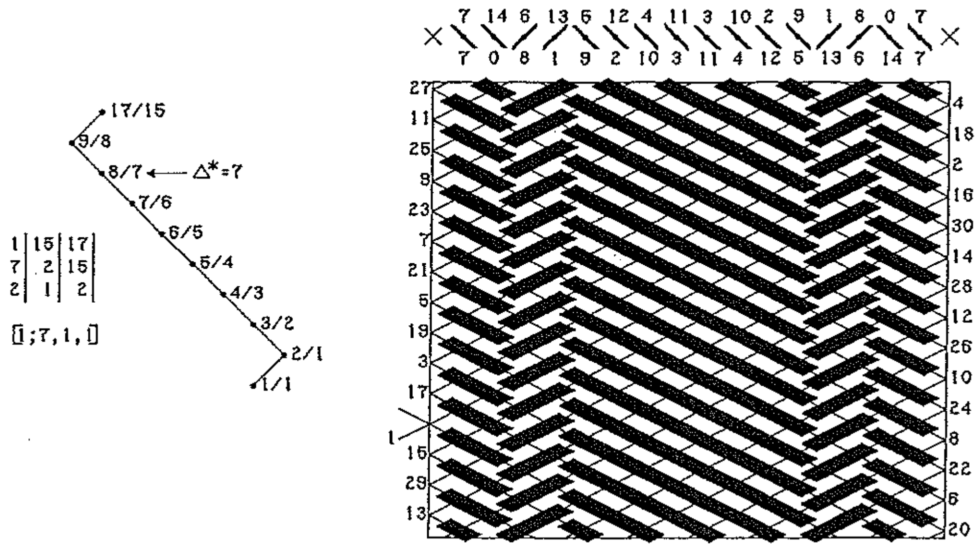

Fig. 1124 — Knot 2.

This is the second knot example in Fig. 1115 discussed in *The Braider*, Issue No. 57, pp. 1371–1372; it belongs to the set **iii** of knots discussed in that Issue on pg. 1371. It can readily be braided to its weaving-pattern. However, it might be a little more convenient to call in the assistance of its algorithm diagram and use its half-cycle braiding algorithms. Let's braid it by starting from the centre of the string-length (associated grid-diagram is then as depicted in Fig. 1125). The half-cycle braiding algorithms are as follows:

1. : Free run.
2. $(i = 0)$: $(s)o$.
3. $(i = 0)$: u.
4. $(i \leq 1)$: $(s)u - o$.
5. $(i \leq 1)$: $o - u$.
6. $(i \leq 2)$: $(s)o - u - o$.
7. $(i \leq 2)$: $u - o - u$.
8. $(i \leq 3)$: $(s, 1)2o - u - o$.
9. $(i \leq 3)$: $2u - o - u$.
10. $(i \leq 4)$: $(s, 2)3o - u - o$.

11. $(i \le 4)$: $3u - o - u$.
12. $(i \le 5)$: $(s,3)4o - u - o$.
13. $(i \le 5)$: $4u - o - u$.
14. $(i \le 6)$: $(s)u - 4o - u - o$.

The end of half-cycle 14 is the Standing End associated with the half-cycles 15–30.

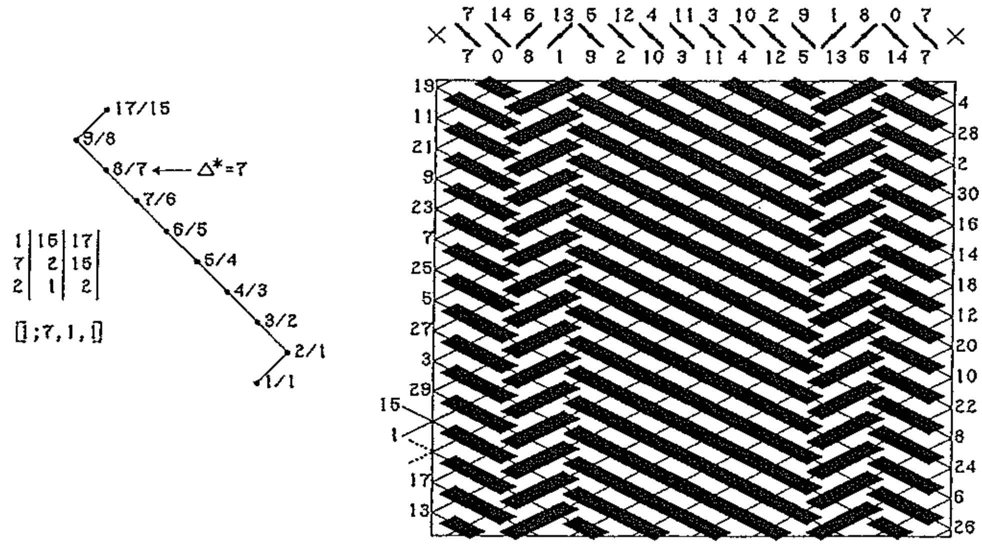

Fig. 1125 — Knot 2. Braiding process starting at centre of string-length.

15. $(i \le 6)$: $u - 4o - u - o$.
16. $(i \le 7)$: $(s)u - o - 4u - o - (1,s)2u$.
17. $(i \le 7)$: $o - u - 4o - u - 2o$.
18. $(i \le 8)$: $u - o - 4u - (1,s)2o - 2u$.
19. $(i \le 8)$: $o - u - 4o - 2u - 2o$.
20. $(i \le 9)$: $u - o - (4,s)5u - 2o - 2u$.
21. $(i \le 9)$: $o - u - 5o - 2u - 2o$.
22. $(i \le 10)$: $u - o - (3,s,2)6u - 2o - 2u$.
23. $(i \le 10)$: $o - u - 6o - 2u - 2o$.
24. $(i \le 11)$: $u - o - (2,s,4)7u - 2o - 2u$.
25. $(i \le 11)$: $o - u - 7o - 2u - 2o$.
26. $(i \le 12)$: $u - o - (1,s,6)8u - 2o - 2u$.
27. $(i \le 12)$: $o - u - 8o - 2u - 2o$.
28. $(i \le 13)$: $u - (1,s)2o - 8u - 2o - 2u$.
29. $(i \le 13)$: $o - 2u - 8o - 2u - 2o$.
30. $(i \le 14)$: $(1,s)2u - 2o - 8u - 2o - 2u$.

Knot 3.

This knot consists of a $p/b = 35/12$ Regular Knot as foundation knot, interbraided with a $p'/b = 7/12$ Regular Knot (see Fig. 1126). The helix angle of the string-run outside the interbraided central section is different to (greater than) the helix angle of the string-run of the interbraided central section. It is very important to ensure that the bights of the foundation knot are regularly spaced around the circumference of the stick and that the visible parts of the string(s) lie tight against each other. This last condition is being facilitated by the local 2–pass coding of the foundation knot at the transitions from its non interbraided sections to its interbraided section.

Let's braid the foundation knot by starting from the centre of its string-length.

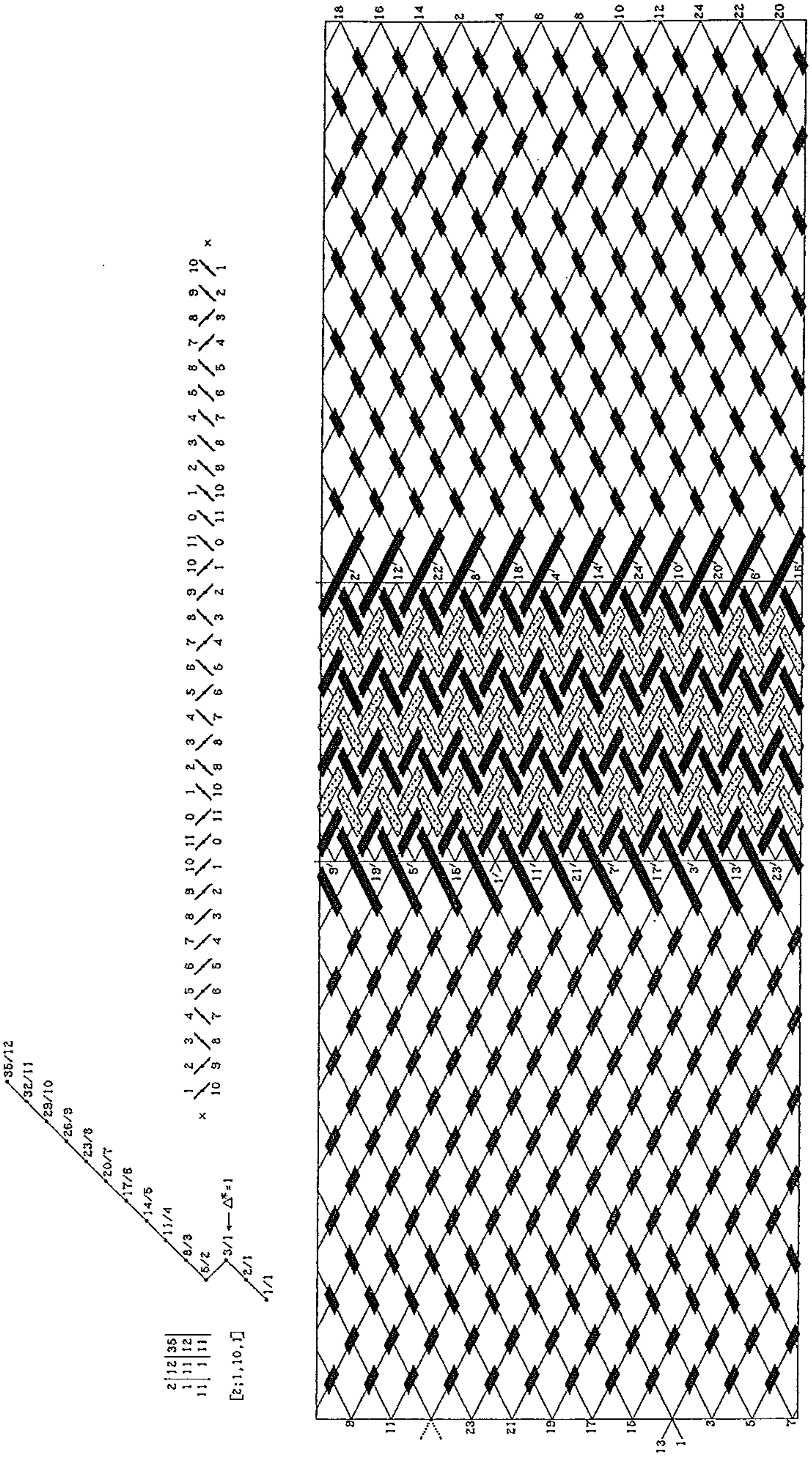

Fig. 1126 — Knot 3. Start the foundation knot at the centre of its string-length.

The half-cycle braiding algorithms for the foundation knot are as follows:

1. : Free run.
2. $(i = 0)$: $(s)u - (s)o$.
3. $(i = 0)$: $u - o$.
4. $(i \leq 1)$: $(s,1)2u - (s,1,s)3o$.
5. $(i \leq 1)$: $2u - 3o$.
6. $(i \leq 2)$: $(1,s,1)3u - (1,s,2,s)5o$.
7. $(i \leq 2)$: $3u - 5o$.
8. $(i \leq 3)$: $2u - (s)o - u - 2o - (s)u - (3,s)4o$.
9. $(i \leq 3)$: $2u - o - u - 2o - u - 4o$.
10. $(i \leq 4)$: $2u - (1,s)2o - u - 2o - u - (s,4,s)6o$.
11. $(i \leq 4)$: $2u - 2o - u - 2o - u - 6o$.
12. $(i \leq 5)$: $2u - 2o - (s,1)2u - 2o - u - o - (s)u - (5,s)6o$.

The end of half-cycle 12 is the Standing End associated with the half-cycles 13–24.

13. $(i \leq 5)$: $2o - 2u - 2o - 2u - o - u - o - 6u$.
14. $(i \leq 6)$: $2o - 2u - (1,s,1)3o - 2u - o - u - o - (s,6,s)8u$.
15. $(i \leq 6)$: $2o - 2u - 3o - 2u - o - u - o - 8u$.
16. $(i \leq 7)$: $2o - 2u - (2,s,1)4o - 2u - o - u - o - u - (s)o - 7u - (s)o$.
17. $(i \leq 7)$: $2o - 2u - 4o - 2u - o - u - o - u - o - 7u - o$.
18. $(i \leq 8)$: $2o - 2u - (3,s,1)5o - 2u - o - u - o - u - o - (s,7)8u-$ $(1,s)2o$.
19. $(i \leq 8)$: $2o - 2u - 5o - 2u - o - u - o - u - o - 8u - 2o$.
20. $(i \leq 9)$: $2o - 2u - (4,s,1)6o - 2u - o - u - o - u - o - u - (s)o-$ $7u - 2o - (s)u$.
21. $(i \leq 9)$: $2o - 2u - 6o - 2u - o - u - o - u - o - u - o - 7u - 2o - u$.
22. $(i \leq 10)$: $2o - 2u - (5,s,1)7o - 2u - o - u - o - u - o - u - (1,s)2o-$ $7u - 2o - (1,s)2u$.
23. $(i \leq 10)$: $2o - 2u - 7o - 2u - o - u - o - u - o - u - 2o - 7u - 2o-$ $2u$.
24. $(i \leq 11)$: $2o - 2u - (6,s,1)8o - 2u - o - u - o - u - o - u - 2o-$ $(s,7)8u - 2o - 2u$.

The half-cycle braiding algorithms for the $p'/b = 7/12$ interbraided Regular Knot can be read from its algorithm diagram in Fig. 1127:

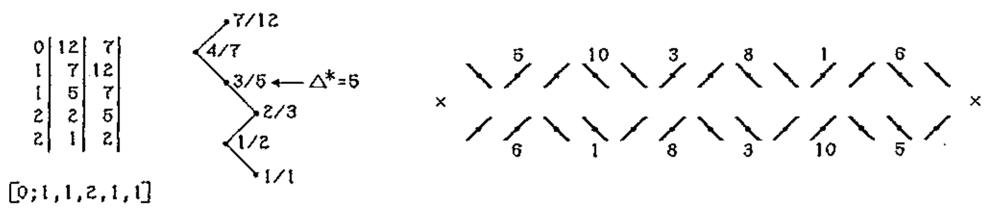

Fig. 1127 — The interbraided $p'/b = 7/12$ Regular Knot.

1′. : $u - o - u - o - u - o - u$.
2′. $(i = 0)$: $u - o - u - o - u - o - u$.
3′. $(i = 0)$: $u - o - u - o - u - o - u$.
4′. $(i \leq 1)$: $u - o - u - o - u - (s,1)2o - u$.
5′. $(i \leq 1)$: $u - o - u - o - u - 2o - u$.
6′. $(i \leq 2)$: $u - o - u - o - u - 2o - u$.
7′. $(i \leq 2)$: $u - o - u - o - u - 2o - u$.

8′. $(i \leq 3)$: $u - o - u - (s,1)2o - u - 2o - u$.
9′. $(i \leq 3)$: $u - o - u - 2o - u - 2o - u$.
10′. $(i \leq 4)$: $u - o - u - 2o - u - 2o - u$.
11′. $(i \leq 4)$: $u - o - u - 2o - u - 2o - u$.
12′. $(i \leq 5)$: $u - (s,1)2o - u - 2o - u - 2o - u$.
13′. $(i \leq 5)$: $u - 2o - u - 2o - u - 2o - u$.
14′. $(i \leq 6)$: $u - 2o - u - 2o - u - 2o - (s,1)2u$.
15′. $(i \leq 6)$: $u - 2o - u - 2o - u - 2o - 2u$.
16′. $(i \leq 7)$: $u - 2o - u - 2o - u - 2o - 2u$.
17′. $(i \leq 7)$: $u - 2o - u - 2o - u - 2o - 2u$.
18′. $(i \leq 8)$: $u - 2o - u - 2o - (s,1)2u - 2o - 2u$.
19′. $(i \leq 8)$: $u - 2o - u - 2o - 2u - 2o - 2u$.
20′. $(i \leq 9)$: $u - 2o - u - 2o - 2u - 2o - 2u$.
21′. $(i \leq 9)$: $u - 2o - u - 2o - 2u - 2o - 2u$.
22′. $(i \leq 10)$: $u - 2o - (s,1)2u - 2o - 2u - 2o - 2u$.
23′. $(i \leq 10)$: $u - 2o - 2u - 2o - 2u - 2o - 2u$.
24′. $(i \leq 11)$: $u - 2o - 2u - 2o - 2u - 2o - 2u$.

Knot 4.

The foundation knot (Regular Knot with $p/b = 17/11$) is centrally interbraided with two Regular Knots, each with $p/b = 5/11$ (see Fig. 1129).

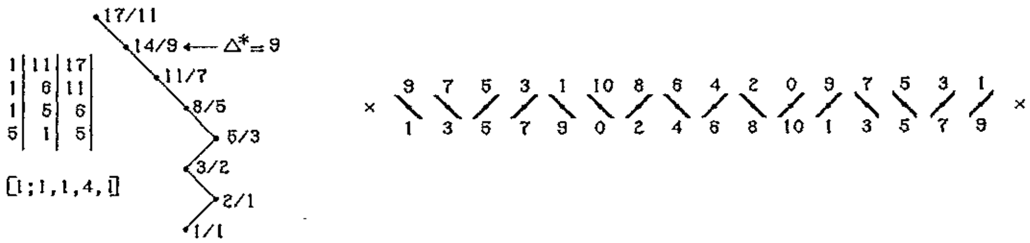

Fig. 1128 — Path in RKT and algorithm diagram of the $p/b = 17/11$ foundation knot.

The half-cycle braiding algorithms for the foundation knot can be read from its algorithm diagram in Fig. 1128 and are as follows:

1. : Free run.
2. $(i = 0)$: $(s)o$.
3. $(i = 0)$: o.
4. $(i \leq 1)$: $(s)u - (1,s)2o$.
5. $(i \leq 1)$: $u - 2o$.
6. $(i \leq 2)$: $(1,s)2u - 2o$.
7. $(i \leq 2)$: $2u - 2o$.
8. $(i \leq 3)$: $(s)o - 2u - (1,s,1)3o$.
9. $(i \leq 3)$: $o - 2u - 3o$.
10. $(i \leq 4)$: $o - u - (s)o - u - 3o$.
11. $(i \leq 4)$: $o - u - o - u - 3o$.
12. $(i \leq 5)$: $(s,1)2o - u - o - u - o - (s)u - 2o$.
13. $(i \leq 5)$: $2o - u - o - u - o - u - 2o$.
14. $(i \leq 6)$: $2o - (1,s)2u - o - u - o - u - 2o$.
15. $(i \leq 6)$: $2o - 2u - o - u - o - u - 2o$.
16. $(i \leq 7)$: $(s)u - 2o - 2u - o - u - o - (s,1)2u - 2o$.
17. $(i \leq 7)$: $u - 2o - 2u - o - u - o - 2u - 2o$.

18.	$(i \leq 8)$	:	$u - 2o - u - (s)o - u - o - u - o - 2u - 2o$.
19.	$(i \leq 8)$	:	$u - 2o - u - o - u - o - u - o - 2u - 2o$.
20.	$(i \leq 9)$	:	$(s,1)2u - 2o - u - o - u - o - u - (1,s)2o - 2u - 2o$.
21.	$(i \leq 9)$	:	$2u - 2o - u - o - u - o - u - 2o - 2u - 2o$.
22.	$(i \leq 10)$	:	$2u - 2o - (1,s)2u - o - u - o - u - 2o - 2u - 2o$.

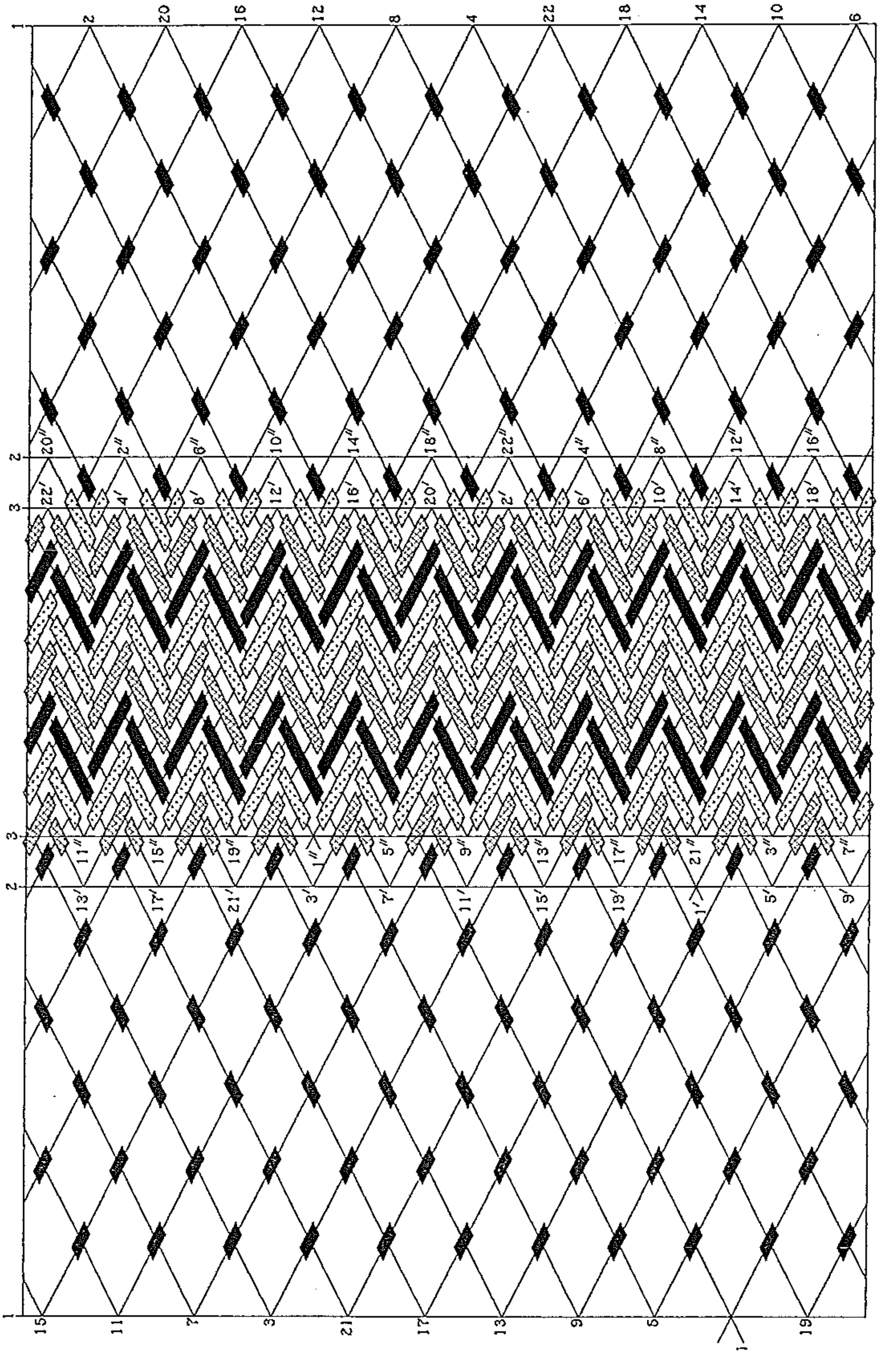

Fig. 1129 — Knot 4.

The half-cycle braiding algorithms for the half-cycles $1'$–$22'$ of the interbraided Regular Knot $p'/b = 5/11$ can be read from the upper algorithm diagram in Fig. 1130 and are as follows:

$1'$.		:	$o - u - o - u - o$.
$2'$.	$(i = 0)$	:	$o - u - o - u - o$.
$3'$.	$(i = 0)$	:	$o - u - o - u - o$.
$4'$.	$(i \leq 1)$	:	$o - u - o - u - o$.
$5'$.	$(i \leq 1)$	:	$o - u - o - u - o$.
$6'$.	$(i \leq 2)$	:	$o - (s,1)2u - o - u - o$.
$7'$.	$(i \leq 2)$	:	$o - 2u - o - u - o$.
$8'$.	$(i \leq 3)$	:	$o - 2u - o - u - o$.
$9'$.	$(i \leq 3)$	:	$o - 2u - o - u - o$.
$10'$.	$(i \leq 4)$	:	$o - 2u - (s,1)2o - u - o$.
$11'$.	$(i \leq 4)$	:	$o - 2u - 2o - u - o$.
$12'$.	$(i \leq 5)$	:	$o - 2u - 2o - u - o$.
$13'$.	$(i \leq 5)$	:	$o - 2u - 2o - u - o$.
$14'$.	$(i \leq 6)$	:	$o - 2u - 2o - (s,1)2u - o$.
$15'$.	$(i \leq 6)$	:	$o - 2u - 2o - 2u - o$.
$16'$.	$(i \leq 7)$	:	$o - 2u - 2o - 2u - o$.
$17'$.	$(i \leq 7)$	:	$o - 2u - 2o - 2u - o$.
$18'$.	$(i \leq 8)$	:	$o - 2u - 2o - 2u - (s,1)2o$.
$19'$.	$(i \leq 8)$	:	$o - 2u - 2o - 2u - 2o$.
$20'$.	$(i \leq 9)$	:	$o - 2u - 2o - 2u - 2o$.
$21'$.	$(i \leq 9)$	:	$o - 2u - 2o - 2u - 2o$.
$22'$.	$(i \leq 10)$	:	$o - 2u - 2o - 2u - 2o$.

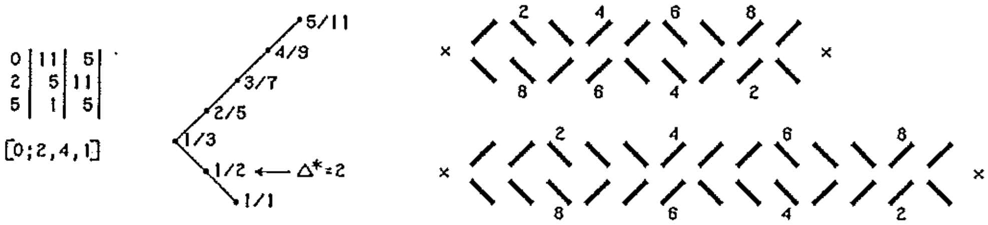

Fig. 1130 — The interbraided $p'/b = 5/11$ and $p''/b = 5/11$ Regular Knots.

The half-cycle braiding algorithms for the half-cycles $1''$–$22''$ of the interbraided Regular Knot $p''/b = 5/11$ can be read from the lower algorithm diagram in Fig. 1130 and are as follows:

$1''$.		:	$2o - 2u - 2o - 2u - o$.
$2''$.	$(i = 0)$	:	$o - 2u - 2o - 2u - 2o$.
$3''$.	$(i = 0)$	:	$2o - 2u - 2o - 2u - o$.
$4''$.	$(i \leq 1)$	:	$o - 2u - 2o - 2u - 2o$.
$5''$.	$(i \leq 1)$	:	$2o - 2u - 2o - 2u - o$.
$6''$.	$(i \leq 2)$	:	$o - (s,2)3u - 2o - 2u - 2o$.
$7''$.	$(i \leq 2)$	:	$2o - 3u - 2o - 2u - o$.
$8''$.	$(i \leq 3)$	:	$o - 3u - 2o - 2u - 2o$.
$9''$.	$(i \leq 3)$	:	$2o - 3u - 2o - 2u - o$.
$10''$.	$(i \leq 4)$	:	$o - 3u - (s,2)3o - 2u - 2o$.
$11''$.	$(i \leq 4)$	:	$2o - 3u - 3o - 2u - o$.
$12''$.	$(i \leq 5)$	:	$o - 3u - 3o - 2u - 2o$.

13″. $(i \le 5)$: $2o - 3u - 3o - 2u - o$.
14″. $(i \le 6)$: $o - 3u - 3o - (s,2)3u - 2o$.
15″. $(i \le 6)$: $2o - 3u - 3o - 3u - o$.
16″. $(i \le 7)$: $o - 3u - 3o - 3u - 2o$.
17″. $(i \le 7)$: $2o - 3u - 3o - 3u - o$.
18″. $(i \le 8)$: $o - 3u - 3o - 3u - (s,2)3o$.
19″. $(i \le 8)$: $2o - 3u - 3o - 3u - 2o$.
20″. $(i \le 9)$: $o - 3u - 3o - 3u - 3o$.
21″. $(i \le 9)$: $2o - 3u - 3o - 3u - 2o$.
22″. $(i \le 10)$: $o - 3u - 3o - 3u - 3o$.

Knot 5.

The foundation knot (Regular Knot with $p/b = 19/11$) is centrally interbraided with two Regular Knots, each with $p/b = 7/11$ (see Fig. 1132).

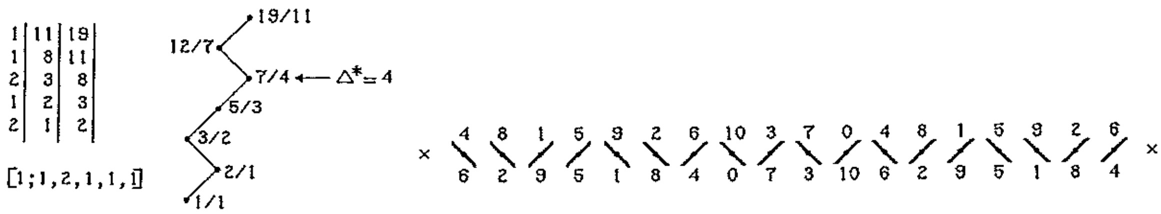

Fig. 1131 — Path in RKT and algorithm diagram of the $p/b = 19/11$ foundation knot.

The half-cycle braiding algorithms for the foundation knot can be read from its algorithm diagram in Fig. 1131 and are as follows:

1. : Free run.
2. $(i = 0)$: $(s)o$.
3. $(i = 0)$: o.
4. $(i \le 1)$: $(s,1,s)3o$.
5. $(i \le 1)$: $3o$.
6. $(i \le 2)$: $o - (s)u - (2,s)3o$.
7. $(i \le 2)$: $o - u - 3o$.
8. $(i \le 3)$: $o - u - (s,3)4o$.
9. $(i \le 3)$: $o - u - 4o$.
10. $(i \le 4)$: $(s)u - o - u - 2o - (s)u - 2o$.
11. $(i \le 4)$: $u - o - u - 2o - u - 2o$.
12. $(i \le 5)$: $u - (1,s)2o - u - 2o - u - o - (s)u - o$.
13. $(i \le 5)$: $u - 2o - u - 2o - u - o - u - o$.
14. $(i \le 6)$: $u - 2o - u - (s,2)3o - u - o - u - (1,s)2o$.
15. $(i \le 6)$: $u - 2o - u - 3o - u - o - u - 2o$.
16. $(i \le 7)$: $u - 2o - u - 2o - (s)u - o - u - o - u - 2o$.
17. $(i \le 7)$: $u - 2o - u - 2o - u - o - u - o - u - 2o$.
18. $(i \le 8)$: $(1,s)2u - 2o - u - 2o - u - o - u - (s,1)2o - u - 2o$.
19. $(i \le 8)$: $2u - 2o - u - 2o - u - o - u - 2o - u - 2o$.
20. $(i \le 9)$: $2u - 2o - (s,1)2u - 2o - u - o - u - 2o - (1,s)2u - 2o$.
21. $(i \le 9)$: $2u - 2o - 2u - 2o - u - o - u - 2o - 2u - 2o$.
22. $(i \le 10)$: $2u - 2o - 2u - o - (s)u - o - u - o - u - 2o - 2u - 2o$.

The half-cycle braiding algorithms for the half-cycles 1′–22′ of the interbraided Regular Knot $p'/b = 7/11$ can be read from the upper algorithm diagram in Fig. 1133.

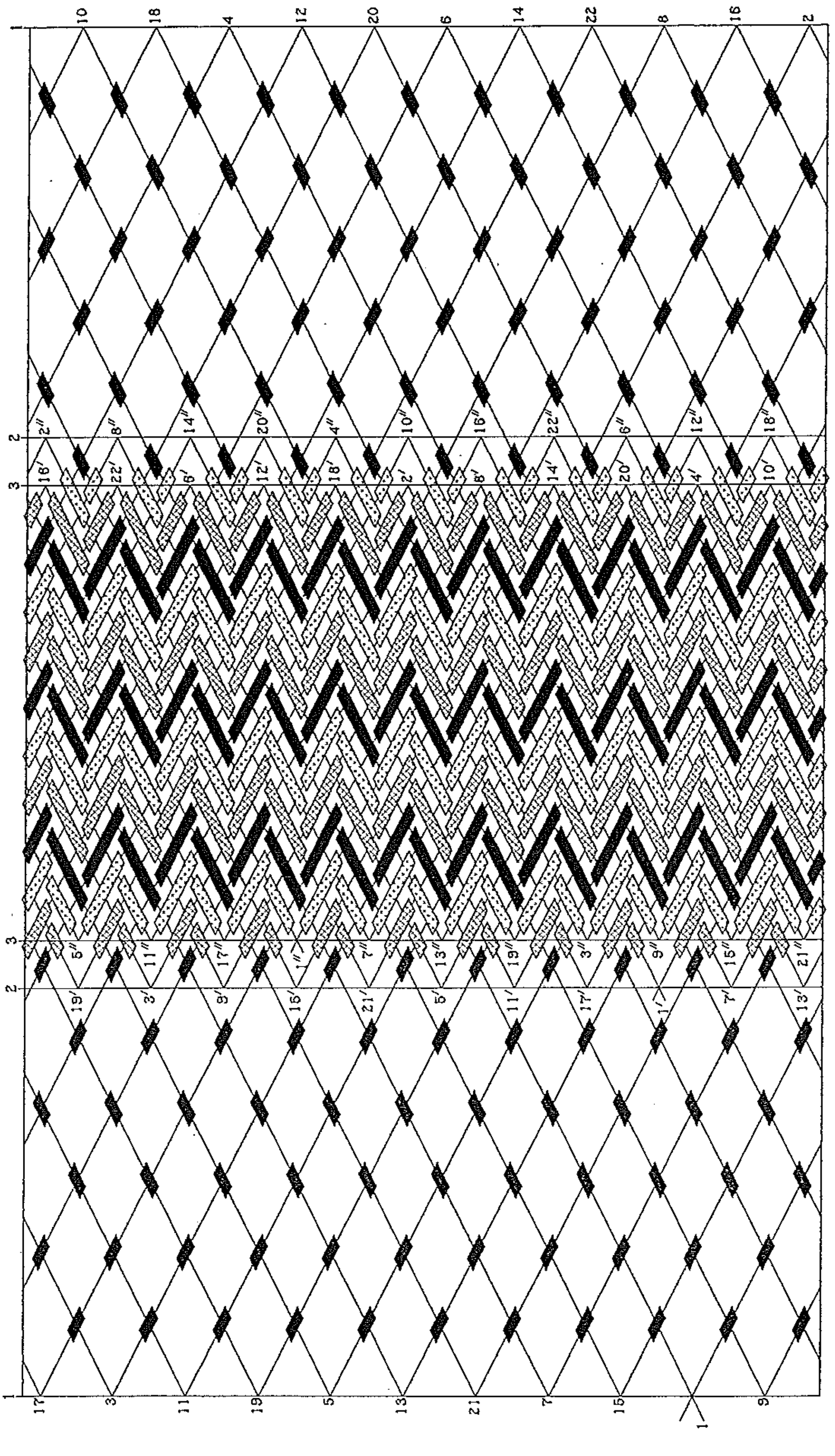

Fig. 1132 — Knot 5.

Hence for the half-cycle braiding algorithms $1'$–$22'$ we obtain:

$1'.$: $o-u-o-u-o-u-o$.
$2'.$ $(i=0)$: $o-u-o-u-o-u-o$.
$3'.$ $(i=0)$: $o-u-o-u-o-u-o$.
$4'.$ $(i\le 1)$: $o-u-o-u-(s,1)2o-u-o$.
$5'.$ $(i\le 1)$: $o-u-o-u-2o-u-o$.
$6'.$ $(i\le 2)$: $o-u-o-u-2o-u-o$.
$7'.$ $(i\le 2)$: $o-u-o-u-2o-u-o$.
$8'.$ $(i\le 3)$: $o-(s,1)2u-o-u-2o-u-o$.
$9'.$ $(i\le 3)$: $o-2u-o-u-2o-u-o$.
$10'.$ $(i\le 4)$: $o-2u-o-u-2o-(s,1)2u-o$.
$11'.$ $(i\le 4)$: $o-2u-o-u-2o-2u-o$.
$12'.$ $(i\le 5)$: $o-2u-o-u-2o-2u-o$.
$13'.$ $(i\le 5)$: $o-2u-o-u-2o-2u-o$.
$14'.$ $(i\le 6)$: $o-2u-(s,1)2o-u-2o-2u-o$.
$15'.$ $(i\le 6)$: $o-2u-2o-u-2o-2u-o$.
$16'.$ $(i\le 7)$: $o-2u-2o-u-2o-2u-(s,1)2o$.
$17'.$ $(i\le 7)$: $o-2u-2o-u-2o-2u-2o$.
$18'.$ $(i\le 8)$: $o-2u-2o-u-2o-2u-2o$.
$19'.$ $(i\le 8)$: $o-2u-2o-u-2o-2u-2o$.
$20'.$ $(i\le 9)$: $o-2u-2o-(s,1)2u-2o-2u-2o$.
$21'.$ $(i\le 9)$: $o-2u-2o-2u-2o-2u-2o$.
$22'.$ $(i\le 10)$: $o-2u-2o-2u-2o-2u-2o$.

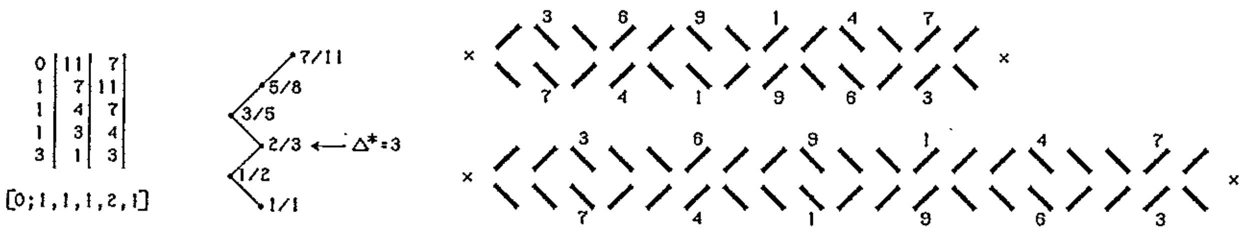

Fig. 1133 — The interbraided $p'/b=7/11$ and $p''/b=7/11$ Regular Knots.

The half-cycle braiding algorithms for the half-cycles $1''$–$22''$ of the interbraided Regular Knot $p''/b=7/11$ can be read from the lower algorithm diagram in Fig. 1133 and are as follows:

$1''.$: $2o-2u-2o-2u-2o-2u-o$.
$2''.$ $(i=0)$: $o-2u-2o-2u-2o-2u-2o$.
$3''.$ $(i=0)$: $2o-2u-2o-2u-2o-2u-o$.
$4''.$ $(i\le 1)$: $o-2u-2o-2u-(s,2)3o-2u-2o$.
$5''.$ $(i\le 1)$: $2o-2u-2o-2u-3o-2u-o$.
$6''.$ $(i\le 2)$: $o-2u-2o-2u-3o-2u-2o$.
$7''.$ $(i\le 2)$: $2o-2u-2o-2u-3o-2u-o$.
$8''.$ $(i\le 3)$: $o-(s,2)3u-2o-2u-3o-2u-2o$.
$9''.$ $(i\le 3)$: $2o-3u-2o-2u-3o-2u-o$.
$10''.$ $(i\le 4)$: $o-3u-2o-2u-3o-(s,2)3u-2o$.
$11''.$ $(i\le 4)$: $2o-3u-2o-2u-3o-3u-o$.
$12''.$ $(i\le 5)$: $o-3u-2o-2u-3o-3u-2o$.
$13''.$ $(i\le 5)$: $2o-3u-2o-2u-3o-3u-o$.
$14''.$ $(i\le 6)$: $o-3u-(s,2)3o-2u-3o-3u-2o$.

15″.	$(i \leq 6)$	:	$2o - 3u - 3o - 2u - 3o - 3u - o$.
16″.	$(i \leq 7)$	:	$o - 3u - 3o - 2u - 3o - 3u - (s,2)3o$.
17″.	$(i \leq 7)$	:	$2o - 3u - 3o - 2u - 3o - 3u - 2o$.
18″.	$(i \leq 8)$	:	$o - 3u - 3o - 2u - 3o - 3u - 3o$.
19″.	$(i \leq 8)$	:	$2o - 3u - 3o - 3u - 2o$.
20″.	$(i \leq 9)$	:	$o - 3u - 3o - (s,2)3u - 3o - 3u - 3o$.
21″.	$(i \leq 9)$	:	$2o - 3u - 3o - 3u - 3o - 3u - 2o$.
22″.	$(i \leq 10)$	:	$o - 3u - 3o - 3u - 3o - 3u - 3o$.

The following knots 6 (see Fig. 1134) and 7 (see Fig. 1135) are variations of respectively knot 4 (Fig. 1129) and knot 5 (Fig. 1132). The non interbraided two-pass column-coded sections in the knots 4 and 5 have been replaced by non interbraided three-pass column-coded sections which gives them a somewhat preferred appearance.

Knot 6.

The foundation knot (Regular Knot with $p/b = 23/11$) is centrally interbraided with two Regular Knots, each with $p/b = 5/11$ (see Fig. 1134). Knot 6 is a variation of knot 4.

The half-cycle braiding algorithms for the foundation knot can be read from its algorithm diagram in Fig. 1134 and are as follows:

1.		:	Free run.
2.	$(i = 0)$	:	$(s)u - (s)o$.
3.	$(i = 0)$	:	$u - o$.
4.	$(i \leq 1)$	:	$(s)o - u - (s,1)2o$.
5.	$(i \leq 1)$	:	$o - u - 2o$.
6.	$(i \leq 2)$	:	$(s)u - o - u - (s,2)3o$.
7.	$(i \leq 2)$	:	$u - o - u - 3o$.
8.	$(i \leq 3)$	:	$(s,1)2u - o - (1,s)2u - 3o$.
9.	$(i \leq 3)$	:	$2u - o - 2u - 3o$.
10.	$(i \leq 4)$	:	$(s,2)3u - o - (1,s,1)3u - 3o$.
11.	$(i \leq 4)$	:	$3u - o - 3u - 3o$.
12.	$(i \leq 5)$	:	$(s)o - 3u - o - (1,s,2)4u - 3o$.
13.	$(i \leq 5)$	:	$o - 3u - o - 4u - 3o$.
14.	$(i \leq 6)$	:	$(s,1)2o - 3u - o - u - (s)o - 3u - 3o$.
15.	$(i \leq 6)$	:	$2o - 3u - o - u - o - 3u - 3o$.
16.	$(i \leq 7)$	:	$(s,2)3o - 3u - o - u - (s,1)2o - 3u - 3o$.
17.	$(i \leq 7)$	:	$3o - 3u - o - u - 2o - 3u - 3o$.
18.	$(i \leq 8)$	:	$(s)u - 3o - 3u - o - u - (s,2)3o - 3u - 3o$.
19.	$(i \leq 8)$	:	$u - 3o - 3u - o - u - 3o - 3u - 3o$.
20.	$(i \leq 9)$	:	$(s,1)2u - 3o - 3u - o - (1,s)2u - 3o - 3u - 3o$.
21.	$(i \leq 9)$	:	$2u - 3o - 3u - o - 2u - 3o - 3u - 3o$.
22.	$(i \leq 10)$	:	$(s,2)3u - 3o - 3u - o - u - (s)o - u - 3o - 3u - 3o$.

The half-cycle braiding algorithms for the half-cycles 1′–22′ of the interbraided Regular Knot $p'/b = 5/11$ are identical to the half-cycle braiding algorithms for the half-cycles 1′–22′ of the interbraided Regular Knot $p'/b = 5/11$ in knot 4.

The half-cycle braiding algorithms for the half-cycles 1″–22″ of the interbraided Regular Knot $p'/b = 5/11$ are identical to the half-cycle braiding algorithms for the half-cycles 1″–22″ of the interbraided Regular Knot $p'/b = 5/11$ in knot 4.

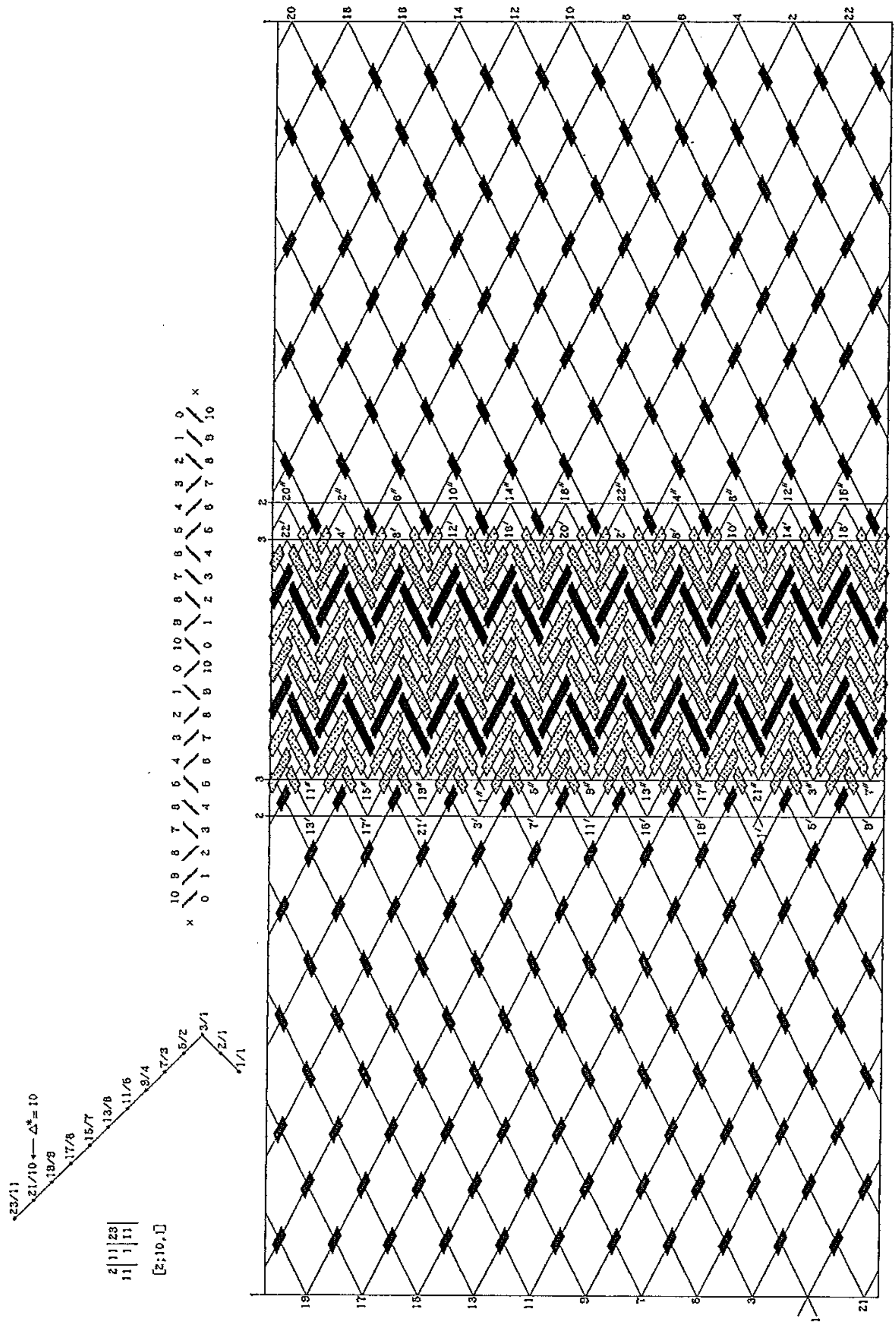

Fig. 1134 — Knot 6.

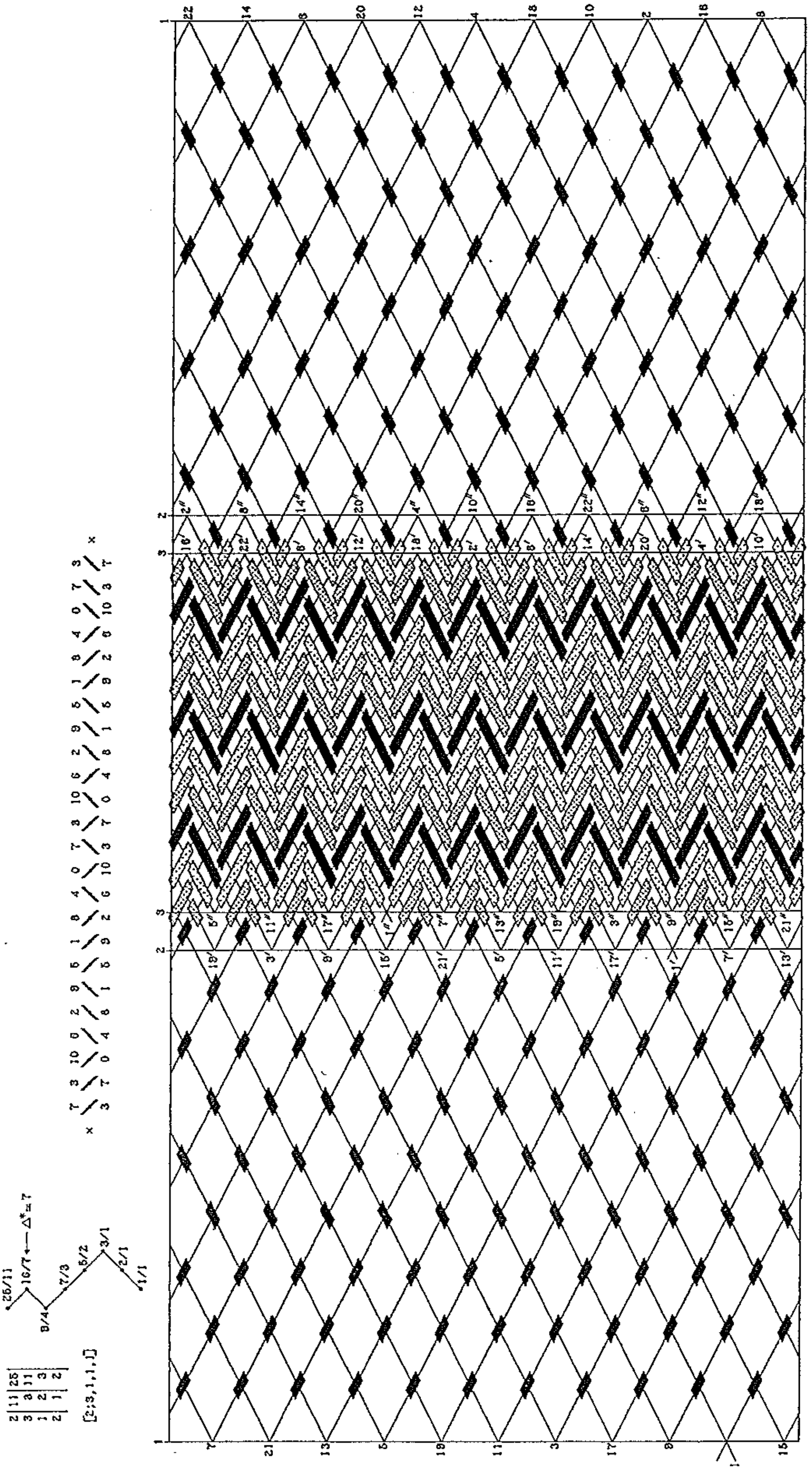

Fig. 1135 — Knot 7.

Knot 7.

The foundation knot (Regular Knot with $p/b = 25/11$) is centrally interbraided with two Regular Knots, each with $p/b = 7/11$ (see Fig. 1135). Knot 7 is a variation of knot 5.

The half-cycle braiding algorithms for the foundation knot can be read from its algorithm diagram in Fig. 1135 and are as follows:

1.		:	Free run.
2.	$(i = 0)$	:	$(s)u - (s)o$.
3.	$(i = 0)$	:	$u - o$.
4.	$(i \le 1)$	:	$(s, 1, s)3u - o$.
5.	$(i \le 1)$	:	$3u - o$.
6.	$(i \le 2)$	:	$(s)o - 2u - (s)o - u - o$.
7.	$(i \le 2)$	:	$o - 2u - o - u - o$.
8.	$(i \le 3)$	:	$(s)u - o - (2, s)3u - o - u - (1, s)2o$.
9.	$(i \le 3)$	:	$u - o - 3u - o - u - 2o$.
10.	$(i \le 4)$	:	$u - o - u - (s)o - 2u - o - (1, s)2u - 2o$.
11.	$(i \le 4)$	:	$u - o - u - o - 2u - o - 2u - 2o$.
12.	$(i \le 5)$	:	$u - o - (s, 1)2u - o - 2u - (1, s)2o - 2u - 2o$.
13.	$(i \le 5)$	:	$u - o - 2u - o - 2u - 2o - 2u - 2o$.
14.	$(i \le 6)$	:	$u - (s, 1)2o - 2u - o - (2, s)3u - 2o - 2u - 2o$.
15.	$(i \le 6)$	:	$u - 2o - 2u - o - 3u - 2o - 2u - 2o$.
16.	$(i \le 7)$	:	$(s, 1)2u - 2o - 2u - o - u - (s)o - 2u - 2o - 2u - (1, s, 1)3o$.
17.	$(i \le 7)$	:	$2u - 2o - 2u - o - u - o - 2u - 2o - 2u - 3o$.
18.	$(i \le 8)$	:	$2u - 2o - (2, s)3u - o - u - o - 2u - 2o - (1, s, 1)3u - 3o$.
19.	$(i \le 8)$	:	$2u - 2o - 3u - o - u - o - 2u - 2o - 3u - 3o$.
20.	$(i \le 9)$	:	$2u - (2, s)3o - 3u - o - u - o - 2u - (1, s, 1)3o - 3u - 3o$.
21.	$(i \le 9)$	:	$2u - 3o - 3u - o - u - o - 2u - 3o - 3u - 3o$.
22.	$(i \le 10)$	:	$(2, s)3u - 3o - 3u - o - u - o - u - (s)o - u - 3o - 3u - 3o$.

The half-cycle braiding algorithms for the half-cycles $1'$–$22'$ of the interbraided Regular Knot $p'/b = 7/11$ are identical to the half-cycle braiding algorithms for the half-cycles $1'$–$22'$ of the interbraided Regular Knot $p'/b = 7/11$ in knot 5.

The half-cycle braiding algorithms for the half-cycles $1''$–$22''$ of the interbraided Regular Knot $p'/b = 7/11$ are identical to the half-cycle braiding algorithms for the half-cycles $1''$–$22''$ of the interbraided Regular Knot $p'/b = 7/11$ in knot 5.

Knot 8.

The upper grid-diagram in Fig. 1136 depicts the foundation knot which is centrally interbraided with two Regular knots, each with $p/b = 5/7$. The first-return string-run of the foundation knot has been depicted in Fig. 1051, pg. 1309 of *The Braider*, Issue No. 55, with $C_1 = C_3 = 10$ and $C_2 = 9$. Hence $3C_1 + C_2 + 3C_3 = 30 + 9 + 30 = 69 = \beta'$ associated with circumferential bight-boundary L_1 and hence with $\alpha' = 3$. With $\alpha = 5$ and $\alpha' = 3$ we obtain $\beta = \dfrac{\beta' \cdot \alpha}{\alpha'} = \dfrac{69 \times 5}{3} = 115$, and consequently $\dfrac{\beta}{\alpha} = \dfrac{\beta'}{\alpha'} = \dfrac{115}{5} = \dfrac{69}{3} = 23$. For $\lambda = 1$, $\dfrac{{B_c}'}{\alpha'} = \dfrac{{B_c}'}{3}$ on bight-boundary L_1 must be coprime with 23. $\dfrac{{B_c}'}{3} = 7$ and hence ${B_c}' = 3 \times 7 = 21$ on bight-boundary L_1 fulfils this condition.

Note that this foundation knot has $B_c = 7 \times \alpha = 7 \times 5 = 35$ bights.

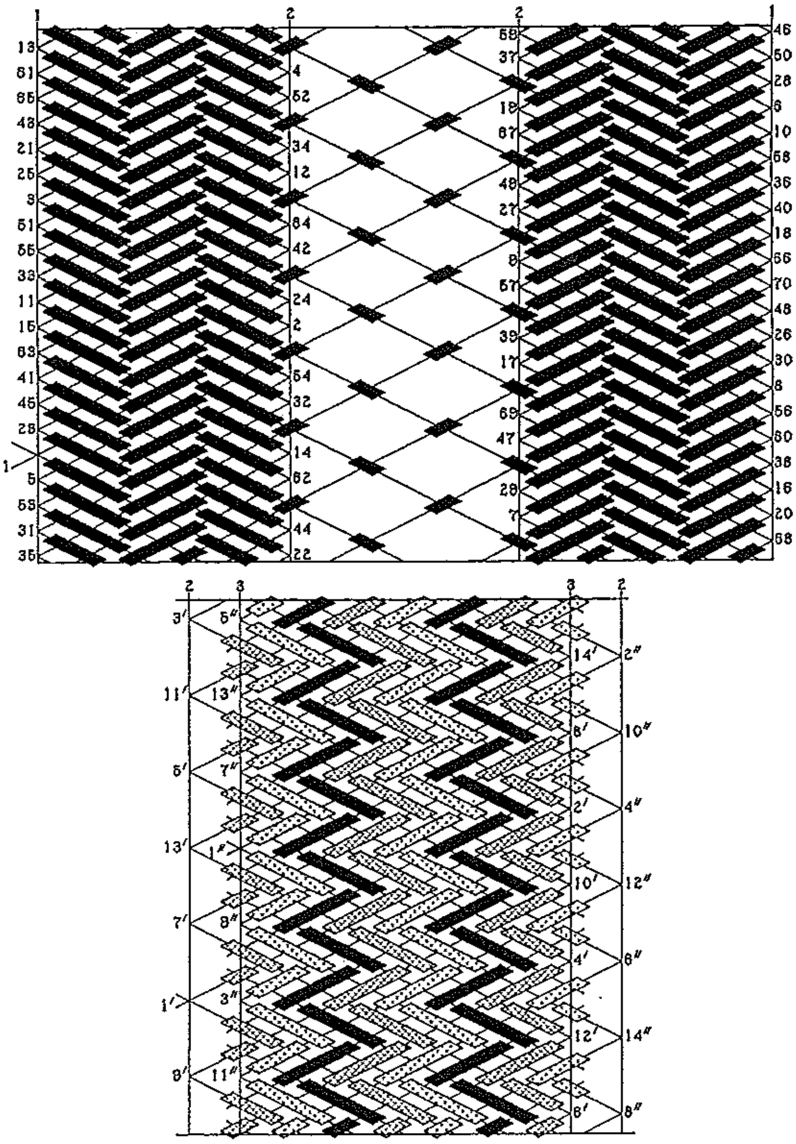

Fig. 1136 — Knot 8.

The half-cycle braiding algorithms for the foundation knot can be read from the tables in Fig. 1137 and Fig. 1138 as follows:

1. $L_1 \longrightarrow R_2$: Free run.
2. $R_2 \longrightarrow L_1$: Free run.
3. $L_1 \longrightarrow R_2$: Free run.
4. $R_2 \longrightarrow L_1$: Free run.
5. $L_1 \longrightarrow R_1$: Free run.
6. $R_1 \longrightarrow L_2$: Free run.
7. $L_2 \longrightarrow R_1$: Free run.
8. $R_1 \longrightarrow L_2$: Free run.
9. $L_2 \longrightarrow R_1$: Free run.
10. $R_1 \longrightarrow L_1$: $u - o - u$.
11. $L_1 \longrightarrow R_2$: o.
12. $R_2 \longrightarrow L_1$: u.
13. $L_1 \longrightarrow R_2$: o.
14. $R_2 \longrightarrow L_1$: $2u$.

15. $L_1 \longrightarrow R_1$: $u - 2o - u$.
16. $R_1 \longrightarrow L_2$: o.
17. $L_2 \longrightarrow R_1$: u.
18. $R_1 \longrightarrow L_2$: $2o$.
19. $L_2 \longrightarrow R_1$: $2u$.
20. $R_1 \longrightarrow L_1$: $u - 3o - u - o$.
21. $L_1 \longrightarrow R_2$: $o - u$.
22. $R_2 \longrightarrow L_1$: $u - 2o$.
23. $L_1 \longrightarrow R_2$: $2o - u$.
24. $R_2 \longrightarrow L_1$: $2u - o$.

HALF-CYCLE									
1	23	45	41	63	15	11	33	55	51
11	33	55	51	3	25	21	43	65	61
21	43	65	61	13	35	31	53	5	X
31	53	5	X	23	45	41	63	15	11
41	63	15	11	33	55	51	3	25	21
51	3	25	21	43	65	61	13	35	31
61	13	35	31	53	5	X	23	45	41
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
3	25	21	43	65	61	13	35	31	53
13	35	31	53	5	X	23	45	41	63
23	45	41	63	15	11	33	55	51	3
33	55	51	3	25	21	43	65	61	13
43	65	61	13	35	31	53	5	X	23
53	5	X	23	45	41	63	15	11	33
63	15	11	33	55	51	3	25	21	43
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
7	29	51	47	69	21	17	39	61	57
17	39	61	57	9	31	27	49	X	67
27	49	X	67	19	41	37	59	11	7
37	59	11	7	29	51	47	69	21	17
47	69	21	17	39	61	57	9	31	27
57	9	31	27	49	X	67	19	41	37
67	19	41	37	59	11	7	29	51	47
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
9	31	27	49	X	67	19	41	37	59
19	41	37	59	11	7	29	51	47	69
29	51	47	69	21	17	39	61	57	9
39	61	57	9	31	27	49	X	67	19
49	X	67	19	41	37	59	11	7	29
59	11	7	29	51	47	69	21	17	39
69	21	17	39	61	57	9	31	27	49
	O	O	O	U	U	U	O	O	O

HALF-CYCLE																						
5	X	23	45	41	63	15	11	33	55	51	21	61	31	27	49	X	67	19	41	37	59	11
15	11	33	55	51	3	25	21	43	65	61	31	X	41	37	59	11	7	29	51	47	69	21
25	21	43	65	61	13	35	31	53	5	X	41	11	51	47	69	21	17	39	61	57	9	31
35	31	53	5	X	23	45	41	63	15	11	51	21	61	57	9	31	27	49	X	67	19	41
45	41	63	15	11	33	55	51	3	25	21	61	31	X	67	19	41	37	59	11	7	29	51
55	51	3	25	21	43	65	61	13	35	31	X	41	11	7	29	51	47	69	21	17	39	61
65	61	13	35	31	53	5	X	23	45	41	11	51	21	17	39	61	57	9	31	27	49	X
	U	U	U	O	O	O	U	U	U	O	U	O	U	O	O	O	U	U	U	O	O	O

Fig. 1137 —Tables for the odd-numbered half-cycles.

25. $L_1 \longrightarrow R_1$: $u - o - u - 2o - u - o$.
26. $R_1 \longrightarrow L_2$: $o - 2u$.
27. $L_2 \longrightarrow R_1$: $u - 2o$.
28. $R_1 \longrightarrow L_2$: $2o - u$.
29. $L_2 \longrightarrow R_1$: $2u - o$.
30. $R_1 \longrightarrow L_1$: $u - o - u - 4o - u - o$.
31. $L_1 \longrightarrow R_2$: $u - o - 2u$.

32. $R_2 \longrightarrow L_1 : \quad 2o - u - 2o\,.$
33. $L_1 \longrightarrow R_2 : \quad u - 2o - u\,.$
34. $R_2 \longrightarrow L_1 : \quad o - 2u - o\,.$
35. $L_1 \longrightarrow R_1 : \quad 2u - o - u - 4o - u - o\,.$
36. $R_1 \longrightarrow L_2 : \quad 2u - o - 2u\,.$
37. $L_2 \longrightarrow R_1 : \quad 2o - u - 2o\,.$
38. $R_1 \longrightarrow L_2 : \quad u - 2o - u\,.$
39. $L_2 \longrightarrow R_1 : \quad o - 2u - o\,.$

HALF-CYCLE									
2	24	46	42	64	16	12	34	56	52
12	34	56	52	4	26	22	44	66	62
22	44	66	62	14	36	32	54	6	2
32	54	6	2	24	46	42	64	16	12
42	64	16	12	34	56	52	4	26	22
52	4	26	22	44	66	62	14	36	32
62	14	36	32	54	6	2	24	46	42
	0	0	0	U	U	U	0	0	0

HALF-CYCLE									
4	26	22	44	66	62	14	36	32	54
14	36	32	54	6	2	24	46	42	64
24	46	42	64	16	12	34	56	52	4
34	56	52	4	26	22	44	66	62	14
44	66	62	14	36	32	54	6	2	24
54	6	2	24	46	42	64	16	12	34
64	16	12	34	56	52	4	26	22	44
	0	0	0	U	U	U	0	0	0

HALF-CYCLE									
6	28	50	46	68	20	16	38	60	56
16	38	60	56	8	30	26	48	70	66
26	48	70	66	18	40	36	58	10	6
36	58	10	6	28	50	46	68	20	16
46	68	20	16	38	60	56	8	30	26
56	8	30	26	48	70	66	18	40	36
66	18	40	36	58	10	6	28	50	46
	U	U	U	0	0	0	U	U	U

HALF-CYCLE									
8	30	26	48	70	66	18	40	36	58
18	40	36	58	10	6	28	50	46	68
28	50	46	68	20	16	38	60	56	8
38	60	56	8	30	26	48	70	66	18
48	70	66	18	40	36	58	10	6	28
58	10	6	28	50	46	68	20	16	38
68	20	16	38	60	56	8	30	26	48
	U	U	U	0	0	0	U	U	U

HALF-CYCLE																						
10	6	28	50	46	68	20	16	38	60	56	26	66	36	32	54	6	2	24	46	42	64	16
20	16	38	60	56	8	30	26	48	70	66	36	6	46	42	64	16	12	34	56	52	4	26
30	26	48	70	66	18	40	36	58	10	6	46	16	56	52	4	26	22	44	66	62	14	36
40	36	58	10	6	28	50	46	68	20	16	56	26	66	62	14	36	32	54	6	2	24	46
50	46	68	20	16	38	60	56	8	30	26	66	36	6	2	24	46	42	64	16	12	34	56
60	56	8	30	26	48	70	66	18	40	36	6	46	16	12	34	56	52	4	26	22	44	66
70	66	18	40	36	58	10	6	28	50	46	16	56	26	22	44	66	62	14	36	32	54	6
	U	U	U	0	0	0	U	U	U	0	U	0	U	0	0	0	U	U	U	0	0	0

Fig. 1138 —Tables for the even-numbered half-cycles.

40. $R_1 \longrightarrow L_1 : \quad 2u - 2o - u - 4o - 2u - 2o\,.$
41. $L_1 \longrightarrow R_2 : \quad 2u - o - 3u\,.$
42. $R_2 \longrightarrow L_1 : \quad 2o - u - 3o\,.$
43. $L_1 \longrightarrow R_2 : \quad u - 2o - 2u\,.$
44. $R_2 \longrightarrow L_1 : \quad o - 2u - 3o\,.$
45. $L_1 \longrightarrow R_1 : \quad 2u - 2o - 2u - 4o - 2u - 2o\,.$
46. $R_1 \longrightarrow L_2 : \quad 2u - o - 3u\,.$
47. $L_2 \longrightarrow R_1 : \quad 2o - u - 3o\,.$
48. $R_1 \longrightarrow L_2 : \quad u - 2o - 3u\,.$

49. $L_2 \longrightarrow R_1$: $o - 2u - 3o$.
50. $R_1 \longrightarrow L_1$: $2u - 2o - 2u - 2o - u - 3o - 2u - 2o$.
51. $L_1 \longrightarrow R_2$: $3u - o - 3u$.
52. $R_2 \longrightarrow L_1$: $3o - u - 3o$.
53. $L_1 \longrightarrow R_2$: $2u - 2o - 3u$.
54. $R_2 \longrightarrow L_1$: $3o - 2u - 3o$.
55. $L_1 \longrightarrow R_1$: $3u - 2o - 2u - 2o - u - 3o - 2u - 2o$.
56. $R_1 \longrightarrow L_2$: $3u - o - 3u$.
57. $L_2 \longrightarrow R_1$: $3o - u - 3o$.
58. $R_1 \longrightarrow L_2$: $3u - 2o - 3u$.
59. $L_2 \longrightarrow R_1$: $3o - 2u - 3o$.
60. $R_1 \longrightarrow L_1$: $3u - 2o - 2u - o - u - o - u - 3o - 3u - 2o$.
61. $L_1 \longrightarrow R_2$: $3u - 2o - 3u$.
62. $R_2 \longrightarrow L_1$: $3o - 3u - 3o$.
63. $L_1 \longrightarrow R_2$: $3u - 3o - 3u$.
64. $R_2 \longrightarrow L_1$: $3o - 3u - 3o$.
65. $L_1 \longrightarrow R_1$: $3u - 3o - 2u - o - u - o - u - 3o - 3u - 2o$.
66. $R_1 \longrightarrow L_2$: $3u - 3o - 3u$.
67. $L_2 \longrightarrow R_1$: $3o - 3u - 3o$.
68. $R_1 \longrightarrow L_2$: $3u - 3o - 3u$.
69. $L_2 \longrightarrow R_1$: $3o - 3u - 3o$.
70. $R_1 \longrightarrow L_1$: $3u - 3o - 3u - o - u - o - u - 3o - 3u - 3o$.

The half-cycle braiding algorithms for the half-cycles $1'$–$14'$ of the interbraided Regular Knot $p'/b = 5/7$ can be read from the upper algorithm diagram in Fig. 1139 and are as follows:

$1'$. : $o - u - o - u - o$.
$2'$. $(i = 0)$: $o - u - o - u - o$.
$3'$. $(i = 0)$: $o - u - o - u - o$.
$4'$. $(i \leq 1)$: $o - u - (s,1)2o - u - o$.
$5'$. $(i \leq 1)$: $o - u - 2o - u - o$.
$6'$. $(i \leq 2)$: $o - u - 2o - u - (s,1)2o$.
$7'$. $(i \leq 2)$: $o - u - 2o - u - 2o$.
$8'$. $(i \leq 3)$: $o - u - 2o - u - 2o$.
$9'$. $(i \leq 3)$: $o - u - 2o - u - 2o$.
$10'$. $(i \leq 4)$: $o - (s,1)2u - 2o - u - 2o$.
$11'$. $(i \leq 4)$: $o - 2u - 2o - u - 2o$.
$12'$. $(i \leq 5)$: $o - 2u - 2o - (s,1)2u - 2o$.
$13'$. $(i \leq 5)$: $o - 2u - 2o - 2u - 2o$.
$14'$. $(i \leq 6)$: $o - 2u - 2o - 2u - 2o$.

The half-cycle braiding algorithms for the half-cycles $1''$–$14''$ of the interbraided Regular Knot $p''/b = 5/7$ can be read from the lower algorithm diagram in Fig. 1139 and are as follows:

$1''$. : $2o - 2u - 2o - 2u - o$.
$2''$. $(i = 0)$: $o - 2u - 2o - 2u - 2o$.
$3''$. $(i = 0)$: $2o - 2u - 2o - 2u - o$.
$4''$. $(i \leq 1)$: $o - 2u - (s,2)3o - 2u - 2o$.
$5''$. $(i \leq 1)$: $2o - 2u - 3o - 2u - o$.

6″. $(i \leq 2)$: $o - 2u - 3o - 2u - (s,2)3o\,.$
7″. $(i \leq 2)$: $2o - 2u - 3o - 2u - 2o\,.$
8″. $(i \leq 3)$: $o - 2u - 3o - 2u - 3o\,.$
9″. $(i \leq 3)$: $2o - 2u - 3o - 2u - 2o\,.$
10″. $(i \leq 4)$: $o - (s,2)3u - 3o - 2u - 3o\,.$
11″. $(i \leq 4)$: $2o - 3u - 3o - 2u - 2o\,.$
12″. $(i \leq 5)$: $o - 3u - 3o - (s,2)3u - 3o\,.$
13″. $(i \leq 5)$: $2o - 3u - 3o - 3u - 2o\,.$
14″. $(i \leq 6)$: $o - 3u - 3o - 3u - 3o\,.$

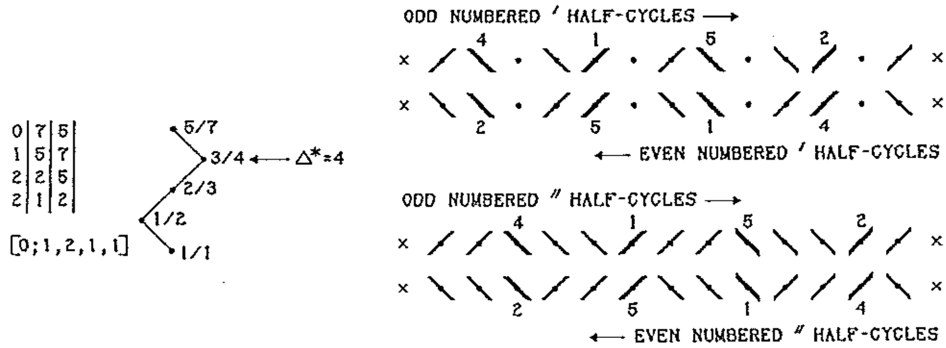

Fig. 1139 — The interbraided $p'/b = 5/7$ and $p''/b = 5/7$ Regular Knots.

In Fig. 1140 the braid of the foundation knot starts at the centre of its string-length.

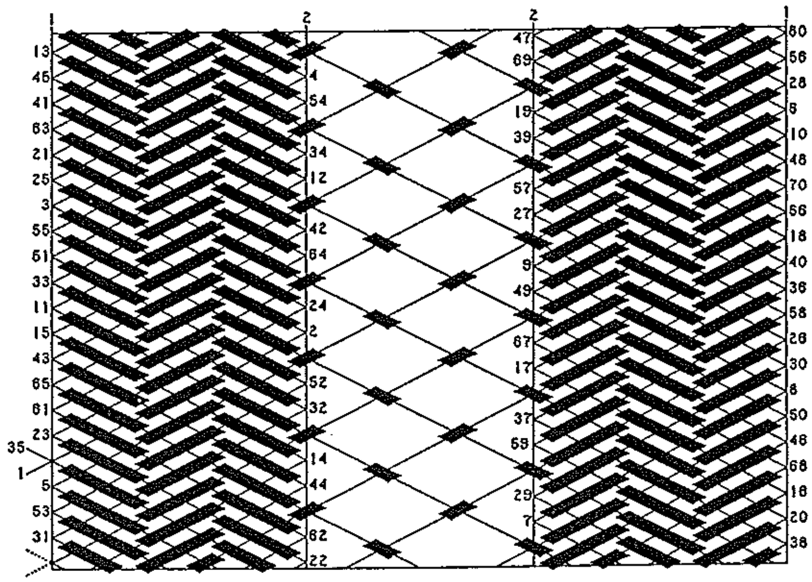

Fig. 1140 — Starting the foundation knot braid at the centre of its string-length.

The half-cycle braiding algorithms for the half-cycles 1–34 of the foundation knot can be read as before from the tables in Fig. 1137 and Fig. 1138. The half-cycle braiding algorithms for the half-cycles 35–70 of the foundation knot can be read from the tables in Fig. 1141 and Fig. 1142 and are as follows:†

† The numerical entries in the tables of Figs. 1137 & 1138 and in Figs. 1141 & 1142 are respectively the same since half-cycle 35 in Fig. 1140 occupies a similar position as half-cycle 35 in Fig. 1136. The tables in Figs. 1141 & 1142 belong to the complete string-run which starts at the end of half-cycle 34 in Fig. 1136, running from upper left bight-boundary to lower right bight-boundary.

35. $L_1 \longrightarrow R_1$: $2o - u - o - 4u - o - u$.
36. $R_1 \longrightarrow L_2$: $2o - u - 2o$.
37. $L_2 \longrightarrow R_1$: $2u - o - 2u$.
38. $R_1 \longrightarrow L_2$: $o - 2u - o$.
39. $L_2 \longrightarrow R_1$: $u - 2o - u$.

HALF-CYCLE									
1	23	45	41	63	15	11	33	55	51
11	33	55	51	3	25	21	43	65	61
21	43	65	61	13	35	31	53	5	X
31	53	5	X	23	45	41	63	15	11
41	63	15	11	33	55	51	3	25	21
51	3	25	21	43	65	61	13	35	31
61	13	35	31	53	5	X	23	45	41
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
3	25	21	43	65	61	13	35	31	53
13	35	31	53	5	X	23	45	41	63
23	45	41	63	15	11	33	55	51	3
33	55	51	3	25	21	43	65	61	13
43	65	61	13	35	31	53	5	X	23
53	5	X	23	45	41	63	15	11	33
63	15	11	33	55	51	3	25	21	43
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
7	29	51	47	69	21	17	39	61	57
17	39	61	57	9	31	27	49	X	67
27	49	X	67	19	41	37	59	11	7
37	59	11	7	29	51	47	69	21	17
47	69	21	17	39	61	57	9	31	27
57	9	31	27	49	X	67	19	41	37
67	19	41	37	59	11	7	29	51	47
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
9	31	27	49	X	67	19	41	37	59
19	41	37	59	11	7	29	51	47	69
29	51	47	69	21	17	39	61	57	9
39	61	57	9	31	27	49	X	67	19
49	X	67	19	41	37	59	11	7	29
59	11	7	29	51	47	69	21	17	39
69	21	17	39	61	57	9	31	27	49
	U	U	U	O	O	O	U	U	U

HALF-CYCLE																						
5	X	23	45	41	63	15	11	33	55	51	21	61	31	27	49	X	67	19	41	37	59	11
15	11	33	55	51	3	25	21	43	65	61	31	X	41	37	59	11	7	29	51	47	69	21
25	21	43	65	61	13	35	31	53	5	X	41	11	51	47	69	21	17	39	61	57	9	31
35	31	53	5	X	23	45	41	63	15	11	51	21	61	57	9	31	27	49	X	67	19	41
45	41	63	15	11	33	55	51	3	25	21	61	31	X	67	19	41	37	59	11	7	29	51
55	51	3	25	21	43	65	61	13	35	31	X	41	11	7	29	51	47	69	21	17	39	61
65	61	13	35	31	53	5	X	23	45	41	11	51	21	17	39	61	57	9	31	27	49	X
	O	O	O	U	U	U	O	O	O	U	O	U	O	U	U	U	O	O	O	U	U	U

Fig. 1141 —Tables for the odd-numbered half-cycles.

40. $R_1 \longrightarrow L_1$: $2o - 2u - o - 4u - 2o - 2u$.
41. $L_1 \longrightarrow R_2$: $2o - u - 3o$.
42. $R_2 \longrightarrow L_1$: $2u - o - 3u$.
43. $L_1 \longrightarrow R_2$: $o - 2u - 2o$.
44. $R_2 \longrightarrow L_1$: $u - 2o - 3u$.
45. $L_1 \longrightarrow R_1$: $2o - 2u - 2o - 4u - 2o - 2u$.
46. $R_1 \longrightarrow L_2$: $2o - u - 3o$.
47. $L_2 \longrightarrow R_1$: $2u - o - 3u$.
48. $R_1 \longrightarrow L_2$: $o - 2u - 3o$.
49. $L_2 \longrightarrow R_1$: $u - 2o - 3u$.
50. $R_1 \longrightarrow L_1$: $2o - 2u - 2o - 2u - o - 3u - 2o - 2u$.
51. $L_1 \longrightarrow R_2$: $3o - u - 3o$.

52. $R_2 \longrightarrow L_1$: $3u - o - 3u$.
53. $L_1 \longrightarrow R_2$: $2o - 2u - 3o$.
54. $R_2 \longrightarrow L_1$: $3u - 2o - 3u$.
55. $L_1 \longrightarrow R_1$: $3o - 2u - 2o - 2u - o - 3u - 2o - 2u$.
56. $R_1 \longrightarrow L_2$: $3o - u - 3o$.
57. $L_2 \longrightarrow R_1$: $3u - o - 3u$.
58. $R_1 \longrightarrow L_2$: $3o - 2u - 3o$.
59. $L_2 \longrightarrow R_1$: $3u - 2o - 3u$.

HALF-CYCLE									
2	24	46	42	64	16	12	34	56	52
12	34	56	52	4	26	22	44	66	62
22	44	66	62	14	36	32	54	6	2
32	54	6	2	24	46	42	64	16	12
42	64	16	12	34	56	52	4	26	22
52	4	26	22	44	66	62	14	36	32
62	14	36	32	54	6	2	24	46	42
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
4	26	22	44	66	62	14	36	32	54
14	36	32	54	6	2	24	46	42	64
24	46	42	64	16	12	34	56	52	4
34	56	52	4	26	22	44	66	62	14
44	66	62	14	36	32	54	6	2	24
54	6	2	24	46	42	64	16	12	34
64	16	12	34	56	52	4	26	22	44
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
6	28	50	46	68	20	16	38	60	56
16	38	60	56	8	30	26	48	70	66
26	48	70	66	18	40	36	58	10	6
36	58	10	6	28	50	46	68	20	16
46	68	20	16	38	60	56	8	30	26
56	8	30	26	48	70	66	18	40	36
66	18	40	36	58	10	6	28	50	46
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
8	30	26	48	70	66	18	40	36	58
18	40	36	58	10	6	28	50	46	68
28	50	46	68	20	16	38	60	56	8
38	60	56	8	30	26	48	70	66	18
48	70	66	18	40	36	58	10	6	28
58	10	6	28	50	46	68	20	16	38
68	20	16	38	60	56	8	30	26	48
	O	O	O	U	U	U	O	O	O

HALF-CYCLE																					
10	6	28	50	46	68	20	16	38	60	56	26	66	36	32	54	6	2	24	46	42	64	16
20	16	38	60	56	8	30	26	48	70	66	36	6	46	42	64	16	12	34	56	52	4	26
30	26	48	70	66	18	40	36	58	10	6	46	16	56	52	4	26	22	44	66	62	14	36
40	36	58	10	6	28	50	46	68	20	16	56	26	66	62	14	36	32	54	6	2	24	46
50	46	68	20	16	38	60	56	8	30	26	66	36	6	2	24	46	42	64	16	12	34	56
60	56	8	30	26	48	70	66	18	40	36	6	46	16	12	34	56	52	4	26	22	44	66
70	66	18	40	36	58	10	6	28	50	46	16	56	26	22	44	66	62	14	36	32	54	6
	O	O	O	U	U	U	O	O	O	U	O	U	O	U	U	U	O	O	O	U	U	U

Fig. 1142 —Tables for the even-numbered half-cycles.

60. $R_1 \longrightarrow L_1$: $3o - 2u - 2o - u - o - u - o - 3u - 3o - 2u$.
61. $L_1 \longrightarrow R_2$: $3o - 2u - 3o$.
62. $R_2 \longrightarrow L_1$: $3u - 3o - 3u$.
63. $L_1 \longrightarrow R_2$: $3o - 3u - 3o$.
64. $R_2 \longrightarrow L_1$: $3u - 3o - 3u$.
65. $L_1 \longrightarrow R_1$: $3o - 3u - 2o - u - o - u - o - 3u - 3o - 2u$.
66. $R_1 \longrightarrow L_2$: $3o - 3u - 3o$.
67. $L_2 \longrightarrow R_1$: $3u - 3o - 3u$.
68. $R_1 \longrightarrow L_2$: $3o - 3u - 3o$.

69. $L_2 \longrightarrow R_1$: $3u - 3o - 3u$.

70. $R_1 \longrightarrow L_1$: $3o - 3u - 3o - u - o - u - o - 3u - 3o - 3u$.

Knot 9.

The upper grid-diagram in Fig. 1143 depicts the foundation knot which is centrally interbraided with two Regular knots, each with $p/b = 7/6$. The first-return string-run of the foundation knot has been depicted in Fig. 1051, pg. 1309 of *The Braider*, Issue No. 55, with $C_1 = C_3 = 10$ and $C_2 = 15$. Hence $3C_1 + C_2 + 3C_3 = 30 + 15 + 30 = 75 = \beta'$ associated with circumferential bight-boundary L_1 and hence with $\alpha' = 3$. With $\alpha = 5$ and $\alpha' = 3$ we obtain $\beta = \dfrac{\beta' \cdot \alpha}{\alpha'} = \dfrac{75 \times 5}{3} = 125$, and consequently $\dfrac{\beta}{\alpha} = \dfrac{\beta'}{\alpha'} = \dfrac{125}{5} = \dfrac{75}{3} = 25$. For $\lambda = 1$, $\dfrac{B_c{}'}{\alpha'} = \dfrac{B_c{}'}{3}$ on bight-boundary L_1 must be coprime with 25. $\dfrac{B_c{}'}{3} = 6$ and hence $B_c{}' = 3 \times 6 = 18$ on bight-boundary L_1 fulfils this condition.

Note that this foundation knot has $B_c = 6 \times \alpha = 6 \times 5 = 30$ bights.

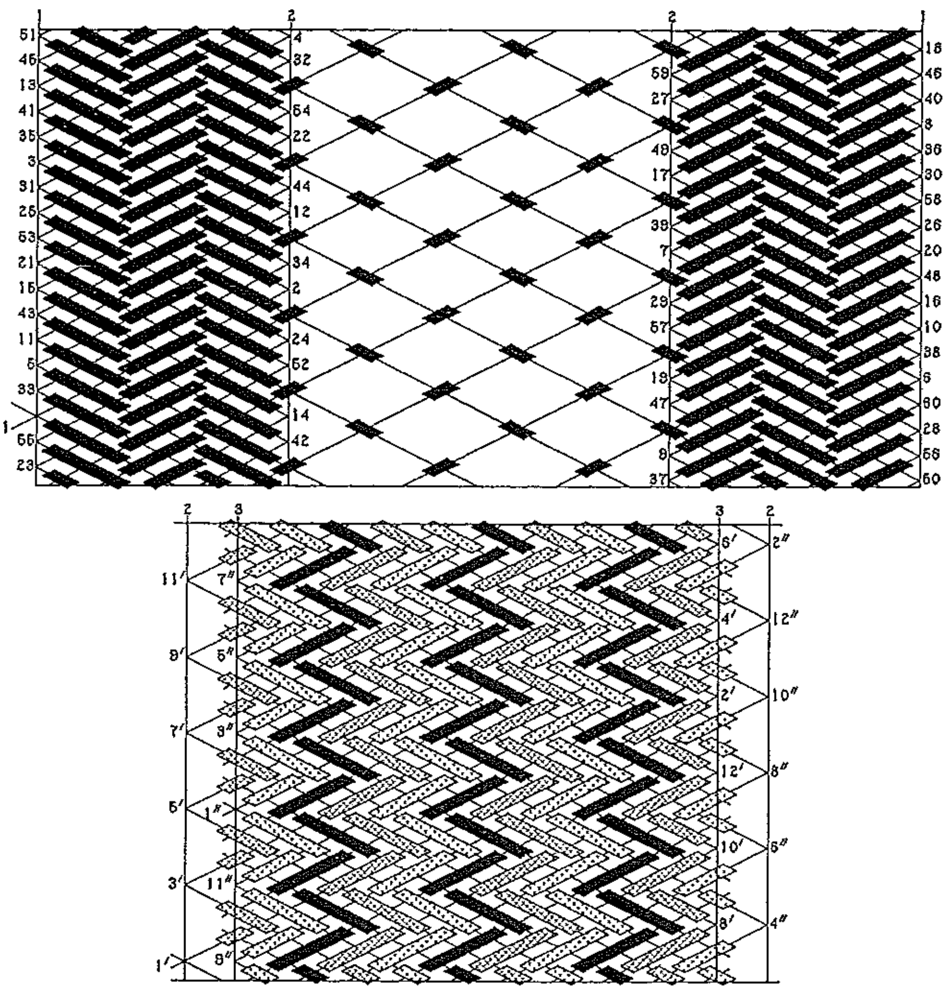

Fig. 1143 — Knot 9.

The half-cycle braiding algorithms for the foundation knot can be read from the tables in Fig. 1144 and Fig. 1145 as follows:

1. $L_1 \longrightarrow R_2$: Free run.
2. $R_2 \longrightarrow L_1$: Free run.

3. $L_1 \longrightarrow R_2$: Free run.
4. $R_2 \longrightarrow L_1$: o.
5. $L_1 \longrightarrow R_1$: u.
6. $R_1 \longrightarrow L_2$: Free run.
7. $L_2 \longrightarrow R_1$: Free run.
8. $R_1 \longrightarrow L_2$: u.
9. $L_2 \longrightarrow R_1$: o.

HALF-CYCLE									
1	33	5	11	43	15	21	53	25	31
11	43	15	21	53	25	31	3	35	41
21	53	25	31	3	35	41	13	45	51
31	3	35	41	13	45	51	23	55	X
41	13	45	51	23	55	X	33	5	11
51	23	55	X	33	5	11	43	15	21
	U	U	U	0	0	0	U	U	U

HALF-CYCLE									
3	35	41	13	45	51	23	55	X	33
13	45	51	23	55	X	33	5	11	43
23	55	X	33	5	11	43	15	21	53
33	5	11	43	15	21	53	25	31	3
43	15	21	53	25	31	3	35	41	13
53	25	31	3	35	41	13	45	51	23
	U	U	U	0	0	0	U	U	U

HALF-CYCLE									
7	39	11	17	49	21	27	59	31	37
17	49	21	27	59	31	37	9	41	47
27	59	31	37	9	41	47	19	51	57
37	9	41	47	19	51	57	29	X	7
47	19	51	57	29	X	7	39	11	17
57	29	X	7	39	11	17	49	21	27
	0	0	0	U	U	U	0	0	0

HALF-CYCLE									
9	41	47	19	51	57	29	X	7	39
19	51	57	29	X	7	39	11	17	49
29	X	7	39	11	17	49	21	27	59
39	11	17	49	21	27	59	31	37	9
49	21	27	59	31	37	9	41	47	19
59	31	37	9	41	47	19	51	57	29
	0	0	0	U	U	U	0	0	0

HALF-CYCLE																								
5	11	43	15	21	53	25	31	3	35	41	51	X	11	21	31	37	9	41	47	19	51	57	29	X
15	21	53	25	31	3	35	41	13	45	51	X	11	21	31	41	47	19	51	57	29	X	7	39	11
25	31	3	35	41	13	45	51	23	55	X	11	21	31	41	51	57	29	X	7	39	11	17	49	21
35	41	13	45	51	23	55	X	33	5	11	21	31	41	51	X	7	39	11	17	49	21	27	59	31
45	51	23	55	X	33	5	11	43	15	21	31	41	51	X	11	17	49	21	27	59	31	37	9	41
55	X	33	5	11	43	15	21	53	25	31	41	51	X	11	21	27	59	31	37	9	41	47	19	51
	U	U	U	0	0	0	U	U	U	0	U	0	U	0	U	0	0	0	U	U	U	0	0	0

Fig. 1144 —Tables for the odd-numbered half-cycles.

10. $R_1 \longrightarrow L_1$: $u - 3o$.
11. $L_1 \longrightarrow R_2$: u.
12. $R_2 \longrightarrow L_1$: o.
13. $L_1 \longrightarrow R_2$: $2u$.
14. $R_2 \longrightarrow L_1$: $u - 2o$.
15. $L_1 \longrightarrow R_1$: $o - u - 3o$.
16. $R_1 \longrightarrow L_2$: u.
17. $L_2 \longrightarrow R_1$: o.
18. $R_1 \longrightarrow L_2$: $o - 2u$.
19. $L_2 \longrightarrow R_1$: $u - 2o$.
20. $R_1 \longrightarrow L_1$: $o - 2u - o - 2u - 2o$.
21. $L_1 \longrightarrow R_2$: $o - u$.
22. $R_2 \longrightarrow L_1$: $u - o$.

23. $L_1 \longrightarrow R_2$: $2o - 2u$.
24. $R_2 \longrightarrow L_1$: $o - 2u - 2o$.
25. $L_1 \longrightarrow R_1$: $u - o - 2u - o - 2u - 2o$.
26. $R_1 \longrightarrow L_2$: $o - u$.
27. $L_2 \longrightarrow R_1$: $u - o$.
28. $R_1 \longrightarrow L_2$: $u - 2o - 2u$.
29. $L_2 \longrightarrow R_1$: $o - 2u - 2o$.

HALF-CYCLE									
2	34	6	12	44	16	22	54	26	32
12	44	16	22	54	26	32	4	36	42
22	54	26	32	4	36	42	14	46	52
32	4	36	42	14	46	52	24	56	2
42	14	46	52	24	56	2	34	6	12
52	24	56	2	34	6	12	44	16	22
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
4	36	42	14	46	52	24	56	2	34
14	46	52	24	56	2	34	6	12	44
24	56	2	34	6	12	44	16	22	54
34	6	12	44	16	22	54	26	32	4
44	16	22	54	26	32	4	36	42	14
54	26	32	4	36	42	14	46	52	24
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
6	38	10	16	48	20	26	58	30	36
16	48	20	26	58	30	36	8	40	46
26	58	30	36	8	40	46	18	50	56
36	8	40	46	18	50	56	28	60	6
46	18	50	56	28	60	6	38	10	16
56	28	60	6	38	10	16	48	20	26
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
8	40	46	18	50	56	28	60	6	38
18	50	56	28	60	6	38	10	16	48
28	60	6	38	10	16	48	20	26	58
38	10	16	48	20	26	58	30	36	8
48	20	26	58	30	36	8	40	46	18
58	30	36	8	40	46	18	50	56	28
	U	U	U	O	O	O	U	U	U

HALF-CYCLE																								
10	16	48	20	26	58	30	36	8	40	46	56	6	16	26	36	42	14	46	52	24	56	2	34	6
20	26	58	30	36	8	40	46	18	50	56	6	16	26	36	46	52	24	56	2	34	6	12	44	16
30	36	8	40	46	18	50	56	28	60	6	16	26	36	46	56	2	34	6	12	44	16	22	54	26
40	46	18	50	56	28	60	6	38	10	16	26	36	46	56	6	12	44	16	22	54	26	32	4	36
50	56	28	60	6	38	10	16	48	20	26	36	46	56	6	16	22	54	26	32	4	36	42	14	46
60	6	38	10	16	48	20	26	58	30	36	46	56	6	16	26	32	4	36	42	14	46	52	24	56
	U	U	U	O	O	O	U	U	U	O	U	O	U	O	U	O	O	O	U	U	U	O	O	O

Fig. 1145 —Tables for the even-numbered half-cycles.

30. $R_1 \longrightarrow L_1$: $u - o - u - o - u - 3o - 2u - 2o$.
31. $L_1 \longrightarrow R_2$: $u - o - u$.
32. $R_2 \longrightarrow L_1$: $o - u - 2o$.
33. $L_1 \longrightarrow R_2$: $2u - 2o - 3u$.
34. $R_2 \longrightarrow L_1$: $2o - 2u - 3o$.
35. $L_1 \longrightarrow R_1$: $u - o - 2u - o - u - 3o - 2u - 2o$.
36. $R_1 \longrightarrow L_2$: $u - o - 2u$.
37. $L_2 \longrightarrow R_1$: $o - u - 2o$.
38. $R_1 \longrightarrow L_2$: $2u - 2o - 3u$.
39. $L_2 \longrightarrow R_1$: $2o - 2u - 3o$.
40. $R_1 \longrightarrow L_1$: $u - o - 3u - o - u - o - u - 2o - 2u - 3o$.
41. $L_1 \longrightarrow R_2$: $u - o - 3u$.
42. $R_2 \longrightarrow L_1$: $o - 2u - 3o$.

43. $L_1 \longrightarrow R_2 : \; 2u - 3o - 3u\,.$
44. $R_2 \longrightarrow L_1 : \; 2o - 3u - 3o\,.$
45. $L_1 \longrightarrow R_1 : \; u - 2o - 3u - o - u - o - u - 2o - 2u - 3o\,.$
46. $R_1 \longrightarrow L_2 : \; u - 2o - 3u\,.$
47. $L_2 \longrightarrow R_1 : \; o - 2u - 3o\,.$
48. $R_1 \longrightarrow L_2 : \; 2u - 3o - 3u\,.$
49. $L_2 \longrightarrow R_1 : \; 2o - 3u - 3o\,.$
50. $R_1 \longrightarrow L_1 : \; u - 3o - 3u - o - u - 2o - u - 2o - 3u - 3o\,.$
51. $L_1 \longrightarrow R_2 : \; u - 3o - 3u\,.$
52. $R_2 \longrightarrow L_1 : \; 2o - 3u - 3o\,.$
53. $L_1 \longrightarrow R_2 : \; 3u - 3o - 3u\,.$
54. $R_2 \longrightarrow L_1 : \; 3o - 3u - 3o\,.$
55. $L_1 \longrightarrow R_1 : \; 2u - 3o - 3u - o - u - 2o - u - 2o - 3u - 3o\,.$
56. $R_1 \longrightarrow L_2 : \; 2u - 3o - 3u\,.$
57. $L_2 \longrightarrow R_1 : \; 2o - 3u - 3o\,.$
58. $R_1 \longrightarrow L_2 : \; 3u - 3o - 3u\,.$
59. $L_2 \longrightarrow R_1 : \; 3o - 3u - 3o\,.$
60. $R_1 \longrightarrow L_1 : \; 3u - 3o - 3u - o - u - o - u - o - u - 3o - 3u - 3o\,.$

The half-cycle braiding algorithms for the half-cycles $1'$–$12'$ of the interbraided Regular Knot $p'/b = 7/6$ can be read from the upper algorithm diagram in Fig. 1146 and are as follows:

$1'.$: $o - u - o - u - o - u - o\,.$
$2'.$ $(i = 0)$: $o - u - o - u - o - u - (s,1)2o\,.$
$3'.$ $(i = 0)$: $o - u - o - u - o - u - 2o\,.$
$4'.$ $(i \le 1)$: $o - u - o - u - o - (s,1)2u - 2o\,.$
$5'.$ $(i \le 1)$: $o - u - o - u - o - 2u - 2o\,.$
$6'.$ $(i \le 2)$: $o - u - o - u - (s,1)2o - 2u - 2o\,.$
$7'.$ $(i \le 2)$: $o - u - o - u - 2o - 2u - 2o\,.$
$8'.$ $(i \le 3)$: $o - u - o - (s,1)2u - 2o - 2u - 2o\,.$
$9'.$ $(i \le 3)$: $o - u - o - 2u - 2o - 2u - 2o\,.$
$10'.$ $(i \le 4)$: $o - u - (s,1)2o - 2u - 2o - 2u - 2o\,.$
$11'.$ $(i \le 4)$: $o - u - 2o - 2u - 2o - 2u - 2o\,.$
$12'.$ $(i \le 5)$: $o - (s,1)2u - 2o - 2u - 2o - 2u - 2o\,.$

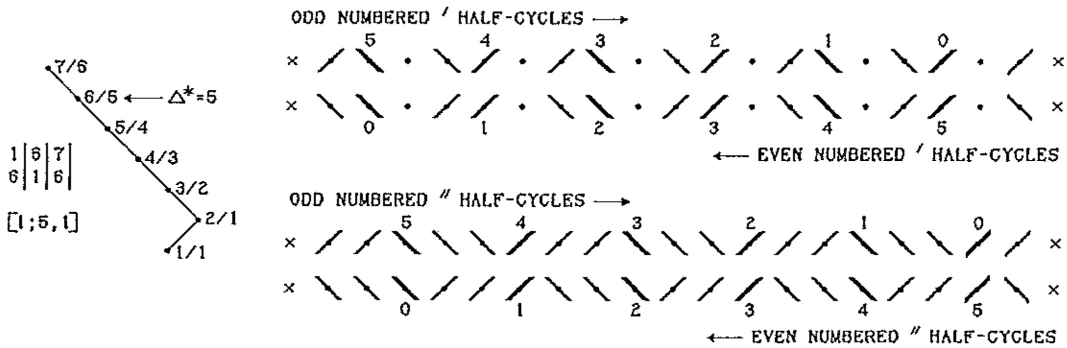

Fig. 1146 — The interbraided $p'/b = 7/6$ and $p''/b = 7/6$ Regular Knots.

The half-cycle braiding algorithms for the half-cycles $1''$–$12''$ of the interbraided Regular Knot $p''/b = 7/6$ can be read from the lower algorithm diagram in Fig. 1146 and are as follows:

$1''.$: $2o - 2u - 2o - 2u - 2o - 2u - o\,.$

2″.	$(i = 0)$	:	$o - 2u - 2o - 2u - 2o - 2u - (s,2)3o$.
3″.	$(i = 0)$	:	$2o - 2u - 2o - 2u - 2o - 2u - 2o$.
4″.	$(i \leq 1)$	:	$o - 2u - 2o - 2u - 2o - (s,2)3u - 3o$.
5″.	$(i \leq 1)$	:	$2o - 2u - 2o - 2u - 2o - 3u - 2o$.
6″.	$(i \leq 2)$	:	$o - 2u - 2o - 2u - (s,2)3o - 3u - 3o$.
7″.	$(i \leq 2)$	:	$2o - 2u - 2o - 2u - 3o - 3u - 2o$.
8″.	$(i \leq 3)$	:	$o - 2u - 2o - (s,2)3u - 3o - 3u - 3o$.
9″.	$(i \leq 3)$	:	$2o - 2u - 2o - 3u - 3o - 3u - 2o$.
10″.	$(i \leq 4)$	:	$o - 2u - (s,2)3o - 3u - 3o - 3u - 3o$.
11″.	$(i \leq 4)$	:	$2o - 2u - 3o - 3u - 3o - 3u - 2o$.
12″.	$(i \leq 5)$	:	$o - (s,2)3u - 3o - 3u - 3o - 3u - 3o$.

In Fig. 1147 the braid of the foundation knot starts at the centre of its string-length.

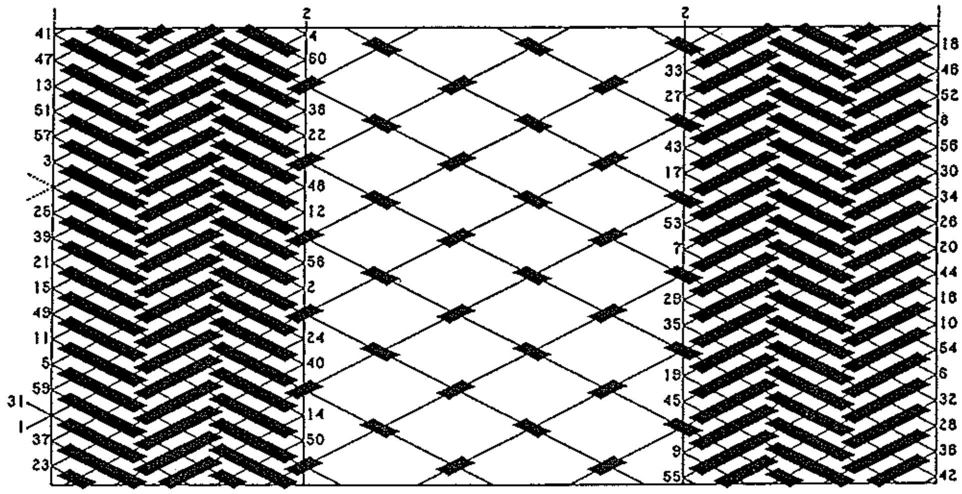

Fig. 1147 — Starting the foundation knot braid at the centre of its string-length.

The half-cycle braiding algorithms for the half-cycles 1–30 of the foundation knot can be read as before from the tables in Fig. 1144 and Fig. 1145. The half-cycle braiding algorithms for the half-cycles 31–60 of the foundation knot can be read from the tables in Fig. 1148 and Fig. 1149 and are as follows:†

31.	$L_1 \longrightarrow R_1$	:	$o - u - o - u - o - 3u - 2o - 2u$.
32.	$R_1 \longrightarrow L_2$	:	$o - u - 2o$.
33.	$L_2 \longrightarrow R_1$	:	$u - o - 2u$.
34.	$R_1 \longrightarrow L_2$	:	$2o - 2u - 3o$.
35.	$L_2 \longrightarrow R_1$	:	$2u - 2o - 3u$.
36.	$R_1 \longrightarrow L_1$	:	$o - u - 3o - u - o - u - o - 2u - 2o - 2u$.
37.	$L_1 \longrightarrow R_2$	:	$o - u - 2o$.
38.	$R_2 \longrightarrow L_1$	:	$u - o - 3u$.
39.	$L_1 \longrightarrow R_2$	:	$2o - 2u - 3o$.
40.	$R_2 \longrightarrow L_1$	:	$2u - 2o - 3u$.

† The numerical entries y in the tables of Figs. 1148 & 1149 are obtained from the numerical entries x in the tables of Figs. 1144 & 1145 with the relationship $y = |x - 4|_{60}$ since half-cycle 31 in Fig. 1147 occupies a similar position as half-cycle 35 in Fig. 1143. The tables in Figs. 1148 & 1149 belong to the complete string-run which starts at the end of half-cycle 30 in Fig. 1143, running from upper left bight-boundary to lower right bight-boundary.

41. $L_1 \longrightarrow R_1$: $o - u - 3o - u - o - u - o - 2u - 2o - 3u$.
42. $R_1 \longrightarrow L_2$: $o - 2u - 3o$.
43. $L_2 \longrightarrow R_1$: $u - 2o - 3u$.
44. $R_1 \longrightarrow L_2$: $2o - 3u - 3o$.

HALF-CYCLE									
3	35	7	13	45	17	23	55	27	33
13	45	17	23	55	27	33	5	37	43
23	55	27	33	5	37	43	15	47	53
33	5	37	43	15	47	53	25	57	3
43	15	47	53	25	57	3	35	7	13
53	25	57	3	35	7	13	45	17	23
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
5	37	43	15	47	53	25	57	3	35
15	47	53	25	57	3	35	7	13	45
25	57	3	35	7	13	45	17	23	55
35	7	13	45	17	23	55	27	33	5
45	17	23	55	27	33	5	37	43	15
55	27	33	5	37	43	15	47	53	25
	U	U	U	O	O	O	U	U	U

HALF-CYCLE									
7	39	11	17	49	21	27	59	31	37
17	49	21	27	59	31	37	9	41	47
27	59	31	37	9	41	47	19	51	57
37	9	41	47	19	51	57	29	~~1~~	7
47	19	51	57	29	~~1~~	7	39	11	17
57	29	~~1~~	7	39	11	17	49	21	27
	O	O	O	U	U	U	O	O	O

HALF-CYCLE									
9	41	47	19	51	57	29	~~1~~	7	39
19	51	57	29	~~1~~	7	39	11	17	49
29	~~1~~	7	39	11	17	49	21	27	59
39	11	17	49	21	27	59	31	37	9
49	21	27	59	31	37	9	41	47	19
59	31	37	9	41	47	19	51	57	29
	O	O	O	U	U	U	O	O	O

HALF-CYCLE																								
1	7	39	11	17	49	21	27	59	31	37	47	57	7	17	27	33	5	37	43	15	47	53	25	57
11	17	49	21	27	59	31	37	9	41	47	57	7	17	27	37	43	15	47	53	25	57	3	35	7
21	27	59	31	37	9	41	47	19	51	57	7	17	27	37	47	53	25	57	3	35	7	13	45	17
31	37	9	41	47	19	51	57	29	~~1~~	7	17	27	37	47	57	3	35	7	13	45	17	23	55	27
41	47	19	51	57	29	~~1~~	7	39	15	17	27	37	47	57	7	13	45	17	23	55	27	33	5	37
51	57	29	~~1~~	7	39	11	17	49	25	27	37	47	57	7	17	23	55	27	33	5	37	43	15	47
	O	O	O	U	U	U	O	O	O	U	O	U	O	U	O	U	U	U	O	O	O	U	U	U

Fig. 1148 —Tables for the odd-numbered half-cycles.

45. $L_2 \longrightarrow R_1$: $2u - 3o - 3u$.
46. $R_1 \longrightarrow L_1$: $o - 3u - 3o - u - o - 2u - o - 2u - 2o - 3u$.
47. $L_1 \longrightarrow R_2$: $o - 2u - 3o$.
48. $R_2 \longrightarrow L_1$: $u - 3o - 3u$.
49. $L_1 \longrightarrow R_2$: $2o - 3u - 3o$.
50. $R_2 \longrightarrow L_1$: $2u - 3o - 3u$.
51. $L_1 \longrightarrow R_1$: $o - 3u - 3o - u - o - 2u - o - 2u - 3o - 3u$.
52. $R_1 \longrightarrow L_2$: $2o - 3u - 3o$.
53. $L_2 \longrightarrow R_1$: $2u - 3o - 3u$.
54. $R_1 \longrightarrow L_2$: $3o - 3u - 3o$.
55. $L_2 \longrightarrow R_1$: $3u - 3o - 3u$.
56. $R_1 \longrightarrow L_1$: $3o - 3u - 3o - u - o - u - o - u - o - 2u - 3o - 3u$.
57. $L_1 \longrightarrow R_2$: $2o - 3u - 3o$.
58. $R_2 \longrightarrow L_1$: $3u - 3o - 3u$.
59. $L_1 \longrightarrow R_2$: $3o - 3u - 3o$.
60. $R_2 \longrightarrow L_1$: $3u - 3o - 3u$.

HALF-CYCLE									
2	34	6	12	44	16	22	54	26	32
12	44	16	22	54	26	32	4	36	42
22	54	26	32	4	36	42	14	46	52
32	4	36	42	14	46	52	24	56	2
42	14	46	52	24	56	2	34	6	12
52	24	56	2	34	6	12	44	16	22
	0	0	0	U	U	U	0	0	0

HALF-CYCLE									
4	36	42	14	46	52	24	56	2	34
14	46	52	24	56	2	34	6	12	44
24	56	2	34	6	12	44	16	22	54
34	6	12	44	16	22	54	26	32	4
44	16	22	54	26	32	4	36	42	14
54	26	32	4	36	42	14	46	52	24
	0	0	0	U	U	U	0	0	0

HALF-CYCLE									
8	40	12	18	50	22	28	60	32	38
18	50	22	28	60	32	38	10	42	48
28	60	32	38	10	42	48	20	52	58
38	10	42	48	20	52	58	30	2	8
48	20	52	58	30	2	8	40	12	18
58	30	2	8	40	12	18	50	22	28
	U	U	U	0	0	0	U	U	U

HALF-CYCLE									
10	42	48	20	52	58	30	2	8	40
20	52	58	30	2	8	40	12	18	50
30	2	8	40	12	18	50	22	28	60
40	12	18	50	22	28	60	32	38	10
50	22	28	60	32	38	10	42	48	20
60	32	38	10	42	48	20	52	58	30
	U	U	U	0	0	0	U	U	U

HALF-CYCLE																								
6	12	44	16	22	54	26	32	4	36	42	52	2	12	22	32	38	10	42	48	20	52	58	30	2
16	22	54	26	32	4	36	42	14	46	52	2	12	22	32	42	48	20	52	58	30	2	8	40	12
26	32	4	36	42	14	46	52	24	56	2	12	22	32	42	52	58	30	2	8	40	12	18	50	22
36	42	14	46	52	24	56	2	34	6	12	22	32	42	52	2	8	40	12	18	50	22	28	60	32
46	52	24	56	2	34	6	12	44	16	22	32	42	52	2	12	18	50	22	28	60	32	38	10	42
56	2	34	6	12	44	16	22	54	26	32	42	52	2	12	22	28	60	32	38	10	42	48	20	52
	0	0	0	U	U	U	0	0	0	U	0	U	0	U	0	U	U	U	0	0	0	U	U	U

Fig. 1149 —Tables for the even-numbered half-cycles.

Knot 10.

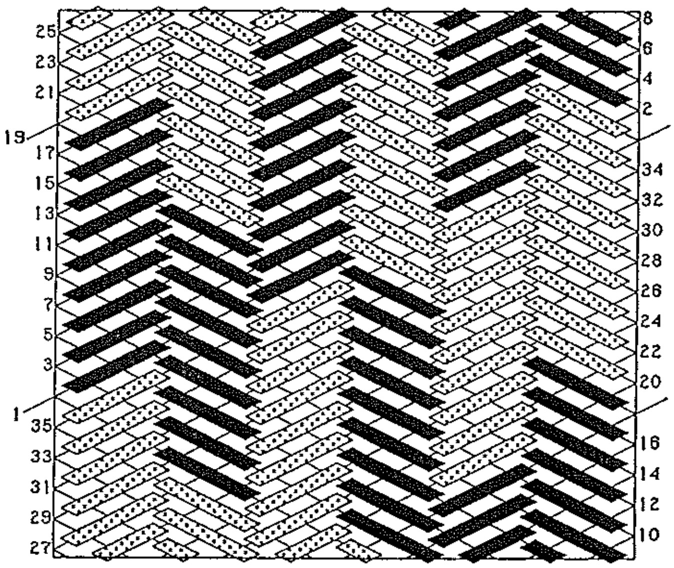

Fig. 1150 — Knot 10.

The string-run of this Regular Knot has $6 \times 3 = 18$ intersection columns and hence its overall string-run has $p = 18 + 1 = 19$ parts. Let the overall string-run have $b = p - 1 = 19 - 1 = 18$ bights. Although this knot can hence be braided from one string, we like to introduce, however, a colour-pattern in the braid and consequently we will have to use more than one string. A two colour pattern requires two strings of contrasting colour. For a balanced colour-pattern, each string has to build half the overall braid-pattern. This can be achieved by letting one coloured string form the half-cycles $1-17$ and the other coloured string form the half-cycles $19-35$; finally finishing the braid by braiding and working away the end of half-cycle 17 and the Standing End of half-cycle 19, respectively by braiding and working away the end of half-cycle 35 and the Standing End of half-cycle 19.

Fig. 1151 shows the path of $p/b = 19/18$ in the RKT and its algorithm diagram.

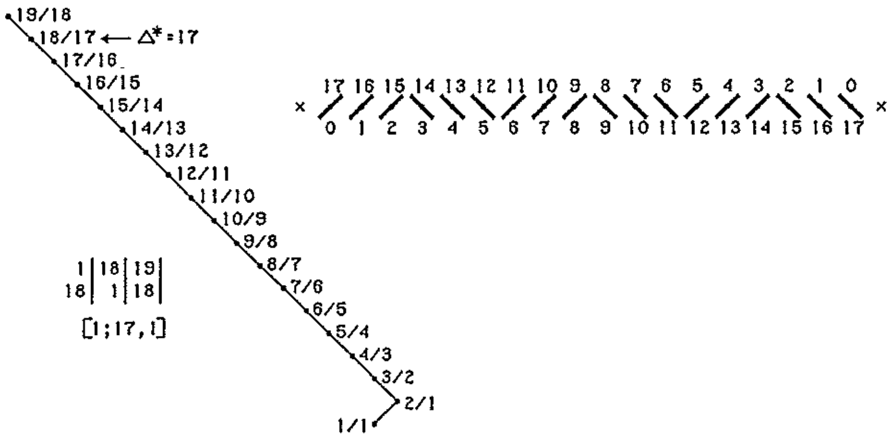

Fig. 1151 — Algorithm diagram of $p/b = 19/18$ and its path in the RKT.

The half-cycle braiding algorithms are read from the algorithm diagram in the usual manner, provided the following exceptions are observed:

i. The half-cycles 18 and 36 are not laid down.

ii. For the odd-numbered half-cycle h_o in the range $19-35$, the entry $i = \dfrac{h_o - 3}{2} - 8$ is neglected.†

Hence the half-cycle braiding algorithms are as follows:

1.		:	Free run.
2.	$(i = 0)$	:	$(s)u$.
3.	$(i = 0)$	:	u .
4.	$(i \leq 1)$	:	$(s,1)2u$.
5.	$(i \leq 1)$	:	$2u$.
6.	$(i \leq 2)$	:	$(s,2)3u$.
7.	$(i \leq 2)$	:	$3u$.
8.	$(i \leq 3)$	:	$(s)o - 3u$.
9.	$(i \leq 3)$	:	$o - 3u$.
10.	$(i \leq 4)$	:	$(s,1)2o - 3u$.
11.	$(i \leq 4)$	:	$2o - 3u$.
12.	$(i \leq 5)$	:	$(s,2)3o - 3u$.

† Note that the subtraction of 8 is associated with half-cycle 18 which did not get laid down $\left(i = \dfrac{h_e - 2}{2} = \dfrac{18 - 2}{2} = 8\right)$.

13. $(i \le 5)$: $3o - 3u$.
14. $(i \le 6)$: $(s)u - 3o - 3u$.
15. $(i \le 6)$: $u - 3o - 3u$.
16. $(i \le 7)$: $(s,1)2u - 3o - 3u$.
17. $(i \le 7)$: $2u - 3o - 3u$.

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19. $(i \le 8$, neglect $i = 0)$: $3u - 3o - 2u$.
20. $(i \le 9)$: $(s)o - 3u - 3o - (2, s^*)3u$.
21. $(i \le 9$, neglect $i = 1)$: $o - 3u - 3o - 2u$.
22. $(i \le 10)$: $(s,1)2o - 3u - 3o - (1, s^*, 1)3u$.
23. $(i \le 10$, neglect $i = 2)$: $2o - 3u - 3o - 2u$.
24. $(i \le 11)$: $(s,2)3o - 3u - 3o - (s^*,2)3u$.
25. $(i \le 11$, neglect $i = 3)$: $3o - 3u - 2o - 3u$.
26. $(i \le 12)$: $(s)u - 3o - 3u - (2, s^*)3o - 3u$.
27. $(i \le 12$, neglect $i = 4)$: $u - 3o - 3u - 2o - 3u$.
28. $(i \le 13)$: $(s,1)2u - 3o - 3u - (1, s^*, 1)3o - 3u$.
29. $(i \le 13$, neglect $i = 5)$: $2u - 3o - 3u - 2o - 3u$.
30. $(i \le 14)$: $(s,2)3u - 3o - 3u - (s^*,2)3o - 3u$.
31. $(i \le 14$, neglect $i = 6)$: $3u - 3o - 2u - 3o - 3u$.
32. $(i \le 15)$: $(s)o - 3u - 3o - (2, s^*)3u - 3o - 3u$.
33. $(i \le 15$, neglect $i = 7)$: $o - 3u - 3o - 2u - 3o - 3u$.
34. $(i \le 16)$: $(s,1)2o - 3u - 3o - (1, s^*, 1)3u - 3o - 3u$.
35. $(i \le 16$, neglect $i = 8)$: $2o - 3u - 3o - 2u - 3o - 3u$.

Knot 11.

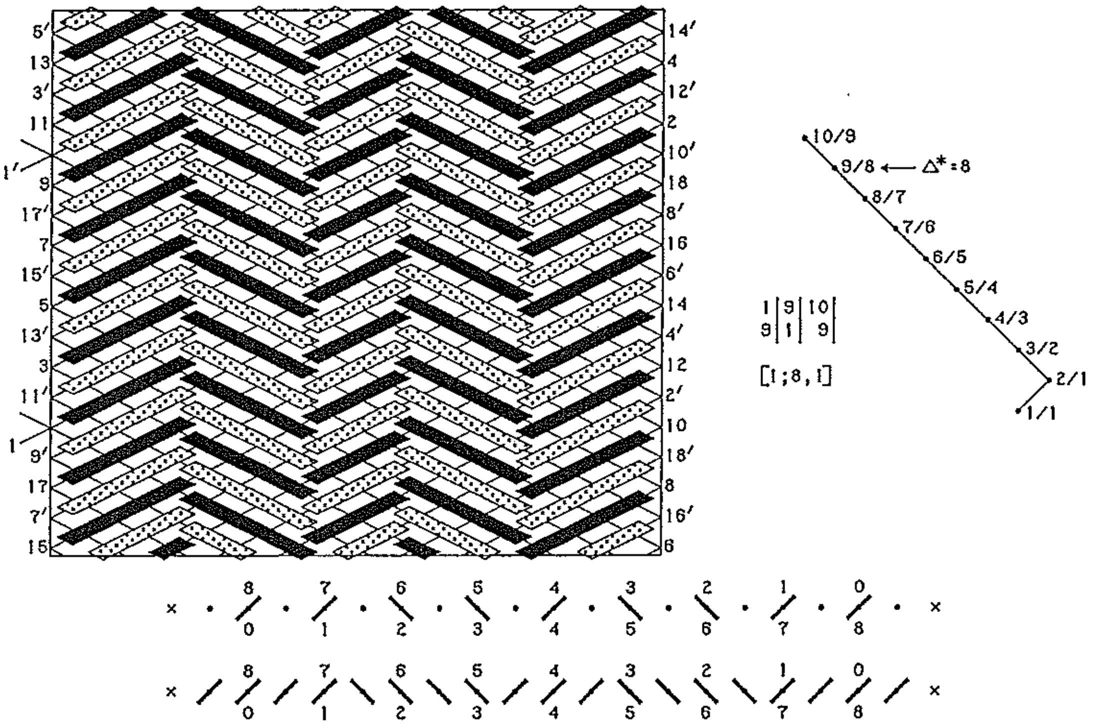

Fig. 1152 — Knot 11.

Upper algorithm diagram for the first to be braided component (half-cycles 1 – 18); lower algorithm diagram for the second to be braided component (half-cycles 1′ – 18′).