

(shuttleless)

- -

4. (rapier)

(shuttle)

. (pirn

winding)

가

.

가

가 . 가

Tumack Gentilini Ripamonti가

,

(carrier)

가

.

가. Draper(D.S.L)

1)

가

. Draper 1945

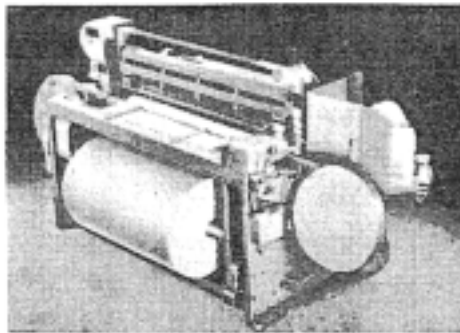
< 1> D.S.L(Draper Shuttleless Loom) .

1950

, 1964

.

40% 가 1
 40% 가 70%
 . D.S.L 가
 (hopper) ,
 .



< 1> D.S.L

2)

(carrier) 가
 , 가
 가 8~9 lb(3.6~4.1kg)
 가 ,
 가
 . 가 < 2>
 .

2 1

(hair pin) ,
 (loop) .
 (binder) (selvage yarn)

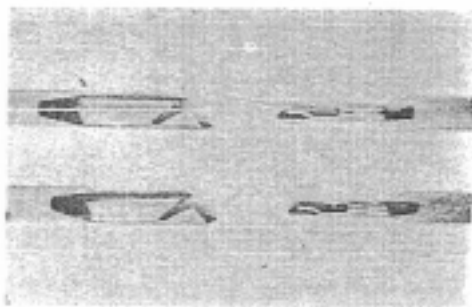
.

가 , 2~3mm

가 .

, (wheel)

.



< 2> 가

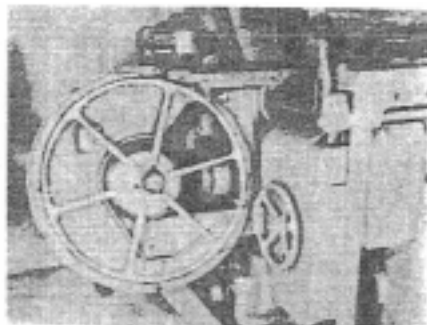
< 3> (tape wheel) .

< 4> . 가

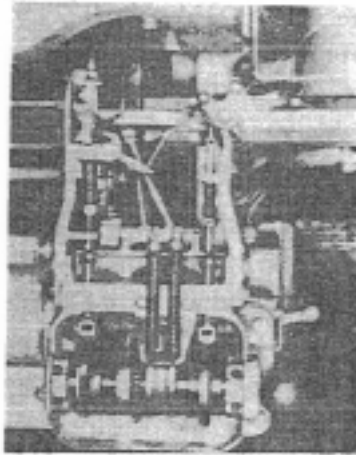
, 가

, .

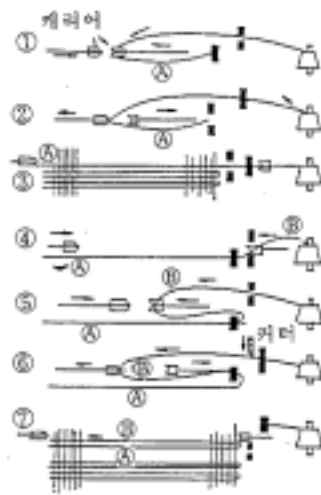
< 5> .



< 3>



< 4>



< 5>

가

가

가

1

2

가

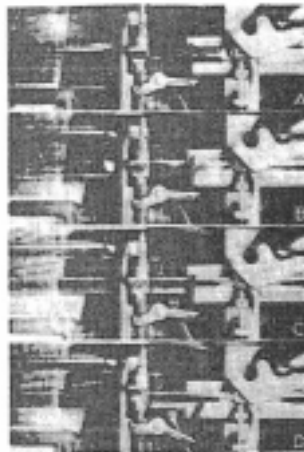
가

가

. 가 가 , ▪
2 1

. < 6> 1

.



< 6> 1

A 1 가 가 .

(depresser)가 가

. B 가 가

(depresser) .

. C

가 .

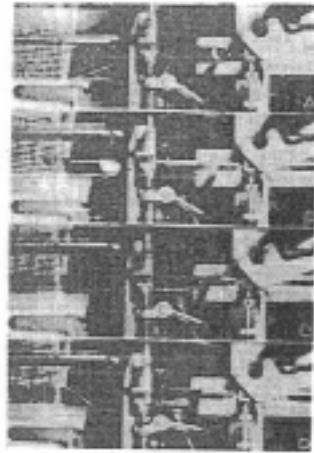
, . D

가

가 가 .

가 가 . D 2

가 .



< 7> 2

< 7> 2 . A 1

가 가 .

.

.

. B

가 가

. 가 가 가 ,

가 가 . C 가 가

. 1 가 .

D 가

, 가 .

가 가 “0”

. ,

(weft hook)

.

.

가

가

2

.

1in

1/2in

.

(tongue buckle)

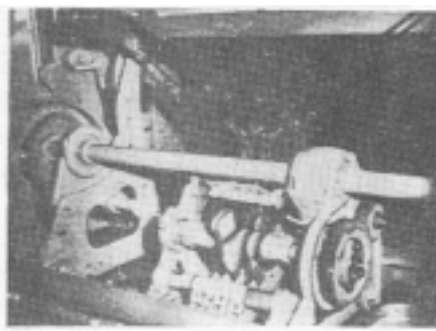
.

10in

2

(loose weft)

.



< 8 >

3)

가

.

1/2

(dwell)

.

(sheet)

가

.

(press down bar)

(cloth fell position)

< 8> 6 (heald)

4)

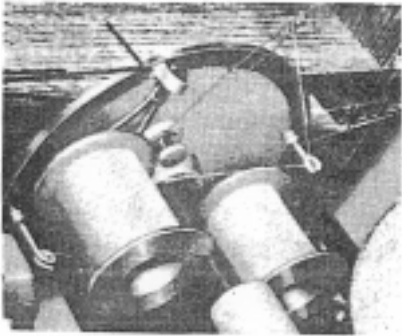
가

< 9>

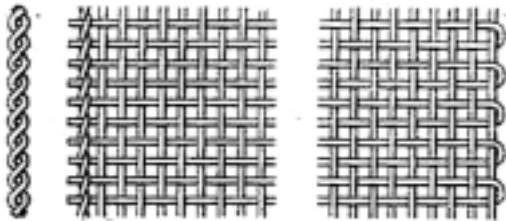
가

2

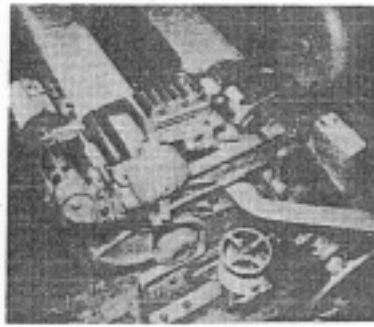
가



< 9>



< 10> D.S.L



< 11>

1 2

1 2

< 10>.

< 11>

가 .

, 3/8in

.

5)

4~292

/in .

,

24in . Ne 30, Ne 40, 가

80 /in (print cloth) 1,300yd 200

. 가

.

,

(pawl)

(ratchet)

(bartlet)

.

36~30in가

.