

San Diego

Sewerage

1887 - 1888

9

TRANSIT

F.B. 713

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

Minutes.	Lks.	Minutes.	Lks.	Minutes.	Lks.
1	2½	21	49	41	95½
2	4½	22	51½	42	98
3	7	23	53½	43	100½
4	9½	24	56	44	102½
5	11½	25	58½	45	105
6	14	26	60½	46	107½
7	16½	27	63	47	109½
8	18½	28	65½	48	112
9	21	29	67½	49	114½
10	23½	30	70	50	116½
11	25½	31	72½	51	119
12	28	32	74½	52	121½
13	30½	33	77	53	123½
14	32½	34	79½	54	126
15	35	35	81½	55	128½
16	37½	36	84	56	130½
17	39½	37	86½	57	133
18	42	38	88½	58	135½
19	44	39	91	59	137½
20	46½	40	93½	60	140

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Table for Running on Slopes.

In the following table the first column shows the angle, the second, the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle.	Cor. in links	Angle.	Cor. in links.	Angle.	Cor. in links.	Angle.	Cor. in links.
°		°		°		°	
4	0-24	11	1-88	18	5-14	25	10-54
5	0-38	12	2-24	19	5-76	26	11-26
6	0-55	13	2-63	20	6-42	27	12-24
7	0-76	14	3-06	21	7-11	28	13-57
8	0-98	15	3-53	22	7-85	29	14-34
9	1-24	16	4-02	23	8-64	30	15-47
10	1-55	17	4-56	24	9-47	35	22-07

with  
Repl. <sup>to</sup> January 25<sup>th</sup> 1888

Car No 6524

from Gladding McBean & Co

139 10<sup>·</sup> Pipi

Imperfect

7 10<sup>·</sup> Pipi

Extra  
Rept. etc

January 25, 1888

Car No 4250

from Gladding, McBean & Co

63 24" Pipe  
156 6" Pipe  
6 6 1/2 "

Imperfect.

17 24" Pipe 12 broken  
1 6" Pipe

Extra  
Rept.

January 25<sup>th</sup> 1888

1

Car No 1431

from Gladding, McBean & Co

526 8" Pipe  
14 8 1/4 "  
7 6 1/4 "  
1 12 1/2 "  
1 12 x 8 "  
3 12 x 12 "

2 8 1/4 " short.

End  
Repl'd  
January 28 1888

C. St. Wilmington

from Tracy Bros + Co

1/2 10 + 4 2/3'

several broken after placed on ditch  
13<sup>th</sup> Street

End  
Repl'd  
Jan 28 1888

2

Car no 3384

from Gladding McLean Co

68 2 1/2' Pipe  
120 6' Pipe  
19 6 1/4"  
1 2 1/2' split Pipe

Imperfect

12 2 1/2' Pipe 10 broken

Encl  
Repl'd  
January 28 1888

Car No 6182

from Gladding McBean & Co

499 6' Pipe

36 2 1/2' Pipe

Encl  
Repl'd  
January 28 1888

3

Car no 974

from Gladding McBean & Co

36 2 1/2' Pipe

388 6' Pipe

89 6' Pipe  
to Coronado Beach Co

Imperfect

1 6' Pipe broken

Entered  
Revised January 28, 1888

Car no 2640

from N Clarke & Co

188	12	Pipe
56	6	Pipe
45	8	Pipe
10	6 1/2	y
10	8 1/8	reverse
10	8 1/2	y
1	12 1/2	y

Imperfect

12	12	Pipe 3 broken
1	6	Pipe

Entered  
Revised January 31, 1888

Car no 4542

from Gladding McBean & Co

56 1/2	6	Pipe
15	2 1/2	Pipe
190	6 1/2	y

Imperfect

2	6	Pipe
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advs  
1888  
6.2.88

February 1<sup>st</sup> 1888

with  
Rehler

Car No 4010

from Gladding, McBean & Co

80 2<sup>nd</sup> Pipe  
168 6<sup>th</sup> Pipe

Imperfect Pipe

4 2<sup>nd</sup> Pipe

with  
Rehler

per S. W. Elder  
c/o J. S. Buck

8 8<sup>th</sup> 6 reducers.  
from Tracy Bros.

advs  
1888  
6.2.88

February 6<sup>th</sup> 1888

5

Car No 472

from N. Clark & sons

✓ 440 6<sup>th</sup> Pipe  
" 87 6<sup>th</sup> to Buck  
42 6<sup>th</sup> to Coronado B.C.

✓ 47 6<sup>th</sup> 6 2<sup>nd</sup>

✓ 64 6<sup>th</sup> 4 2<sup>nd</sup>

Imperfect Pipe

31 6<sup>th</sup> Pipe

3 6<sup>th</sup> 6 2<sup>nd</sup>

3 6<sup>th</sup> 4 2<sup>nd</sup>



admd by C. E. S. D. Feb 21 1888  
 February 1888

Car No 2502

from Clark & Sons

Unloaded by C. E. S. Dunlop  
 at 22<sup>nd</sup> St Depot

531	6	Pipe	
7	6	Pipe	Bad
11	6	Y	reverse
1	6	Y	Bad
92	6	Y	
1	6	Y	Bad

2 6x6

14 6x6

2 6x6

to yard

Mar 21 88

Unld Replk

42

110

250

129

531

10th

10th

L & M

India

Unld Replk

Feb 28 88

admd by C. E. S. D. Feb 21 1888  
 February 1888

6

Unld Replk Car No 40643

from Gladding, McLean & Co

Unloaded by C. E. S. Dunlop  
 at 22<sup>nd</sup> St Depot

405	6	Pipe	
3	6		Bad
9	6		Short

300 ft 30362

26 2<sup>nd</sup> 1/2

70

220 2<sup>nd</sup> 1/2

98

100

150 2<sup>nd</sup> 1/2

664

3

667

advs  
by Ch. S. D  
February 12 1888

with  
Repts. Car no 3663

from Gladding McLean & Co

Unloaded by C. E. Dunlevy  
at 22<sup>nd</sup> St Depot

666 6" Pipe

122 4<sup>th</sup>

138 5<sup>th</sup>

220 2<sup>nd</sup>

150 2<sup>nd</sup>

46

666

with  
Repts. February 10 88

Car no 4521

from Gladding McLean & Co

81 2<sup>nd</sup> Pipe  
122 6 Pipe  
21 8<sup>th</sup> of reverse

Imperfect Pipe

3 2<sup>nd</sup> Pipe  
4 6 Pipe

Entered  
Revised  
February 10 88

Car no 2882

from Gladding, McBean & Co

326	10	Opie
30	10+4	y
16	12x 6	y

Entered  
Revised  
Feb 12 88

8

per City of Pueblo

Jan 7. S P des

14	10+6	y
14	10+8	y

Gold  
Replish Feb 15 88

Car No 1830

from Gladding McBeane Co

481 6 Pipe  
24 2 1/2  
4 2 1/2 + 6

Imperfect

4 6 Pipe  
3 2 1/2 Pipe

Gold  
Replish Feb 14 88

Car No 8964

for Gladding McBeane Co

264 6 Pipe  
132 8 Pipe  
406 6 + 4 2 1/2

Imperfect

1 8 Pipe  
10 6 + 4 2 1/2

9

Grid  
Repl  
Feb 17 88

Car No 10398

for Gladding, McBean

34 2 1/2" Pipe

1 2 1/2" 12 y

535 6 Pipe

Imperfect

1 2 1/2" Pipe

3 6 Pipe

Grid  
Repl  
Feb 18 88

10

Car No 8302

for Gladding, McBean

44 2 1/2" Pipe

43 6 Pipe

Imperfect

5 2 1/2" Pipe

Entl  
Repl<sup>l</sup>ch

Feb 20 88

Car No 4182

To Gladding McBean

78 2 1/2" Pipe  
128 6" Pipe

Imperfect

6 2 1/2" Pipe

Entl  
Repl<sup>l</sup>ch

Feb 22 88

Car No 8508

To Gladding McBean

~~348~~ 574 8' Pipe  
96 8 1/4"  
25 6 1/2" Reducers

40  
65  
58  
80  
82  
70  
50  
71  
578  
1156

Imperfect

1 8 1/4"

~~54~~ 8' Pipe short

Sold Feb 23 88  
Rehl  
G. W. Elder

for San Fran S.P. Ans

46 2 1/2 Pipe  
841 6 Pipe  
= 80 6 Pipes to S.S. Buck

Imperfect

2 2 1/2 Pipe  
13 6 Pipe

= 811  
80  
13  

---

904 6 Pipes

Sold Feb 27 88  
Rehl  
Car No 8000

12

for Gladding, McLean

84 2 1/2 Pipe  
71 6 Pipe

Sold  
Repl

March 2<sup>nd</sup> 1888

G. W. Elder

from San Juan Sewer Pipe Co

402 6" Pipe  
63 6 1/4" 2" Pipe  
24 7 1/4" Pipe

Imperfect

10 6" Pipe  
1 6 1/4" 2" Pipe  
2 7 1/4" Pipe  
8 6" Pipe short

Sold  
Repl

March 4<sup>th</sup> 1888

car no. 3024

from Bladney McKeand Co

31 7 1/4" Pipe  
542 6" Pipe

Imperfect

2 7 1/4" Pipe cracked  
~~broken in both~~



Emil  
Rep  
March 4<sup>th</sup> 1888

Car No 4832

from Gadding, McBean & Co

31 3/4 Pipe  
6 8 Pipe  
530 6 Pipe

Imperfect

2 3/4 Pipe broken Ball  
5 6 Pipe

2 3/4 Pipe used  
11 1/2 for Manholes  
over 10. 88

---

Emil  
Rep  
March 10 1888 14

Car No 1378

from Gadding, McBean & Co

384 8 Pipe  
38 8 1/4 Y  
123 6 1/2 Y

Imperfect

2 6 1/4 Y

Ins  
Repl

March 14 88

per G. W. Elder

From Gracey Bros & Co

~~348~~ ~~383~~ 15" Pipe  
 61 ~~65~~ 15 7/8" " "  
 14 15 1/2" Pipe 2 1/2"  
 191 8" Pipe

From S of Sewer Pipe Assn

Ins  
Repl  
340 8" Pipe

Imperfect

6 8" Pipes short

March 14 88

per G. W. Elder

From Gracey Bros & Co

Imperfect Pipe

26 15" Pipe  
 1 " " short  
 3 15 7/8" "  
 2 " " short  
 2 15 1/2" Pipe short  
 2 8" Pipe  
 6 8" short

Imperfect 15" Pipe

25 15" Pipes  
 4 15 7/8" "

---

= 57 bad  
of 70

Weld  
Repl  
hh

March 17 88

per G. W. Elden

from N. Clark & Sons

1483	6	Pipe
95	24	Pipe
1	24	b y
89	6	r u y
42	6	r b y

Imperfect Pipe

30	6	Pipe
11	6	(Short)
16	24	
2	6	r u y

Weld  
Repl  
hh

March 17 88

per City of Puebla & Bonitos

from N. Clark & Sons

113	24	Pipe
1	24	r u y
1	24	r b y
2824	6	Pipe
244	6	r u y
10	6	r b y

Imperfect Pipe

8	24	Pipe
40	6	Pipe
8	6	r u y

Encl  
Repl bks

March 17 88

for City of Puebla + Bonita

from Tracy Bros & Co

435 8" Pipe  
49 8x4 Y

Imperfect Pipe

4 8" Pipe

Encl  
Repl bks

Mar 21 88

Car No 2996

from Gladding McBean & Co

36 2 1/2" Pipe  
1 2 1/2 to 1 1/2 reducer  
85 8" Pipe  
39 1/2 6" Pipe

Imperfect

4 6" Pipe broken

March 30 88

Car no 4700

Ends for Gladding McBean  
Reel  
35 2 1/2" Pipe

1 Imperfect  
2 1/2" Pipe

March 30 88

18

Car no 1584

Ends for Gladding McBean  
Reel  
35 2 1/2" Pipe

1 Imperfect  
2 1/2" Pipe

Ent'd  
Rep'd  
March 30 88

Car No 1728

for Gladding McBean

35 24" Pipe  
511 6" Pipe  
20 6" u y

Imperfect

1 24" Pipe  
4 6" Pipe

Ent'd  
Rep'd  
March 30 88

19

per Wilmington

for K. Clark & Sons

1449 6" Pipe  
235 6" u y  
9 24" Pipe

Imperfect

18 6" Pipe broken  
164 6" " short  
4 6" u y broken  
1 24" Pipe broken

14 8" u y }  
98 8" Pipe } not sent

Entered  
Rep'd March 30 88  
per Santa Rosa

K Clark & sons

67 2 1/2" Pipe  
108 6" Pipe

Imperfect

8 2 1/2" Pipe broken

Entered  
Rep'd April 7th 1888  
per Santa Cruz

20

K Clark & sons

72 2 1/2" Pipe  
1032 6" Pipe  
454 8" Pipe  
30 8+4 y  
104 6+4 y

Imperfect

~~5~~ 2 1/2" Pipe  
92 6" broken school  
62 8"  
4 8+4 y

7 6+4 y etc

Gold  
Refined April 7 1888

per City of Puebla

San Francisco Silver Pipe Assay

55	24	Pipe
1320	6	Pipe
333	8	Pipe
13	24	4

Imperfect

2	24	Pipe
55	6	1 broken short
31	8	" "

Gold  
Refined April 1 88

Car No 1384

Grading McBean & Co

464	6	Pipe
10	6	4

8 per 6 Pipe over



with  
Rep  
April 1 88

Car No 4700

Gladding McBean & Co

507 6' Pipe  
19 6+4 24

Imperfect

6 6' Pipe  
1 6+4 24

with  
Rep  
April 4 88

22

Car No 8670

Gladding McBean & Co

42 24 Pipe  
661 6 Pipe  
33 6+4 24  
8 10' 1/2 Split Pipe  
4 12 1/2

Imperfect

26 6 Pipe  
1 6+4 24

with  
Replish April 6 88

Car No. 2793

Gladding McBean & Co

60 2 1/2" Pipe  
188 6 Pipe

Imperfect

6 6" Pipe

with  
Replish April 4 88

Stm Queen

R Clark & Sons

44 6 6" Pipe  
30 2 1/2" Pipe

Imperfect

8 6" Pipe  
4 2 1/2" Pipe

Apr 1 88

per Wilmington

R Clark & sons

108 6 Pipes

left out of shipment  
sent by Santa Rosa  
with 2 1/2 Pipes

reported with Santa Cruz shipment

Cancelled  
Reported  
as arrived  
on the Santa Rosa

also  
375 par  
Entered  
Repl'd

Apr 27 88

124

car no 3486

Gladney M Chan

35 2 1/2 Pipes

1 2 1/4 15 4

505 6 Pipes

14 6 1/4 2

Imperfect

4 6 Pipes

1 6 1/4 2

4/13/58  
C. W. P. A.  
M. L.  
Repl. M.

April 13th 58

Stn Santa Rosa

to Clark & Sons

916 8' Pipe

45 24' Pipe

28 6' 6" y

357 6' 4" y

Imperfect

57 8' Pipe

15 24' Pipe

2 6' 6" y

3 6' 4" y

April 13 58

C. W. P. A.  
M. L.  
Repl. M.

Car No 516 SP

Gladwin, M. C. Bean & Co

716 6' Pipe

26 8' 8" y covers

Imperfect

17 6' Pipe

Entered  
Revised

April 13 88

Car No 33781 N.P.

Gladding McBean & Co

31 2" Pipe

4 2 1/2" Y

5 2 1/2" 6" Pipe

Imperfect

1 2 1/2" Y  
21 6" Pipe

26

Entered  
Revised  
April 13 88

Car No 33032

Gladding McBean & Co

36 2 1/2" Pipe

4 6" Pipe

2 6 1/2" Y

Imperfect

9 6" Pipe  
13 6 1/2" Y

Encls  
Repts  
April 13 88  
Shim Puebla

San Juan S. P. Assn

208 6+4 y  
643 8" Pipe  
90 24" Pipe

Imperfect

24 8" Pipe  
4 6+4 y  
11 24" Pipe

27

Encls  
Repts  
Apr 16 88

Queen of the Pacific

San Juan S. P. Assn

61 24" Pipe  
503 8" Pipe  
12 6+4 y  
703 6+4 y

Imperfect

10 24" Pipe  
9 8" Pipe  
7 6+4 y

Encl  
Repl

Apr 20 88

San "Santa Rosa"

San Francisco Lower Pipe Area

30	2u	Pipe
1149	8	Pipe
145	8+u	4
57	6+u	4

Imperfect

4	2u	Pipe
114	8	Pipe
3	8+u	4
2	6+u	4

Encl  
Repl

Apr 20 88

28

Car No 4046 C.P.

Gladney M<sup>e</sup> Bean

508	6	Pipe
36	2u	Pipe
10	6+u	4

Imperfect

10	6	Pipe
----	---	------

Ent'd  
Repl'd

Apr 20 88

Car 1687 514+54

Gladding, McBean & Co

36 24 Pipe  
507 6 Pipe  
10 674 24

Imperfect

8 6 Pipe

29

Ent'd  
Repl'd

Apr 21 88

Car 11002

Gladding, McBean

9 24 Pipe  
467 6 Pipe  
198 674 24

Imperfect

3 24 Pipe  
4 6 Pipe  
2 674 24



End  
Repl  
Apr 21 88

per Stms Treen

from Clark & Sons

24 2 1/2 Pipe  
31 1/2 8 Pipe

Imperfect

2 2 1/2 Pipe  
5 8 Pipe

End  
Repl  
Apr 25 88

per Car No 33952

Gladling & Bean

14 1/2 6" Pipe  
26 8 1/2 "

Imperfect

5 6" Pipe  
2 8 1/2 "

Entered  
Rehls  
Apr 25 88

City of Puebla

R Clark & sons

64 2" Pipe  
646 8" Pipe  
15 24" 4

Imperfect

4 8" Pipe

Entered  
Rehls  
Apr 25 88

31

Car No 6307

Gladding McBean

578 6" Pipe  
400 6" 4

Imperfect

13 6" Pipe

Emld  
 Repl<sup>sh</sup> Apr 26 88  
 for thru Santa Rosa

San Juan Pipe Assn

93 2 $\frac{1}{2}$  Pipe  
 13 8 $\frac{1}{2}$  b up

Imperfect

1 2 $\frac{1}{2}$  Pipe =

Emld  
 Repl<sup>sh</sup> May 1 88

H Clark & sons

35 2 $\frac{1}{2}$  Pipe  
 4 2 $\frac{1}{2}$  rejected after repaired

31

2 2 $\frac{1}{2}$  b up

1 2 $\frac{1}{2}$  b up

Reselected from rejected  
 Pipe and repaired

Sold May 1 88  
Replish

Gladding, McBean & Co

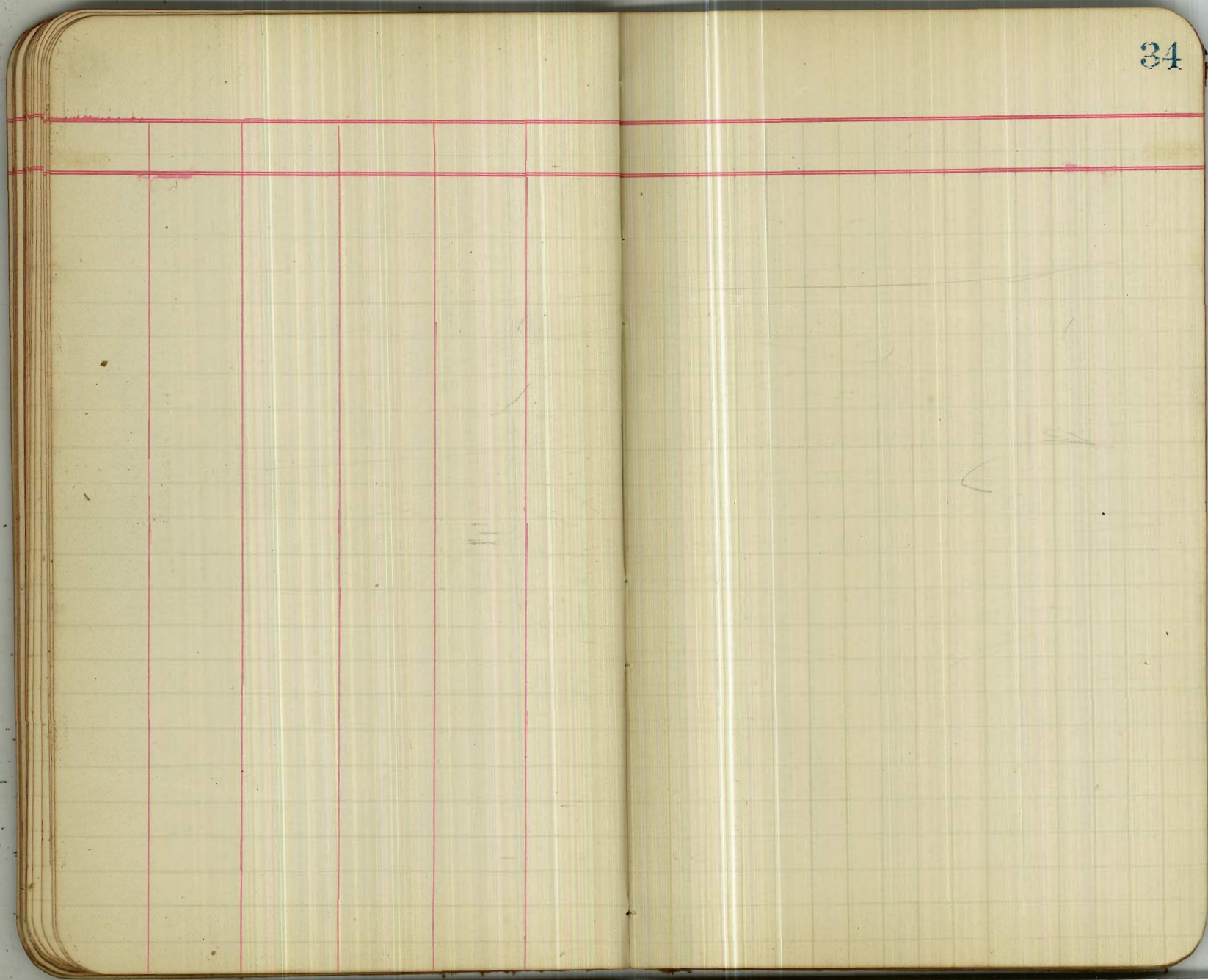
15 2 1/2' Pipe

1 2 1/2' rejected after rep'd

14

1 2 1/2' sp'

rejected from rejected  
Pipe and repaired

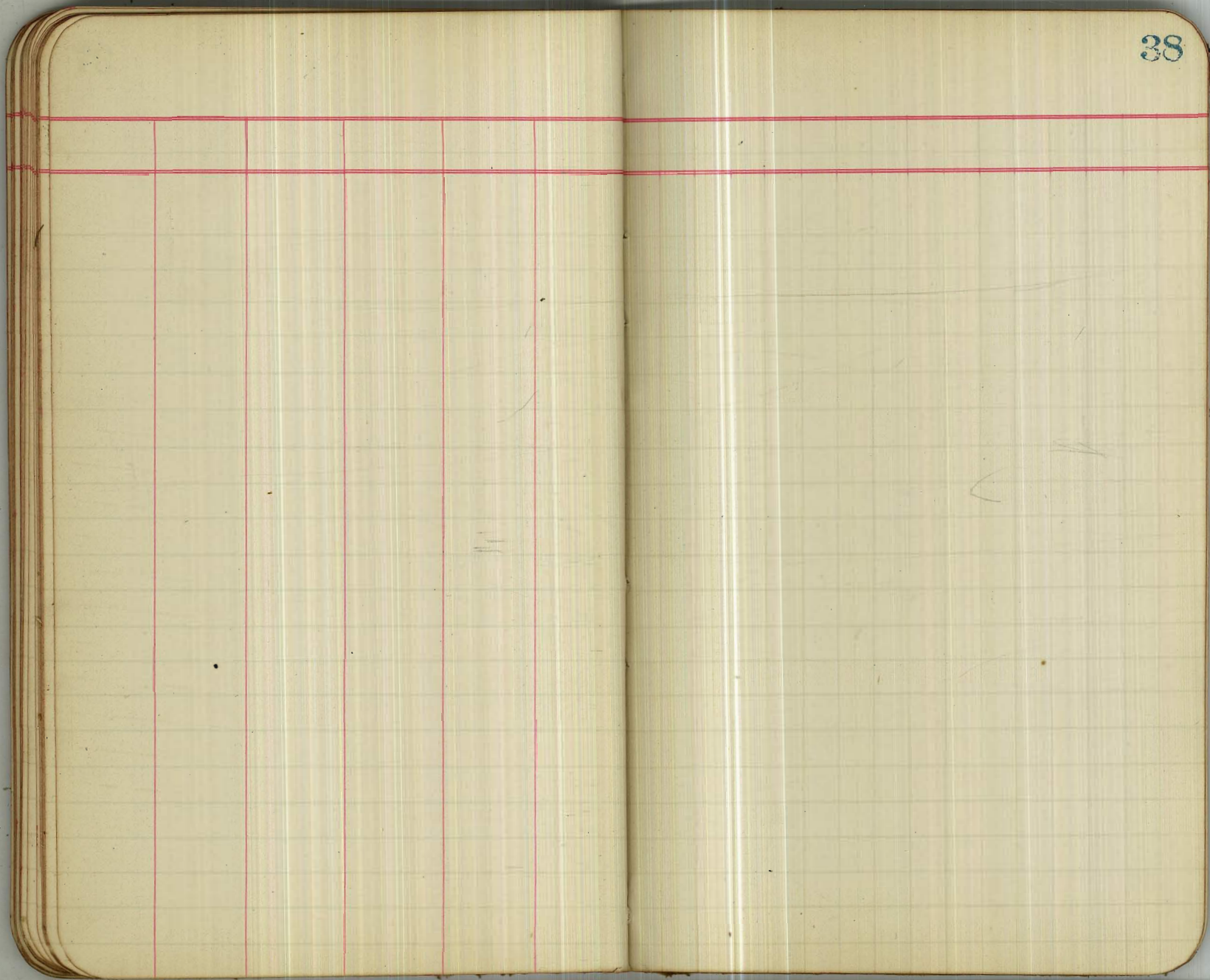






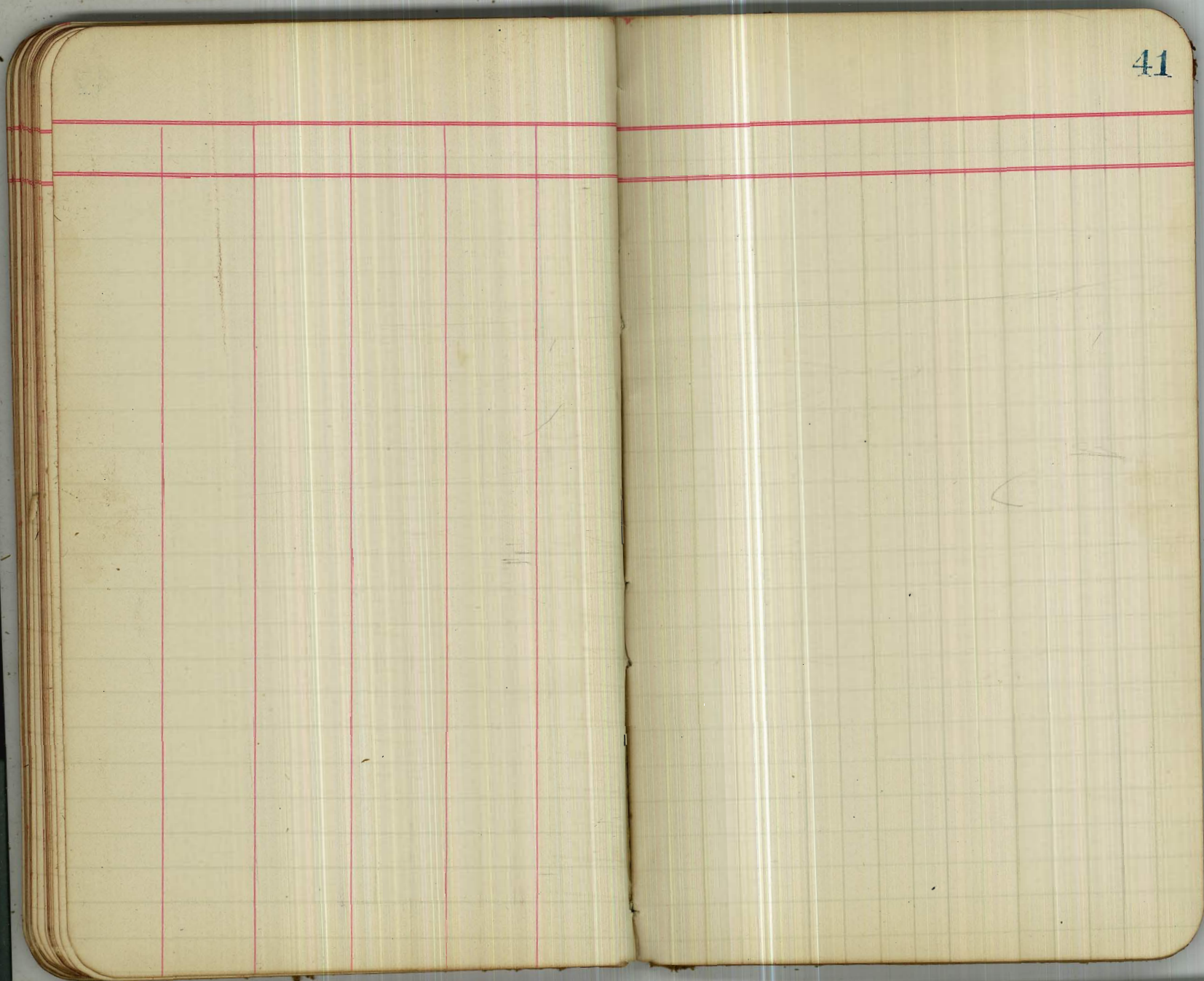


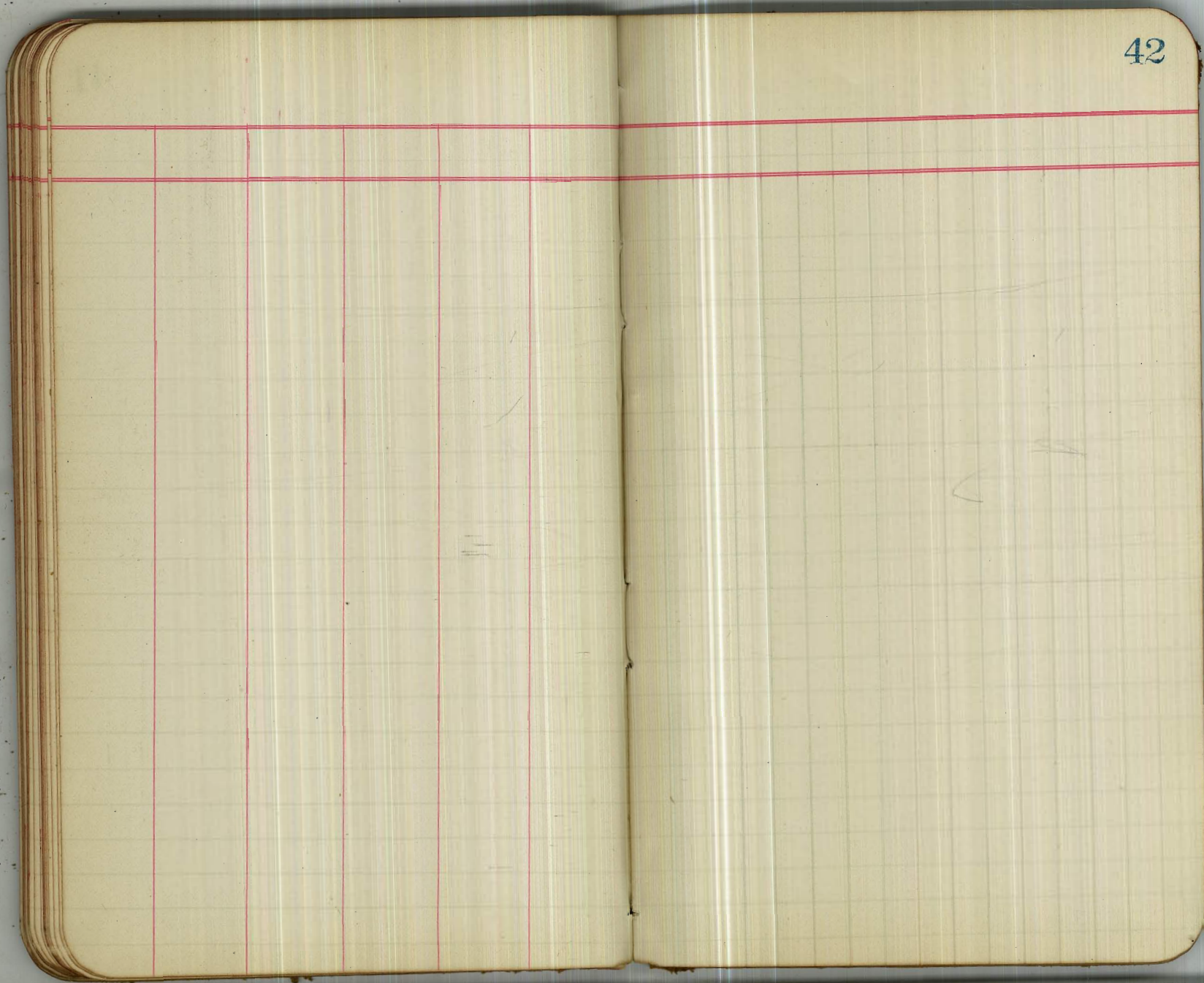


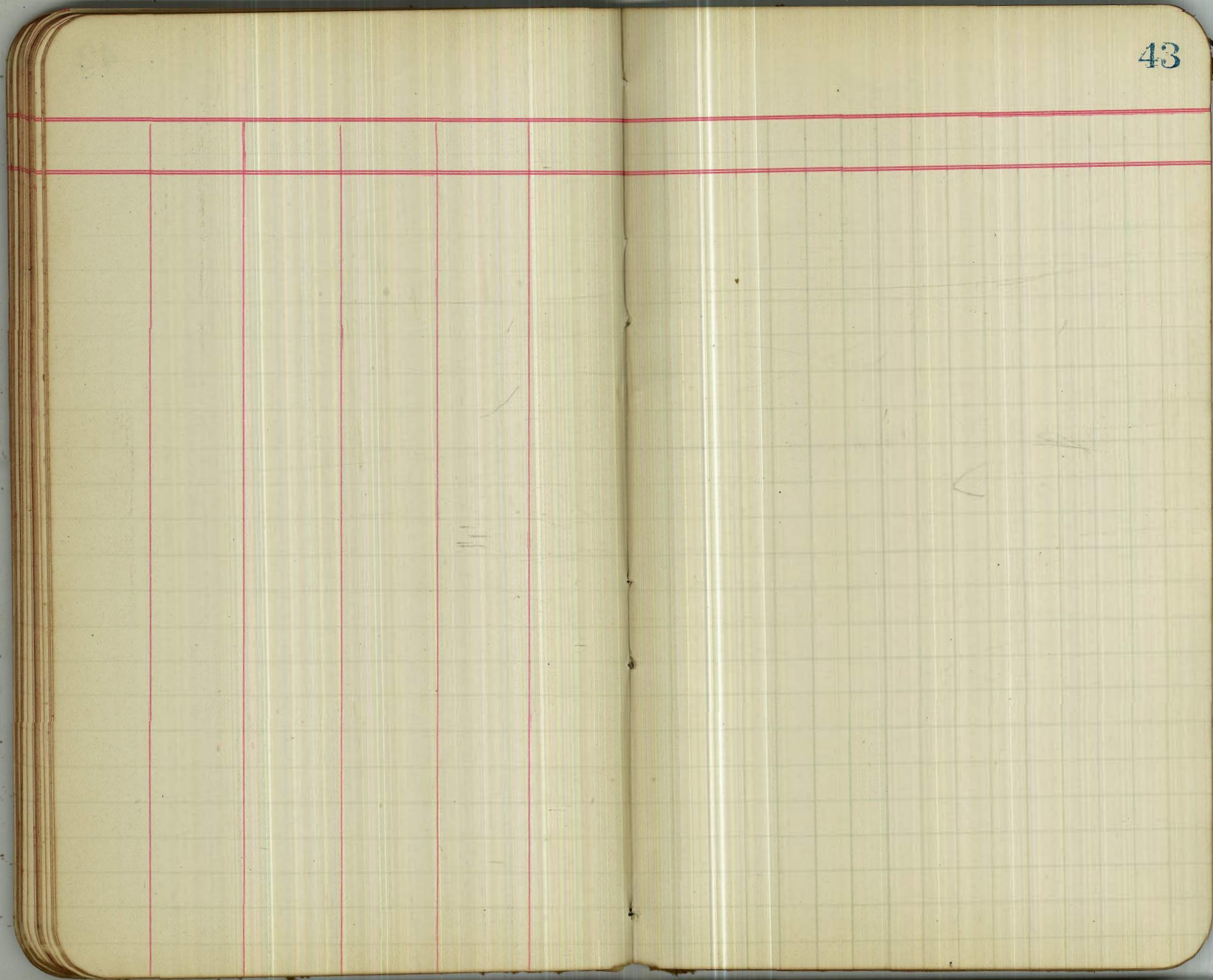


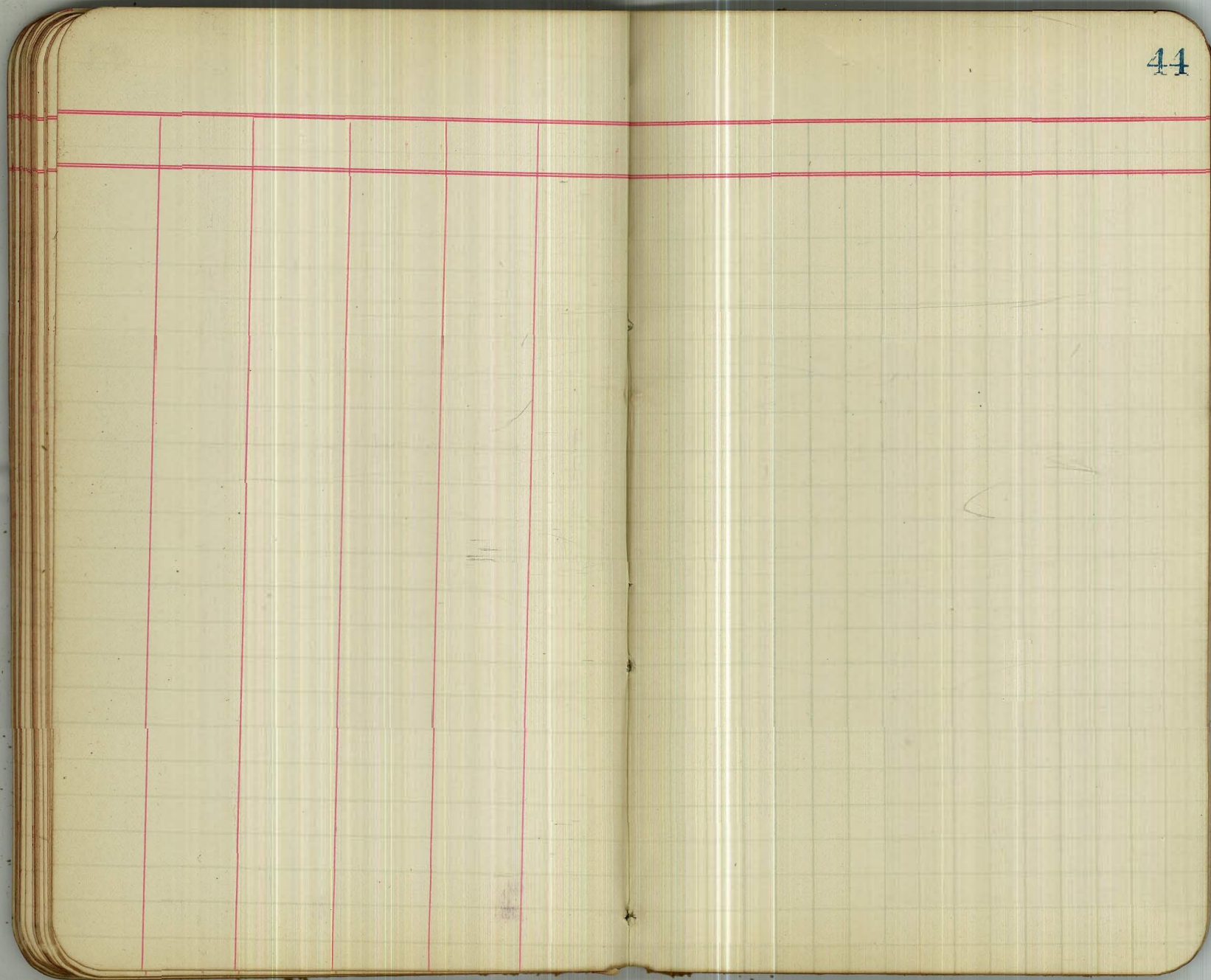
The image shows an open notebook with two pages. The left page is ruled with a grid and has four vertical red lines, creating five columns. The right page is ruled with a grid and has the number 39 in the top right corner. The notebook is placed on a light-colored surface.

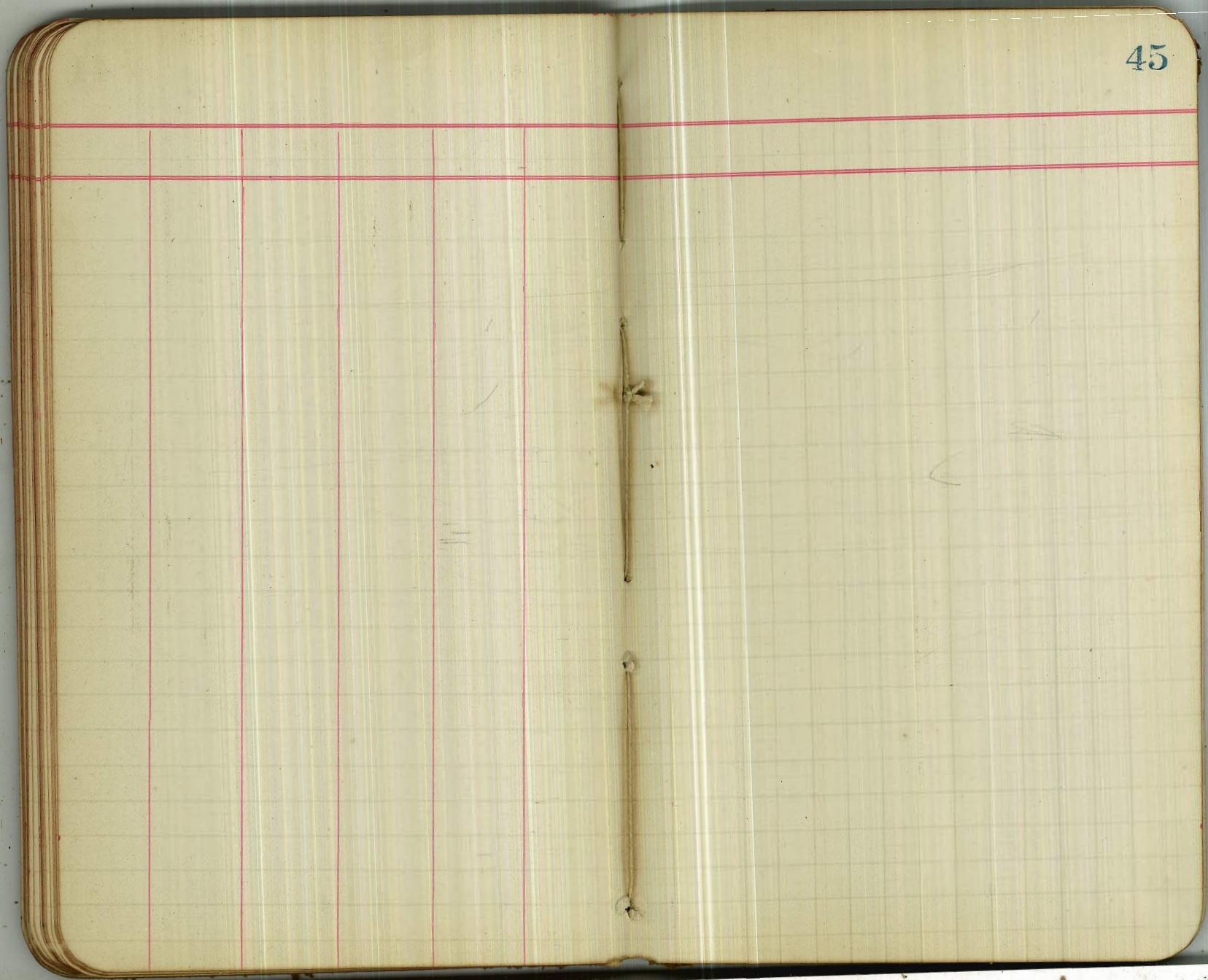
The image shows an open notebook with two pages. The left page is ruled with a grid and has four vertical red lines, creating five columns. The right page is ruled with a grid and has the number '40' in the top right corner. The notebook is placed on a light-colored surface.



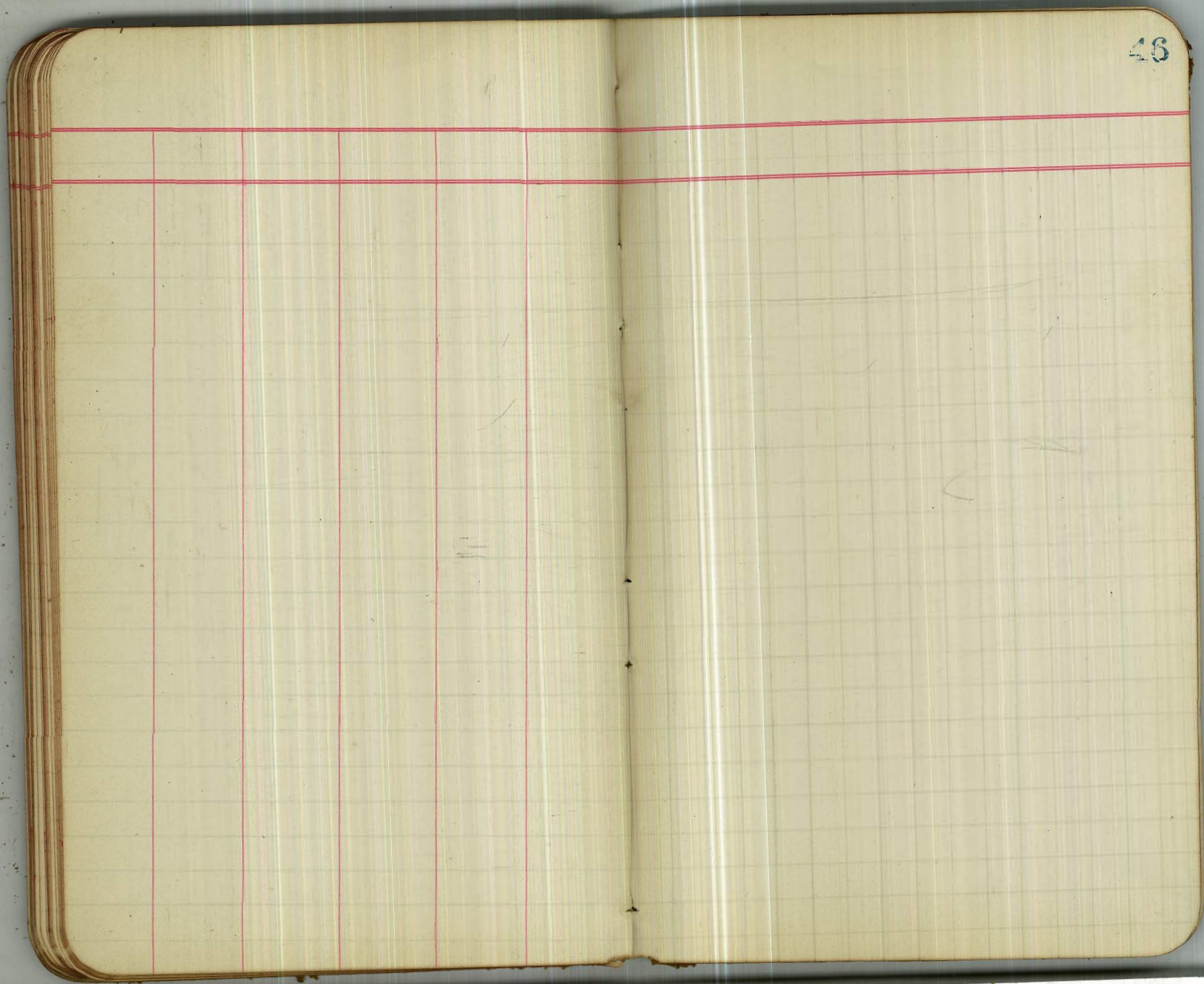


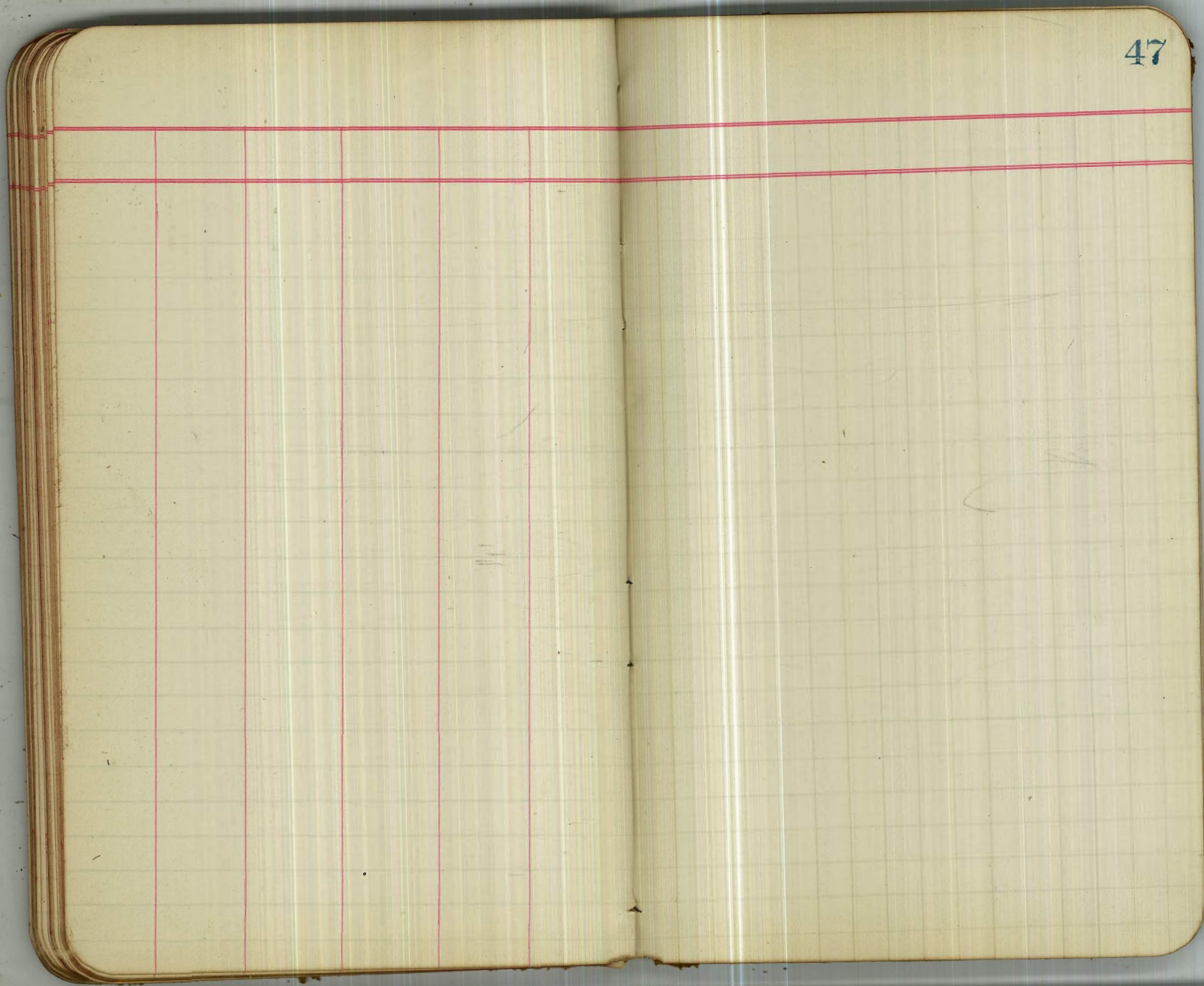


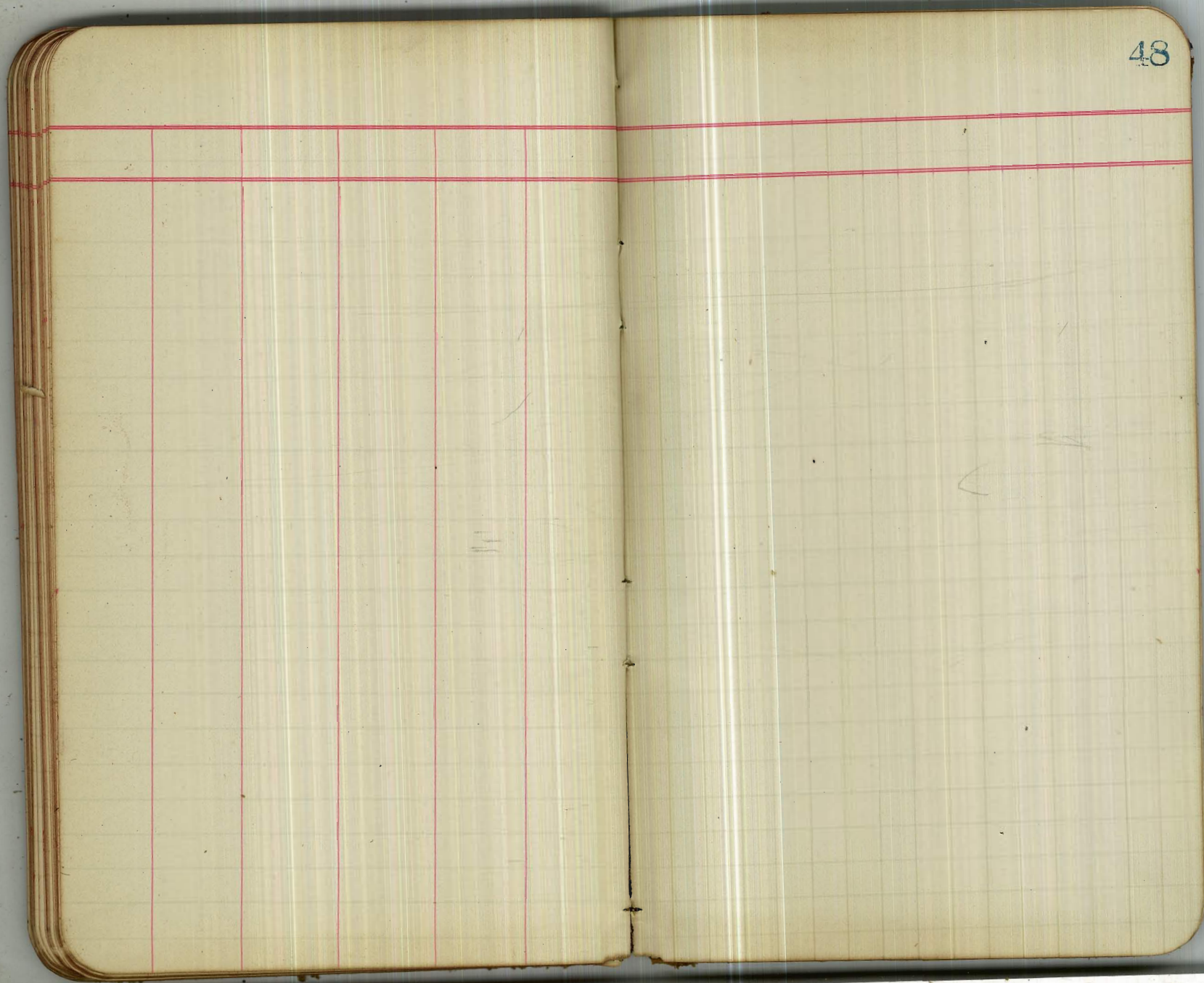


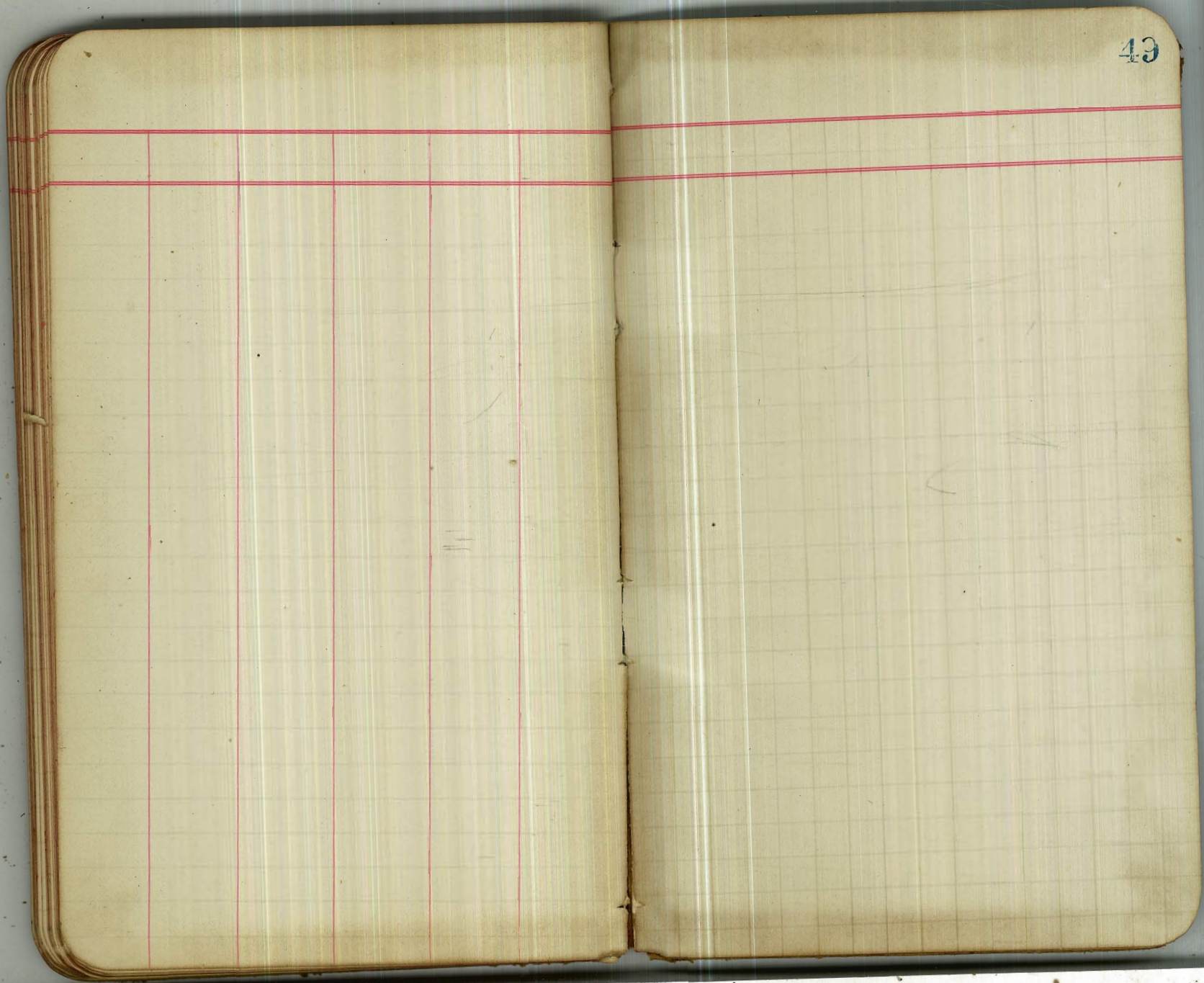












TRAVERSE TABLE FOR TRANSIT BOOK,  
From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	85
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	84
2	99.94	3.49	99.92	3.98	99.91	4.36	99.88	4.80	83
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	82
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	81
5	99.45	8.73	99.58	9.15	99.54	9.58	99.50	10.02	80
6	99.25	10.45	99.41	10.89	99.36	11.32	99.31	11.75	79
7	99.03	12.19	99.20	12.62	99.14	13.05	99.09	13.49	78
8	98.77	13.92	98.97	14.35	98.90	14.78	98.84	15.21	77
9	98.48	15.64	98.70	16.07	98.63	16.50	98.56	16.93	76
10	98.16	17.36	98.40	17.79	98.33	18.22	98.25	18.65	75
11	97.81	19.08	98.08	19.51	97.99	19.94	97.90	20.36	74
12	97.44	20.79	97.72	21.22	97.63	21.64	97.53	22.07	73
13	97.03	22.50	97.34	22.92	97.24	23.34	97.13	23.77	72
14	96.59	24.19	96.92	24.62	96.81	25.04	96.70	25.46	71
15	96.13	25.88	96.48	26.30	96.36	26.72	96.25	27.14	70
16	95.63	27.56	96.00	27.98	95.88	28.40	95.76	28.82	69
17	95.11	29.24	95.50	29.65	95.37	30.07	95.24	30.49	68
18	94.55	30.90	94.97	31.32	94.83	31.73	94.69	32.14	67
19	94.05	32.56	94.41	32.97	94.26	33.38	94.12	33.79	66
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	65
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	64
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	63
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	62
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	61
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	60
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	59
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	58
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	57
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	56
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	55
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	54
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	53
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	52
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	51
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	50
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	49
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	48
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	47
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	46
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	45
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	44
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	43
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	42
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	41
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.

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