

T
FIELD NOTE BOOK

CROCKER LAND EXPEDITION

1913 - 1915

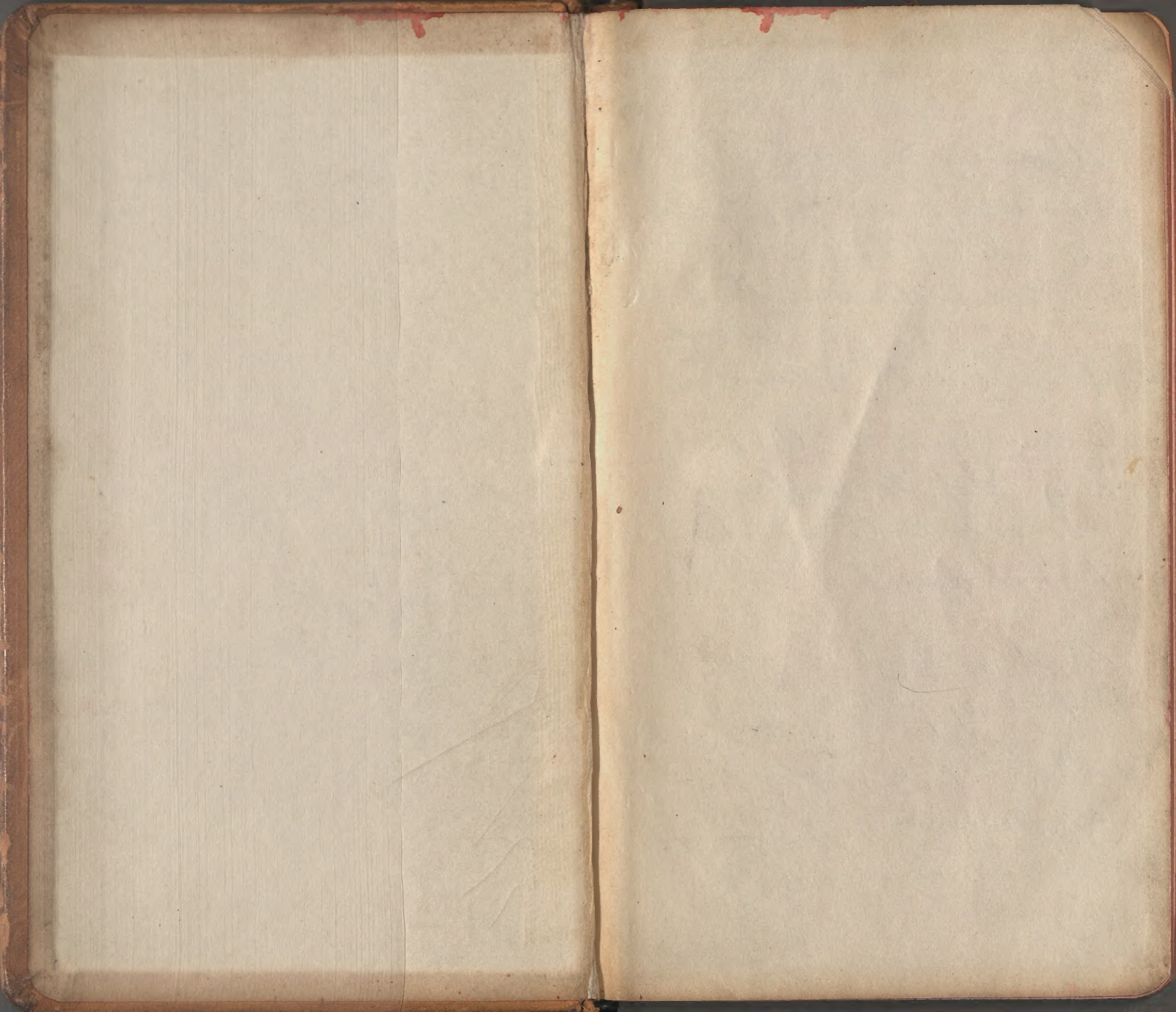
No 57

Tides

at Etah 1917

May to June

George Comer

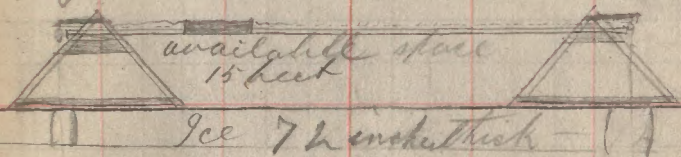


during the winter I placed
a pole 6 feet long in the
hole where I had cut through
& measure the ice this piece
in and later was sawed
off level with the surface

To day June 3 (1917) I
find that the surface of the
ice has melted or evaporated
 $\frac{1}{2}$ inch so far

To day June 10 the
surface of the ice has
evaporated 2 inches (in all)
so far but nothing underneath
on the ice measures 70 inches
thick in new cut hole

Tides at Etah Harbor
North Greenland
May 1 1917



An inverted trough
partitioned off by a piece
of tin the small iron
weights are carried backwards
or forward and left on
the tide comes or recedes

the plank is marked off
in 5 feet and tenths

Plan of arrangement
in measuring the
rise and fall of tides

Eight fathoms deep

(Piggin) 8 fathoms
deep

Can
Filled
with
stone

8				
9				
10				
11				

Time	Height	Temp	Wind	Clouds	Remarks
noon	12	7 feet	35	0	
	1	6 feet	10	1	NE
	2	5 feet	27	0	
X	3	5 feet	13	0	
	4	5 feet	83	2	SW
	5	7 feet	14	2	SW
	6	8 feet	87	1	S
	7	10 feet	25	2	NE
	8	11 feet	35	4	NE
XX	9	11 feet	77	0	
	10	11 feet	48	1	NE
	11	10 feet	45	3	S
mid	12	9 feet	07		

x low water at 2.45
pm standing on 5 feet 1 inch
mark
+x high water at 9.06 pm
standing on 11 feet 7 8
mark

North Greenland

[illegible]

Etah

May

3

1917

the low tide
went down to the66
36
mark

wind

direction

feet

hundredths

2				
3				
4				
5				
6				
7	10	65	0	
8	11	72	0	
9	12	00	1	SW
X 10	11	55	2	SW
11	10	25	4	SW
12	8	52	2	W
1	6	78	0	
2	5	50	1	W
3	4	93	3	NE
X 4	5	22	3	NE
5	6	37	4	NE
6	8	22	4	NE
7	10	18	4	NE
8	11	80	4	NE
9	12	78	5	NE
++ 10	12	93	5	NE
11	12	08	5	NE
12	10	68	5	NE

X Top high water 9.08 am
standing on 12 feet 00 tenths
mark

++ Low low water at 3.07 pm
standing on 4 feet 90 tenths
mark

North Greenland

clouds

overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	snow
overcast	hazy	snow
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	
overcast	hazy	

xxv High tide at 9.25 h
standing on 12 feet 98
mark

Eetak

North Greenland

may

4

1917

1 am

2

the morning low

3

tide fell to the

4

5 foot 92

5

mark

6

to

7

8

11 30

5 S W

9

12 23

4 S W

X 10

12 32

4 S W

11

11 50

2 S W

12 noon

9 80

3 S W

1

7 83

0

2

5 95

2 S W

3

4 65

4 S W

XX 4

4 33

4 S W

5

5 13

3 S W

6

6 75

3 S W

7

9 08

3 S W

8

11 23

3 S W

9

12 60

2 S W

10

12 55

1 S W

XXX 11

13 28

2 S W

12 mid

11 75

2 S W

X

high water 9.45 am

standing on 12.3.90 mark

XX

low water at 3.50 pm

stopped at 4 feet 33 mark

XXX

high water at 10.18 pm

standing on 13.60 mark

amount of clouds

10

hazy

10

hazy

10

hazy snow

10

misty snow

10

fog snow

10

fog snow

10

fog snow

10

clouds breaking

fog snow

10

clouds broken

fog snow

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

clouds broken

misty

10

Etah

North Greenland

May 5

1917

Haven

Foot bath

1						
2	the morning low tide					
3	fell to 5 feet. 20					
4						
5	feet	handlets	wind	force	cloud	
6						
7	8	20	SW	4	10	hazy
8	10	08	S	4	10	hazy
9	11	67	SE	4	10	hazy
10	12	30	SE	2	10	snow
X 11	12	05	SE	1	10	mark
12 noon	10	65	SE	4	10	snow
1	8	55	S	4	10	snow
2	6	25	S	5	10	snow
3	4	43	SW	7	10	snow
4	3	63	SW	8	10	snow
X 5	4	05	SW	8	10	snow
6	5	63	SW	7	10	snow
7	7	95	SW	5	10	snow
8	10	55	SW	8	10	snow
9	12	85	SW	8	10	snow
10	14	25	SW	8	10	snow
11	14	45	SW	7	10	snow
X 12	13	50	SE	7	10	snow

* High tide at 10.15
standing on 12.37 mark

* Low water at 4.20 pm
standing on 3.57 mark
while watching the tide gauge at
4 pm the marker would go back
and forth an inch showing the
effects of a swell though the ice
is 6 feet thick and the edge
of the ice must be at least
3 miles away perhaps more

High tide at about 10.45
standing 14.47 mark

May 6 1918
Etah north Greenland

hours	Feet	Direction of wind	Force	Amount of clouds	
1					
2					
3					
4					
5					
6					
7	6.80	S	7	0	drift
8	8.75	S	6	0	drift
9	10.65	S	6	0	drift
10	12.10	S	4	9	
x 11	12.40	S	5	5	
12	11.55	SW	5	5	
1	9.65	SW	6	6	
2	7.43	SW	6	5	
3	5.05	SW	5	3	
4	3.60	W	5	8	
xx 5	3.13	W	4	8	
6	4.12	W	5	8	
7	6.23	W	4	9	
8	8.90	0	0	10	
9	11.72	0	0	10	
10	13.87	0	0	10	
w 11	15.00	N	1	10	misty
12	14.73	W	1	10	some

tide fell 8
4.60 this am

x high tide 11 am
standing 12.40 mark

xx low tide at 5 pm
standing on 3.13
mark

high tide at 11 pm
standing on 15.00
mark

Etah May 7. 1913

North Greenland

ham

	Heat	Amplitude	Direction of Wind	Force	Amount of Clouds	
1						
2						
3						
4						
5						
6						
7	5	53	N	6	8	hazy
8	7	53	NE	4	10	hazy
9	9	77	NE	6	10	drift
10	11	73	E	6	10	drift
11	12	78	E	7	10	drift
xx 12	12	63	E	7	10	snow
1	11	150	N	7	10	snow
2	8	95	N	6	10	snow
3	6	47	N	2	10	snow
4	4	35	SW	3	10	snow
xx 5	3	23	SW	8	9	hazy
6	3	47	NW	3	10	hazy
7	5	07	SW	5	9	hazy
8	7	93	SW	6	10	hazy
9	10	55	S	4	10	hazy
10	13	20	W	6	10	hazy
11	14	90	SW	6	10	hazy
xxxx 12	15	33	SW	6	7	hazy

Low tide and tide stand on
4.47^{pm} morning
mark

xx high water at 11 25
standing on 12. 8⁵⁰
mark

(520 xae)
xx low water 4 20^{pm}
standing on 3.17
mark

high water at 12 midnight
standing 15 33^{mark}

Etah

North Greenland

May 8 1917

hours	feet	handwritten	Photomicrograph	same	standing in water
1					
2					
3					
4					
5					
6					
7	4	00	Saw	6	7
8	5	48	Saw	9	6
9	7	68	Saw	5	4
10	9	90	Saw	6	6
11	11	52	Saw	6	5
X 12 noon	12	05	Saw	5	4
1	11	40	Saw	4	2
2	9	65	Saw	4	6
3	7	28	Saw	5	9
4	4	95	Saw	5	8
5	3	23	Saw	5	9
XX 6	2	70	Saw	5	10
7	3	58	Saw	4	5
8	5	65	Saw	4	5
9	8	60	Saw	4	2
10	11	55	Saw	4	2
11	13	98	Saw	4	1
XXX 12	15	30	Saw	3	1

low tide this am
registered 3.60 mark

high water at 12 m
standing on 12.05 mark

XX low water at 6 pm
standing on 2.70 mark

XXX high water between 12 and
one o'clock midnight
standing on 15.47
mark

Etah

North Greenland

May 9

1917

		feet	temperature	Direction of wind	Force of wind	Clouds	
am	1						
	2						
	3						
	4						
	5						
	6						
x	7	3	.80	NE	3	0	Pleasant
	8	4	.60	NE	2	0	hazy
	9	6	.43	NE	1	0	hazy
	10	8	.63	NE	4	0	hazy
	11	10	.75	NE	4	0	hazy
noon	12	11	.93	NE	4	0	hazy
xx	1	12	.10	NE	4	0	hazy
	2	11	.03	NE	4	0	hazy
	3	9	.10	NE	4	0	hazy
	4	7	.53	NE	5	0	hazy
	5	fence were in		E	5	0	hazy
	6	3	.23	E	5	0	hazy
xxx	7	3	.30	E	4	0	hazy
	8	4	.67	E	5	0	hazy
	9	7	.00	NE	4	0	hazy
	10	9	.93	NE	4	0	hazy
	11	12	.80	NE	4	0	hazy
	12	14	.73	NE	4	0	hazy

low tide standing on
3.43 mark

high tide reach 12.14
mark

xxx low tide stand on
3.13 mark

E. Turk

North Greenland

May 10 1917

hour	feet	direction	force of wind	clouds in tenths
x 2				
3				
4				
5				
6				
7	4.27	NE	6	0
xx 8	4.23	E	5	0
9	5.40	E	4	0
10	7.27	E	4	0
11	9.37	E	4	0
noon 12	11.13	E	4	0
1	11.92	E	4	0
xxx 2	11.70	E	4	0
3	10.45	E	4	0
4	8.40	E	4	0
5	6.20	E	4	0
6	4.47	E	4	0
xxxx 7	3.68	E	4	0
8	4.00	NE	5	0
9	5.62	NE	5	0
10	7.92	NE	5	0
11	10.47	NE	5	0
12	12.97	NE	5	0

no clouds but haze during the day

x the High tide reached 15.45 mark

xx the low tide stood on the 4.13 mark

xxx High tide reached the 11.97 mark

xxxx at low tide stopped at the 3.60 mark

E. Tak

North Greenland

May 11 1917

Age	feet	Barometer	Wind	Force	Cloud
2					
3					
4					
5					
6					
7	4	97	SE	5	0
8	4	07	SE	5	0
xx 9	4	20	SE	4	0
10	5	47	SE	4	0
11	7	27	NE	4	0
12	9	20	NE	4	0
1	10	60	NE	4	0
xxx 2	unreliable		NE	3	0
3	10	80	NE	3	0
4	9	62	NE	3	0
5	7	82	NE	3	0
6	6	05	NE	3	0
7	4	50	NE	4	0
8	4	13	NE	4	0
xxx 9	4	75	NE	4	0
10	6	43	N	6	0
11	8	70	N	6	0
12	11	00	N	0	0

clear weather

The wind is generally much stronger and on the ice than at the house

High tide reached the 14.85 mark

xx Low water at the 4.05

xxx High water reached the 11.17 mark

xxxx Low water registered on the 4.10 mark

as I am alone here at present I am unable to do better work as there is several other things have to be attended too

Etah

North Greenland

May 12 1917

	Feet	Barometer	Direction	Force	Clouds
1					
2					
3					
4					
5					
6					
7	6	85	NE	6	0
8	5	20	NE	6	0
9	4	50	NE	6	0
x 10	4	75	NE	5	0
11	5	90	NE	5	0
12	7	55	NE	5	0
1	9	17	NE	5	0
2	10	48	NE	6	0
xx 3	10	90	NE	6	0
4	10	57	NE	6	0
5	9	53	NE	5	0
6	8	03	NE	5	0
7	6	42	NE	5	0
8	5	30	NE	5	0
xxx 9	5	00	NE	5	0
10	5	60	N	5	0
11	7	00	N	5	0
12	9	03	N	5	0

Clear weather clearing day
at night a little haze
in South end west

the early morning tide
reached the 14 35 mark

x the low tide fell to the
4.47 mark

xx after noon high tide at
3 pm standing on
10.90

xxx low tide 9 pm
standing on
5.00 mark

To my house put
two quarts of kerosene
oil in the kaler to
see if it would prevent the
water from freezing in

Etah

May 13

1917

hour am	°	°	°	°	°
1					
2					
3					
4					
5					
6					
7	5	78	NE	4	7
8	6	78	NE	4	5
9	5	35	E	4	3
x 10	4	67	E	4	2
11	4	83	NE	3	1
12	5	80	E	3	1
pm 1	7	18	E	3	1
2	8	65	E	3	1
3	9	85	E	4	1
4	10	27	SE	5	0
xx 5	10	12	SE	5	0
6	9	35	SE	5	0
7	8	23	SE	6	1
8	6	95	SE	4	1
9	6	00	SE	6	1
xx 10	5	63	SE	6	1
11	6	00	SE	6	1
12	7	13	SE	5	1

the wind slightly variable
in force and direction
at times

North Greenland

high water reached the 13.75 mark this am

x low water stood on the 4.63 mark

xx high tide stood on the 10.33 mark

xx low tide it stood on the 5.62 mark

the oil put in the
hale helps a little but
think a body oil would
be better and keep the wire

— smoother to cut through

Etah

North Greenland

May

4

1917

	height	number	round	face	cloud
1					
2					
3					
4					
5					
6					
7	10	58	NE	4	1
8	8	96	NE	4	1
9	7	08	NE	3	2
10	5	63	E	3	3
* 11	4	87	SE	3	4
12	4	87	E	4	7
1	5	70	SE	4	10
2	7	07	SE	4	10
3	8	50	SE	4	10
4	9	83	SE	4	10
5	10	65	E	2	10
** 6	10	80	NE	2	9
7	10	37	NE	1	8
8	9	37	NE	1	8
9	8	08	NE	1	8
10	7	08	NE	2	8
11	6	40	NE	2	8
xxx/12	6	37	NE	2	7

sky covered mostly by
thin heavy clouds

the early morning tide
reached the 12.85
mark

* low water mark was 4.8.0

++ high water mark was 10.8.0

+++ the low tide fell to the
6.3.0 mark

Etah

North Greenland

May 15 1917

	feet	barometer	wind	force	clouds
1					
2					
3					
4					
5					
x 6					
7	12	00	NE	2	7
8	10	65	NE	3	4
9	8	88	E	2	4
10	6	98	E	2	4
11	5	49	E	2	3
12	4	63	E	3	1
xx 1	4	53	SE	3	1
2	5	25	SE	3	1
3	6	60	E	3	1
4	8	25	E	3	1
5	9	80	E	4	3
6	10	87	E	4	4
xx 7	11	29	E	5	1
8	not reliable		E	5	1
9	10	07	E	5	1
10	8	70	E	6	0
11	7	48	E	6	0
12	6	50	E	5	0

warm and pleasant
wind varying in force* the morning high tide
reached the 12.58 markxx the low tide went to the
4.35 mark* the high tide reached the
11.33 mark 7.15 pm

May 16 Etah

1917

	feet	hundredths	Wind	force	clouds
1					
2					
3					
4					
5					
6					
x 7	12	25	NE	5	4
8	11	93	NE	6	4
9	10	68	NE	6	3
10	8	93	NE	6	2
11	7	00	NE	5	1
12	5	33	SE	4	1
1	4	30	SE	4	0
xx 2	4	10	N	4	0
3	4	89	NE	4	0
4	6	45	NE	4	0
5	8	45	NE	5	0
6	10	30	NE	4	0
7	11	70	NE	4	0
8	12	28	N	3	0
9	12	05	NE	4	1
xx 10	10	90	NE	4	1
11	9	27	NE	4	1
12	7	50	NE	4	1

Wind steady a little
in force and direction

North Greenland

The low tide went to the
6.17 mark

x The high tide reached
the 12.27 mark
at 7.15 am

xx the low tide went to
the 4.05 mark
at 1.45 pm

xx the high tide reached
the 12.33 mark.

May 17 1917

Etah

	Feet	Barometer	Wind	Force	Clouds
1					
2					
3					
4					
5					
6					
7	11	73	6	5	0
x 8	12	25	8	5	0
9	11	90	8	4	0
10	10	65	8	4	0
11	8	80	8	4	1
12	6	43	8	4	1
1	4	47	8	4	1
2	3	83	8	4	1
xx 3	3	93	8	4	1
4	5	03	8	5	0
5	6	85	8	5	0
6	9	25	8	5	0
7	11	80	8	5	0
8	12	87	8	5	0
xx 9	13	45	8	5	1
10	13	00	8	5	1
11	11	45	8	6	1
12	9	58	8	6	1

The wind variable in force

North Greenland

The low tide went to
the 5.60 mark

x The high tide reached
the 12.25 mark
at 8 am

xx the low tide went to the
3.75 mark

xx The high tide reached the
13.45 mark at 9 pm

May 18
Etah 1917

	Temp	Humidity	Wind	Force	Cloudy	
1						
2						
3						
4						
5						
6						
7	10	60	E	6	0	
8	11	93	E	6	0	
x 9	12	48	E	5	0	
10	12	05	E	4	1	
11	10	58	E	4	1	
12	8	50	E	4	1	
1	6	28	E	3	2	
2	4	50	E	4	1	
3	3	63	E	4	0	
x+ 4	3	90	SE	4	0	
5	5	33	SE	4	0	
6	7	68	SE	4	0	
7	10	50	SE	4	0	
8	12	53	SE	3	0	
9	14	08	E	3	0	
x+ 10	14	48	N E	4	1	
11	13	68	N E	4	6	
12	11	78	N E	4	9	

North Greenland

recorder of saw tide lost
by being vibrated off by
the wind

+ high tide save to the
12.48 mask at 9 am

7+ low tide fell to the
3.55 mark

High tide reached the
14.48 mark at 10 pm

Etah

north Greenland

may	19	1917			
hour	lat	longitude	wind	force	clouds
2					
3					
4					
5					
6					
7	8	80	S	5	10
8	10	53	S	5	10
9	11	93	S	5	10
10	12	30	S	5	10
11	11	65	S	5	10
12	9	98	S	5	10
1	7	70	S	5	10
2	5	45	S	4	10
3	3	83	S	4	9
4	3	03	S	4	7
5	3	63	W	3	6
6	5	40	NW	3	4
7	8	10	NW	3	4
8	10	85	NW	2	3
9	13	30	NW	1	2
10	14	63	NW	1	2
11	14	65	N	2	1
12	13	40	N	3	1

after noon
clear and pleasant

early morning
low tide went to the
4.63 mark

x the high tide reached
the 12.30 mark
10 am

xx low tide went to the
3.04 mark
at 4 pm

xx the high tide went to
the 14.78 mark
at 10.20 pm

Etah

North Greenland

May 20

1913

hour	foot	barometer	Winds	force	clouds
1					
2					
3					
4					
5					
6					
7	6	68	NE	4	0
8	8	88	SE	4	0
9	10	88	SE	5	0
10	12	18	SE	5	0
11	12	35	SE	5	0
12	11	38	SE	6	0
1	9	40	NE	6	0
2	7	23	NE	6	0
3	5	00	NE	6	1
4	3	55	E	6	1
5	3	28	E	5	1
6	4	43	W	1	1
7	6	88	0	0	1
8	9	85	0	0	1
9	12	35	NW	2	2
10	14	50	NW	2	3
11	15	45	W	3	6
12	15	08	W	3	8

Pleasant forenoon calm
after noon a thin hazy clouds
coming up

the low tide went to
the 4.00 mark

xx the high tide went to
the 12.40 mark

xxx the low tide fell to the
3.25 mark

xx
xx the high tide rose to the
15.48 mark
highest yet so far

Elah

North Greenland

May

21

1919

	Foot	headwater	Wind	Force	Clouds
1					
2					
3					
4					
5					
6					
7	5	30	W	3	3
8	7	30	W	3	4
9	9	53	W	4	5
10	11	43	W	4	7
11	12	38	W	4	7
12	12	20	W	5	5
1	10	90	W	4	9
2	8	88	W	4	9
3	6	58	W	4	10
4	4	43	W	4	10
5	3	40	W	4	10
6	3	63	W	4	10
7	5	25	W	4	10
8	7	80	W	4	10
9	10	68	W	4	10
10	13	33	W	5	10
11	15	12	W	5	10
12	15	55	W	4	10

know falling lightly during the afternoon at midnight breaking away

the highest tide so far

* the low tide went to the
4 03 mark

xx The high tide rose to the
12 45 mark

xx the low tide fell to
the 3 35 mark

xxx The high tide reached
the 15 55 mark at
midnight

Etah

North Greenland

May

22

1917

	heat	humidities	wind	force	clouds	
1						
2						
3						
4						
5						
6						
7	4	55	W	4	10	dense snow
8	5	60	W	4	10	
9	7	68	W	4	10	
10	9	83	W	4	10	
11	11	58	W	4	10	a little snow falling
x 12	12	20	W	4	10	
1	11	70	W	4	10	
2	10	15	W	3	10	
3	8	04	W	2	10	breaking away in the west
4	5	90	W	1	10	
5	4	25	W	1	10	
x 6	3	70	W	1	10	
7	4	50	W	1	10	
8	6	50	0	0	10	
9	9	18	0	0	10	
10	12	00	0	0	10	
11	14	23	0	0	10	
12	15	60	0	0	9 x	

the early morning low tide fell to the 3.90 mark

noon
xx The high tide reached the 12.20 mark at 12 noon

xx The low tide fell to the 3.70 mark at 6 pm

Estach

may 23 1917

	feet	inundation	Wind	force	clouds
1					
2					
3					
4					
5					
6					
7	4	40	W	3	7
+ 8	5	05	W	4	9
9	6	70	W	4	10
10	8	77	W	4	10
11	10	75	SW	4	10
12	12	05	SW	5	10
xx 1	12	33	SW	4	10
x 2	11	45	SW	5	10
3	9	77	S	5	10
4	7	75	SW	4	10
5	5	83	SW	4	10
6	4	67	W	4	10
xx 7	4	57	W	4	10
8	5	85	W	4	10
9	7	95	W	2	10
10	10	55	W	3	10
11	13	05	W	2	10
12	14	93	W	1	10

measuring
lightly

now falling thick
during the afternoon

north Greenland

+ the midnight high tide
rose to the 15.68 mark

the highest tide so far

x this morning low tide fell
to the 4.35 mark

++ the mid-day high tide rose
to the 12.33 mark
at 12.45 pm

xx the low tide went
down to the 4.50
mark

Etah

May 24

1917

	feet	inches	wind	force	clouds	
1						
2						
3						
4						
5						
6						
7	4	97	0	0	10	
8	4	85	0	0	10	
9	5	80	W	2	10	
10	7	53	0	0	9	
11	9	45	NE	1	10	
12	11	05	SW	2	10	
1	11	85	SW	3	10	
2	11	77	SW	3	10	
3	10	67	SW	3	10	
4	9	00	SW	2	10	
5	7	12	SW	3	10	
6	5	60	SW	1	10	
7	4	95	NE	3	6	
8	5	23	NE	4	2	
9	6	77	NE	5	1	
10	8	97	NE	5	0	
11	11	30	NE	5	0	
12	13	30	E	5	0	

Sun shining through the fog and snow

weather clearing

north Greenland

Very early morning
high tide rose to the
15.57 mark

xx the morning low tide fell
to the 4.80 mark

xx the early afternoon high
1.20 pm tide reached the 11.95
mark

xx the low tide fell to
the 4.92 mark

Etohi

May 25

1917

	feet	height	wind	force	clouds
1					
2					
3					
4					
5					
6					
7	6	03	NE	5	1
8	5	23	NE	5	1
9	5	27	NE	4	1
+10	6	40	NE	4	1
11	8	03	NE	4	2
12	9	72	E	5	2
1	10	95	E	5	1
+2	11	42	E	5	1
3	11	08	E	5	1
4	9	95	E	5	1
5	8	43	E	4	1
6	6	93	NE	3	0
7	5	83	E	4	0
+8	5	55	NE	4	1
+9	6	23	NE	5	1
10	7	72	NE	4	1
11	9	70	NE	5	2
12	11	67	NE	5	7

wind falling a little more

The high tide went to the 14 95' mark

* the low tide went to the 5.15' mark

xx the high tide went to the 11.43. mark

xx the low tide fell to the 5.55' mark at 8 pm

Et tunc

May 26 1913

	leaf	number of leaves	number	price	colored
1					
2					
3					
4					
5					
6					
7	7	25	NE	7	8
8	5	93	NE	7	5
x 9	5	40	NE	6	5
10	5	73	NE	6	7
11	6	85	NE	6	9
12	8	35	NE	6	10
1	9	75	n	7	9
2	10	63	n	7	10
x 3	10	80	n	6	9
4	10	35	n	6	7
5	9	37	n	6	6
6	8	12	n	5	4
7	6	92	n	5	3
8	6	17	n	5	3
+ 9	6	13	NE	5	1
10	6	93	NE	4	2
11	8	32	NE	4	4
12	10	00	NE	4	6

a little more
well a short while

page

North Greenland

The morning high tide
went to the 14 27
mark

* face mean
the low tide bell &
the 5.40 mark

XX after noon
the high tide reached the
10 8.5 mark

xx
x New. Crossing hall to the
G. 05 mark

Etah

North Greenland

May 24 1917

	Bar	Barometer	Wind	Force	Clouds
1					
2					
3					
4					
5					
6					
7	8	63	NE	4	8
8	6	93	NE	5	9
9	5	93	NE	5	9
xx 10	5	65	NE	5	5
11	6	15	S	2	3
12	7	23	N	4	4
1	8	50	N	4	2
2	9	62	W	4	2
3	10	27	W	4	2
4	10	33	SW	3	1
xx 5	9	80	SW	1	2
6	8	90	SW	3	3
7	7	87	SW	3	10
8	7	00	SW	3	10
9	6	60	SW	2	9
xx 10	6	72	SW	2	9
11	7	45	SW	3	8
12	8	63	S	0	8

the early morning tide
rose to the 13.45 mark

fore noon
xx the low tide fell to the
5.65 mark
at 10 am

after noon high
xx tide rose to the
10.38 mark

xx evening low tide fell
xx to the 6.58 mark

Etah

May 28 1917

	feet	barometer	wind	force	clouds
1					
2					
3					
4					
5					
6					
7	9	27	n	6	3
8	7	80	n	6	2
9	6	53	n	6	1
10	5	75	n	6	0
+11	5	57	n	6	0
12	6	07	n	6	0
1	7	03	n	6	0
2	8	15	NE	6	0
3	9	15	NE	5	0
4	9	85	NE	6	0
+5	10	08	NE	6	0
6	9	75	NE	6	0
7	9	05	E	6	0
8	8	25	E	6	0
9	7	48	E	6	0
10	7	05	E	6	0
+11	7	15	E	6	0
12	7	68	E	6	0

Clear with cloudy
fresh breeze

North Greenland

early morning
high tide reached
the 12 30 mark

x fore noon
low tide fell to the
5.55 mark

xx after noon high tide
reached the 10 08
mark

xx xx evening low tide
fell to the 6 97 mark

Etah

North Greenland

May 29 1917

	Reef	Underwater	Wind	Force	Clouds
1					
2					
3					
4					
5					
6					
7	10	18	E	6	0
8	8	90	E	5	0
9	7	58	E	5	0
10	6	40	E	5	0
11	5	78	E	5	0
12	5	63	E	4	0
1	6	20	E	4	0
2	7	20	E	4	1
3	8	40	E	4	1
4	9	45	E	4	0
5	10	17	E	4	0
x+6	10	47	E	4	0
7	10	33	E	4	0
8	9	72	E	4	0
9	8	93	E	4	0
10	8	20	E	4	0
11	7	65	new		0
x+12	7	50	new		0

Morning high tide
rose to the 11.68 mark

x The noon low tide
fell to the 5.68 mark

xx The afternoon high tide
rose to the 10.48
6 pm mark

xx Midnight low tide
fell to 7.50
mark

Etah

may 30th 1917

	feet		Wind	Force	Clouds
1					
2					
3					
4					
5					
6					
7	10	63	SE	5	0
8	9	73	SE	4	0
9	8	53	E	4	0
10	7	22	E	4	0
11	6	13	E	4	0
12	5	57	E	4	0
x 1	5	58	NE	4	0
2	6	05	NE	4	0
3	7	10	E	4	0
4	8	27	E	5	0
5	9	45	E	5	0
6	10	30	E	4	0
7	10	63	E	4	0
xx 8	10	63	E	4	0
9	10	05	E	4	0
10	9	17	E	5	1
11	8	27	E	5	1
12	7	57	E	5	1

Clouds in South west

North Greenland

the early morning
high tide reached the
11 07 mark

x the midday low
tide fell at the
5.53 mark

xx the evening high tide
rose to the 10.43
mark
at 7 30 pm

Eetak

May 31 1917

	feet	temperature	wind	force	clouds
1					
2					
3					
4					
5					
6					
7	10	65	NE	6	2
x 8	10	40	NE	6	2
9	9	55	NE	5	2
10	8	27	NE	5	1
11	6	97	NE	6	2
12	5	93	E	6	3
xx 1	5	30	SE	6	3
2	5	35	SE	6	2
3	6	10	SE	6	2
4	7	40	E	6	2
5	8	87	E	6	3
6	10	30	SE	6	2
7	11	37	E	6	3
xx 8	11	80	SE	6	4
xx 9	11	63	SE	7	7
10	10	80	SE	7	7
11	9	55	SE	7	7
12	8	27	E	7	4

mist coming off the
glacier

North Greenland

the early morning low tide
fell to the 7.17 mark

x the morning high tide
rose to the 10.75 mark

the midday low tide
fell to the 5.20
mark

xx the evening high
tide rose to the
11.83 mark

Etah

June 1 1917

	height		wind		force	clouds
1						
2						
3						
4						
5						
6						
7	10	83	N	4	5	
xx 8	11	10	E	6	4	
9	10	70	E	4	2	
10	9	70	E	4	0	
11	8	25	E	5	1	
12	6	80	SE	5	1	
1	5	65	E	3	1	
xx 2	5	10	N	4	0	
3	5	35	E	4	0	
4	6	40	E	4	1	
5	7	95	E	4	4	
6	9	70	SE	4	5	
7	11	27	SE	5	4	
8	12	33	SE	5	3	
xx 9	12	65	SE	4	4	
10	12	23	SE	5	4	
11	11	15	SE	5	3	
12	9	68	E	4	1	

wind steady

a little snow in squalls

North Greenland

the early morning low tide fell to the 6.83 mark

the morning high tide rose to the 11.20 mark

xx the afternoon low tide fell to the 5.10 mark

xx the evening high tide rose to the 12.68

feet
meters

Etah

June 2

Wind

Force

Barometer
1917

1	8	03	E	6	1
2	6	93	NE	5	1
X 3	6	45	E	4	0
4	6	73	N	4	0
5	7	63	NE	5	0
6	8	87	NE	6	0
7	10	12	NE	8	2
8	11	03	E	5	2
X 9	11	27	E	6	2
10	10	77	EE	5	2
11	9	55	E	6	2
12	8	05	E	8	2
1	6	40	EE	6	2
2	6	05	EE	5	6
X 3	5	57	E	5	3
4	6	12	E	5	3
5	7	55	EE	5	3
6	9	50	EE	5	3
7	11	50	E	5	3
8	13	25	E	4	2
9	14	23	E	4	2
X 10	14	35	N	4	4
X 11	13	47	NE	4	4
12	11	85	E	5	4

the tide gauge there is a little swell
showing

North Greenland

* the early morning tide
fell to the 6.45 mark

the forenoon high tide
rose to the 11.30 mark

X the afternoon low tide
fell to the 5.55 mark

XX the evening high tide
reached the 14.43

feet
pendulum

Etah June 3
1919

1	9	57	NE	5	1
2	7	97	NE	5	2
3	6	87	NE	6	1
+4	6	53	NE	6	1
5	7	15	NE	7	1
6	8	45	NE	7	1
7	9	80	E	6	3
+8	11	25	E	6	3
+9	12	13	E	6	3
10	12	13	E	5	5
11	11	27	E	5	5
12	9	73	E	5	4
1	7	95	E	5	2
2	6	29	SE	4	2
3	5	27	SE	4	2
+4	5	23	SE	5	1
5	6	50	E	5	1
6	8	30	E	5	2
7	10	60	SE	5	2
8	12	93	SE	2	3
9	14	75	SE	4	2
10	15	45	E	5	2
+11	15	30	E	4	3
12	13	95	E	4	6

The greatest thickness of the ice during the winter has been 72 inches during the winter when I had

North Greenland

x the early morning low tide fell to the 6.47 mark

x the fore noon high tide rose to the 12.23 mark

the after noon low tide fell to the 5.07 mark

the late evening high tide rose to the 15.53 mark

cut a hole I put a 6 foot pole (lambac) down and it froze in then sawed off level with the surface to day I find the surface has gone down 4 inches

	feet	handwritten	tide	wind	June 24	clouds
1	11	77	NE	3	6	1917
2	9	50	NE	5	6	
3	7	60	NE	2	8	
4	6	50	N	5	8	
+5	6	30	NE	6	7	
6	7	17	E	4	3	
7	8	63	E	4	3	
8	10	40	E	4	3	
9	11	93	E	4	4	
10	12	70	E	4	6	
+11	12	63	E	4	6	
12	11	43	E	4	7	
1	9	67	E	5	8	
2	7	53	E	3	9	
3	5	80	E	1	9	
+4	5	00	E	1	9	
5	5	30	E	2	9	
6	6	82	E	2	6	
7	9	13	E	4	3	
8	11	87	E	3	2	
9	14	26	E	4	1	
10	15	93	E	4	4	
11	16	20	E	5	5	
12	15	40	E	5	4	

North Greenland

x The early morning
low tide fell to the
6.27 mark

xx The fore noon high tide
rose to the 12.77 mark

xx The after noon low tide
fell to the 5.00 mark

xx The evening high tide
rose to the 16.20
mark

feet
meters

Eteah June 5

1917

1	13	53	S	2	8
2	11	00	S	2	8
3	8	17	NE	3	8
4	6	55	NE	4	1
5	5	65	NE	2	1
6	5	85	NE	2	1
7	7	13	E	4	1
8	9	03	E	4	1
9	11	00	E	4	1
10	12	47	E	4	0
+ 11	13	00	E	4	0
12	12	45	E	4	0
1	10	90	E	5	0
2	8	77	E	5	0
3	6	53	E	4	0
4	4	97	E	5	0
xx 5	4	50	E	5	0
6	5	25	NE	5	0
7	7	20	NE	5	0
8	10	08	NW	3	0
9	12	90	NW	3	0
10	15	17	W	3	0
xx 11	16	63	W	1	0
12	16	35	0	0	0

North Greenland

x The early morning low tide
fell to the 5.57 mark

xx the fore noon high tide
rose to the 13 00
mark

xx the after noon low tide
fell to the 4.47
mark

The near midnight high
tide rose to 16.63
mark

Etah June 1917

	feet	feet	wind	force	
1	15	07	n	1	0
2	12	75	n	1	0
3	9	97	0	0	0
4	7	43	0	0	0
5	5	65	NE	1	0
x 6	5	07	S	2	1
7	5	63	W	2	0
8	7	20	W	2	0
9	9	40	W	2	0
10	11	40	W	4	0
11	12	77	SW	4	0
+ 12	13	00	SW	4	0
1	12	12	SW	4	0
2	10	27	SW	4	1
3	7	97	SW	2	1
4	5	90	SW	4	1
5	4	53	SW	3	1
xx 6	4	35	SW	2	2
7	5	60	SW	3	3
8	7	90	0	0	2
9	10	93	W	2	2
10	13	63	W	1	2
11	15	90	SW	2	2
xx 12	16	85	SW	1	2

North Greenland

The morning low tide
fell to the 5.05 mark

The midday high tide
rose to the 13.00
mark

xx
x after noon low tide
fell to the 4.30
mark

xx
x top high water at
the 16.85 mark

North Greenland

	Feet	Amplitude	Stat	Wind	Force	Height	1917
1	16	40		0	0	0	
2	14	57		0	0	0	
3	11	90		0	0	0	
4	8	97		0	0	0	
5	6	80		0	0	0	
6	5	00		0	0	0	
7	4	67		0	0	0	
x 8	5	65	SW	2		0	
9	7	65	SW	3		0	
10	9	87	SW	4		0	
11	11	87	SW	4		0	
12	13	00	SW	4		0	
xx 1	13	00	SW	4		0	
2	11	80	SW	4		0	
3	9	80	SW	4		0	
4	7	47	SW	4		0	
5	5	47	SW	4		0	
6	4	35	SW	4		0	
xx 7	4	47	SW	4		0	
8	6	20	SW	2		0	
9	8	75	SW	2		0	
10	11	75	0	0		0	
11	14	45	0	0		0	
12	16	35	0	0		0	

x The morning low tide
fell to the 4.67 mark

xx The noon high tide rose
to the 13.13 mark

xx The after noon low
tide fell to the
4.20 mark

feet		temperature	to tide	Wind	force	Clouds
1	16	88		0	0	0
2	15	90		0	0	0
3	13	80		0	0	0
4	10	97		0	0	0
5	8	07		0	0	0
6	5	97		0	0	0
7	4	58		0	0	0
xx 8	4	68	SW	2	0	0
9	5	90	SW	3	0	0
10	8	00	SW	3	0	0
11	10	23	SW	4	0	0
12	12	07	SW	4	0	0
xx 1	12	90	SW	4	0	0
xx 2	12	67	SW	4	0	0
3	11	35	SW	4	0	0
4	9	30	SW	2	0	0
5	6	95	SW	4	0	0
6	5	40	SW	1	0	0
xx 7	4	67	SW	2	0	0
xx 8	5	30	0	0	0	0
9	7	03	0	0	0	0
10	9	60	0	0	0	0
11	12	44	0	0	0	0
12	14	82	SE	1	0	0

North Greenland

+ the very early morning
tide rose to the

16.93
mark

xx. the morning low tide
fell to the 4.47
mark

xx the after noon high tide
reached the 12.95
mark

xx the evening low tide
fell to the 4.60
mark

Etah June 9

North Greenland

	feet	height	Wind	force	clouds	1917
1	16	07	N	4	0	
2	16	53	N	4	0	
3	15	30	NW	1	0	
4	13	10	SW	1	0	
5	10	20	NW	1	0	
6	7	57	SW	3	0	
7	5	35	O	0	0	
++ 8	4	53	SW	1	0	
9	4	77	O	0	0	
10	6	23	S	1	0	
11	8	33	S	3	0	
12	10	55	S	4	0	
1	12	12	W	4	0	
++ 2	12	83	W	5	0	
++ 3	12	43	W	5	0	
4	11	06	W	5	0	
5	9	03	W	5	0	
6	6	97	W	5	0	
7	5	53	NW	5	1	
8	5	03	NW	5	1	
++ 9	5	80	NW	5	1	
++ 10	7	60	NW	4	1	
11	10	07	NW	5	1	
12	12	00	NW	5	2	

more of a
water cloud
over the open water

x the very early morning
high tide rose to the
16.53 mark

+ the pure noon
low tide fell to the
4.47 mark

++ the after noon high tide
rose to the 12.93 mark

++ the evening low tide
fell to the 5.05 mark

height
wind direction

Ctata June 10
1877

wind
force

clouds

1	14	82	SW	4	3
2	15	90	SW	5	9
+3	15	80	SW	4	9
+4	14	35	SW	4	9
5	12	03	SW	4	9
6	9	38	SW	5	10
7	6	87	W	5	10
8	5	17	W	5	10
+9	4	48	W	5	10
10	4	97	W	5	10
11	6	47	W	5	10
12	8	45	W	5	8
1	10	45	W	5	9
2	11	85	W	5	9
3	12	33	W	5	10
4	11	95	W	5	9
5	10	65	W	5	9
6	9	00	W	5	10
7	7	20	W	5	10
8	6	00	W	4	10
+9	5	67	W	4	10
10	6	35	W	4	10
11	8	03	W	5	10
12	10	20	W	4	10

xxx

xxx

xxx

Ice 70 inches thick
2 inches having gone off
the surface

North Greenland.

the early morning high
tide rose to the
16.00
mark

xx the fore noon low
tide fell to the
4.48 mark

xx the after noon high
tide rose to the
12 33 mark

xx the late evening
low tide fell to the
5.67 mark

Pale placed in ice
decaying winter is to day
2 inches out
ice measured 70 inches

North Greenland

Etah June 11 1917

feet	hundredths	wind	force	clouds
1	12 43	0	0	10
2	14 17	0	0	10
3	15 10	0	0	10
4	14 82	SW	2	10
5	13 47	SW	1	10
6	11 37	SW	1	10
7	9 00	0	0	10
8	6 50	0	0	10
9	5 20	0	0	10
10	4 77	0	0	10
11	5 35	SW	1	7
12	6 82	0	0	7
1	8 70	0	0	7
2	10 70	0	0	5
3	12 23	0	0	3
4	12 80	0	0	2
5	12 60	0	0	2
6	11 50	0	0	1
7	10 03	0	0	1
8	8 45	S	1	1
9	7 35	0	0	5
10	7 05	0	0	8
11	7 65	0	0	7
12	9 05	0	0	4

a little hazy

* morning high tide
stood on 15.10
mark

* the fore noon low tide
10 am fell to the 4.77
mark

xx the after noon high tide
rose to the 12.85
mark

xx the evening low tide
fell to the 7.05
mark

			E. Lake		1917	
feet	feet	feet	feet	feet	feet	feet
1	11	00	0	0	0	
2	12	93	0	0	0	
3	14	30	0	0	0	
4	14	87	0	0	0	
5	14	45	NE	1	0	
6	13	13	0	0	0	
7	11	07	0	0	0	
8	8	90	0	0	1	
9	6	93	0	0	1	
10	5	60	0	0	2	
11	5	25	W	2	3	
12	5	85	SW	3	4	
1	7	23	SW	4	4	
2	9	03	SW	4	2	
3	16	83	SW	4	2	
4	12	18	W	4	3	
5	12	80	W	4	2	
6	12	70	W	2	1	
7	11	80	W	2	1	
8	10	50	0	0	1	
9	9	20	0	0	0	
10	8	17	0	0	0	
11	7	75	0	0	0	
12	8	17	NW	1	0	

Utah
June 13

1917

	feet	hundredths			
1	9	10	NE	4	0
2	10	62	NE	4	0
3	12	15	NE	4	0
4	13	40	NE	5	0
5	13	84	NE	4	0
6	13	67	NE	4	0
7	12	60	E	4	0
8	10	95	E	4	0
9	9	03	E	4	0
10	7	25	E	5	0
11	6	05	E	5	0
12	5	75	E	5	0
13	6	27	E	4	2
14	7	57	E	4	5
15	9	35	E	5	8
16	11	15	E	5	9
17	12	55	SW	5	9
18	13	20	SW	2	9
19	13	35	SW	4	9
20	12	70	W	4	9
21	11	45	O	0	9
22	10	07	W	1	9
23	8	50	W	2	9
24	8	05	O	0	8

Very thin by hope
windward

North Greenland

Early
* the morning high tide
stood on the 13.90
mark

*
* the low tide fell to the
5.45 mark

*
* the evening high
tide rose to the
13.47 mark

	feet	inches	seconds	minutes	hours
1	8	05	0	0	1
2	8	55	0	0	0
3	10	60	0	0	0
4	10	73	0	0	0
5	11	95	0	0	0
6	12	55	0	0	0
7	12	70	0	0	0
8	12	20	SW	3	0
9	10	67	SW	4	0
10	8	90	SW	4	0
11	7	27	SW	2	0
12	6	33	S	1	1
1 ^{xx}	5	93	S	2	1
2	6	40	0	0	1
3	7	67	S	2	1
4	9	20	0	0	1
5	10	95	0	0	0
6	12	85	S	3	0
7	13	80	0	0	0
8 ^{xx}	13	93	0	0	0
9	13	40	0	0	0
10	12	15	0	0	0
11	10	65	SE	1	0
12	9	23	0	0	0

North Greenland

* the midnight low tide
stopped on the
7.98 mark

^{xx} the morning high tide
reached to the
12.93 mark

^{xx} the midday low tide
fell to the 5.93
mark

^{xx} the evening high tide
reached the 13.93
mark

Etah June 15 1917

		feet	inches	Wind	force	clouds
1		8	33		0	0
2	+	8	15	0	0	0
3		8	60	0	0	0
4		9	67	0	0	0
5		11	00	0	0	0
6		12	15	0	0	0
7		12	85	0	0	1
8	++	12	93	SW	1	1
9		12	23	SW	2	1
10		10	97	SW	1	1
11		9	35	0	0	1
12		7	95	0	0	1
1		6	77	SW	2	1
2	++	6	53	SW	3	1
3		7	07	SW	3	1
4		8	45	SW	3	1
5		10	35	N	1	0
6		12	40	E	4	0
7		13	43	E	4	0
8		15	00	E	4	0
9	++	15	23	E	4	0
10		14	60	E	4	0
11		13	10	E	5	0
12		11	35	SE	4	0

North Greenland

the early morning
low tide fell to the
8.13 mark

++ the morning
high water reached
the 12.9.5 mark

xx the afternoon low tide
fell to the 6.53
mark

xx the evening high tide
rose to the 15.23
mark

Etah June 16 1917

hour	feet	wind	force	clouds
1	9 60	NE	5	0
2	8 45	NE	5	0
3	8 07	NE	2	0
4	8 43	NE	5	0
5	9 43	NE	4	0
6	10 50	SW	3	0
7	12 05	W	1	0
8	13 05	SW	1	0
9	13 15	S	1	0
10	12 55	S	1	0
11	11 18	SW	1	0
12	9 45	SW	1	0
1	7 57	SW	4	0
2	6 50	SW	4	0
3	6 53	SW	4	0
4				
5				
6				
7				
8	15 15			
9	15 85	W	5	10
10	Took down the Tide			
11	Gauge			
12				

There is to go with these readings a report of the readings kept at North Star Bay at same time

North Greenland

The early morning low tide fell to the 8.07 mark

The fore noon high tide reached the 13 30 mark

The after noon low tide fell to the 6.53 mark

9 15 pm the high tide registered 15.85

Took down the tide gauge

Cetch June 17

North Greenland

Sunday

It may not be out of place to remark that the hole which I cut through the ice on June 10 the ice then measured 80 inches in thickness.

To day June 17 measured the ice at same hole but was not satisfied with it and took the measure from the bottom to the surface of the water found it to be 60 inches.

then cut another hole through with in 20 feet of it and found the ice measured from bottom to the water edge only 60 1/2 inches and 65 1/2 inches to top of ice.

this leads me to think that after the hole is cut through at the time that the ice begins to melt on the surface and runs down the hole it being more fresh I think it freezes at the bottom of

of the hole much as a spring of water coming up out of the ground on the winter time forming a mound around it the hole that is cut through becomes smaller at the bottom.

I mention this to show that correct measurement can not be depended on by keeping a hole open and taking the measure each day or period of days.

Thickness of the Harbor
Ice at Etah winter of 1916-17

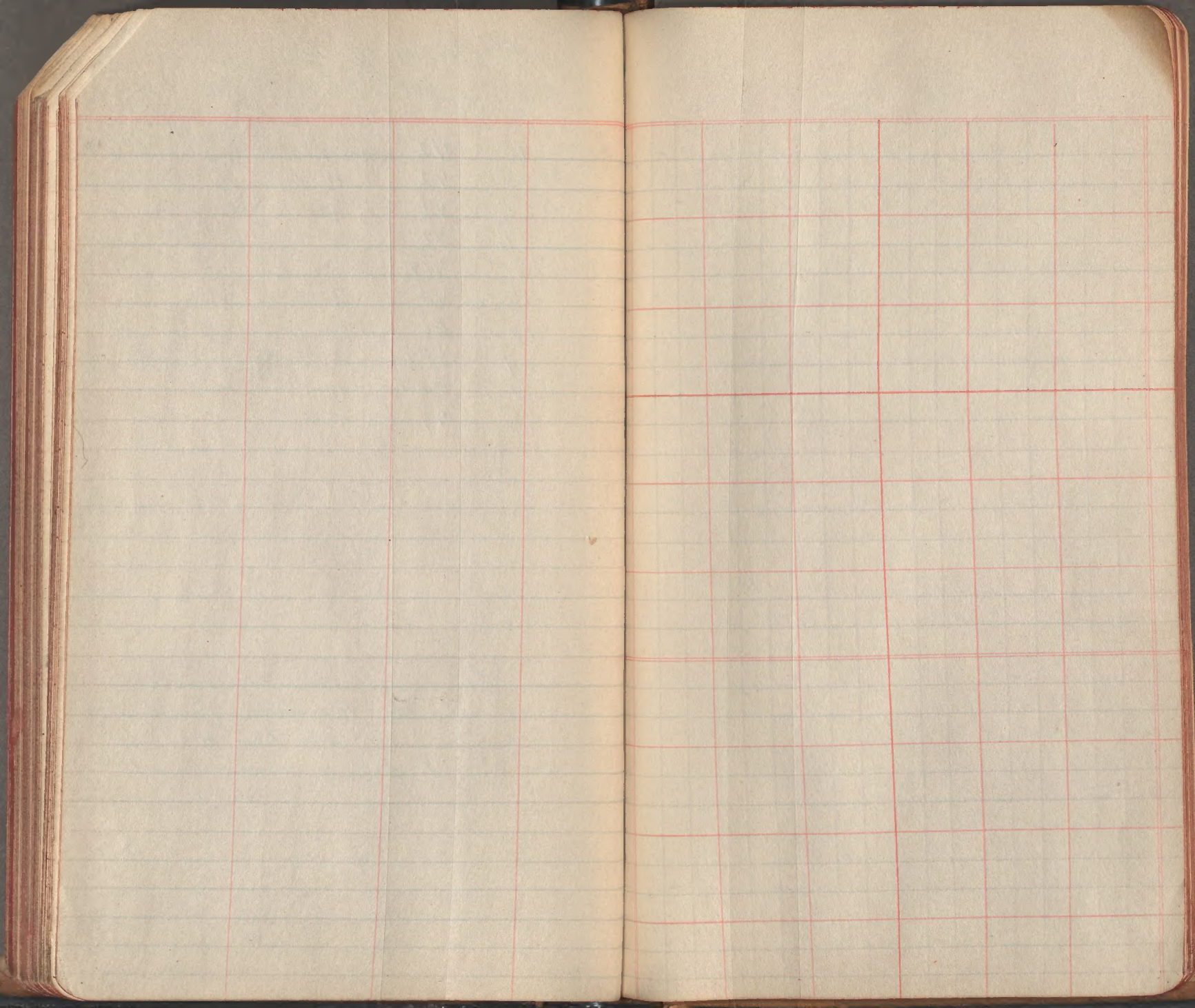
October 15	9	inches
" 22	13	"
" 29	17 1/2	"
November 5	20	"
" 12	21 1/2	"
" 19	22 1/2	"
" 26	25 1/2	"
December 3	29 1/2	"
" 10	32	"
" 17	35 1/2	"
" 24	38	"
" 31	40 1/2	"
January 7	45	"
" 14	48	"
" 21	50	"
" 28	52	"
February 4	52	"
" 11	54 1/2	"
" 18	56 1/2	"
" 25	58	"
March 4	60 1/2	"
" 11	61	"
" 18	64	"
" 25	65	"
April 1	66 1/2	"
" 8	69 1/2	"
" 15	71	"
" 22	72	"
" 29	72	"

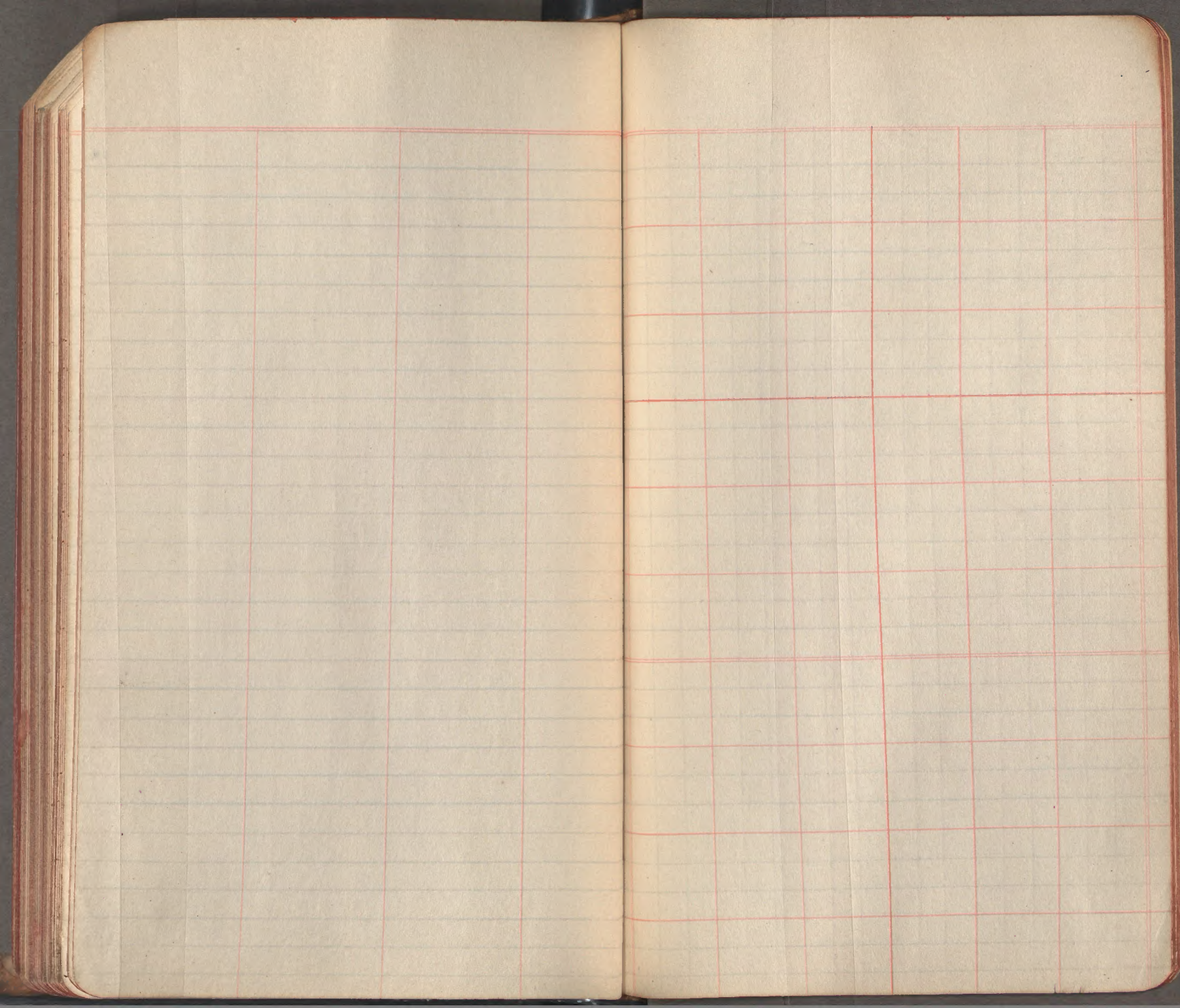
Thickness of Harbor Ice
continued

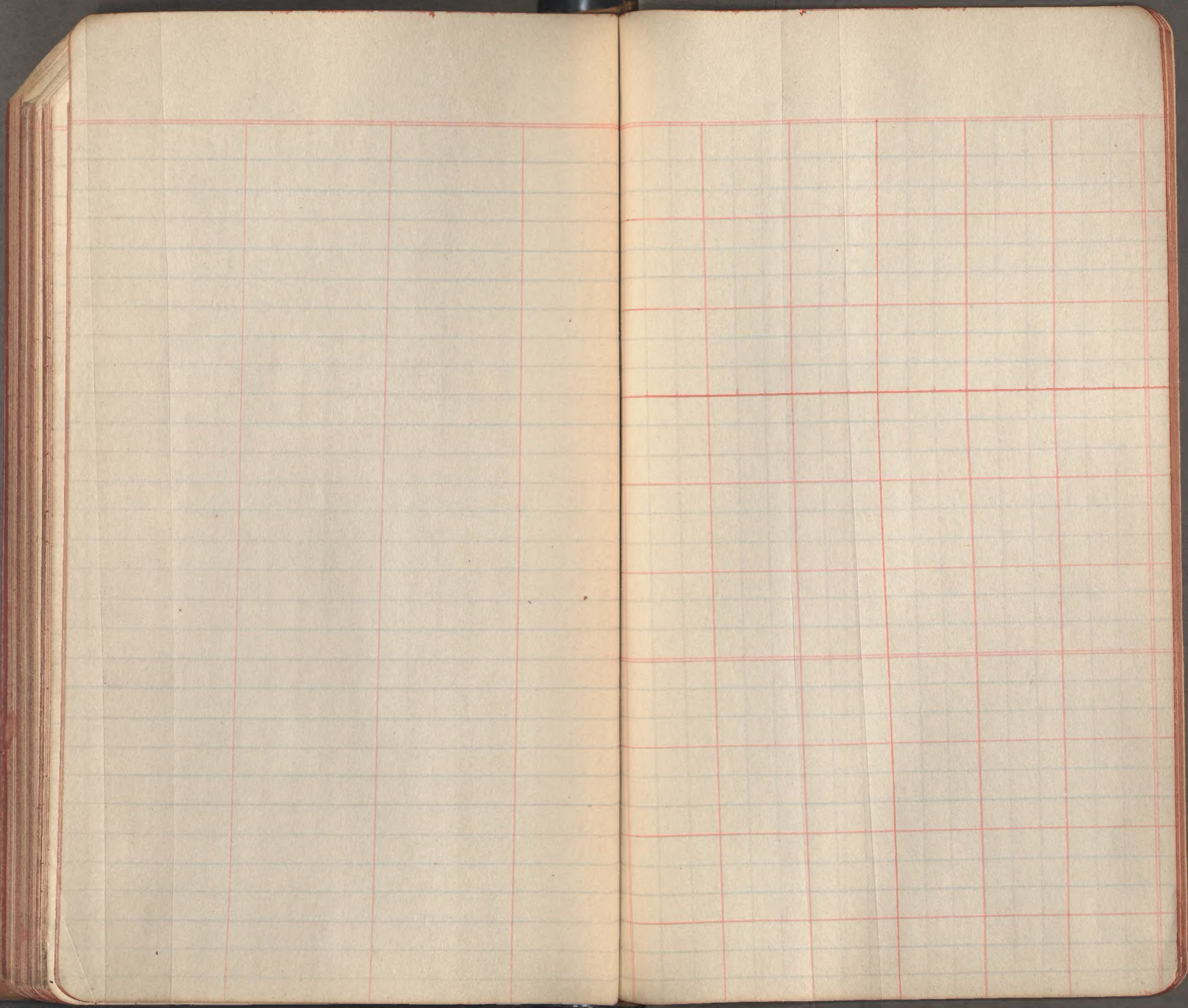
May 6	72	inches
" 13	72	"
" 20	72	"
" 27	72	"
June 3	71 1/2	"
" 10	70	"
" 17	65	"
" 24	58 1/2	"
July 1	52 1/2	"
" 8	49	"

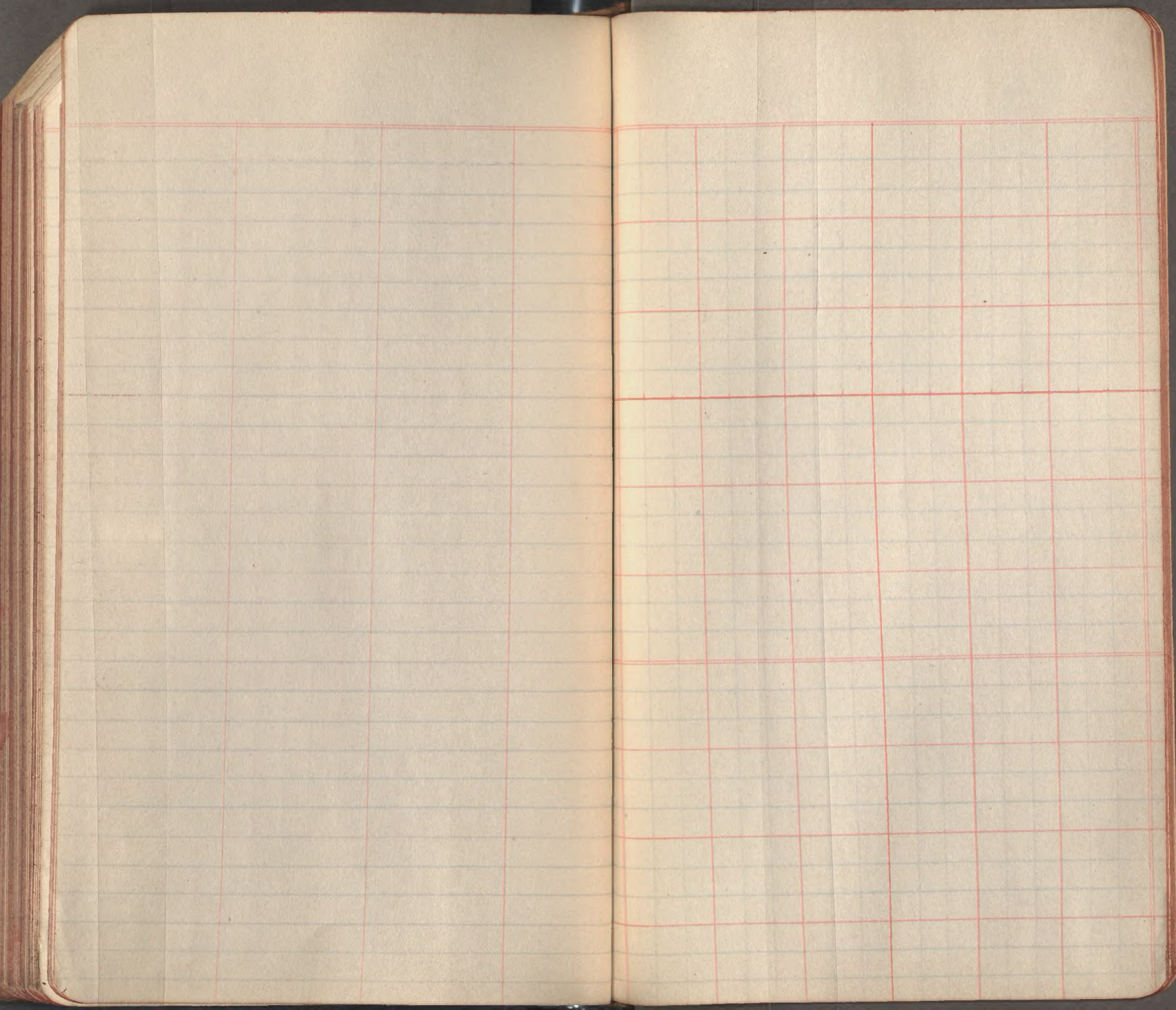
the decrease in thickness
is due to the melting
of the surface ice
which nothing up to
the present time has
melted from the lower
part of the ice

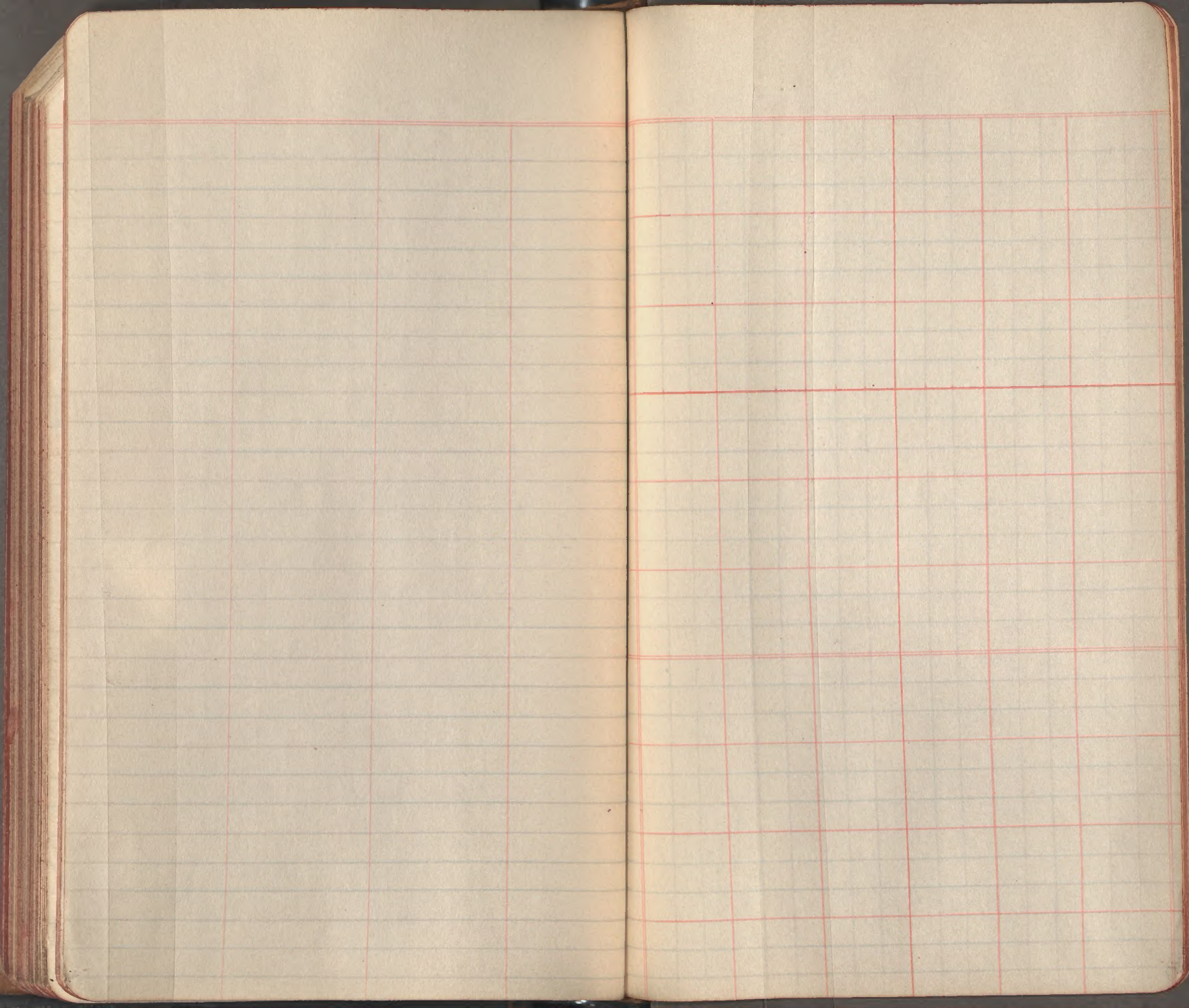
So far as the usefull
part of the Harbor for vessels
is concerned the ice went out
the 20 of June.

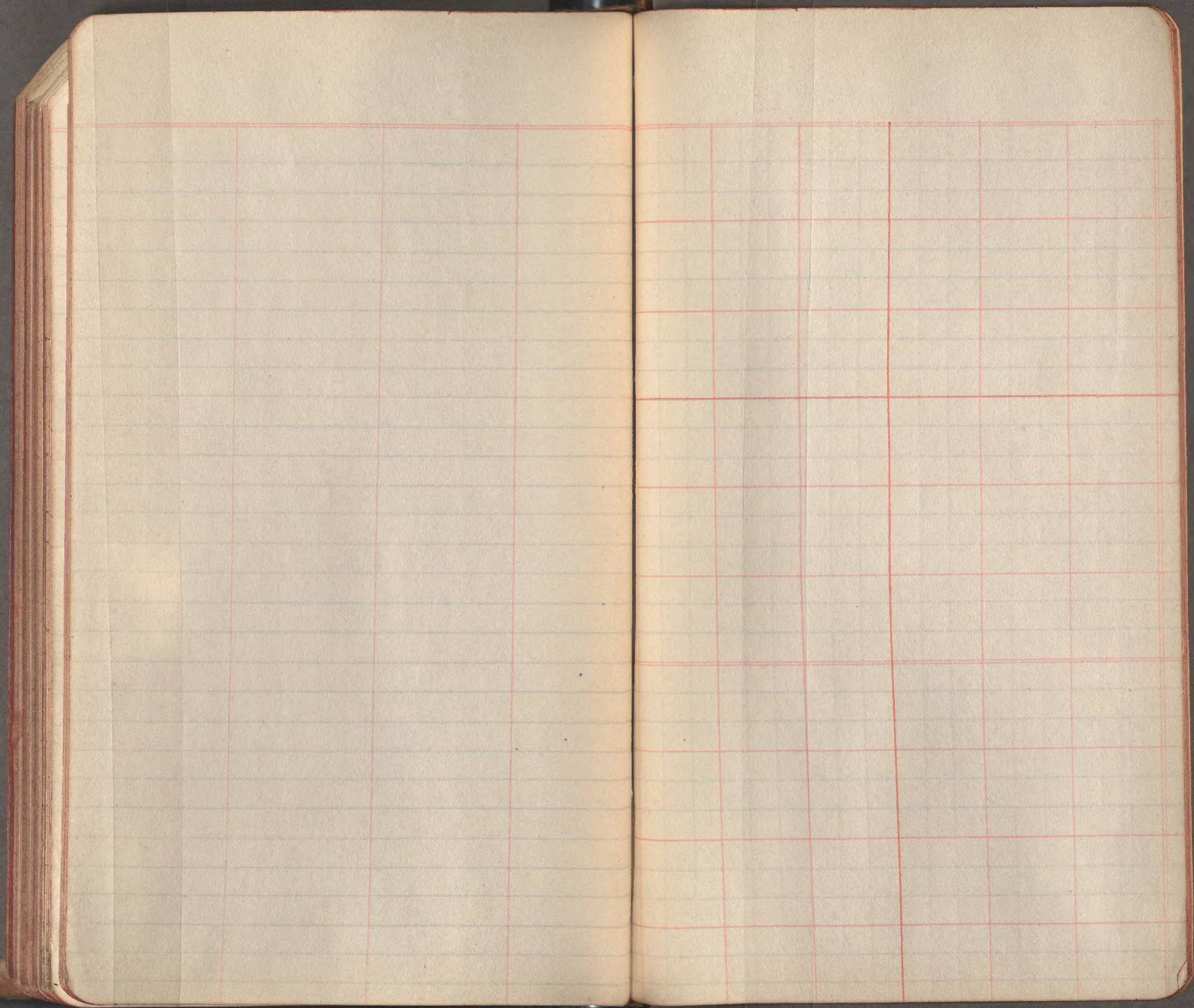


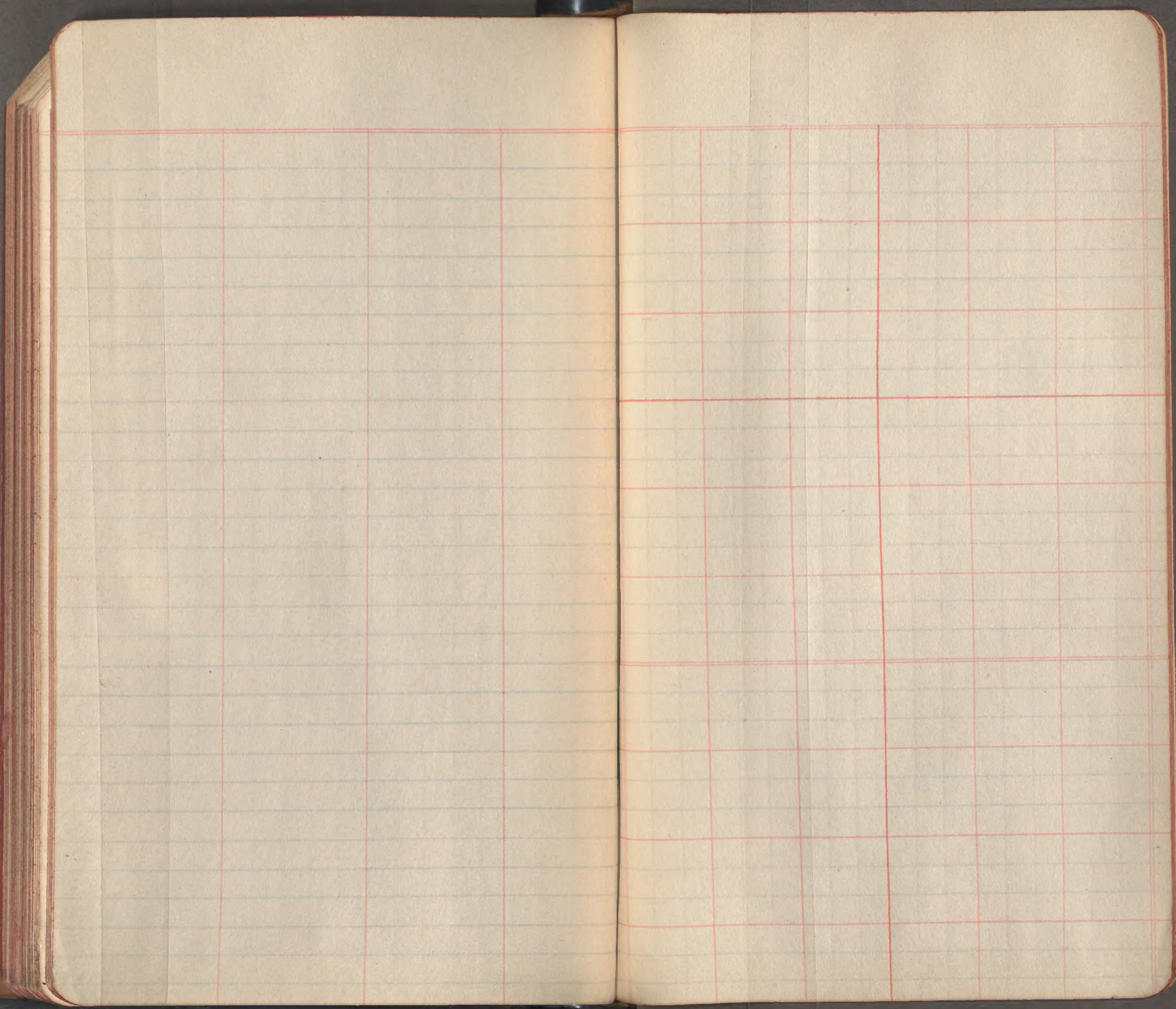


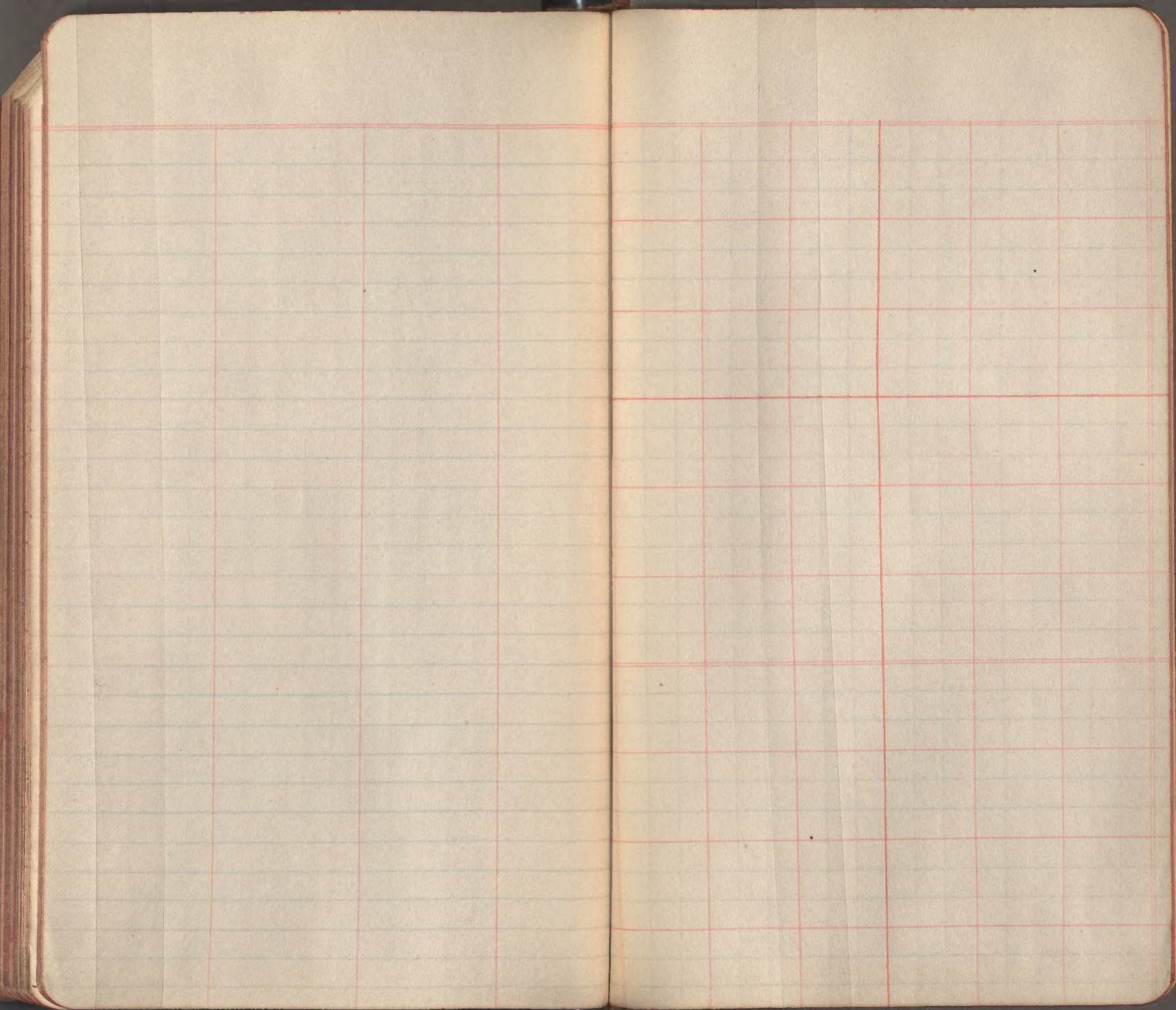


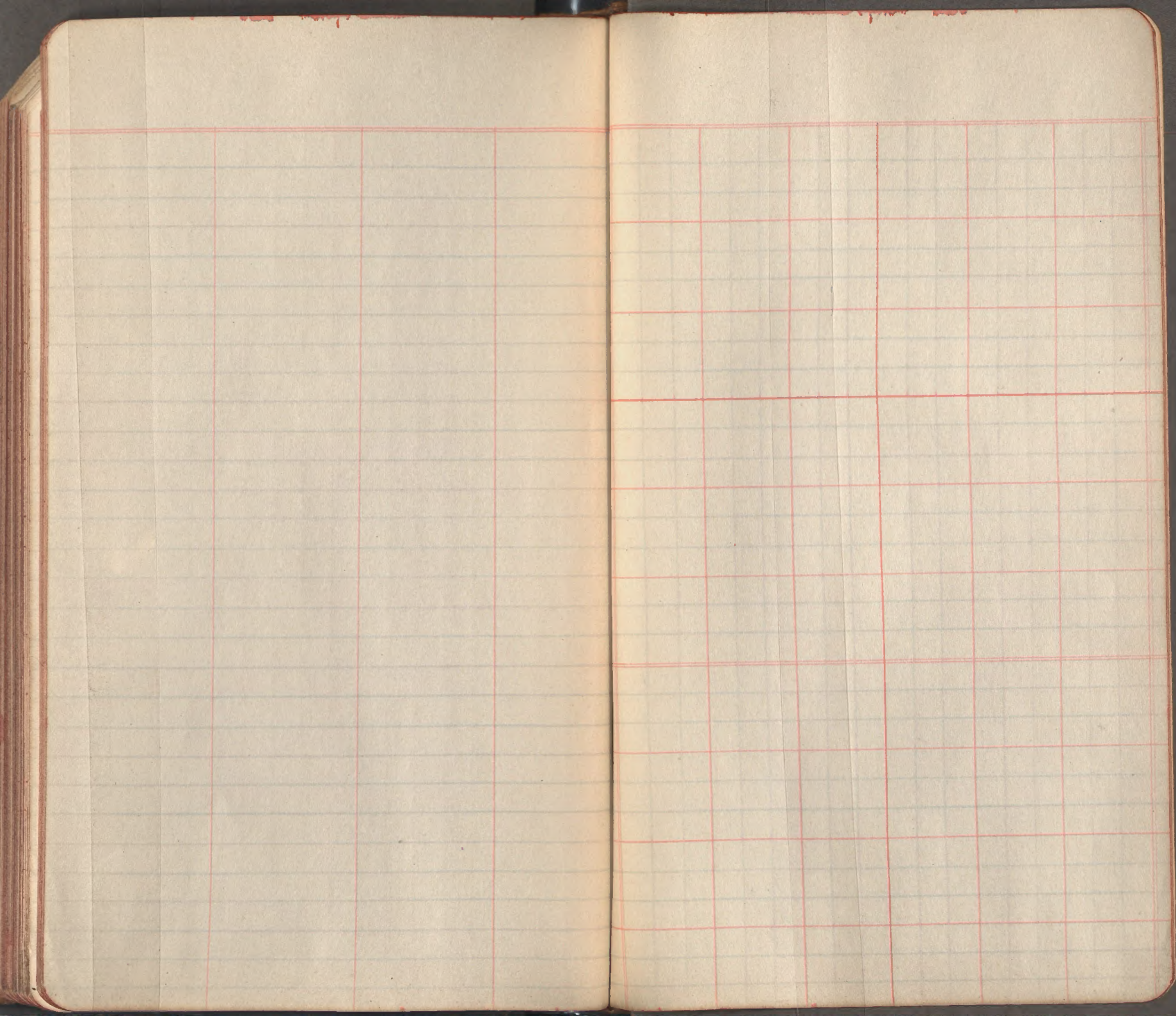


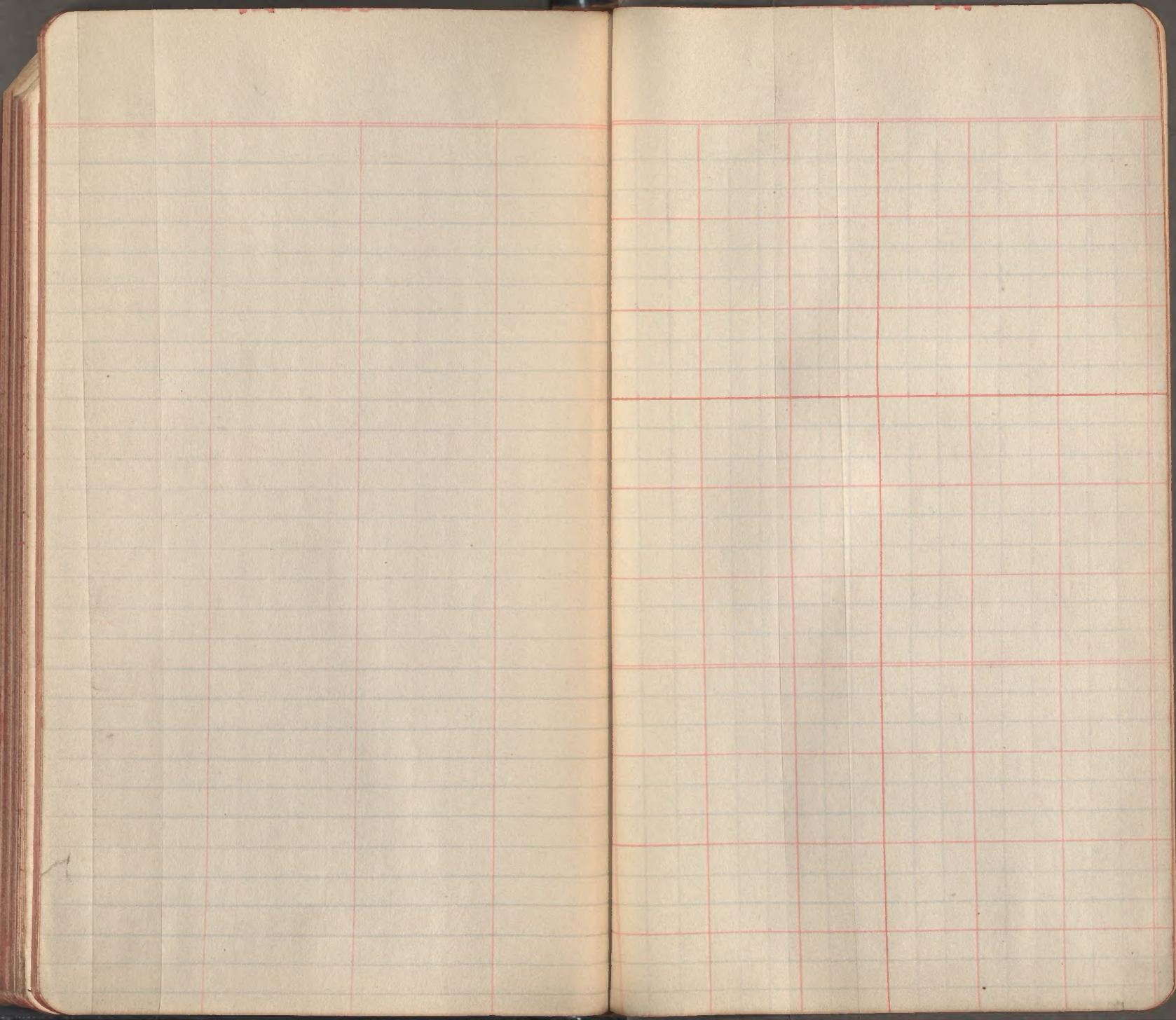


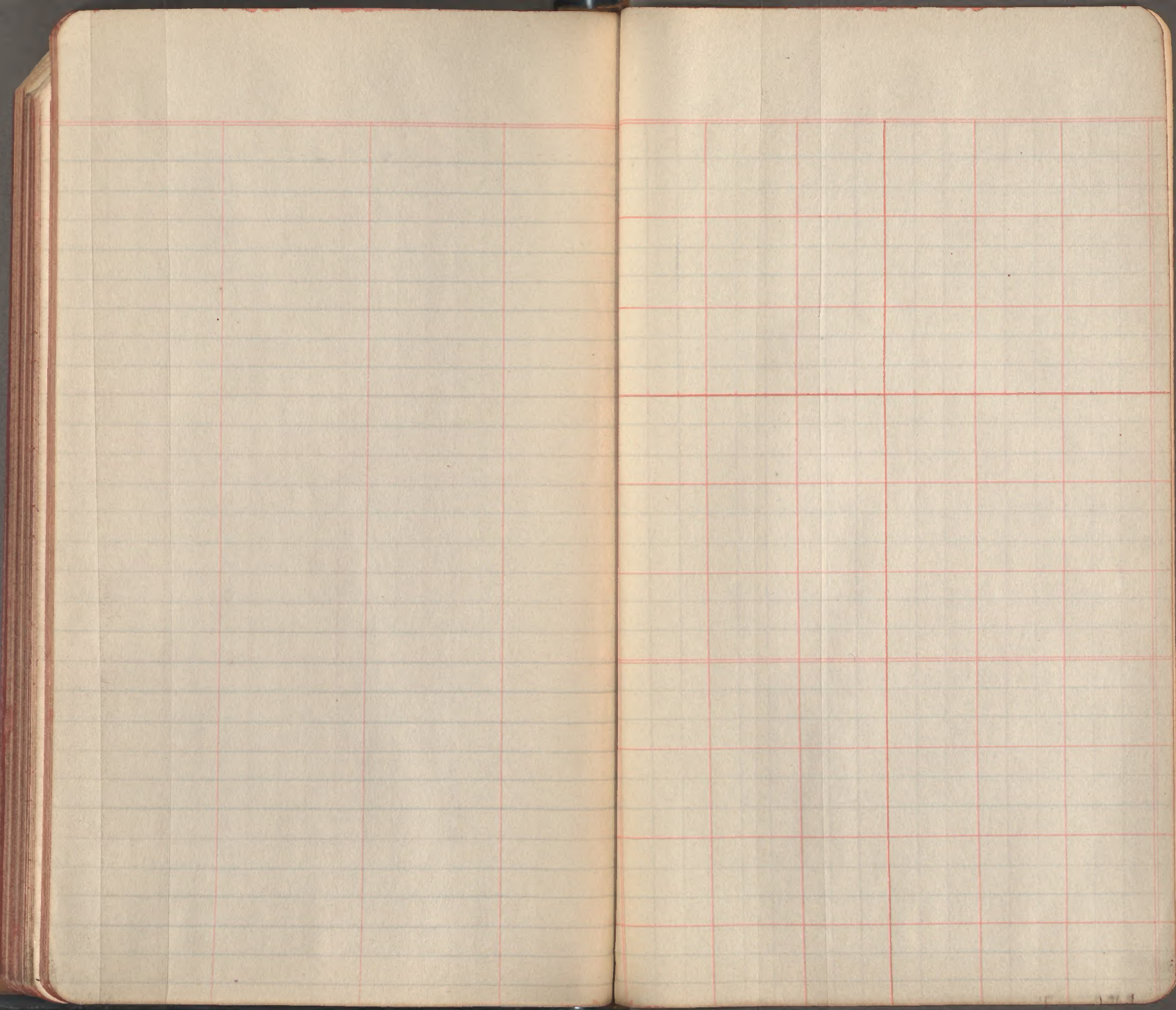


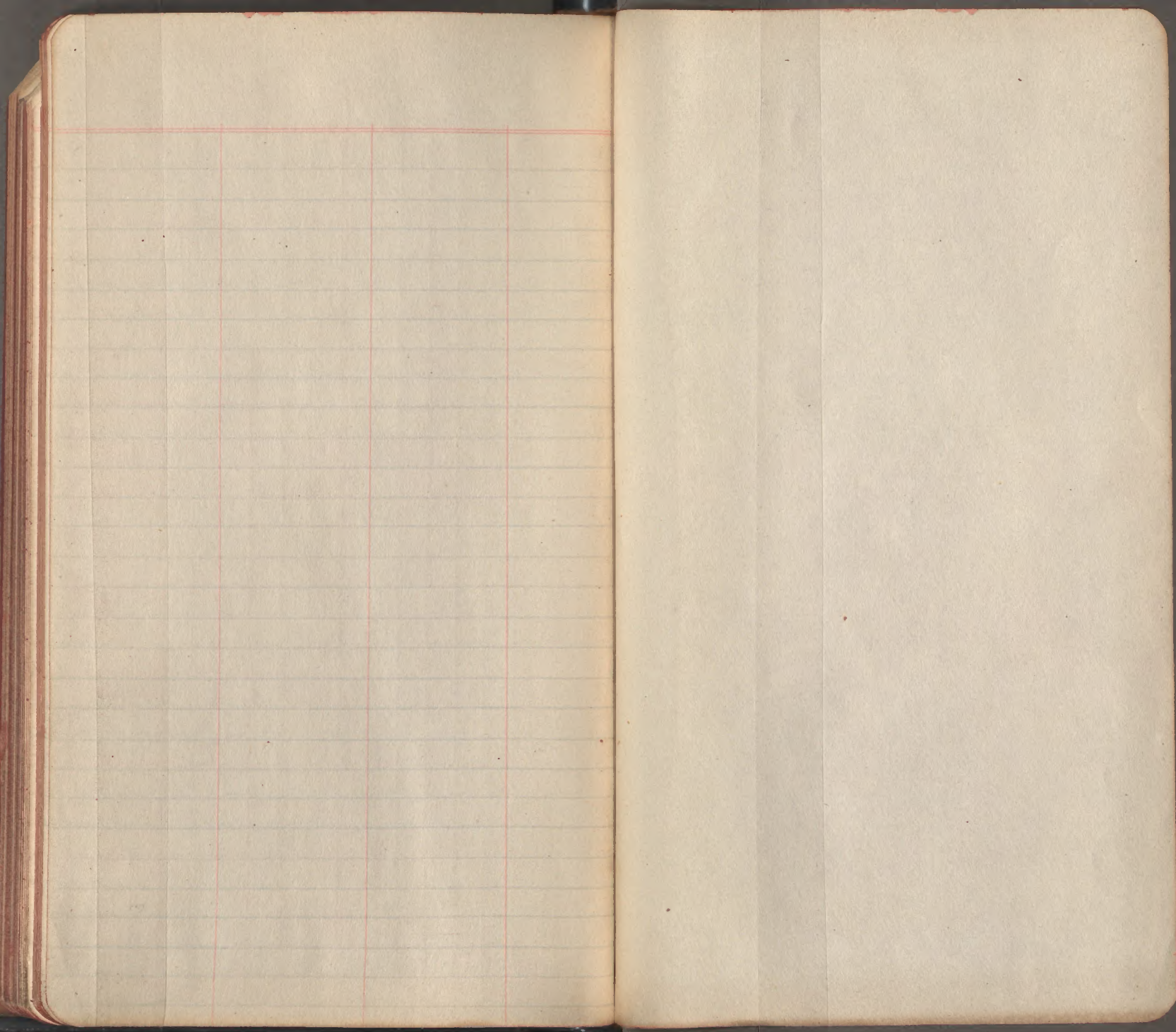












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