

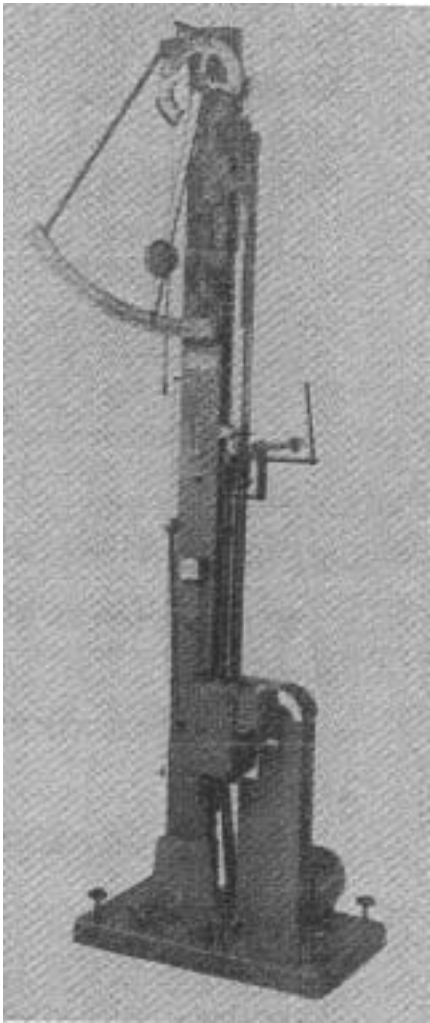
() - (9)

(,)

(3)

, 1 .

1) < 1.27>



< 1.27>

2)

a)

(clamp) 50cm, 30
cm/min . 50 ,
(gf) .

b)

50 가 5 ,
.

c)

50 ,
.

d)

(%)
.

(4)

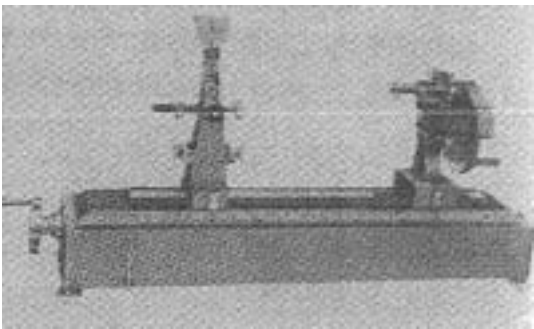
가 .

(, ,) , 가
.
가 가 , .

(knit) .

1) < 1.28>

(pendulum)



< 1.28>

2)

a)

25.4cm(10in) 가 , 가
가 , 2 . (. 가) 40
 , 1in .
 , .
250m .

< 1.17> ()

(: g)

10	15.0	30	5.0	50	3.0	80	2.0
20	7.5	40	3.5	60	2.5	100	1.5

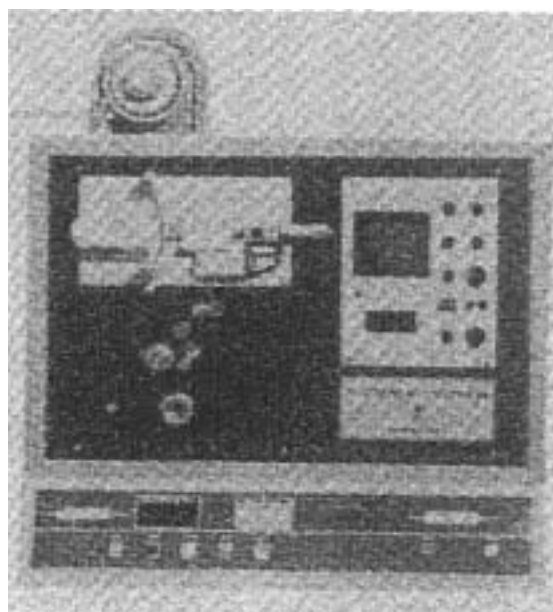
b)

40 가 ,

(5) ()

가

1) < 1.29>



< 1.29>

2)

: 3mm . : 30m/min, : 1
20m, : 5 , 10m .

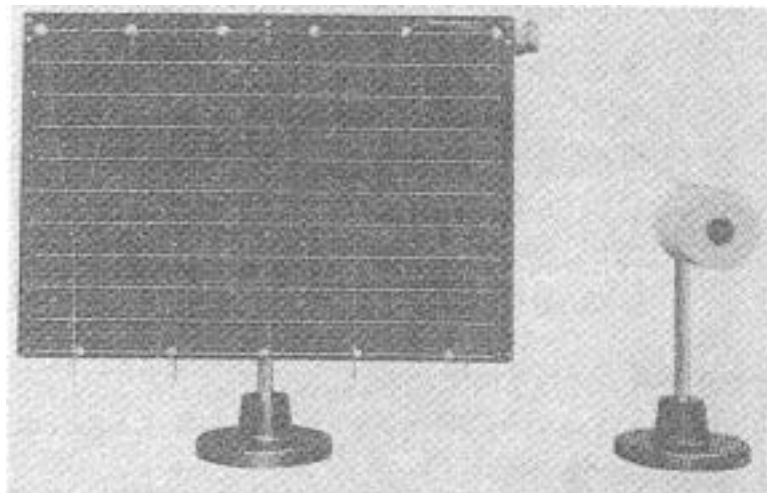
(6) (snarl)

가

가

1) < 1.30>

kringelfactor meter



< 1.30> kringelfactor meter

2)

< 1.30>

(1~3g)

,

,

.

0.45g

.

.

40

,

.

< B>	
A	가 B , a, b …… .
A ()	B ()
(1)	a.
(2) (wrap reel)	b.
(3)	c. ,
(4)	d.
(5)	e.

[] (1) c, (2) e, (3) b, (4)d, (5) a

< C>	
: 60%,	: 40%
,	8.5%, 11.0%

[]
$$= \frac{60 \times 8.5 + 40 \times 11.0}{100} = \frac{950}{100} = 9.5\%$$

< A>	
()	.
(1)	, (,)
	.
(2)	(,)가 ,
	(,)가 .
(3) 100%	(8.5%, 7.5%) .
(4)	, 가

(,) .
 (5) , (S , Z) ,
 () (Z , S) .

[] (1) (1lb) (840yd)

가 .

(2) ,

 .

(3)

(4) (20 ± 2 , $65 \pm 2\%$)

가 .

가 가 ,

 .

(5) ,

 .

< A>
 () , .
 1) 1lea (1)yd 40 .
 2) (2) in .
 3) () 1lb가 (3) yd 1 .
 4) 2s() 1lb (4) yd 가 .
 5) 40s 120s (5) .
 [1/3, 1, 2, 3, 6, 10, 100, 120, 200, 400, 420, 840, 1,680]

[] (1) 120, (2) 1, (3) 840, (4) 1,680, (5) 3

< B>

○, × .

(1) 가 .

(2) 100% 8.5% .

(3) spectrogram 가 .

(4) (IPI) , , 가 3 .

(5)

가 .

(6) .

[] (1) × 가 ,

() , .

(2) × ,

.

(3) ○

(4) × (IPI) 가 (thin places), (thick places), (neps) .

(5) ○

(6) ○