66

Pots continued.
The average dimensions
of an average size Pot
after 4 or 5 Founds, may
be taken as follows.

Inside top diam^{r}.	$44\frac{3}{8}$ inches
do bottom Diam.	$30\frac{1}{4}$ in.
do 18 in. down do	$36\frac{1}{2}$ in.
do $20\frac{2}{3}$ in. down do.	35 in
Perpendicular depth	$33\frac{2}{3}$ in
From filling place to bottom.....	$32\frac{1}{2}$ in.

Oct. 1837

67

12 perpendicular inches of
Bottoms are found to contain
7 cwt. l. qrs. 0 lbs. Glass at
60° Fah.
$32\frac{1}{2}$ Inches (ring being in)
contains 23 cwt. 0 qrs. 0 lbs.
of Glass at 60° Faht., being
the usual quantity cont^{d}
in a pot when about $1\frac{1}{4}$
inches out. (C.T.C.)
N.B. 13 slant inches
on Trial rod = 12 perpendicular.

68 **[Deleted entry]**

69 **[Deleted entry]**

70

Pots continued,

1st inch contd.	1.. 0..	3. Glass.
3 following ins.	2.. 3..	19
3 do.	2.. 3..	1
3 do	2.. 2..	11
3 do	2.. 1..	21
3 do	2.. 1..	3
3 do	2.. 0..	13
3 do	1.. 3..	23
3 do	1.. 3..	5
3 do	1.. 2..	15
3 do	1.. 1..	25

71

3 bottom inches	1..1.. 7
+ $\frac{1}{2}$ inch. =	
Total	24..1..6

Oct^{r}. 1837.
(Very nearly correct).

N.B. Pots of the usual
dimensions (without Clay
Rings in them) contain
25 cwt. of Glass.

Oct^{r}. 1837.

72

Pots contd.
Total capacity of a
pot (as described p.66)
is 21.115 cub^{c}. feet. (hot).
It will contain 25 cwt. of Glass
@ 60° Faht.

25 cwt. = 44800 oz.
and $\frac{44800}{21.115} = 2.1217$

N.B. 13 Cubic inches of
Hot Metal = 1 lb. Avoirdupoise. *[sic]*

C.T.C.

73

(Slant).		Cubc. Ins.
1st 3 inches from Top.		4475.7
2nd do	do	4203.3
3rd do	do	3941.8
4th do	do	3687.8
5th do	do	3442.
6th do	do	3205.
1st 18th inches	do	22955.6
∴ the remainder =		13531.5
Total.		36487

being 1.2278 oz. per cubc. inch
∴ Sp. gr. at working
temperature must be 2.1217.

C.T.C.

[No entries pages 74 to 87 inclusive.]

88

Accurate results of careful investigations,
of the proportional products, &c. of the
patent S.S. mixture, described at p.24.

Total of Glass produced : Total of Mixture & Cullet used
as 1 : 1.18 = 0.847. r [r = reciprocal]
Total of Glass really made : Total of Mixture used.
as 1 : 1.31 = 0.763 r

89

Total of Glass really made : Total of Sand used,
as 1 : 0.78 = 1.28 r
Wt. of Metal wrought : Wt. of the Tables drawn.
as 1 : 0.648 = 1.54 r
Wt. of Cullet used : Wt. of Cullet ret^{d}. from Glass House.
as 1 : 0.854 (no Rings in the Pots)
∴ Wt. of Cullet used : Wt. of Cullet ret^{d}. from the Cutting Room,
as 1 : .0332, when we supply
not so much Cullet as we use. (turn over)

90

Total of Cullet used : Total of Mixture used
as 1 : 1.813
Total of Cullet used : Total of Glass extracted from the Pots,
as 1 : 2.38
Total of Cullet used : Total of Glass made from the mixture alone
as 1 : 1.38
Total of Cullet used : Total of Sand used,
as 1 : 1.08
Total of Cullet used : Wt. of Tables drawn,
as 1 : 1.528. Oct^{r}. 31. 1837

91

Total of Cullet used : Wt. of tables made exclusively from the Cullet itself
as 1 : 0.104.

N.B. These results were obtained in Oct^{r}. 1837, when the men were making double work.
i.e. 4800 tabls. per week, 1/11th. of which was cut up.

92

£2..12..0 per ton.
Patent S.S. Mixture.
Cost, Consumption & Produce
per week. 7 Founds, 4800 Tabs.
= $71\frac{1}{7}$ Batches.

Cwt. qr. lbs.		
284. .2..11	prepd. Sand @ 30/-	£21.. 6..11
106. .2..25	S.S.. @ 90/-------	24.. 0.. 4
88. .3..21	prepd. lime @ 7/1	1..11.. 6
7. .2..14	do Charc^{l}. @ 6/10	2..12..11
0. .2..17	do Mang^{se}. @ 9/11	0.. 5.. 7
1.. 2.. 0	do Arsen^{c}. @ 34/-	2..11.. 0
490.cwt.		£52.. 8.. 3
	Interest on Buildgs.	.l.. 0...0
	Mixers Wages and Coal -----	10.. 0.. 0

93

1 Ton mixture (exclusive
of Cullet) yields 15.810 cwt.
cwt. qrs. lbs.
of Glass. = 15..3..7. =189 Tabs.
1 Ton of Glass thus Produced
costs (in materials mixed)
£3..5..10; or 3/3$\frac{1}{2}$ per crate
(wheelers wages included)
N.B. The Cullet has been
omitted because it is reproduced.
The S.S. has been charged
at its cost price to us.
C.T.C. Oct^{r}. 26 1837

94

Patent S.S Mixture.

S.S. in Sol^{n}.	168
Dry I. of W. Sand	448
Hyd. lime.	140
Charcoal	12
	768 lbs.

When withdrawn from the
Calcar, this Batch
of Mixture weighs 775 lbs.
This is mixed, afterwards
with 336 lbs. Cullet, and
the Batch then weighs 1111 lbs.

95

Every 112 lbs. of Mixture
Prep^{d}. for the Found cont^{s}.

Cullet	33.87
Sand	45.16
S.S.	16.93
Hyd. lime.	14.11
Carb^{n}.	1.21
Extra moisture.	.72
	112.

C.T.C.
Oct. 1837.

96

Patent S.S. Mixture.
7 Founds required
$71\frac{1}{7}$ Batches, being
$10\frac{1}{6}$ Batches of Found.
The quantity of Sand
in these $71\frac{1}{7}$ Batches
was 284 cwt. 2 qrs. 11. lbs.
= 31875 lbs. and the
Quantity of Glass really made
(exclusive of the Cullet and
Toppings) was 341 cwt. 3 qrs. 17 lbs.
= 38265 lbs. ? (+)
∴ Glass : Sand used :: $1\frac{1}{5}$: 1 ?
C.T.C. Oct. 25 1837

97

Hence, as 7 founds are
just a week's work for
two furnaces (making from
4700 to 4800 Tabs.) we have
for a week's consumption

of Materials.	cwt. qrs. lbs.
Sand.....	284.. 2.. 11
S.S.....	106.. 2.. 25
Hyd. Lime.....	88.. 3.. 21
Cullet in Mixtre.	213.. 1.. 22
do for Topping....	64.. 2.. 6
Charcoal.....	7.. 2..14
Mangse.....	0.. 2..17
Arsenic.....	1.. 2.. 0

98

Crates &c.
10 Doz. Poles will make
2 Doz. pair of Crates,
making every allowance for defective
poles. (I. Gwyn.

Cost of Crates, per Pair. £

Wages per Pair	0..1..0
Poles, 10 @ 2/ per doz,	0..1..8
Strips, 4 ft. @ $1\frac{1}{2}$ d.	0..0..6
Nails 80 @	$0..0..3\frac{1}{2}$
	£0..3..$5\frac{1}{2}$

Aug.l837.

99

Boxes &c.
Newton's charge for boxes
is 1/- per 50 ft. box. below 12 x 10
1/5 per do above do
1/10 per 100 ft. do below do
2/6 per do above do

A Dilly takes 50 boxes
of 50 ft.; or 30 of 100 ft.

[No entries pages 100 to 101 inclusive.]

102

Sp. gr. of our S.S. Glass. 2.532. @ 60°
Sp. gr. of do workg. temp. 2.120
Sp. gr. of Clay rings, annle[d]. 2.100.
Sp. gr. of Isle of Wight Sand. 2.644.

The accurate produce of the S.S.
mixture (p.24) is just so much
Glass as amounts to the Wt. of
the dry sand used. and $\frac{+28}{100}$ ths.
N.B. the Cullet used has been deducted
from Wt. of Glass produced.

103

Glass.
Wt. of Glass per Crate.
Ap. 1836 to Ap. 1837.
Average of 20 crates per week
(making 1000 crates) as
follows, viz.

		cwt.qrs.lbs.
200	Crates.	196..2..23
200	do	197..0.. 1
200	do	198..0..23
200	do	199..3..22
200	do	198..1..14
1000	crates	990..9..27

or 0..3..27 per crate.

104

Average wt. of 12 tables
of Glass is 112 lbs.
100 ft. of Glass weigh $61\frac{1}{2}$ lbs.
1 ft. of do = 0.615 lbs. or 9.84 ozs,
∴1 ft. conts. 6.715 cubc. inches.
112 lbs. of Glass (cut into
squares) = 182.113 ft.
112 lbs. of Glass = 1223 cubc. in.
∴1 Tab. = 101.96 Cubc. in.

105

Average produce of every cwt. of Glass
cut up, from Breakage, Small & Bad
Work, Starved & melted, & Glass of
Good size but bad quality; (taken from
the year 1836) is $135\frac{1}{2}$ feet;
& this number of feet, includes Quarries,
& sizes less than 6 x 4; and there
will remain, about 29 lbs.
of Cullet C.T.C.

106

The average number of feet of Export Glass only, produced from each cwt. of Glass cut up during the year 1836, was 130.9; of smaller panes, $4\frac{1}{2}$ feet and of cullet 29 lbs. (C.T.C.)

107

A crate of Glass (112 lbs.) of good work, and averaging 50 inch tables, will without any extraordinary care, produce $136\frac{1}{2}$ feet of the usual export sizes; and 28 lbs. of Glass in smaller panes, & Cullet will remain. (C.T.C.)

108

Experimental crates cut up with great care.
No. l. 50 in. tab. wt. 0..3..25.
Produce (cut 6 in. from Bullion)
141..4 feet Export squares
12 small squares. wt. $\frac{1}{2}$ lb.
& 21 lbs. of Cullet.

No. 2. 50. in. tab. wt. 0..3..$20\frac{1}{4}$
Produce, (cut as usual)
136..11..4. feet Export squares.
4..0..6. feet smaller do
Cullet, 20 lbs.

109

No. 3. $50\frac{1}{4}$ in. Tabs.
Produce. Quarries, 10s. 135..7 feet
Squares..... .. 3..6. do
139..1feet.

No. 4. $50\frac{1}{2}$ in. Tabs. Produce.
Quarries, 10s. 135.. 1 feet
Squares, ...6..10 ft.
141..11 ft.

110

Waste in the Glass house whilst manufacturing, is = 2/6ths of the wt. of the total amount taken from the pots.
Calculated Aug. 30th 1837.
Wt. of a Moil = 1.845 lbs.
Wt. of a Ponty = 2.13 oz.
Wt. of Skimmings, 1 cwt. per 100 tabs. made (Rings)
do.....do..... 144 lbs. per 100 tabs, when we did not use rings.

111

Tables of Glass.
48 inch. Tab. conts. 1809.5 sq. in.
49 in. do 1887.4 do
*50 in. do. 1963.5 do
51 in. do 2042.8 do
52 in. do 2123.7 do
1 foot conts. 6.715 cubc. inches
17 Tables contain about 1 cubc. ft.
*a well made table of glass should be 50 inches in diamr. and weigh $9\frac{1}{3}$ lbs. it then contains 101.915 cubc. ins.

112

	Duties &c	Debentures,
112 lbs.	£3..13..6	£4..18..0
136 feet	£2.7443	£3.6591
$136\frac{1}{2}$ ft.	2.7544	3.6725
$135\frac{1}{2}$ ft.	-	3.6456
100 ft.	2.0179	2.6905
28 lbs. Cullet.	0.9188	
29 lbs. Cullet.	0.9516	

113

114

Epitome of Wages.

Glass Makers per Journey (vide P.39)	£7.. 8..9
do do per Over journey.	5..10..0
Founders Crew per week	£10.. 0..0
including allowance and Coal Wheeling. &c.	
Cutters, Packers, &c.	£12..10..0 to 13..10..
Halliers & Dilly men.	£5. to 6.
Crate makers,	£3. to 4.
Pot making & Clay department	£5. to 5..5..0.

House and Coal allowances £5.9.9 per week.

115

Alkali workers per week.	£3..6..8
Metal mixing, &c.	9..7..0
Glass Pickers	2..8..0
Smiths	£3..8..0
Carpenters	2..0..0
Masons	4..0..0
Pensioners	£1..7..6. variable
Yardsmen	7..0..0 variable

Standing exp^{s}. in Wages and allowances £138 to £158 per wk.

116

The Rent and Coal allowances
to those who receive 8 loads of
Brush Coal per an., & £5 rent,
amount to £0..3..2½ per week.
Total allowance in Coal and House
rent, to all who receive them
is * ~~£285..8..4 per annum or 5..9..9 per week~~
*It is now £286..5..0 per an.
or £5.10..0. per week in
consequence of the Founders.
Aug. 1837

117

Wages @ Nailsea

Managers,	£200 ea. per an.
Clerk. £100 + (C. + H.) = £120.	
Pot Maker	35/-. H. & Coal.
Furnace Mason	28/- H. & C.
Other do	21/-
Carpenter	20/-
Smith's, Headman	28/-
2nd. do	21/-
Assistant	12/-
Lad	7/-
Crate makers	1/- per pair.

118

Glass Makers Wages.

Edw[d]. Phillips	£3..17..0
John Brooks.	2.. 5..0
Tho[s] Smart	2.. 5..0
2 Flashers @ 30/-	3.. 0..0
2 Pilers @ 30/-	3.. 0..0
2 Assistants @ 20/-	2.. 0..0
2 Carriers Off @ 21/-	2.. 2..0
8 Blowers @ 30/-	12.. 0..0
1 do. practising 25/-	1.. 5..0
8 Gatherers @ 25/-10..	0..0
1 spare Gatherer @ 25/-	1.. 5..0
2 Skimmers @ 25/-	2..10..0

119

for "4 double journeys"

2. 1[st] time Gatherers @9/-	£0..18..0
1 Ponty sticker @ 12/-	0..12..0
1 do do @ 9/-	0.. 9..0
2 do do @ 7/-	0..14..0
2 spare boys @7/-	0..14..0
2 Marver cleaners @ 5/-	0..10..0
7 other boys @ 4/-	1.. 8..0
1 Spare man (N.S.) @ 10/-	0..10..0
2 Blowers behind @ 20/-	2.. 0..0
2 Flashing F[ce]. Keep[rs]. @ 18/-	1..16..0
1 Crambo Keep[r]. (N.S.) @ 15/-	0..15..0
Total. ...	£55..15..0

Besides Coal allowances &c.
(in Feb[y]. 1836.)

120

Founders Crew

Founder	£1..10..0
2 Teazers @ 23/-	2.. 6..0
2, 2nd do @ 18/-	1..16..0
2 Spare men @ 15/-	1..10..0
Cave man	0..16..0
Coal wheeler	0..15..0
Average Pot money	0..12..0
Sweeping Furnace	0.. 1..0
Wheeling Ashes off	0.. 7..0
Usual drink allowance	0.. 5..4
Extra allowance-	0.. 1..4
Total-	£9.. 19..8

121

Metal Mixers.

Edw[d]. Gainer. 2/3rds.	£1.. 0..0
Jas. Connelly	1..10..0
Assistant mixer	0..12..0
2 Pan men @ 14/-	1.. 8..0
2 Caulker men @ 18/-	1..16..0
2 Mill men @ 12/- 1.. 4..0	
2 Horses @ 18/-	1..16..0
24 Quarters of Coal @ 1/4	1..12..0
Hauling do.	0.. 2..8
Total Wages.	£11.. 0..8

for 72 Batches of Mixture.
= about 4800 Tables; or
8 double journeys.

122 [No entry]

[Not numbered, = 123]

Index.

[Not numbered, = 124]