

가 (9)

5

(가
가)

.

1 : (Marking and Stitching)

(1)

, , 가 . Sewing

Machine

1) Ink .

Ink Anilin Black Tar Telepen

Gum Telepen .

가 Acrylic

Ink .

2 : (Singeing)

가 가 가

가

a) gas 가 (Gas Singeing)-Gas

b) 가

(Plate Singeing)-

c) 가

(Roller Singeing)-

d) (Electric Singeing)-

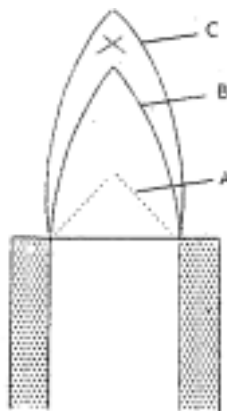
e) (Radiation Singeing)-

Gas

Gas, Propane Gas Gasoline gas

Burner (10) A Gas가

Gas B



< 10> Burner

C B Gas가
 . C B CO Gas가

B C
 ×
 Gas 1,850 ~1,980

가 가 가
 가 가
 가

(Knecht : Jour. Soc. Dyers&Col., 36 195(1920), Knecht and Muller : 1Bid 41 43(1925)).

(C.K.Patel : 1bid 44 301(1928), G.E.Holden : 1bid 44 368(1928), G.E.Holden : Jour SOC Dyers & Col, 45 205(1929)).

Mg Zn

가

가

Gas 9~11 , Propane Gas 22

, 가 Gas

Rotary Blower, Roots Blower

Turbo Blower

Conditionary

Brushing

< 24> (4,984cal/m³, Gas)

%	0	5	10	15	20
	1,980	1,900	1,840	1,790	1,700

< 25>

Gas		()
Gas	51.0 %	0.73 m/sec
Gas	17.0 %	1.56 m/sec
CO + H ₂	44.0 %	3.14 m/sec
C ₂ H ₄	7.14 %	1.42 m/sec
m/sec C ₂ H ₆	10.6 %	0.85 m/sec
C ₄ H ₆	9.9 %	0.67 m/sec

3 : (Desizing or Steeping)

4~8% 가

- a) (Rot Steeping)
- b) (Acid Steeping)
- c) (Steeping in Enzyme Preparation)

a)

35~40

24

60

12

가

가

.

b)

0.5~1%

가

Water

Mangle

가

.

c)

Diastafor, Naltose, Amylazine

PH

가

.

Rapidase

Bacterie

1

가

.

Gelatose

Galatine

Rayon

.

가

1857

1900

Diastafor가

.

(Maltase)

가

(Dextrin)

2

가

.

가

.

a) (, , ,)

Novefermaslo, Vival, Degomma, Ultraferman, Dedresan

b)

)

Diastafor, Diastase, Gabalit

) Bacteria

Biolase, Rapidase

a) (Liquefaction)

b) (Conversion to Dextrin)

c) (conversion to Maltose)

- [Amylose → Dextrisation → Maltose
Amylopectin → Lique → Maltose]

< 26 >

		Pancrea	Bacteria
(g/l)	3~20	1~3	0.5~1
()	50~60	50~60	60~70
PH	6.0~7.5	6.5~7.5	5.5~7.5

< 27 > (%) (Scott: Ind. Eng. Chem. 1940. 32 783)

Malt	81(55)	83(60)
	79(55)	81(54)
Bacteria	70(55)	83(66)

< 28>

Lipase	→ Glycerine +
Amylase	→ Dextrine +
Protease	→ 가 Polypeptide +Amino
Zymase	→ Alcohol + CO ₂ Gas
Catalase	→ +
Cellulase	Cellulose →
Saccharidase	→

a) 가 ?

b) 가 ?

1) Rope System

Desizing

Race,

Broad, Popline, Gabardine

a)

b)Rope mark 가

(Saturator)

Pump

Rope Washer

2) Jigger Desizing

1

가

2~4

가

2~4

Stainless Steel

3) Pad-Jig Desizing

65 Pad 65

가 Jigger

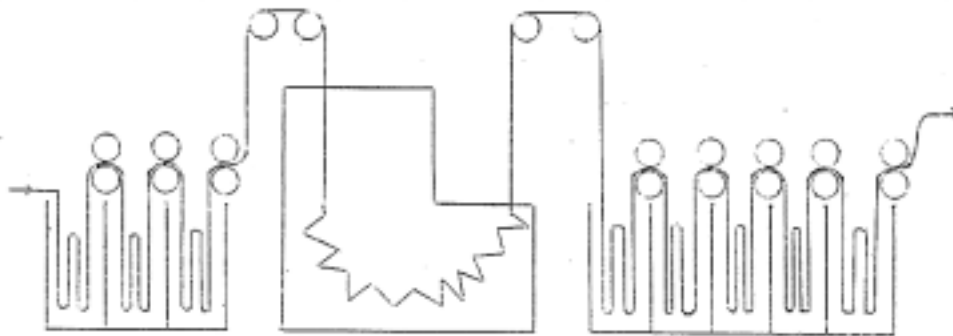
4)

65

가

Amylase 가 가

Key Point가



< 11>

a) (95~100) 가

 (~ 10)

b) (30~60)

) J-box Type
Steam Box

5)

가

a)

b)

Colloid

4 :

가

(1), (2), 1 (3), 2 (4), 1

가

가 (F. Scholefield and D. Ward : Jour. Soc. Dyers & Col., 51
172~178(1935)).

1) 5~6% 8~10 ()

20~30LBS 가 5~10

가

- 2) Ca-
 CaSO_4 CaCl_2 .
 1~2 ° TW
 12 ~1 가 .
 3) 5~6% (1.5~2%
 가 2) 20~30LBS
 가 5~8 .
 Pectine , , , ~ 가
 가
 4) 1
 1 2% 2~3 .
 a) 3~4% 가 3% 가 가
 2~3
 b) 2~3% 가 20~30LBS 가
 3~6
 c) 가 2~2.5% 1%
 0.5~1%, (70 ° TW) 2% 가 20~30LBS 가

8~10

c)

가

(12).

(Vertical System)

(Horizontal System)

(13).

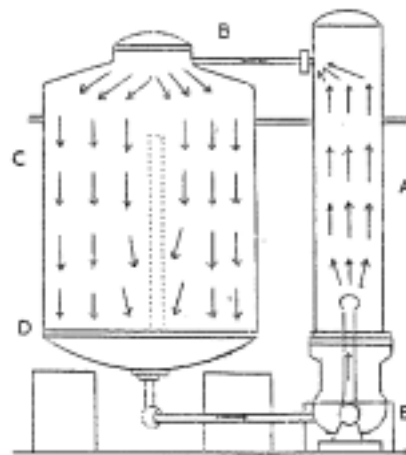
가

Rope

가

Rail

14



A:

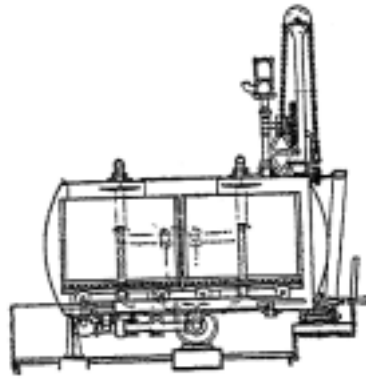
D :

B :

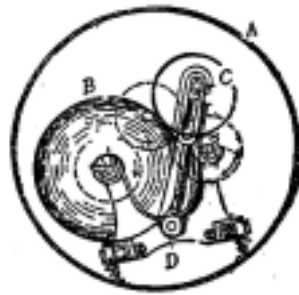
E :

Pump

C:



< 13> Mathe-Platt



< 14> Jackson

5 : Mercerization

1844 John Mercer 가

가 1890 Lowe 가

가 가

가

가 Mercer

Mercerization 가

가

Mercerization 가 .

가 Silket(

) 2 .

Mercerization

) mercerization가

) Mercerization가

) Mercerization가

) Mercerization가

) Mercerization가

) 가 Mercerization가

)

) 가 Mercerization가

가 가

가 .

Micell

Slide가 .

Mercer

Mercer 4~5%

5% 가 가

10~30% .

Mercer Cellulose가 Alkali Cellulose가

가 (C₁₂H₂₀O₁₀H₂O) .

Mercer Egypt 가

가 30°Bē , 18~20 1~3 .

Mercerization 가 .

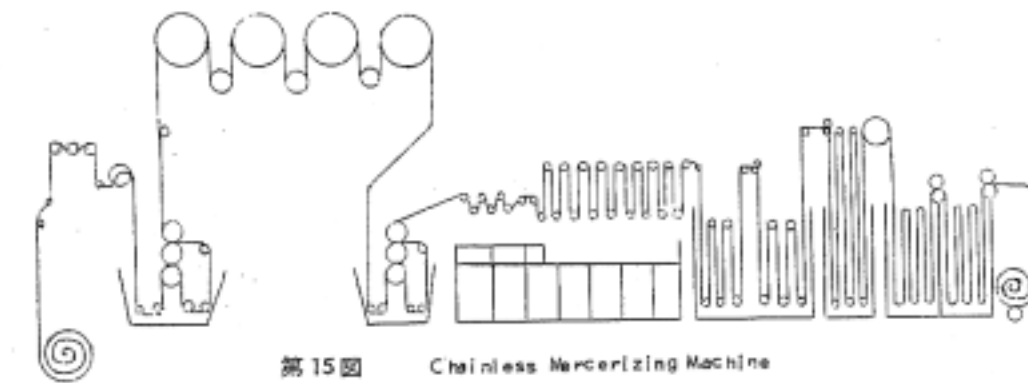
가 7~14 20°Bē

가 10~12°Bē ,

Roll .

Shrunk가 .

15 Chainless Merceriser Mercerization가 .



< 15> Chainless Mercerizing Machine

Mercerization

) 가 29~30°Bē가 30°Bē

가 .

) 18~20 Control .

) 가

) 6% .

) Mercer 1% .

) . 가

Alkali

6 :

Concret

7 : (Blueing) (Fluorescent Bleaching)

가 가

가

Methylene Blue(), Alizarin Saphirole B,
Alizarin Irisol, Alizarine Sky Blue()
(Indanthrene Blue GPZ)

3

Cost

(Continuous Peroxide Bleaching)

1

1. Welter System

1937 (Jute)

16

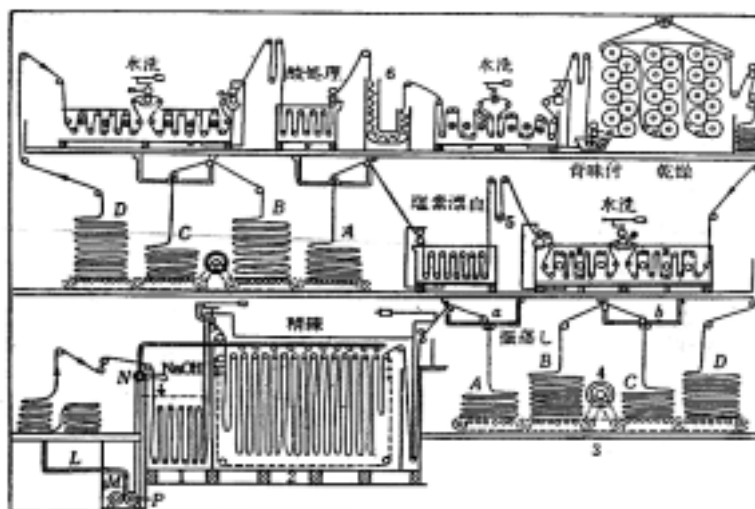
(1) 가 (1.5~2°Bē) Roll

(2) 가

0.5~1lb 가 가

Endless Clain

750m 가 30



< 16> welter System

Roll (a) Endless Conveyor(3) (A)

(4) (B) (C) (D) 2 가 (5)

(Compensater)

$3/4 \sim 1^\circ \text{Be}'$

$1 \sim 1.5^\circ \text{Be}'$

(6)

16~30m

(ㄴ) 가 , (P) Pump, (M) Moter, (N) 가

2. Mathesius-Freiburger System

Rope 가

Roll

가

가 20~40

17



< 17> Mathesius-Freiburger system

2

1888 (2.5)

가 가

3~4 Ageing

Kier

, ,

1930 J-Box

1939 Du-Pont

Kier

Kier

가

1. J-Box

J-Box System

J

가 100

J-Box

가

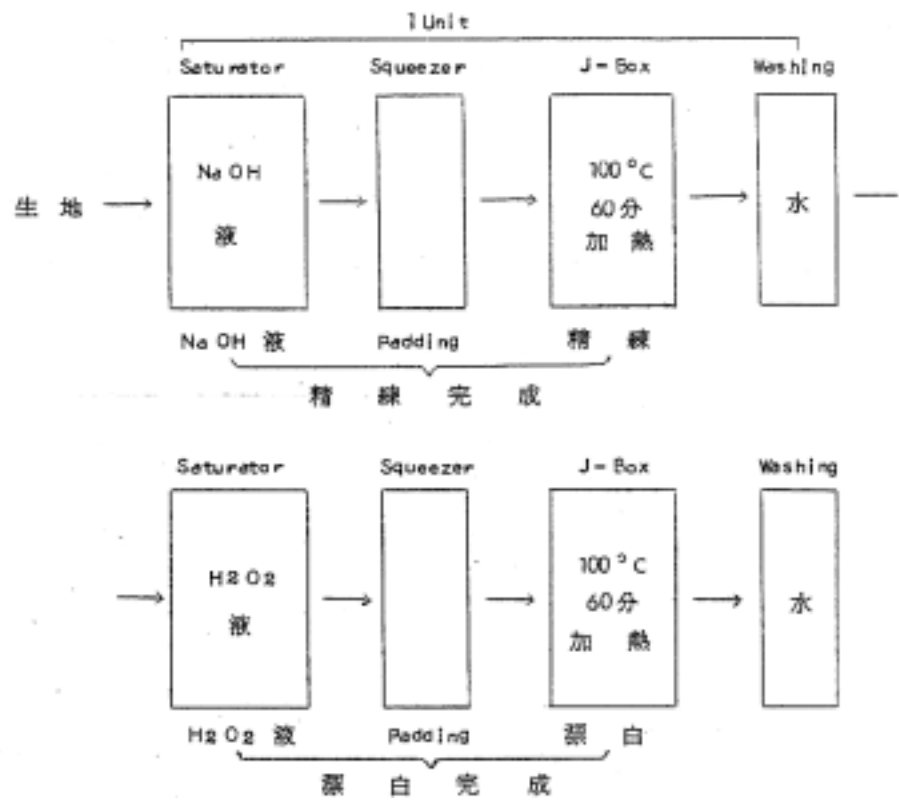
(Stainless Steel)

Box

100m

1

6,000m



， (Mercer가)

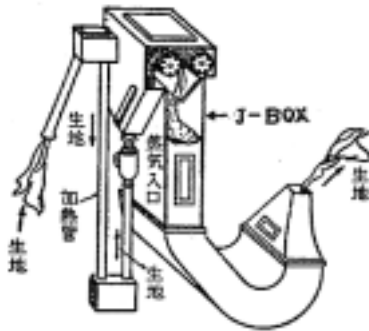
가 (Saturator)

(Squeezer) (가 padding) J-Box

Alkali

가

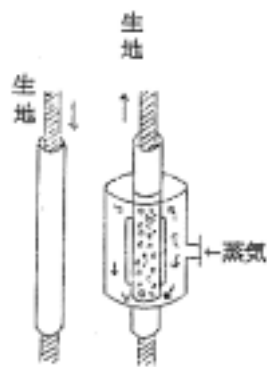
18 Du-Point 가 J-Box 19 가
20 가



< 18> J-Box 가



< 19> 가



< 20> 가

Du-Pont Becco system Mathieson System .

21 Becco System J-Box, 22 Butter Worth J-Box

Becco , 23 Butter Worth J-Box Du-Pont

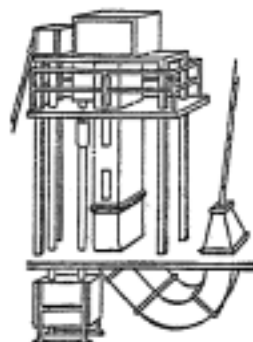
(Rope).



< 21> Becco System J-Box



< 22> Butter Worth Becco J-Box



< 23> Butter Worth Du-Pont J-Box

24 Becco

(A)

Rope

가

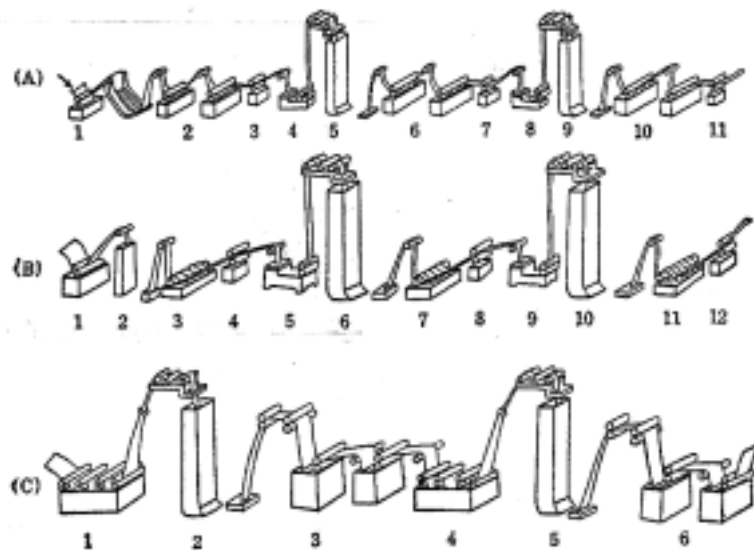
(B)

Rope

가

(C)

J-Box Rope



< 24> Becco

(A) Becco Rope (Rope)

(1) Padding (2) Rope (3)

(4) (5) J-Box (6) Rope

(7) (8) (9) J-Box

(10) Rope (11)

(B) Becco Rope (Rope)

(1) Padding (2) J-Box (3) Rope

(4) (5) (6) J-Box

(7) Rope (8) (9)

(10) J-Box (11) Rope (12)

(C) Becco

- | | | | |
|-----|-----------|-----|------------|
| (1) | (2) J-Box | (3) | (William) |
| (4) | (5) J-Box | (6) | (William) |

: 1) Du-Pont E. I. Du-Pont de Nemours & Co.

Becco Buffalo Electro Chemical Co.

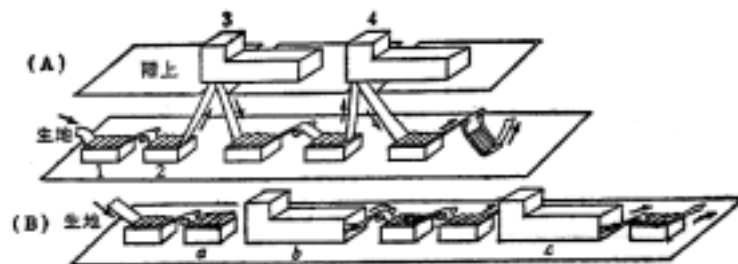
Mathieson Mathieson Alkali Work

2) Becco Padding Ion

가 Dextrin

25 mathieson (A) Conveyer 가 ,

(B) Conveyer 가



< 25> Mathieson

(A) Conveyer 가

(1) (2)

(3) Elevator (4) (3)

(B) Conveyer 가

(a) (b) Conveyer

(c) (b)

J-Box Endless

Stainless Steel Conveyer가

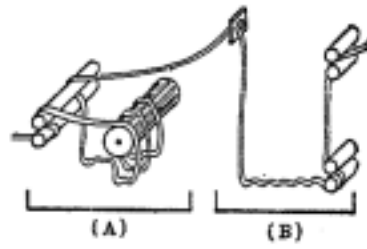
Conveyer

가

가

26 Dundee Mill System

Towel

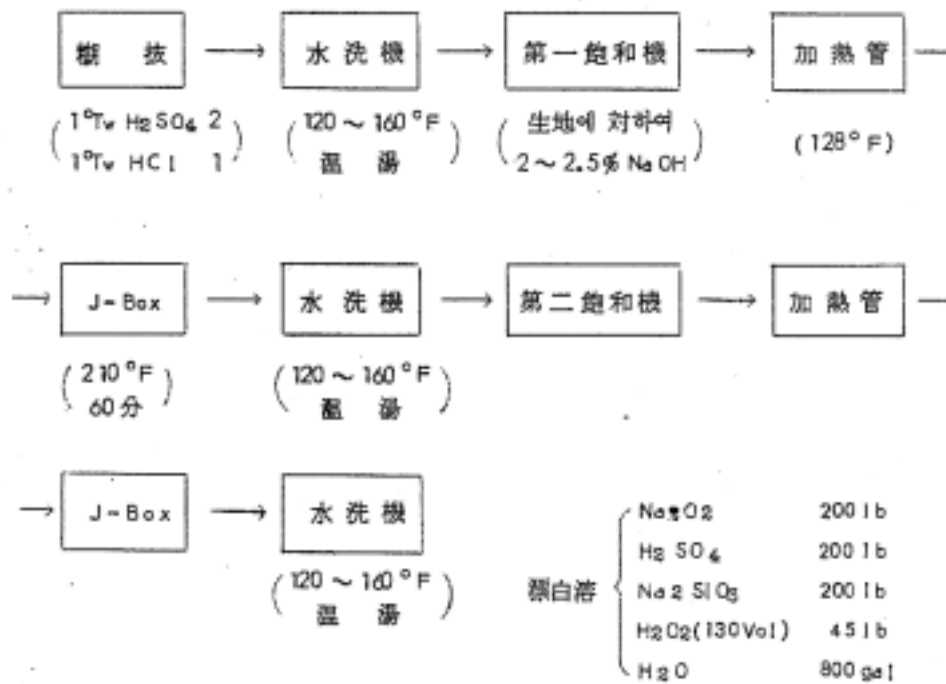


< 26> Dundee

(A) Rope

(B)

Towel

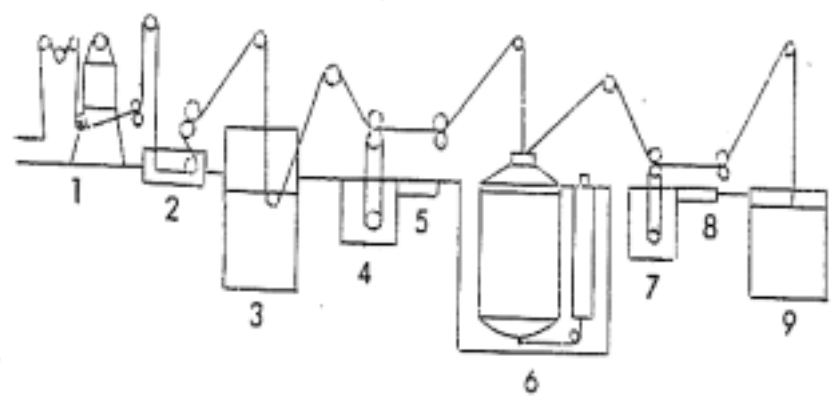


2. Kier

Kier

가 Alkali

27 (1935)



< 27> Kier

， ， Kier 가 95
6
Kier 2~6% 12~18%
4,200l
(1939)
90~100
) Kier

3. Kier

< 29> Kier

	Kier	
(ft ²)	3,000	1,350
()	4	2.5(40%)
(lbs)	288,000	70,560
	4sT Kier 9	3,000lb J-Box 2eo
()	20	2