

E.K.

Miscellaneous Botany.

FIELD NOTE BOOK

CROCKER LAND EXPEDITION

1913 - 1915

No. 3

Plants of Lutherland Is.

The Trip to Sutherland Island
and Hayes Harbor. August 17-20
1914.

Members of Party

Jot, Mac^{and} J. - Ooblayah, Auklio,
Etukishoo, Nukapingua, Okpuddy-
shaho and Summe.

Left Etah in afternoon of 17th with
whaleboat and five kayaks, and
Sipoo, his family, dogs, boat and
property all in tow. We took Green's
personal equipment to outer island
where we landed them. Had fine
weather all way; only rough water
was about C. Alexander. On the way
down I marked the second fjord north
of Cape Alexander, the first one
north of the glacier as Pandora Harbor.
It is a deep narrow fjord with steep-
and high-walled sides. I believe the
box-like point on its north side gave
origin to the name. It was the first time
I had really known the contour of the
coast down to the Cape and to the glacier
over which I passed at least three
last winter. At Cape Alexander we
flushed a score or more black brant.
Between Sutherland Island and the
mainland on the north we passed by
a herd of walrus, and just before

we got to Silkevaddy another. In the face of the glacier we saw a large stream of red water issuing some distance above the base. Soon after we passed Sutherland Island we noted a small cove about which I had spoken as a possible harbor for our motor boat.

We took Kipsoo and his party beyond the glacier at Silkevaddy, and there he asked us to leave him which we gladly did.

We then returned to the little cove and on the way Mac read that it was at that very place that Hayes and his southward bound party pitched one of their camps.

We found it a snug little harbor and upon landing a picturesque and convenient place for our camp as headquarters for hunting, with shelter from wind, a covered place to load from our whaleboat, our good supply of water, and plenty of game - gulls, little auklets, rabbits, eider, walrus, and ookerok at hand.

Since I was to act as cook, I at once took charge and got supper ready

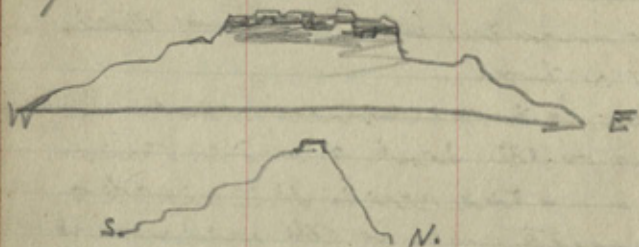
after which we went to bed. - Mac and I got sleep aboard the boat, Arklio, Bobby, Ah, Sammie and I in the tent, and Etukishoo, Okpuddyshe, and Tukapingwa among the rocks. The next day the 13th they landed me on Sutherland Island, while all the rest went walrus hunting. I studied the botany, geology, and zoology of the island all the day.

Description of Sutherland Island
This island was named after Dr Sutherland of the English expedition. It lies in the bay south of Cape Alexander just a short distance from the end of the glacier. Composed entirely of sandstone, massively bedded and remotely fractured it rises from the water like a walled citadel. It has apparently been quite submerged in past ages and the salt with which it seems to be saturated is being precipitated on the under side of the rocks and in protected niches, so an incrustation from the water seeping through the

stone. All the water on the island is saline.



The back-bone or E highest ridge of the island is almost or quite half its length and lies near the north side of the island. The ascent to this ridge from either end or the south side of the island is by a series of ledges or terraces while on the north side it is by a gradual slope almost to the top.



The sandstone lies almost horizontal and is coarse-grained, fine, and filled with rounded pink or white quartz pebbles, well worn and rounded by water. These pebbles are sometimes arranged in beds, sometimes in bands.

The talus slopes toward the top of the south side and at the east

and are of sharp-angled and rather large fragments. The slope on the north side is of smaller fragments, while the west end and the south side are generally of worn ledges, more or less covered by a sandy soil, saturated with salt, ~~in~~ nearly everywhere I think.

The island is swept by the winds which harass Cape Alexander from every direction and is lapped by stormy waves on all sides.

I found a large caribou antler on the south slope, old and disintegrated, and near the top I found the bones of a fox.

The *Larus hyperboreus* nests in numbers on the flat, grass covered ledges, and the cliffs of the rocks on the south side of the island. I counted 86 nests and found a score or more young ready to fly; six did not fly to the sea quickly enough to escape the rocks I threw at them, so I got half a dozen for supper.

The *Alle alle* also nests in great numbers on the talus slopes of the south side and east end. The young

were about ready to fly. While I was annoying the *Larus hyperboreus*, several of them disgorged entire doorkies on the rocks about me; everywhere about the nests of the gulls, were large numbers of the bones and feathers of the *Alle alle*. The most of the young doorkies had flown, but I saw several far in the cliffs where they had been hatched.

The young gulls which escaped me made their way to the sea and swam away. Some of the more fully feathered birds flew directly; the younger ones, from ledge to ledge. I was surprised to find so many young birds dead in the nests. A third of the nests contained a dead youngster, at various stages of development. Whether they had died from parasites, food or lack of it, exposure, attacks by the old bird, or what, I can not tell.

I found many nests of the *Somateria mollissima borealis* on the grassy slopes. I saw except one of them the birds had hatched and gone. In this one, one bird had hatched and died

and when I flushed the mother he followed her to the water. Another little fellow had just hatched but was not yet dry. Even so he sensed the alarm and tried to hide in the down. A third little fellow was just cutting the shell, and when I visited the nest in the evening he had emerged. The fourth egg



had not hatched but a faint peeping within it showed that on

the morrow the clutch would all be shells and young ducklings. I also found three nests of the *Brenta bernicla gaussogetra* (Black bent, and during the day they flew, swam, or fed about the sea and. I could not get near them.

I saw four wheat-ears among the rocks. I also saw a nest of snow-buntings, which I fancy had been reared on the island.

One flock of black-bellied plover and a number of *Arrenaria interpres* *morinella* flew about the island, and an occasional *Cypripus gryllus* roosted on the grounded icebergs.

on the shores. I fancy the Turnstones and sea-pigeons had nested on the island.

Also I found on a ledge near the top a nest which I guessed to be a *Troglodytes*, but I was not sure.

The vegetation is rather sparse and restricted to a few species i.e. those that can endure a sandy soil saturated with salt. The basis of the soil is sand, pure sand. The only plant nutrient that I can conceive is such salts as may have impregnated the sandstone during its submergence and the humus from the bird guano - the droppings of geese, reds, gull and dove. At the best it is an infertile soil. The total list of plants I found is

Stellaria humifusa
Cerastium alpinum
Melandrium triflorum
Cochlearia officinalis
Saxifraga nivalis
Carex
Luzula
Alopecurus alpinus
Catabrosa algida

Aira caespitosa

Poa glauca

" *sp.*

Glyceria distans

" *sp.*

Stellaria humifusa grew in the wetter and more saturated of the sandy slopes and ledges, often where it seemed, it could not derive nutriment from the bird guano, but from the salts with which the sandstone seems impregnated.

Cerastium alpinum and *Melandrium triflorum* grew where the soil seemed heaviest and also warmest and driest as if more humus, and warmth were necessary to their growth.

Cochlearia officinalis grew everywhere apparently but not in profusion. Two forms, one with round cordated leaves, another with oblong-lanceolate leaves, were common. A few plants were still in blossom but on most the elliptical thick pods were fast maturing. It grew most luxuriant where nourished by

water from the bird guano. I saw some stems two feet long in favored localities.

Saxifraga nivalis (small white and no flower) grew in the damp cold slopes with water-saturated soil. though I found some not far from *Cerastium* and *Melandrium*.

Carex grew on the drier ledges where the soil was not more than a fraction of an inch thick often, but where it could secure a holdfast in some crevice of the rock.

Luzula sp. grew on the drier terraces and ledges, often with the *Carex*, *Cerastium*, and *Melandrium*.

Alopecurus alpina was the predominant plant of the island growing everywhere in damp soil or dry, fertile or infertile.

Catabrosa algida, I found in large mats on the lower ledges its short stems and leaves rising from the thinnest of soils. I also found a few isolated plants on damper ledges over which the water seeped.

Asa caespitosa flourished all over the south side of the

island and far up the slopes. It formed a dense soft carpet over much of the south side. It seems to require a sandy, saline, wet soil.

The *Poa* sp. grew in the thicker soils where there was chance for them to obtain holdfasts.

The *Glyceria* sp. grew in similar localities but distant as meets to prefer the lower, damper slopes and terraces the smaller species the higher drier places.

The plants of the island are then those that can endure a sandy saline soil, low in humus.

Cerastium, *Melandrium*, *Poa*, *Luzula* and *Carex* apparently require a warm, heavier soil.

About three o'clock the motor-boat came after me. It had been towards C. Alexander and out and southwards towards Silkwaddy where they had killed three walrus. Cobloyah had harpooned the first one an old bull; Arkleis the second, a large cow; and Nukapingwa the third, a small calf. Itukisook and Okpudwahah had missed their throws. They towed the walrus to Cove Camp.

In the evening, it began to grow cold but we had a good supper and spent a comfortable night. For supper we ate young quail; little auklets the Eskimo had caught in their nets which they had brought along; tea with sugar and milk; crackers with butter; a few gum drops and nuts.

Seeing some ooksook to the south of us and the Eskimo set out at once after supper and went Likluwaddiyward. Mac and I stayed about camp, climbing cliffs, and watching for the return of the boat. About 3 in the morning it came back, successful in having killed 3 walrus, 2 ooksook, and nine seal.

On the high water we cut up the walrus and then went to bed. After a good sleep we rose to a breakfast of oat-meal, beans, little auklets, gulls, coffee with milk and sugar and crackers with butter.

It was raining when we awoke, the weather threatened wind, and game would be hard to kill on the rough water so we ~~left~~ broke camp, packed and

put our stuff aboard, and started for Etah.

Before starting I collected all over the point with the result that I found 35 species of plants, of which one Alpine verna, I had not found before. The plants were as follows.

- 1 *Pod gnanca*
- 2 "
- 3 *Puccinellia*
- 4 *Agrostis distans*
- 5 *Festuca ovina*
- 6 *Trisetum spicatum*
- 7 *Alopecurus alpinus*
- 8 *Hierochloa alpina*
- 9 *Carex sp*
- 10 *Luzula confusa*
- 11 *Scirpus arcticus*
- 12 *Melandrium apetalum*
- 13 " *affinis*
- 14 " *triflorum*
- 15 *Pedicularis hirsuta*
- 16 *Cerastium alpinum*
- 17 " *trigynum*
- 18 *Stellaria longipes*
- 19 *Alpine verna*
- 20 *Cochlearia officinalis*
- 21 *Draba fladriensis*
- 22 " *nivalis*

- 23 *Oxyria digyna*
 24 *Polygonum viviparum*
 25 *Saxifraga oppositifolia*
 26 " *rupestris*
 27 " *nivalis*
 28 " *stellaria*
 29 " *tricuspidata*
 30 " *groenlandica*
 31 *Ranunculus sulfureus*
 32 " *pygmaeus*
 33 *Potentilla Vahlbiana*
 34 " *rubricaulis*
 35 *Juncus acuminatus*

Alisma verum I found growing on a ledge covered with wet rich soil; I found but a few plants there.

The localities from which I got these plants at Hayes Harbor may be fairly well assembled in four groups: 1st, a rather dry grassy meadow-slope with varying thickness of soil; 2nd, a dry gravelly rocky, hilltop with rather infertile soil; 3rd, wet seepage slopes with thick soil, cold and mucky; 4th, rock ledges of varying degrees of moisture.

In the first I found
Alopecurus alpinus
Poa sp. (where sandy)
 " *glauca*
Festuca ovina

23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

In the second I found 2, 5, 7, 8, 10, 11, 15, 20, 24, 25, 29, 33.

In the third I found 9, 12, 18, 21, 22, 23, 24, 26, 27, 28, 31, (where grassy) 32.

In the fourth, 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 21, 22, 23, 24, 26, 27, 28, 29, 30, 32.

In about an hour's collecting I gathered 35 species of plants here, whereas on Sutherland Island, but a bare two miles distant I found only a third as many. The difference in soil most probably accounts for this difference. The Hayes Harbor locality is not yet exhausted in species, for more extended and careful search should reveal many more. Also the mainland to the north of the glacier, Cape Alexander itself, should be explored.

We started back about ten o'clock and got into Etah at about midnight deeply laden with pemmican and oodook. The walrus we cached at Hayes Harbor.

On the way back we passed through millions of little aiks floating on the now calm water about C. Alexander, and flushed from near the point a large flock of brant. To the westward great bergs and flows of ice were massed, blocking the way beyond Lytleton Island. We found Foulke Ford full of ice and more coming in.

The Trip to Cape Sabine^{and} Flagler Ford August 22-1914.

At eleven o'clock we set out in the motorboat for Cape Sabine. Mac had had this trip in mind all summer, and took this first opportunity to go.

The party was made up of Dot, Allen, Jack, Mac and myself, and Ooblogah, Etukishloo, Orlis and Kakochingwa (Jimmy).

It was a good calm morning. I took complete scientific equipment with me - botany, geology and ornithology and felt elated at the prospect of paleontological work on Bache Peninsula or Norman Rockys Island.

We took on plenty of gasoline for the trip, and in addition two cases of kerosene, two bags of coal, and a quantity of wood for future use at Pealy's old headquarters on Pym Island. As we rounded Sunrise Point we realized that the prospect was decidedly unfavorable for heavy ice lay beyond the point, particularly about Lytleton Island; such ice

as we encountered last year when trying to cross the Sound in the *Eric*.

Just south of Littleton Island two floes closed in on us and for a few moments it looked as if we should lose our motor boat. Iot tried to shove it between two points of ice into a lead but they were connected by a submarine bridge upon which the boat grounded. We frantically made every possible effort to extricate the boat, and finally Ooblogah with his killing iron cleared away the ice, and Jotly turned the bow homeward. The boat would not at first respond to the wheel and we feared that the rudder or propeller or both were badly bent.

However we got back to provision point where we beached the boat for further examination, but soon saw that she was unharmed. We pushed her off, and in a few moments were back at her moorings.

The Eskimo took us ashore on

their kayaks - Inac, Kachchingwa and I - by combining them side by side to form a sort of pontoon boat. We were safely landed.

I was much disappointed thus to be frustrated in my hope to obtain some fossils from Ellesmere Land, and to collect some plants, for I feared that it was the last opportunity I should have to do this work I wanted so much to do.

August 23 -

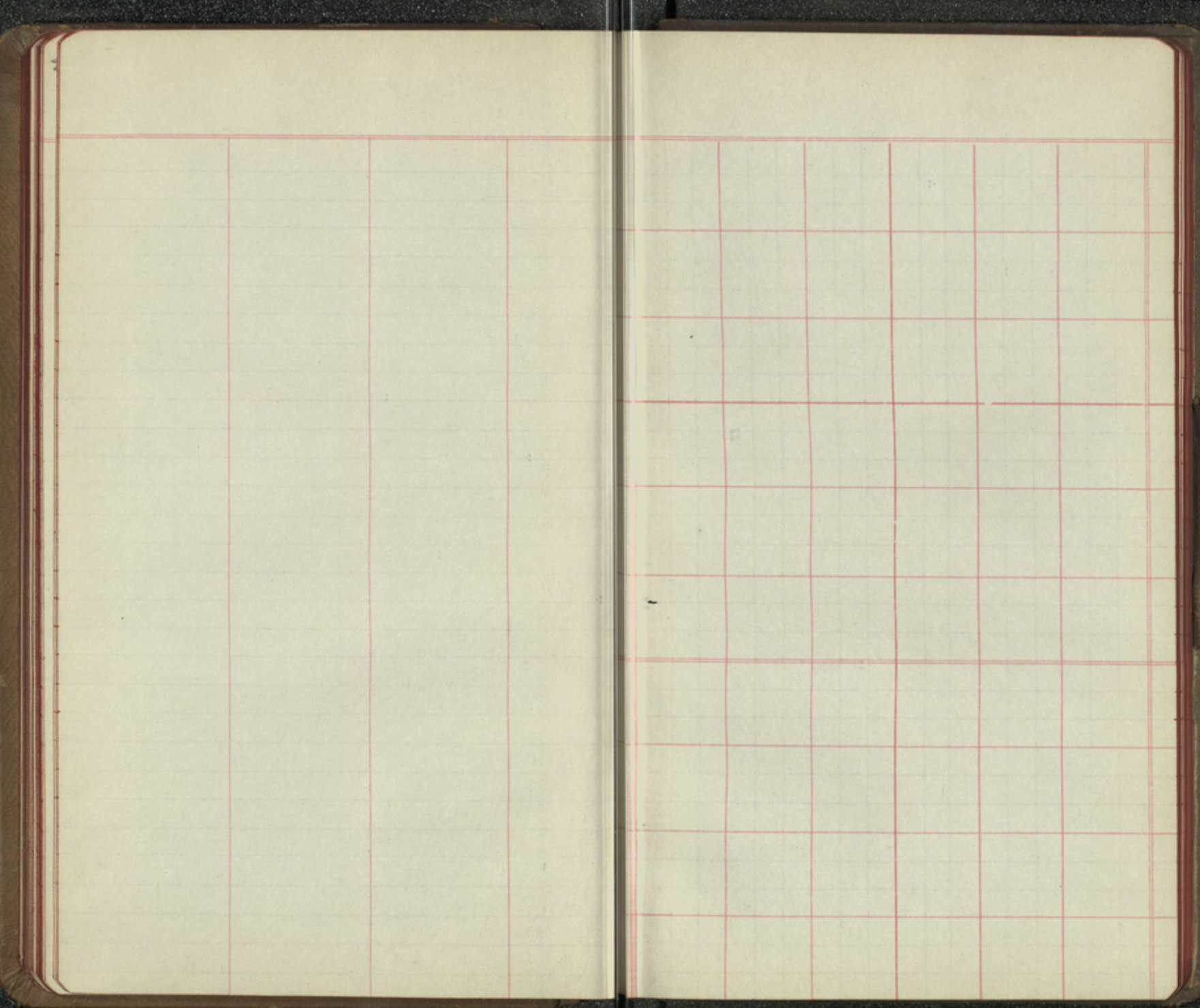
All day Jot was kept out in the harbor because heavy ice lay about the moorings and in the cove where the moorings are.

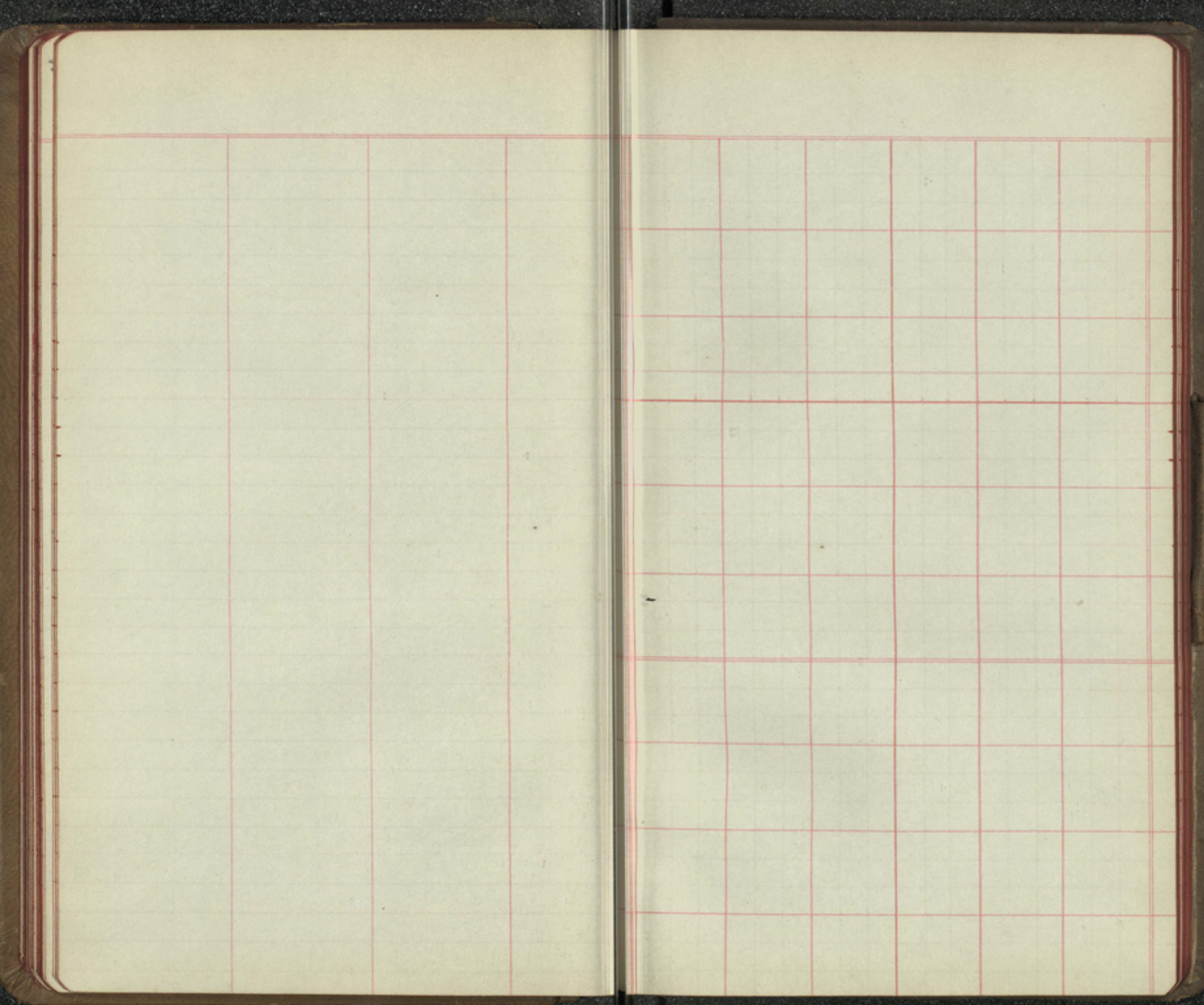
I put ~~away~~ the plants in press that I had collected at Suterland Island and Hayes Harbor, cleaned up my share of the attic, and made ready for the resumption of the trip to Cape Sabine.

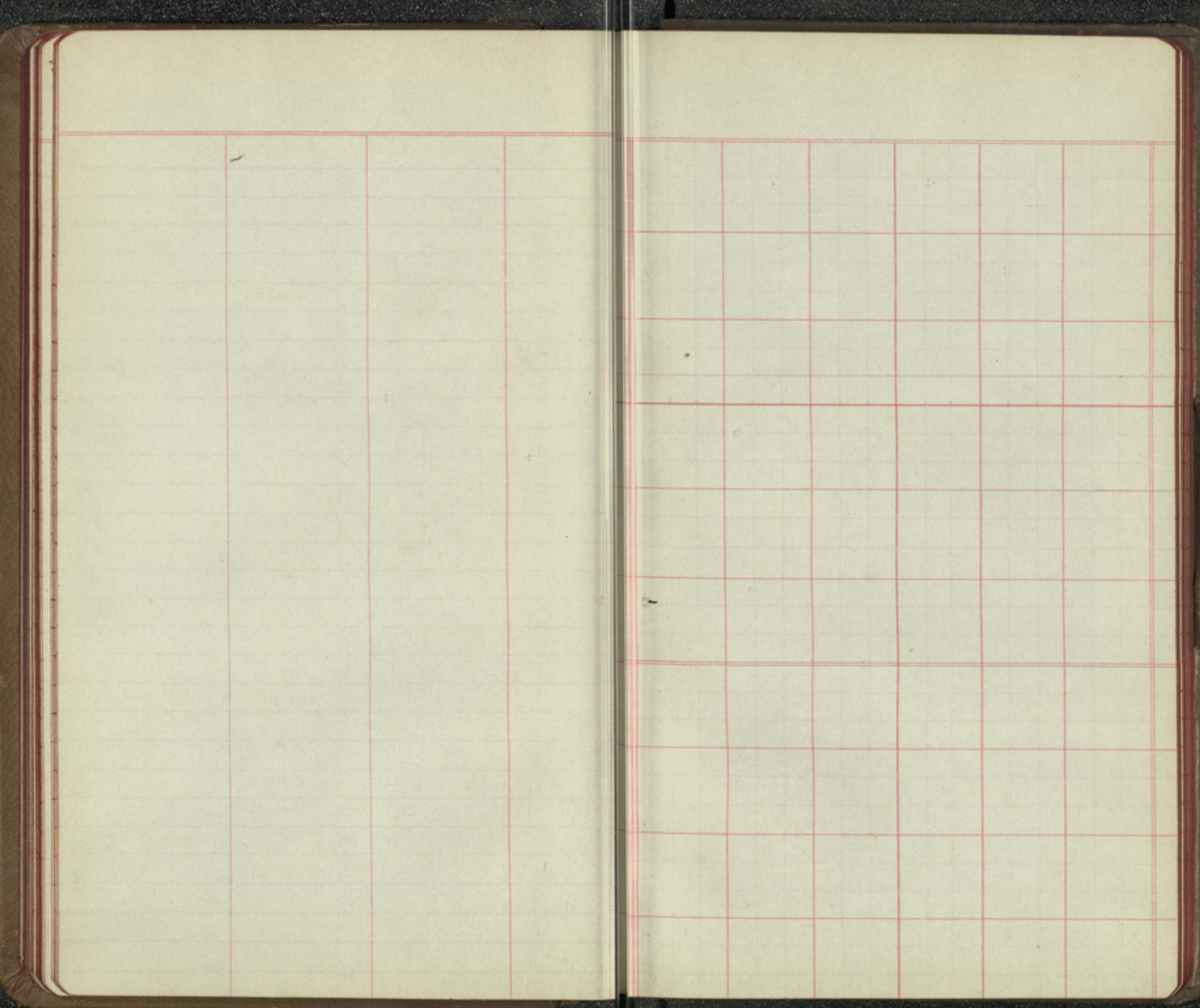
Fitz and I went for a walk to the tidal gauge and came back by way of Jot valleys. Saw six rabbits, killed one.

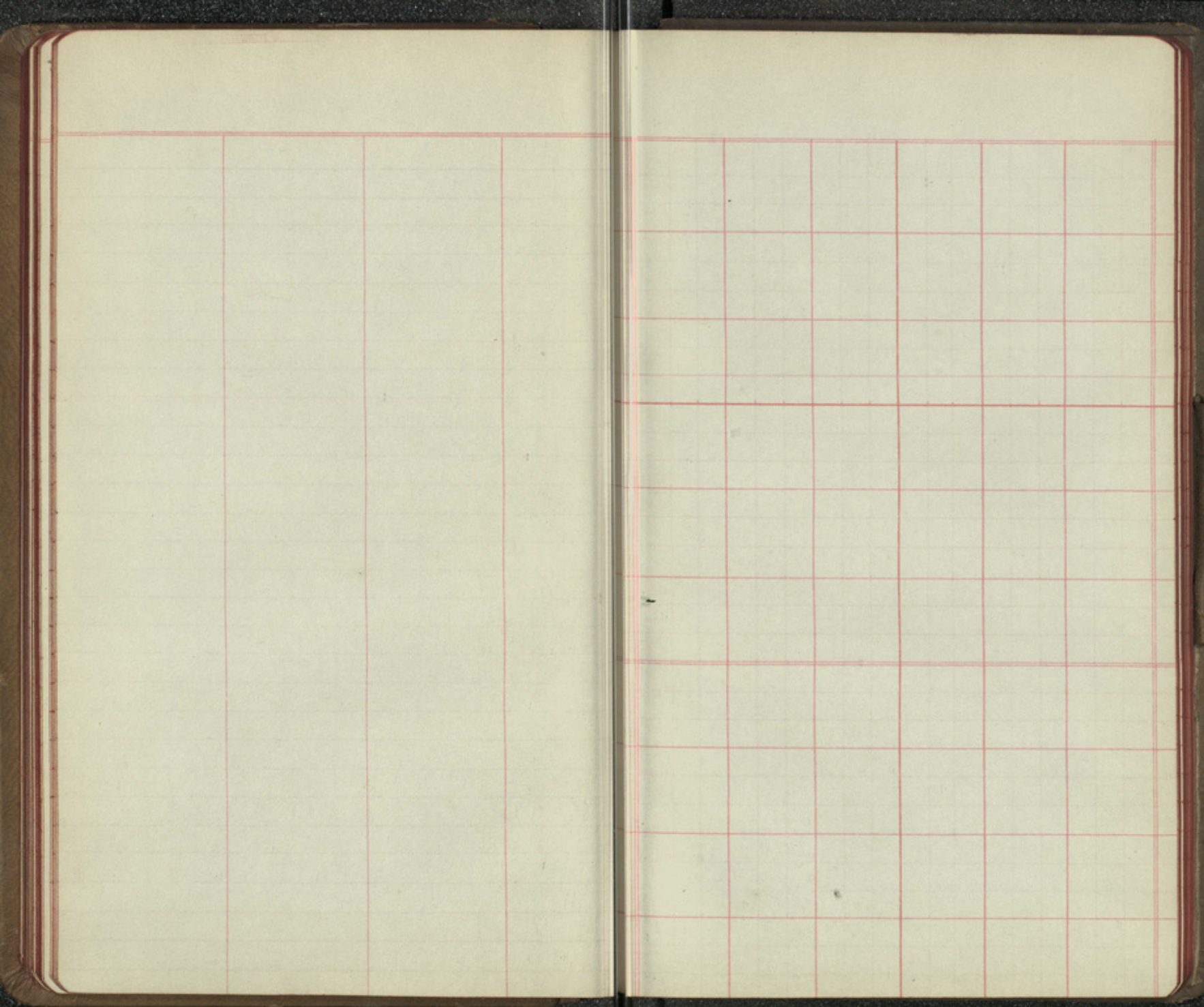
The Trip to Siktowaddy

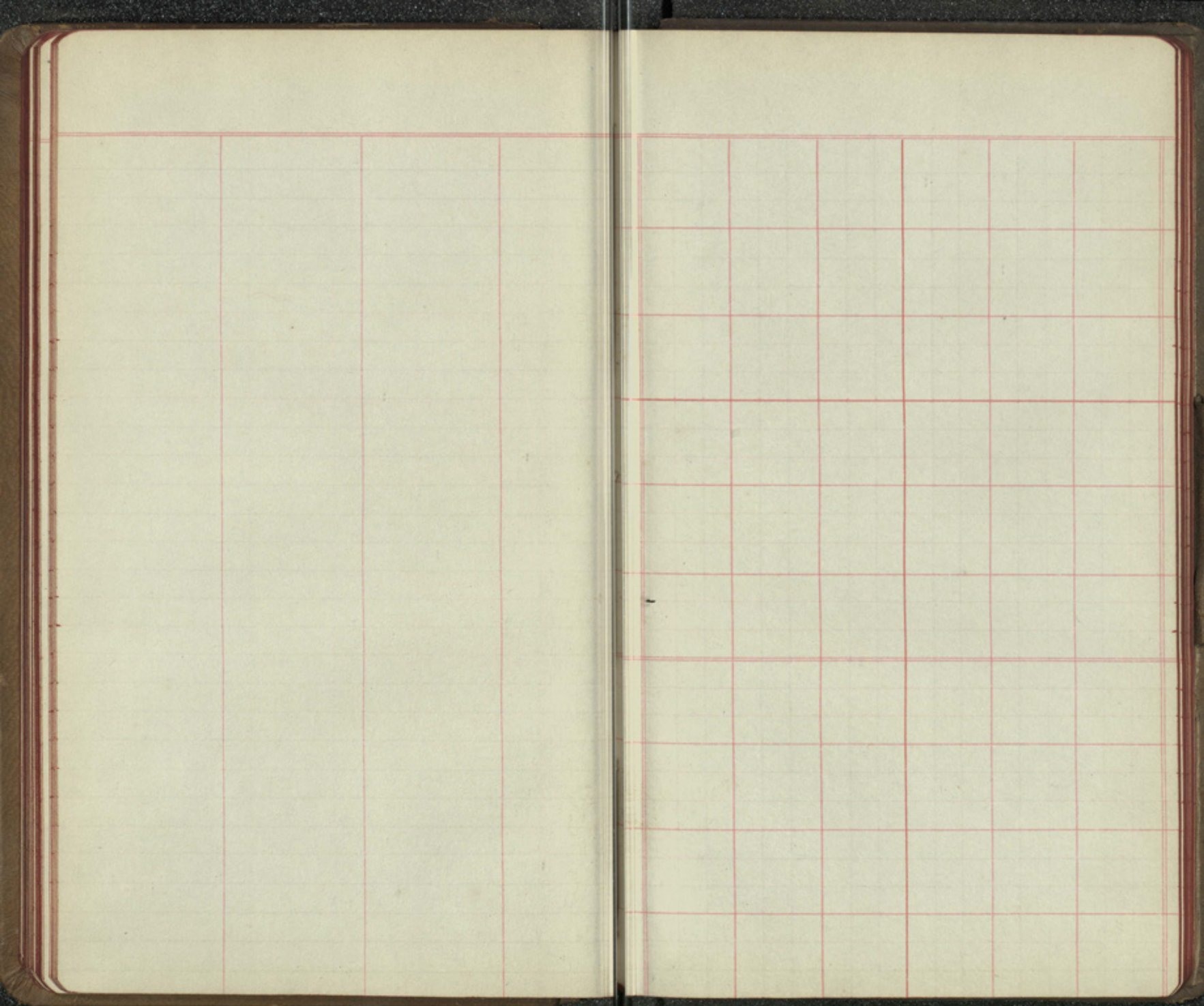
August 24-25-26-27-28

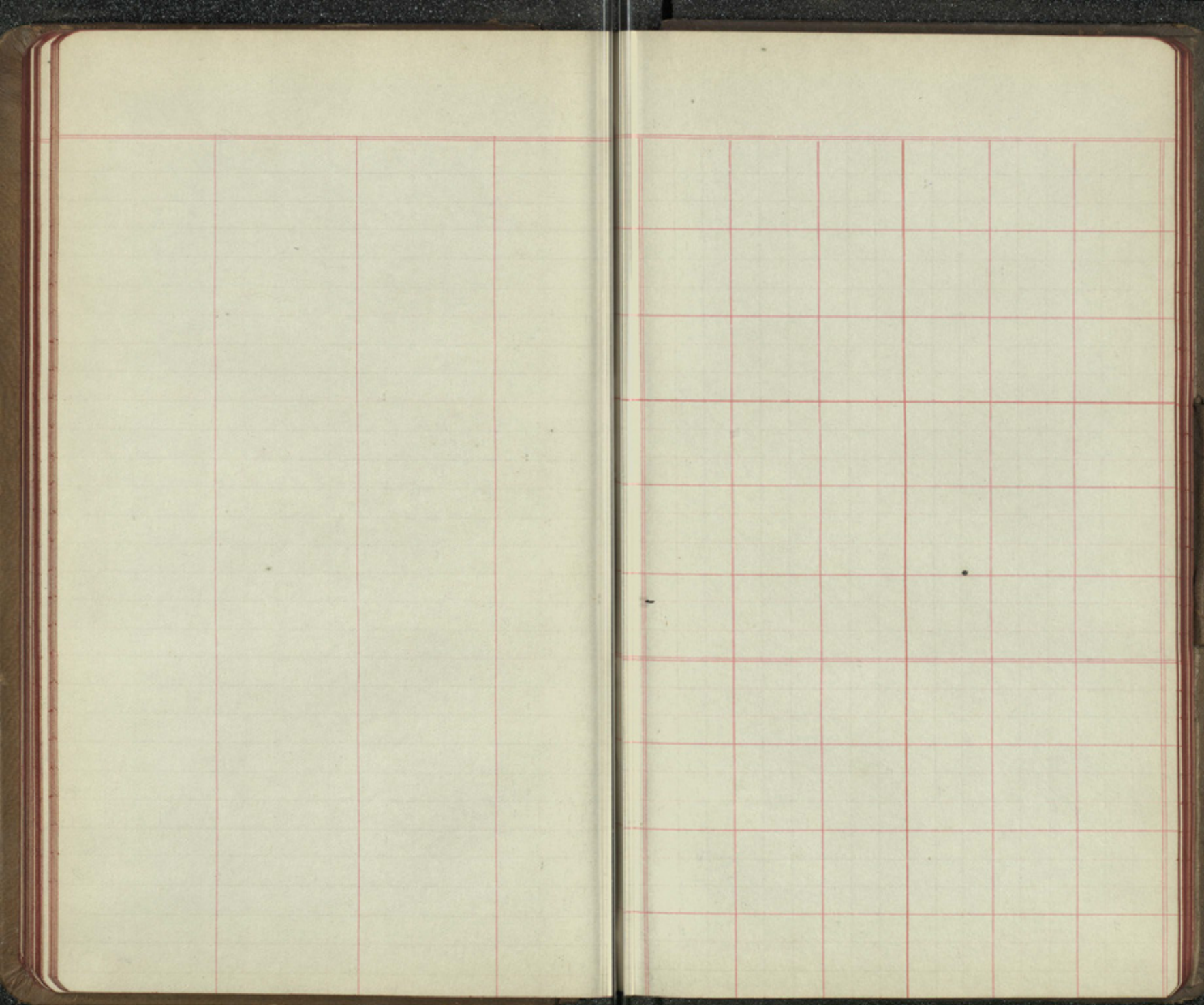


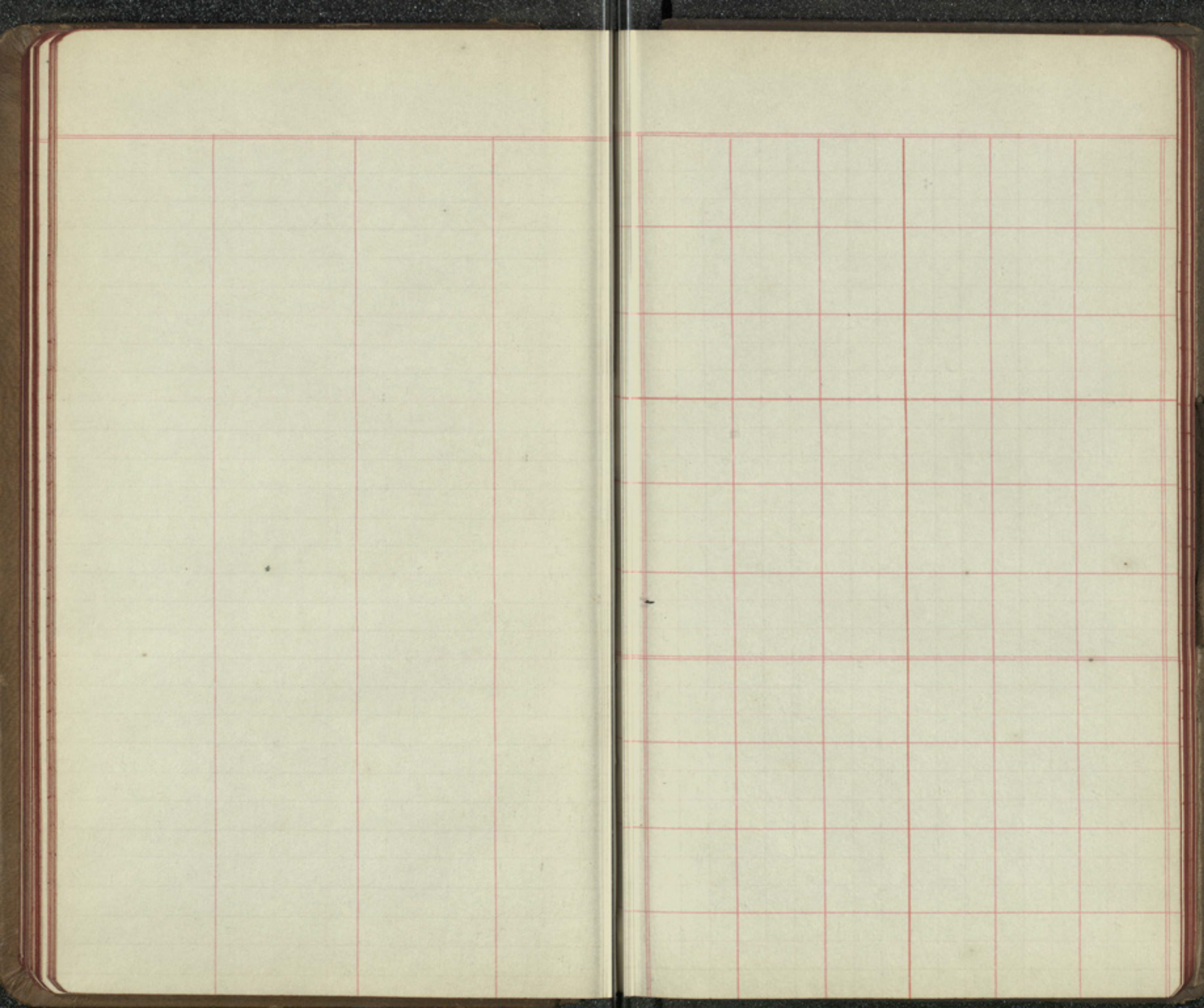


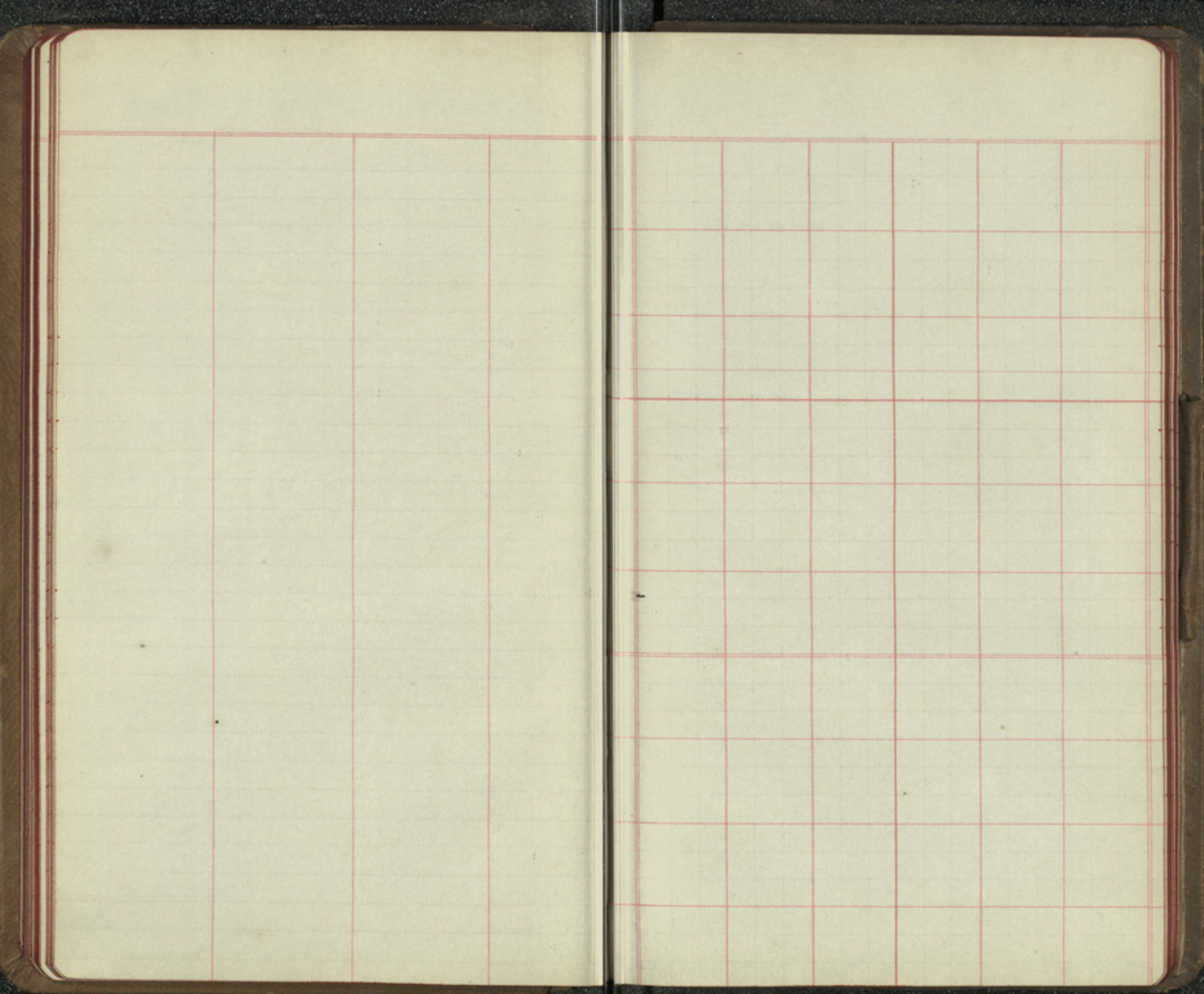


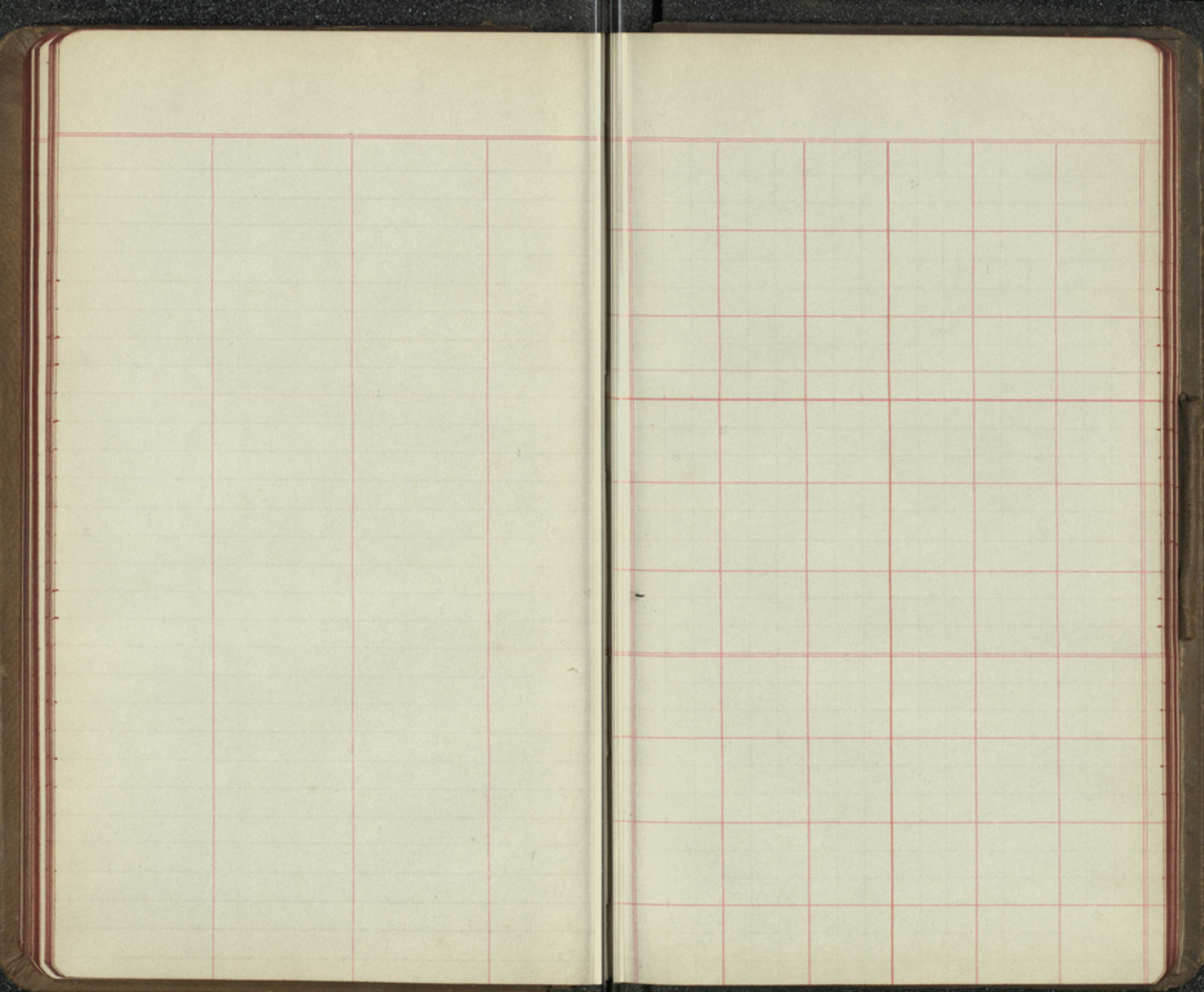


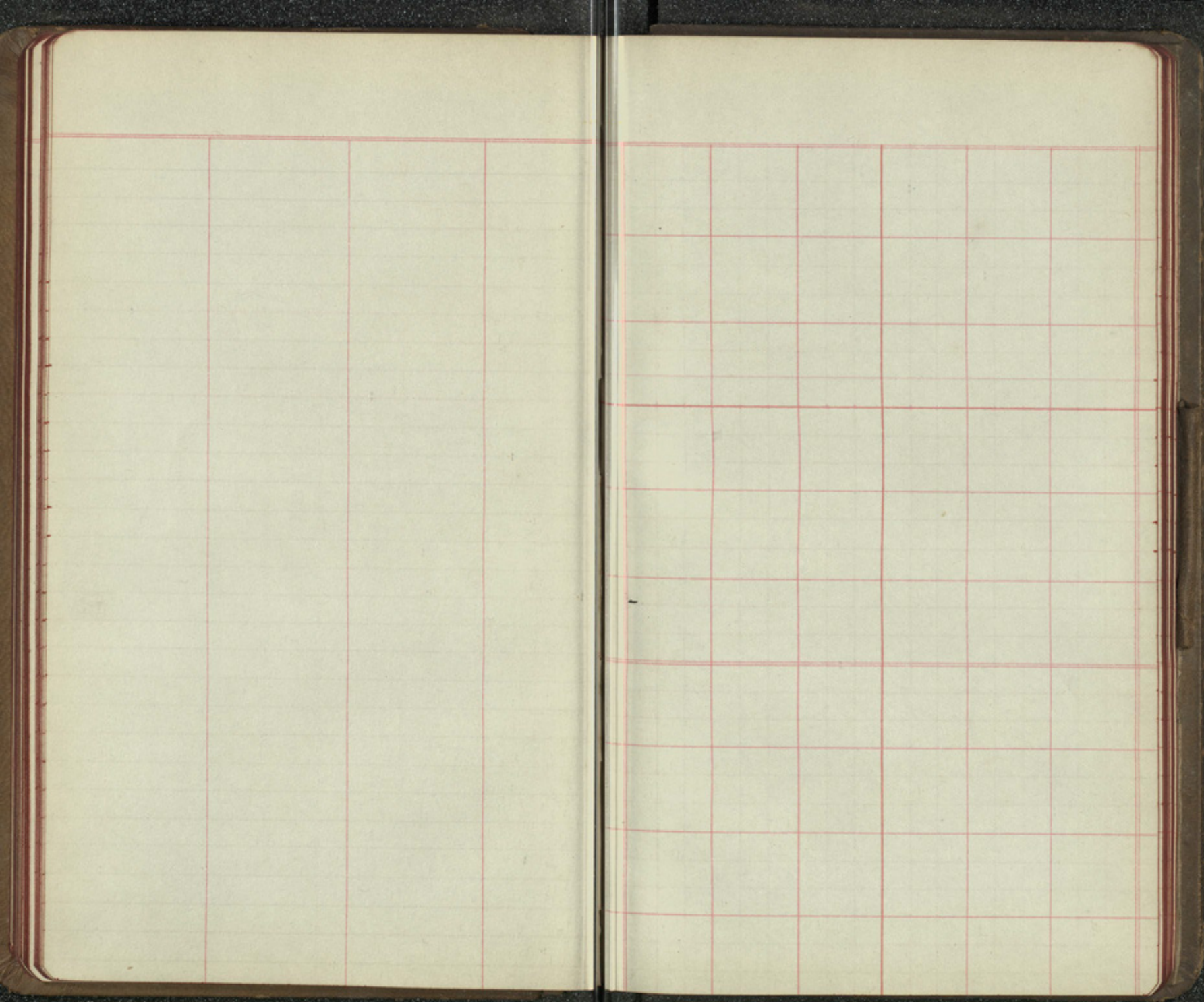


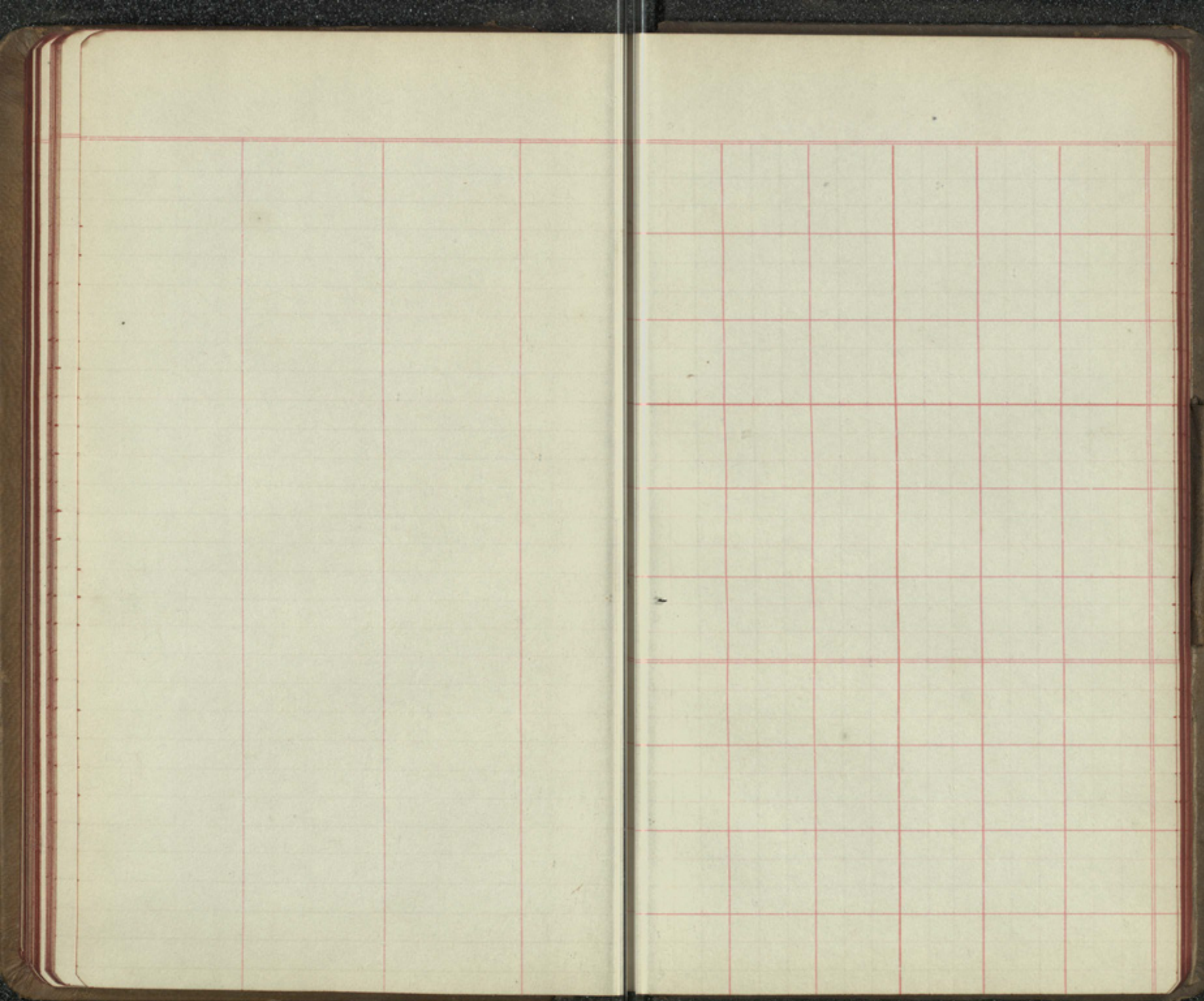


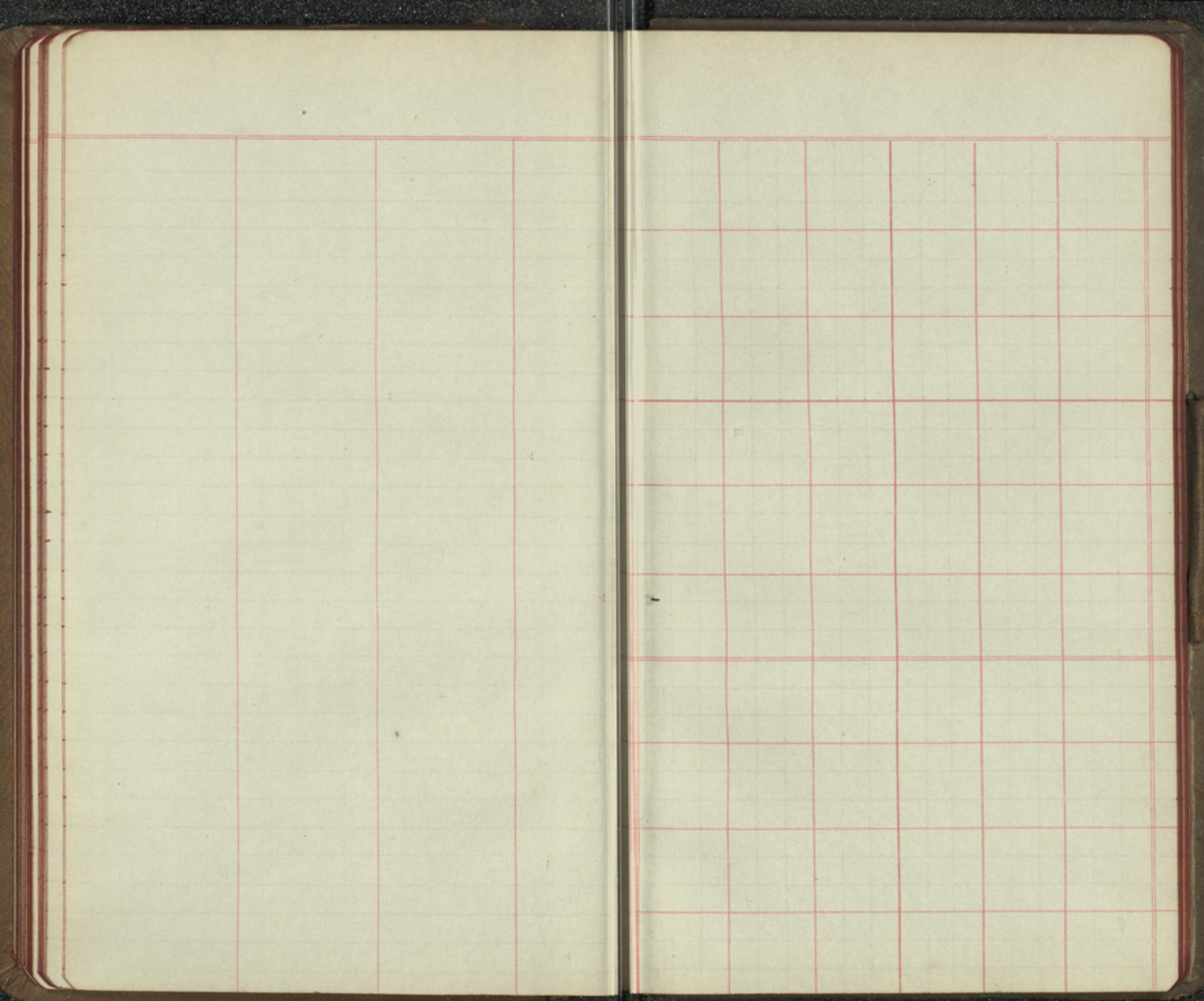


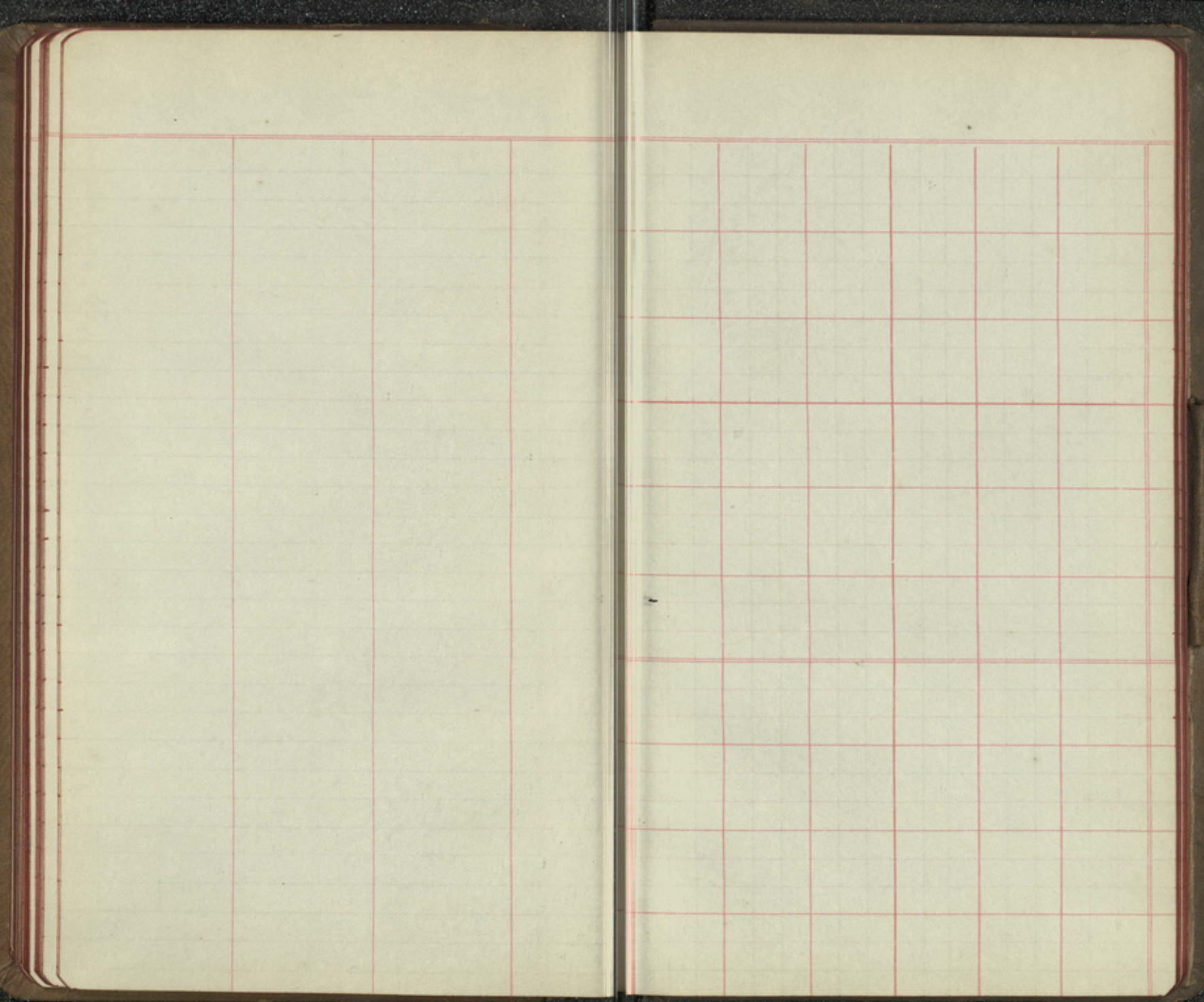


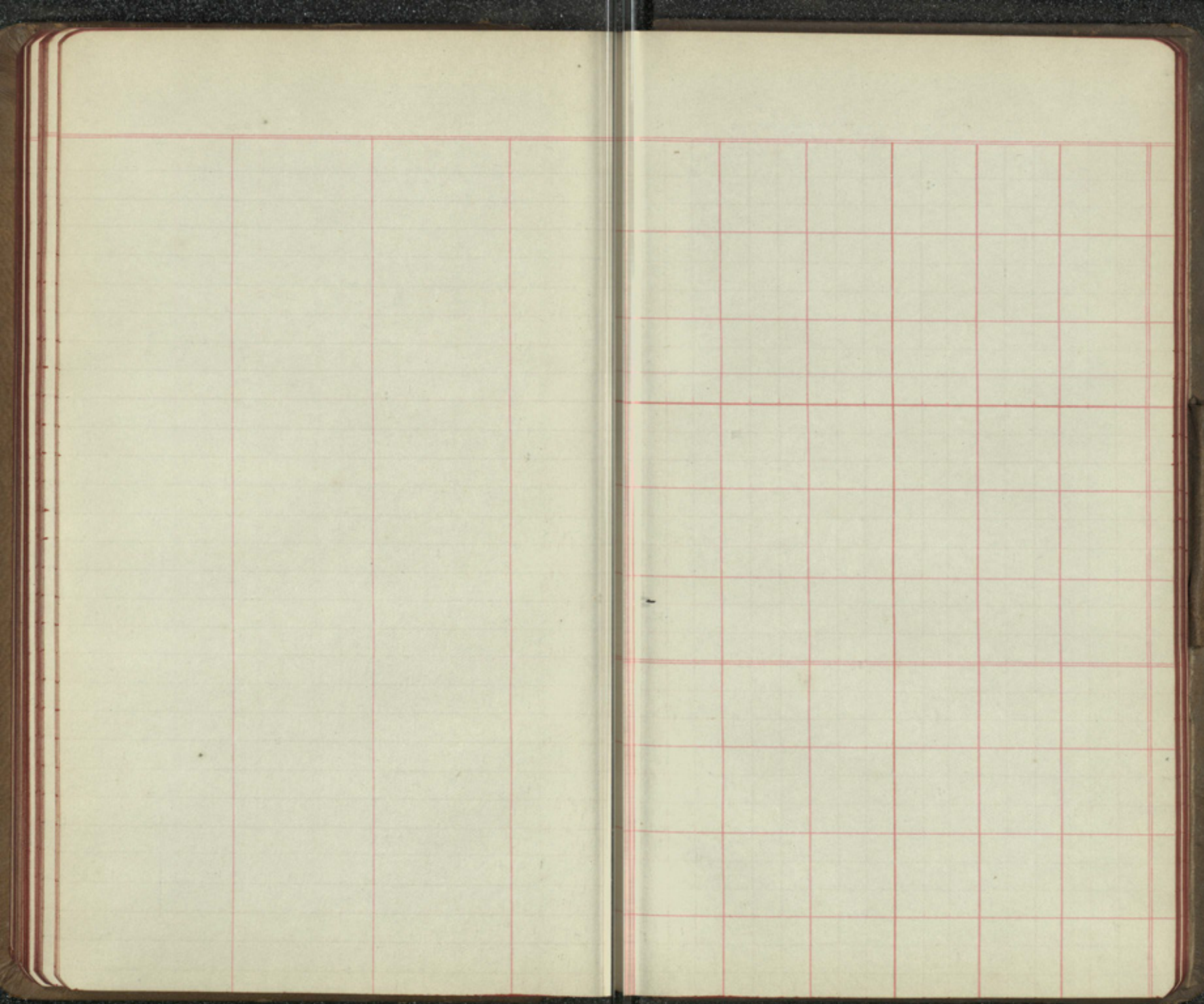


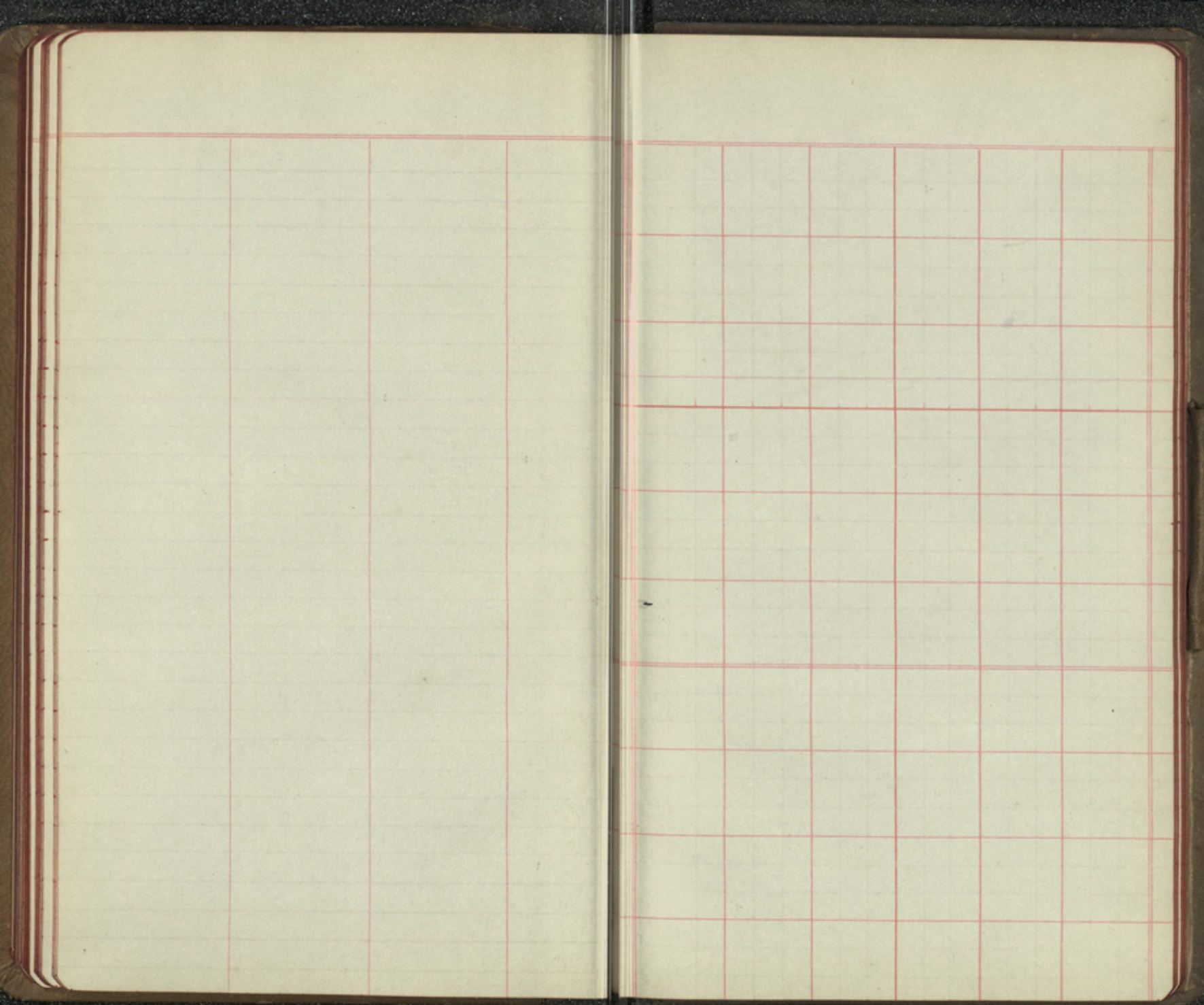


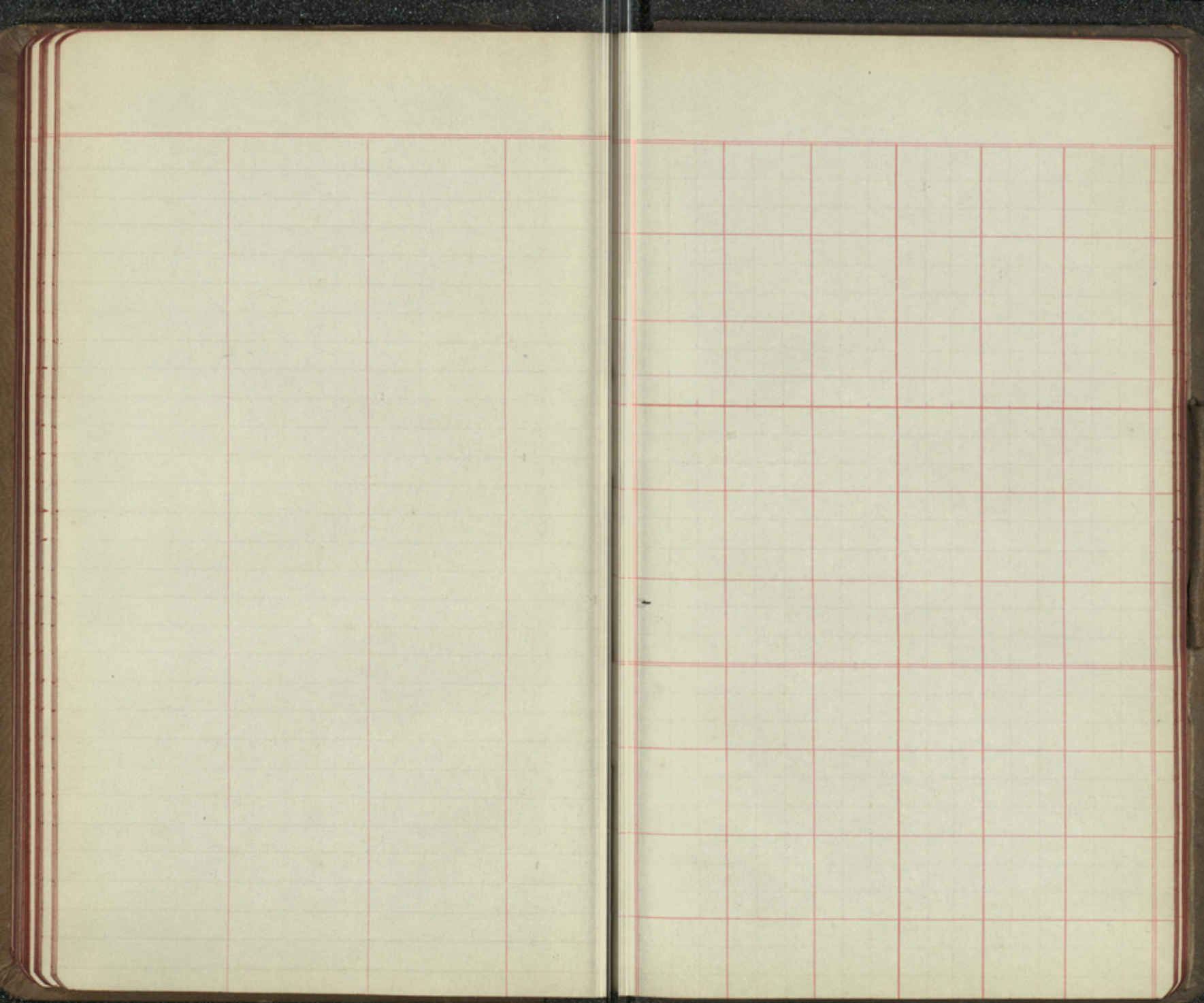


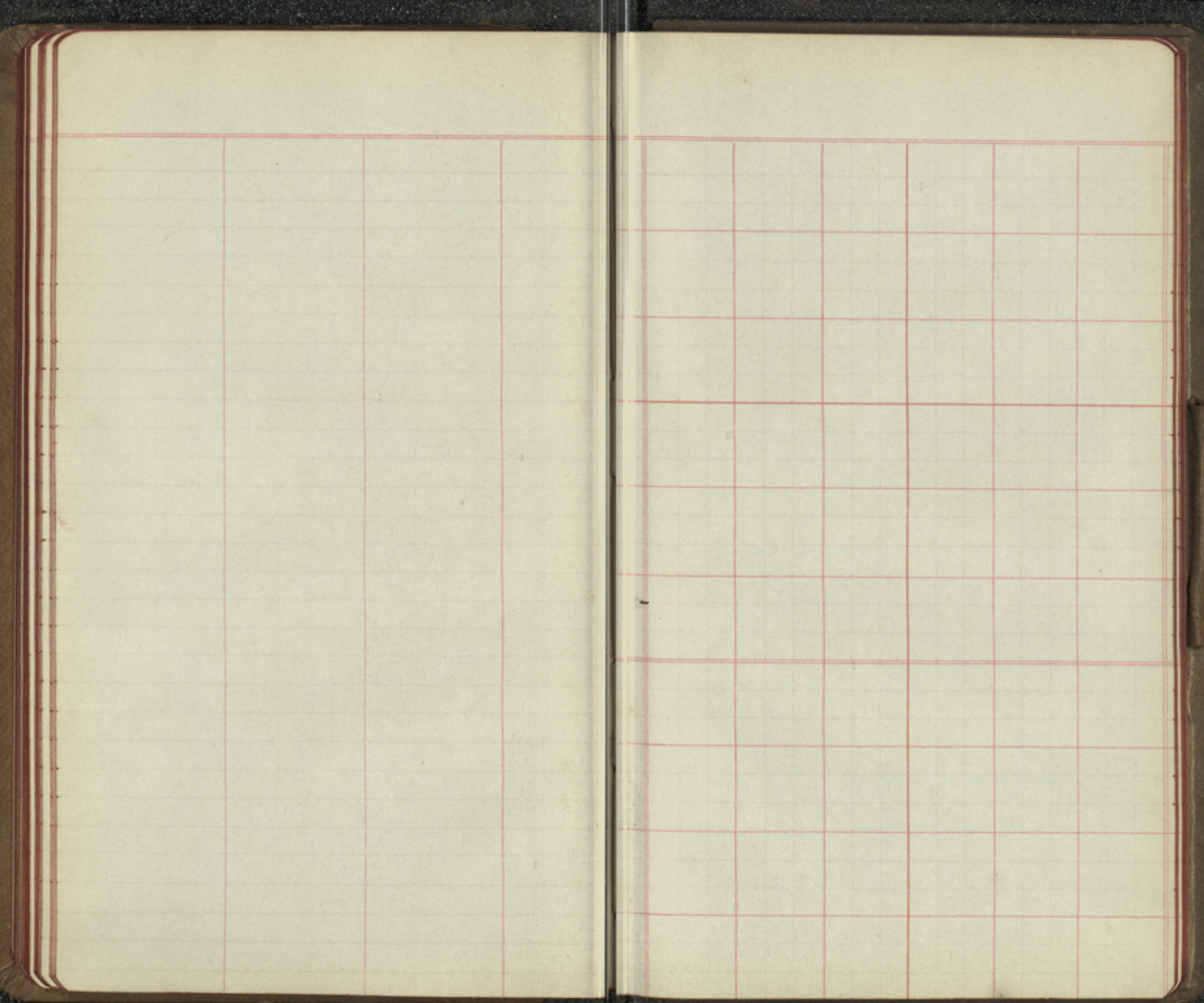


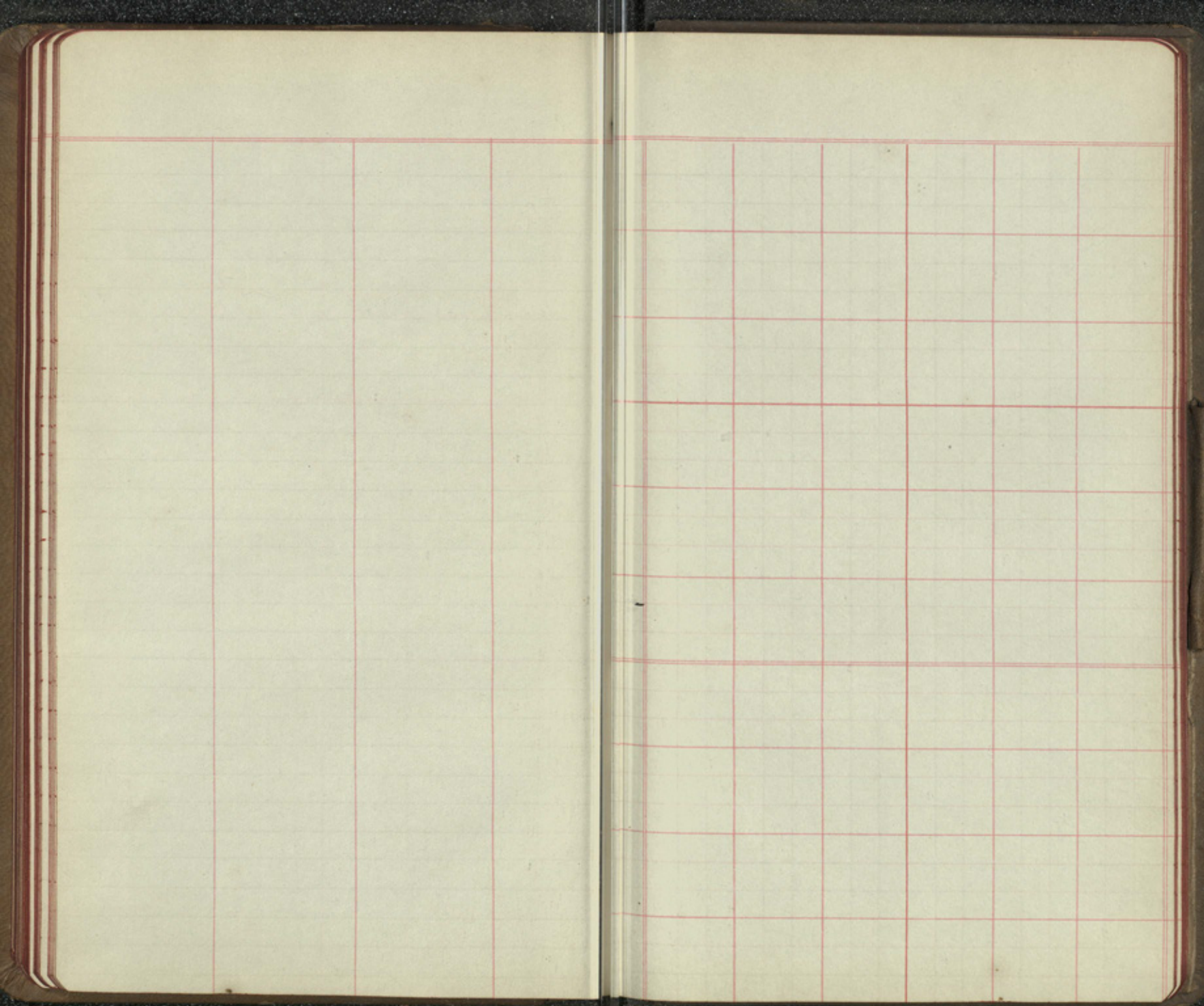


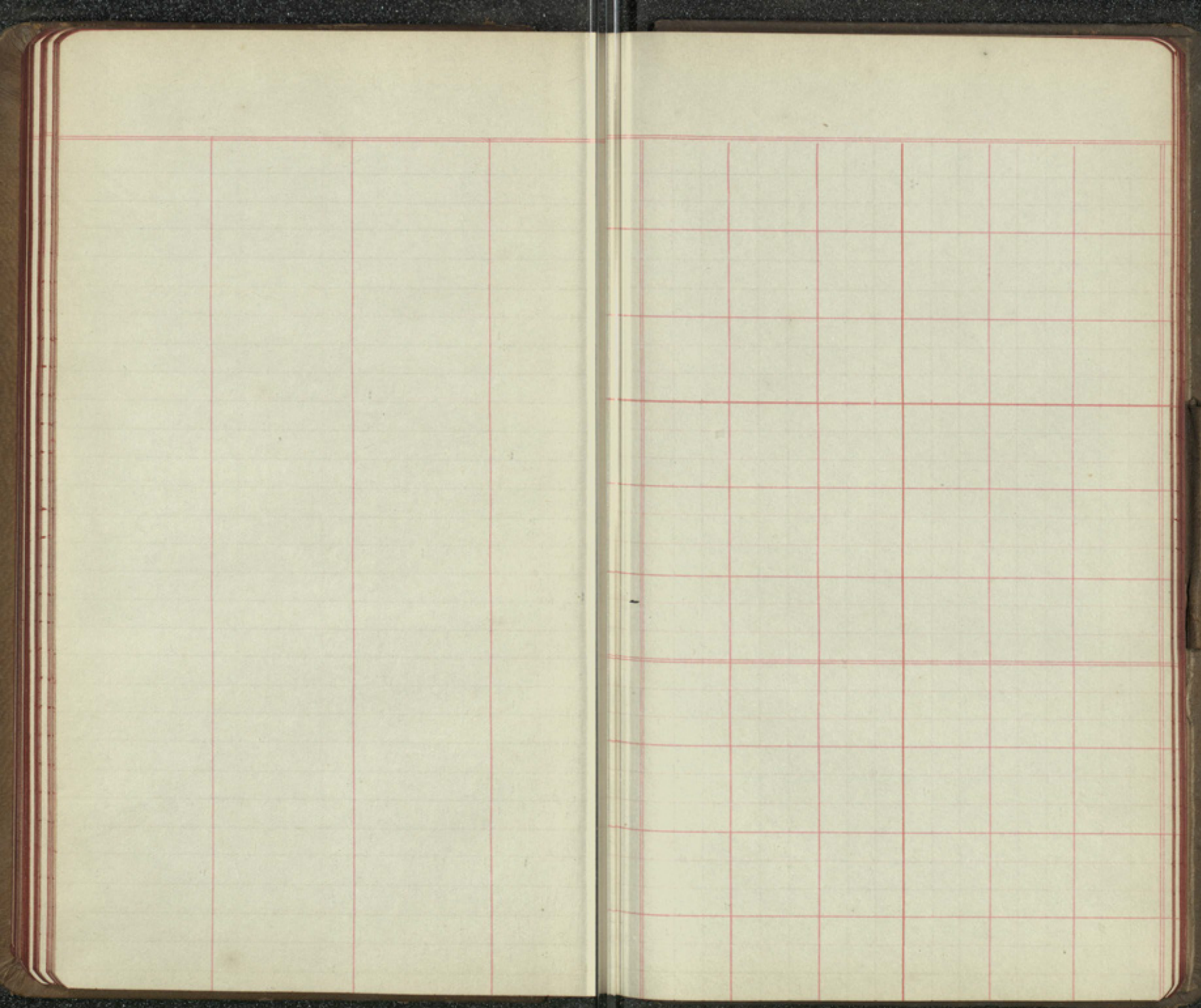


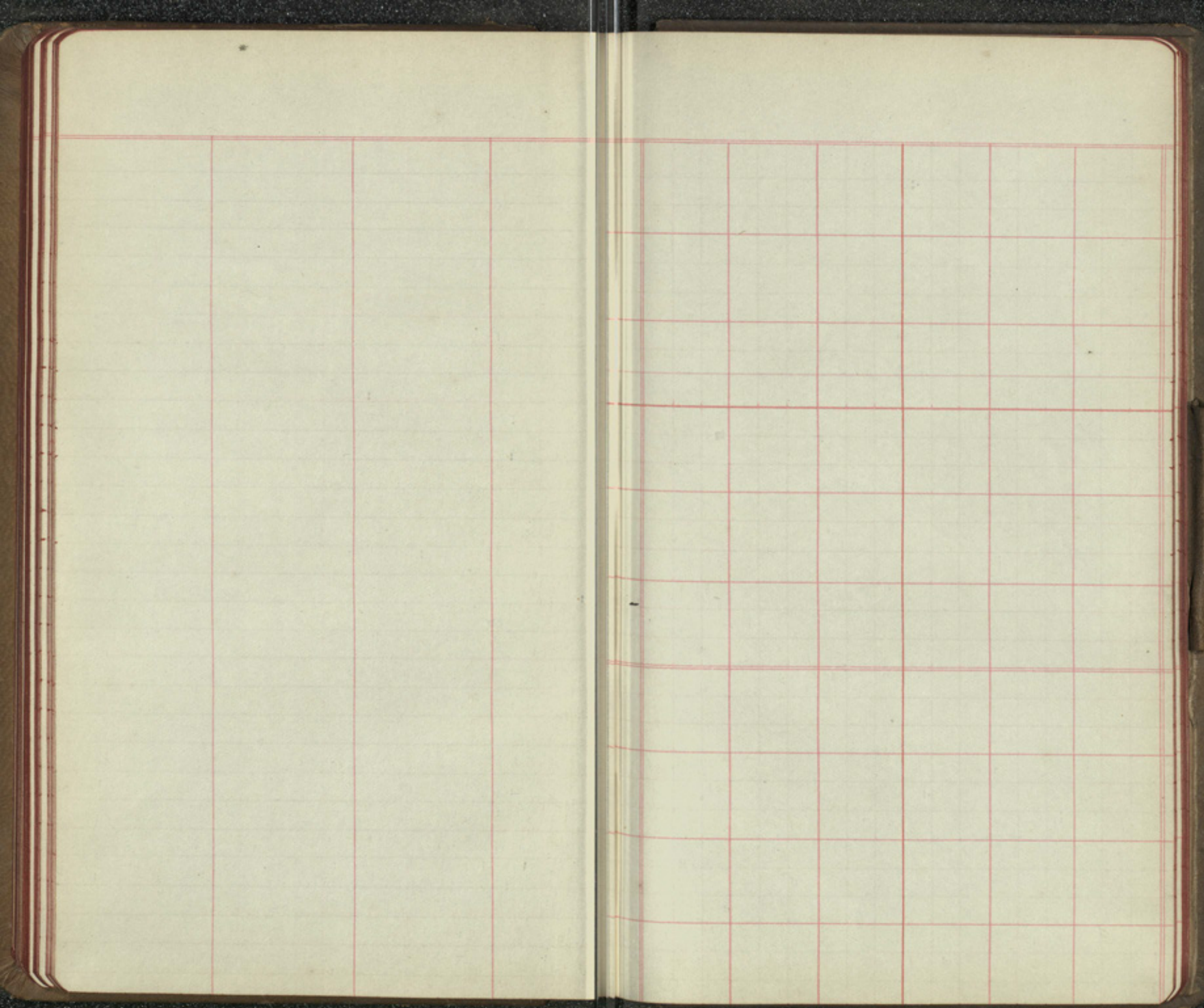


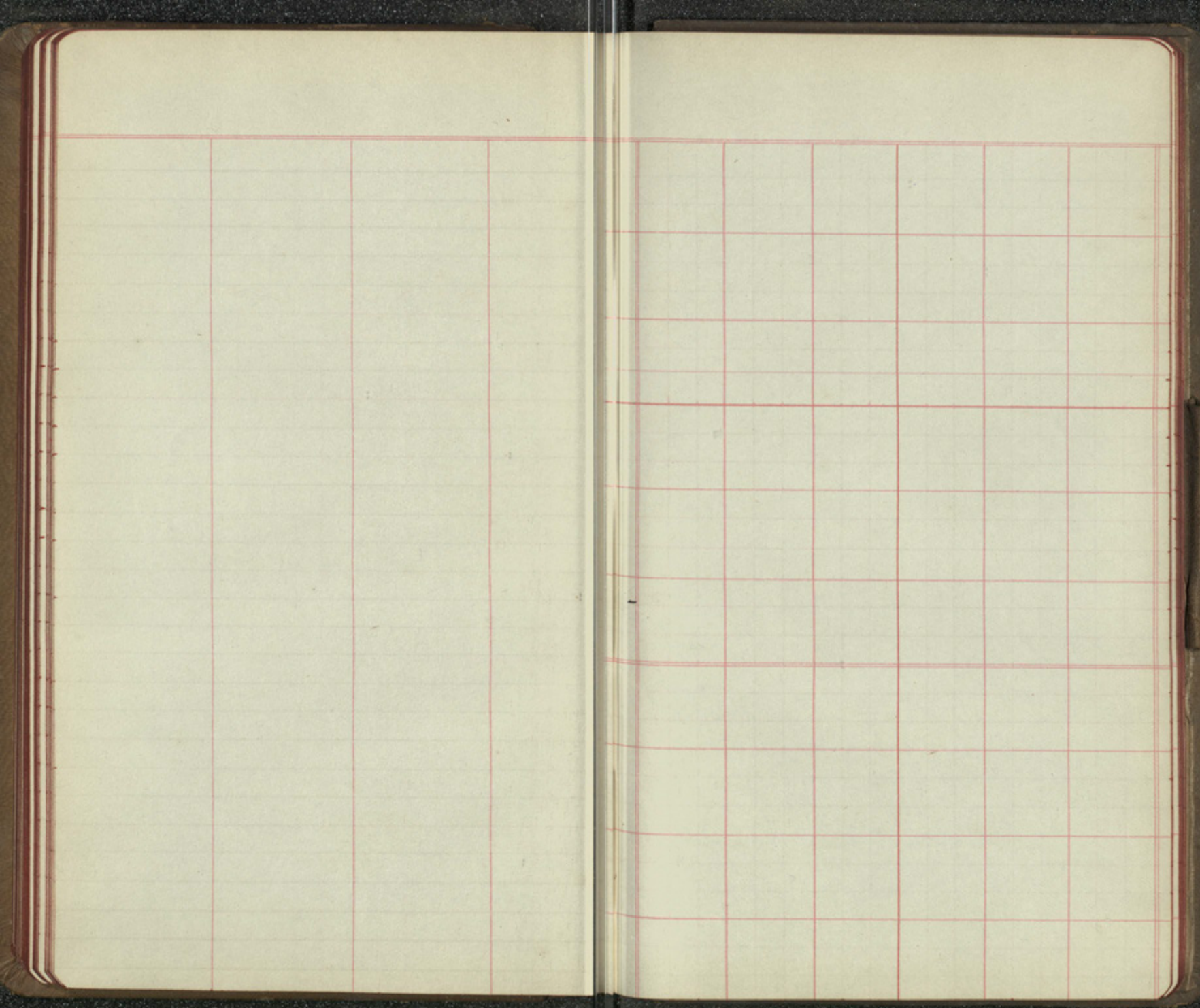


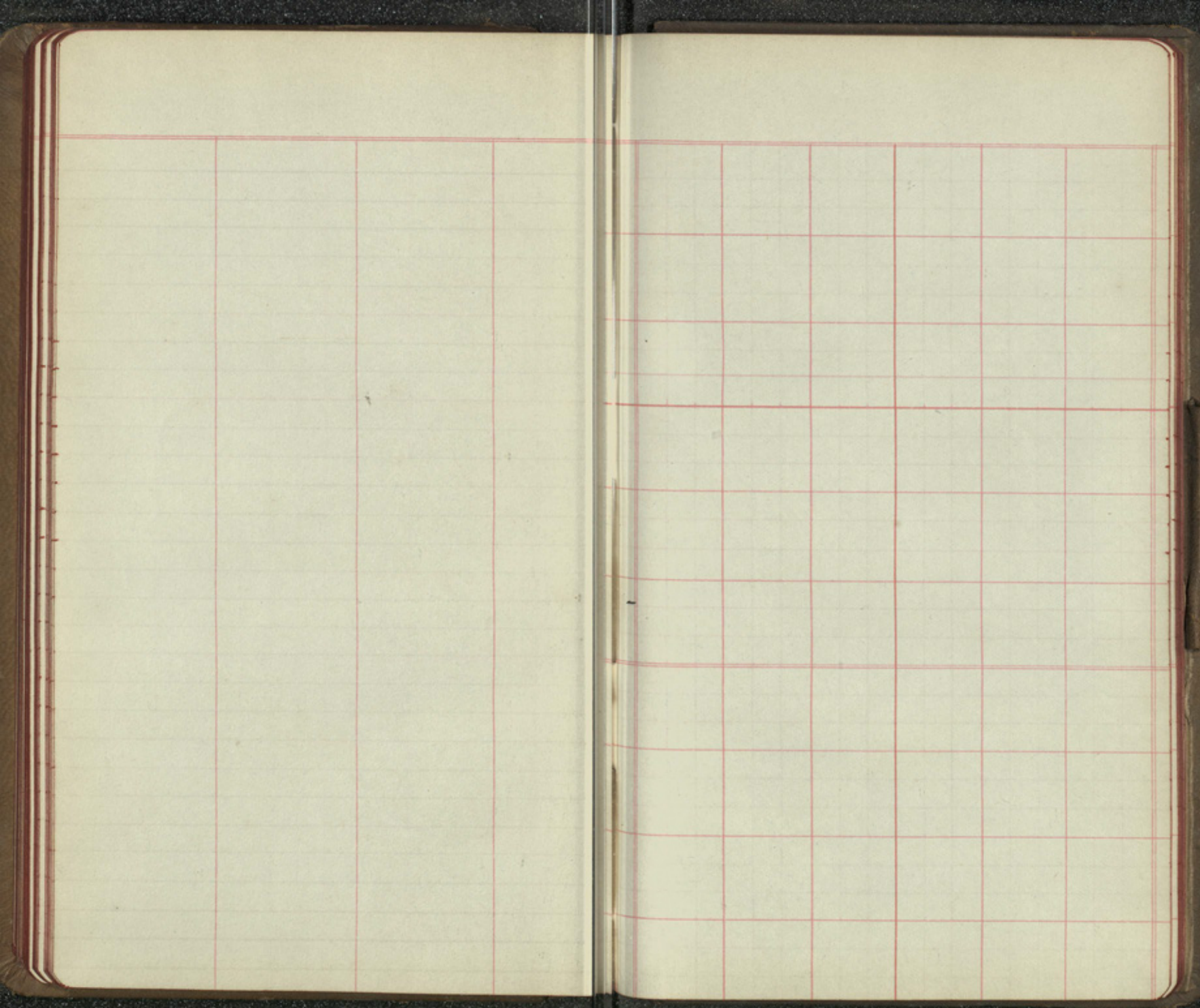


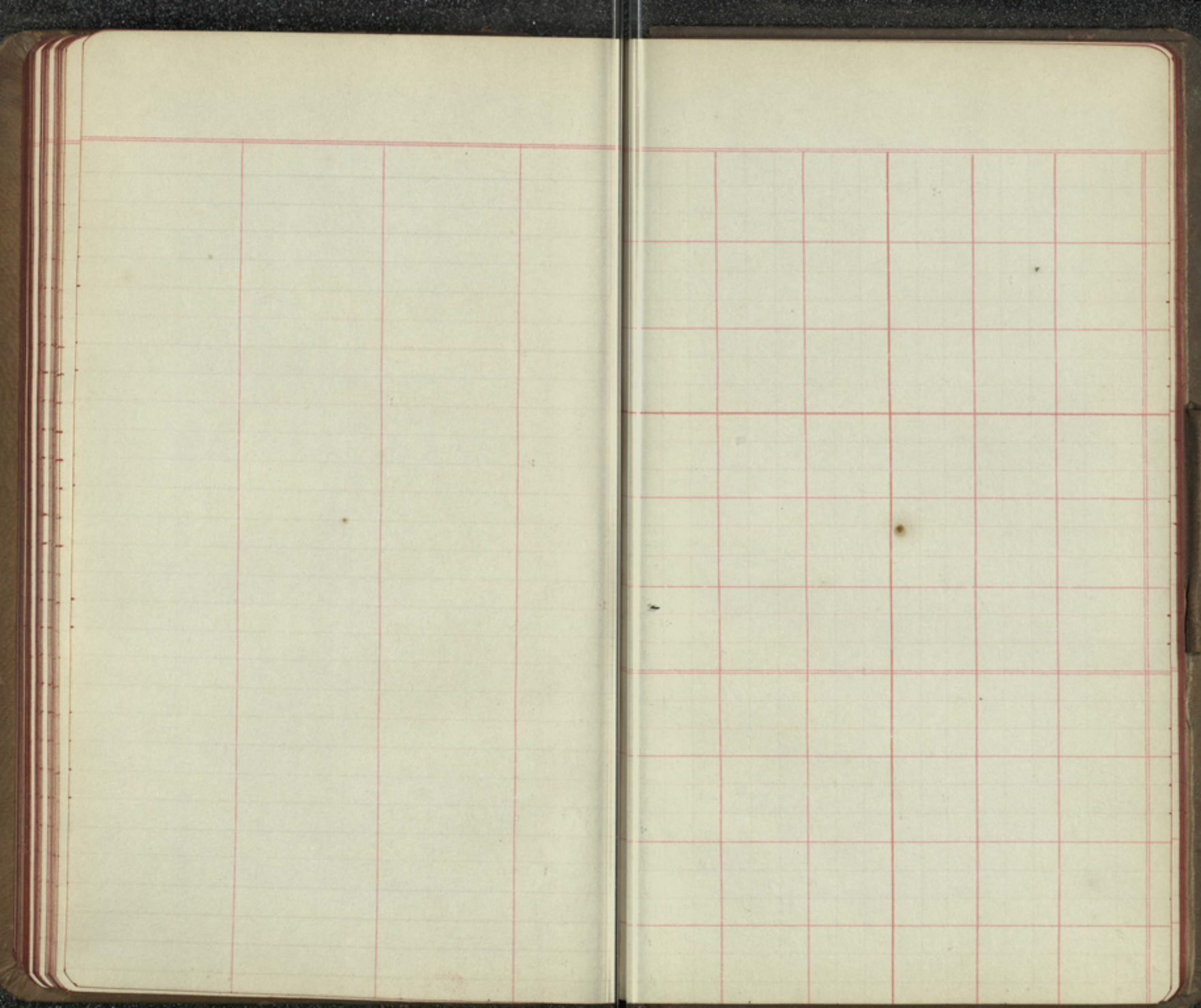


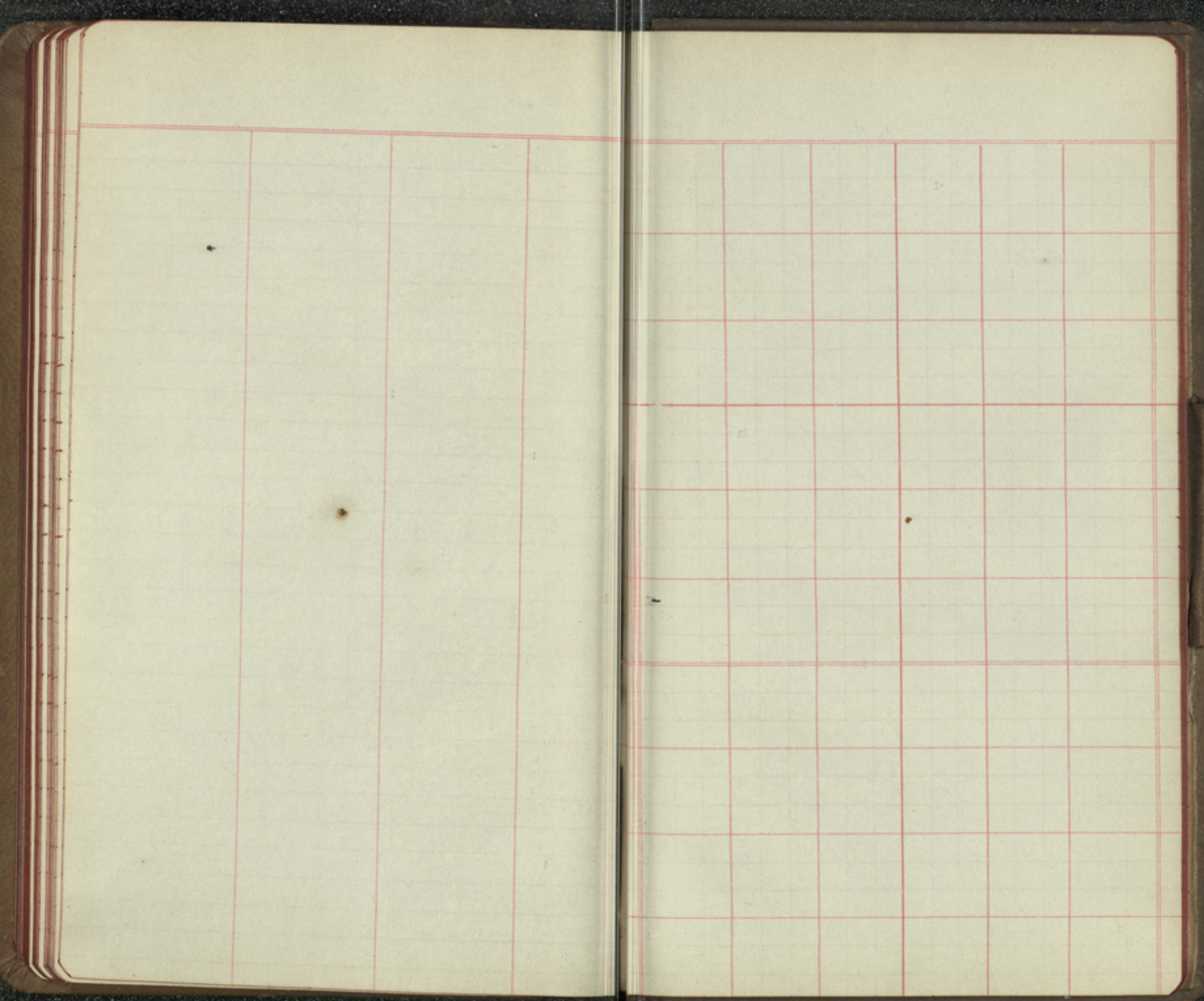


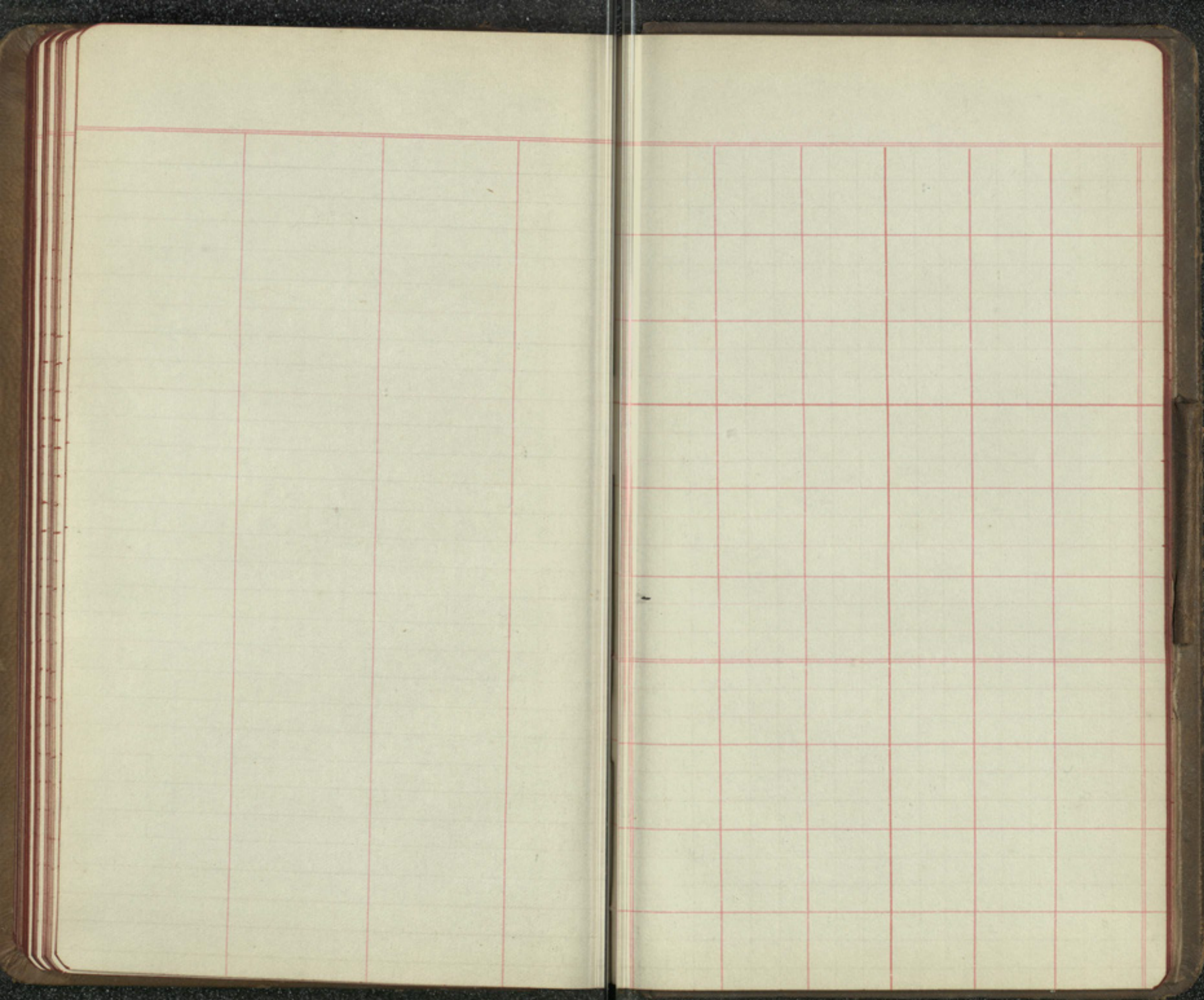


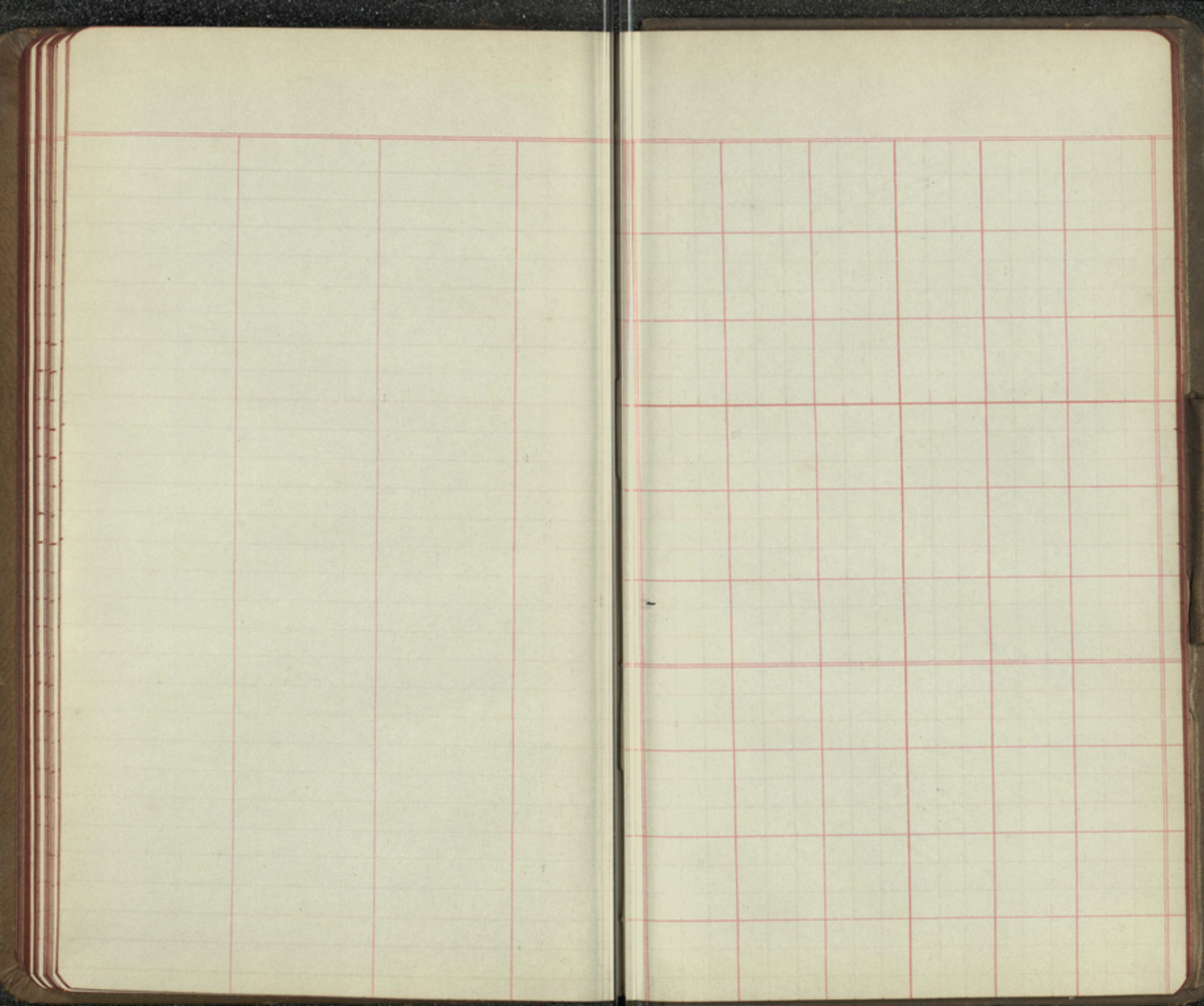


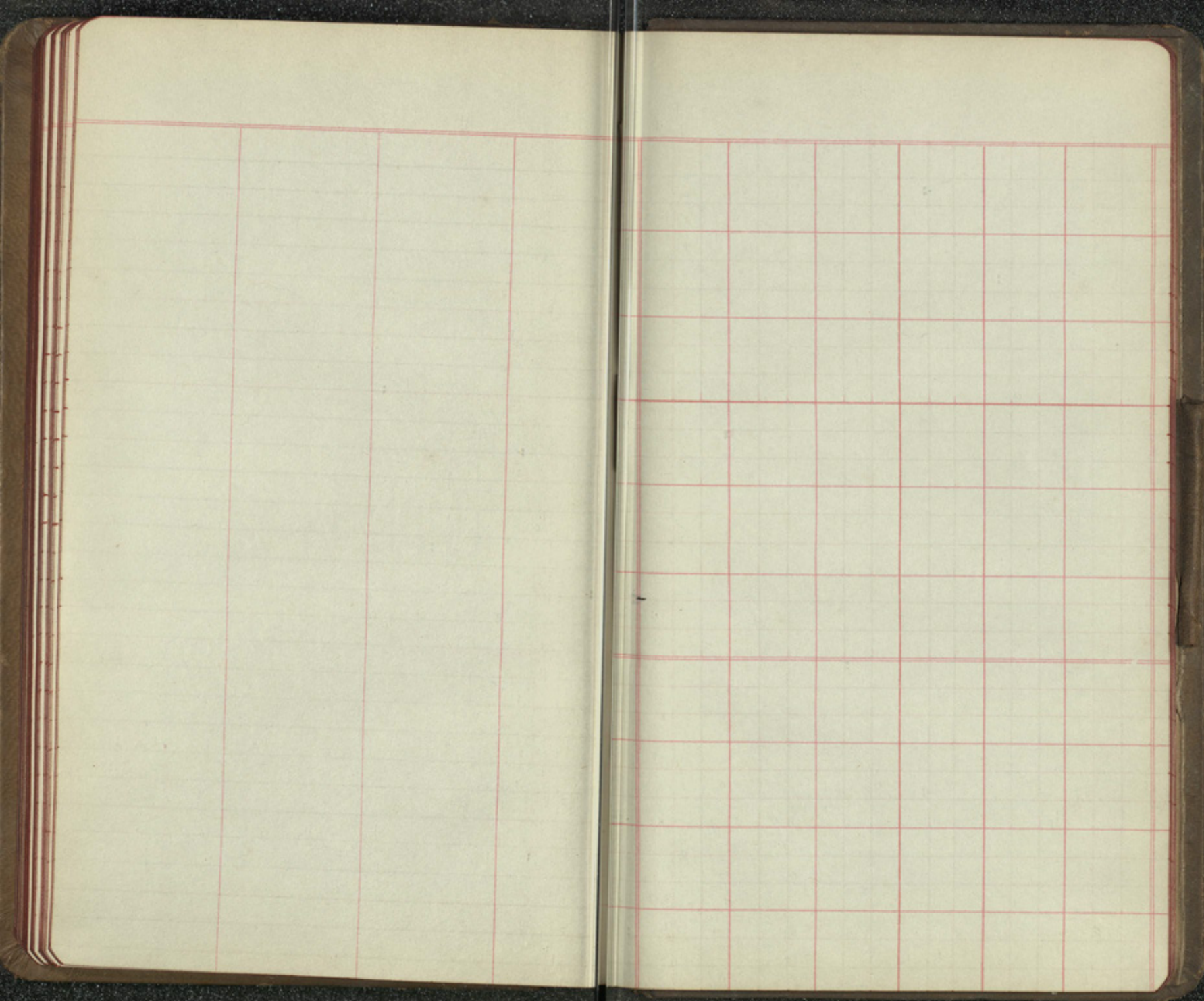


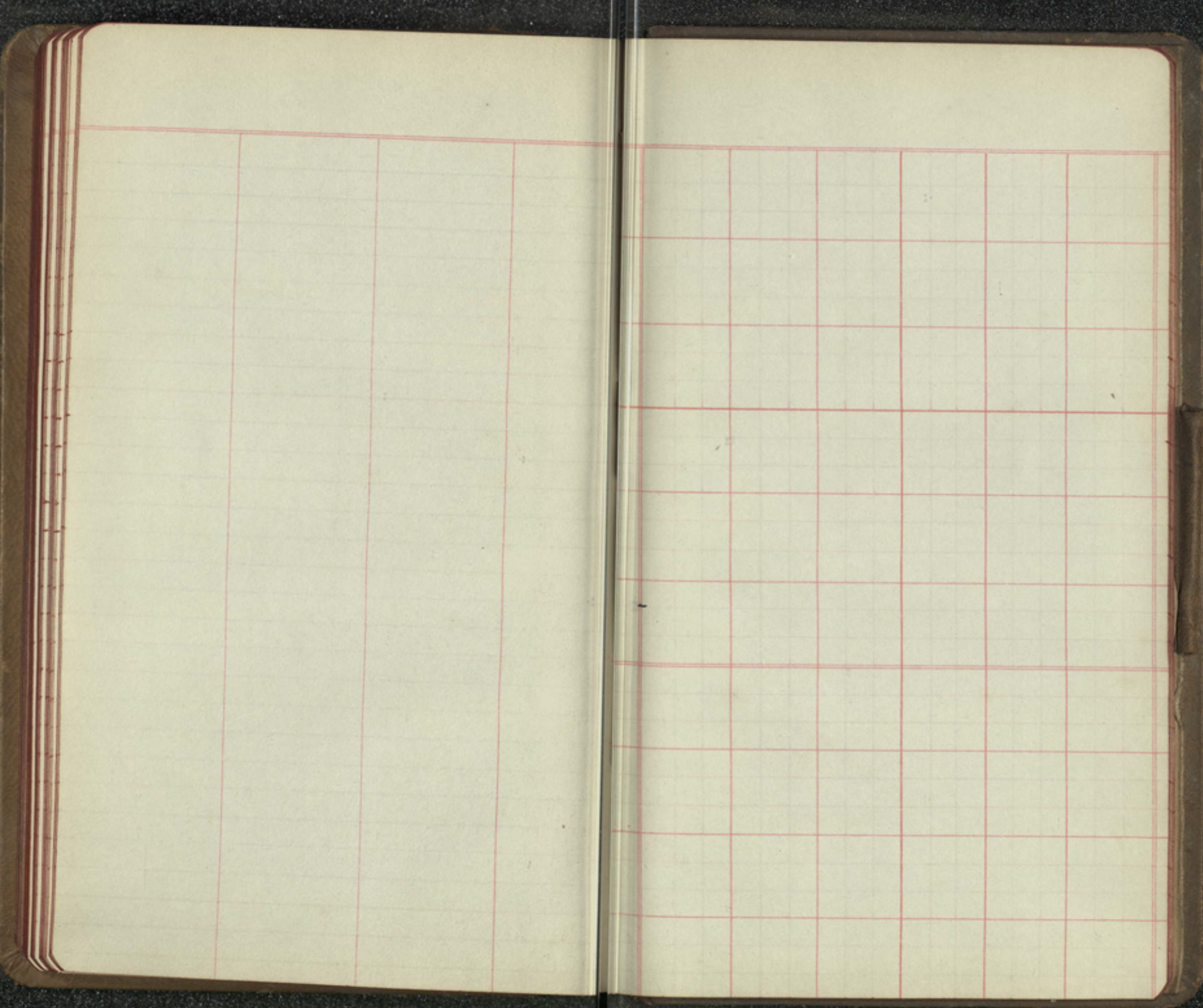


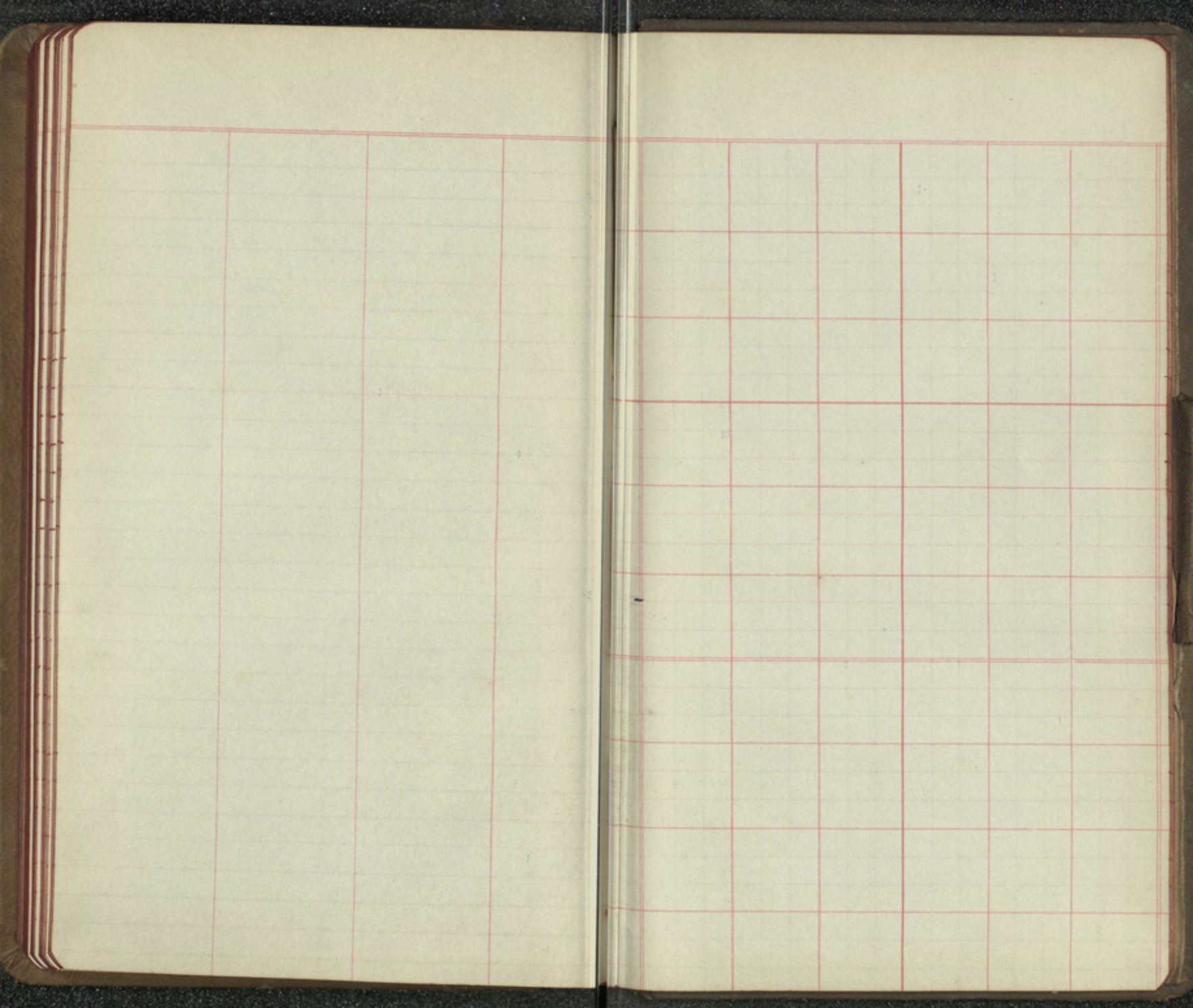


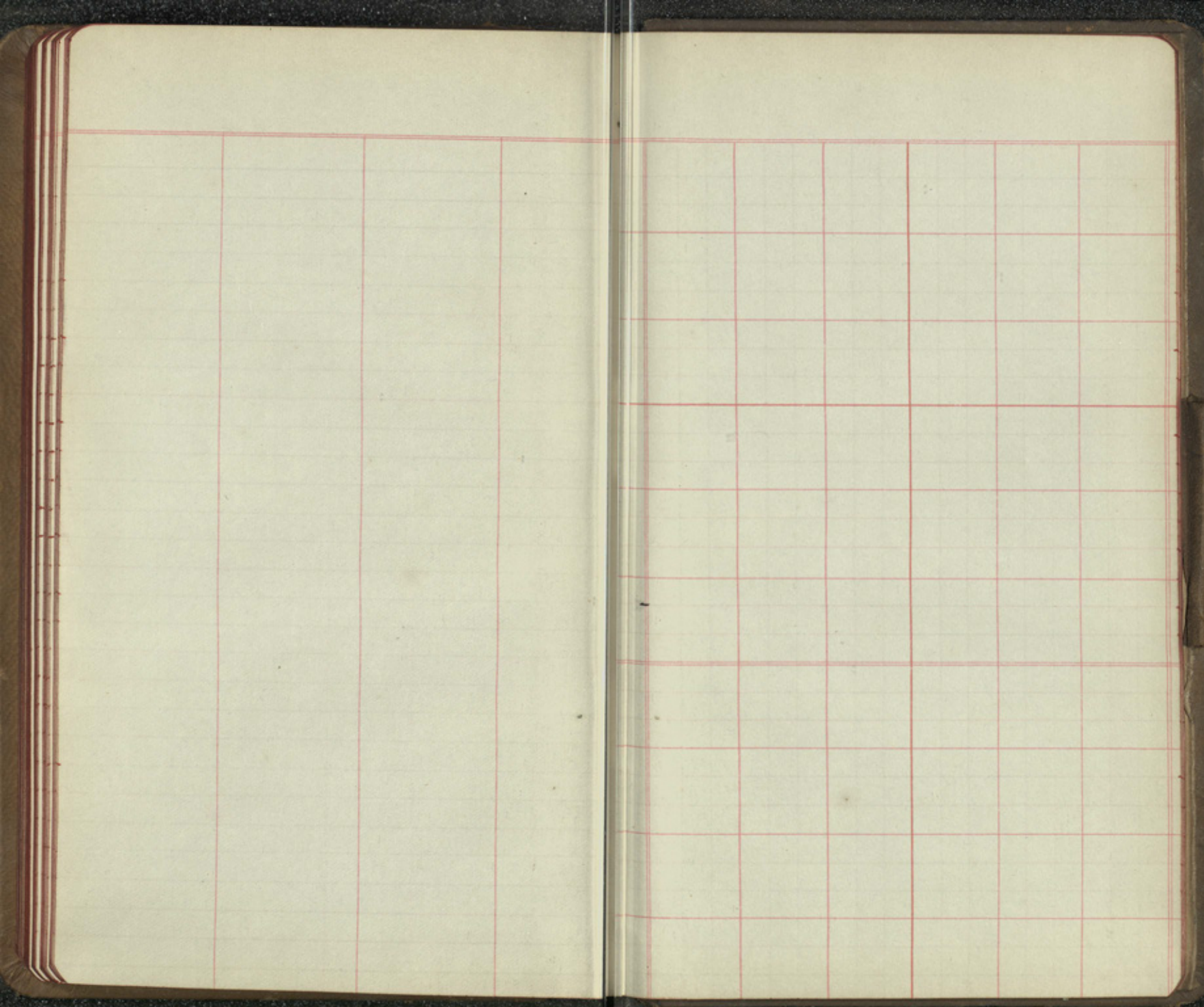


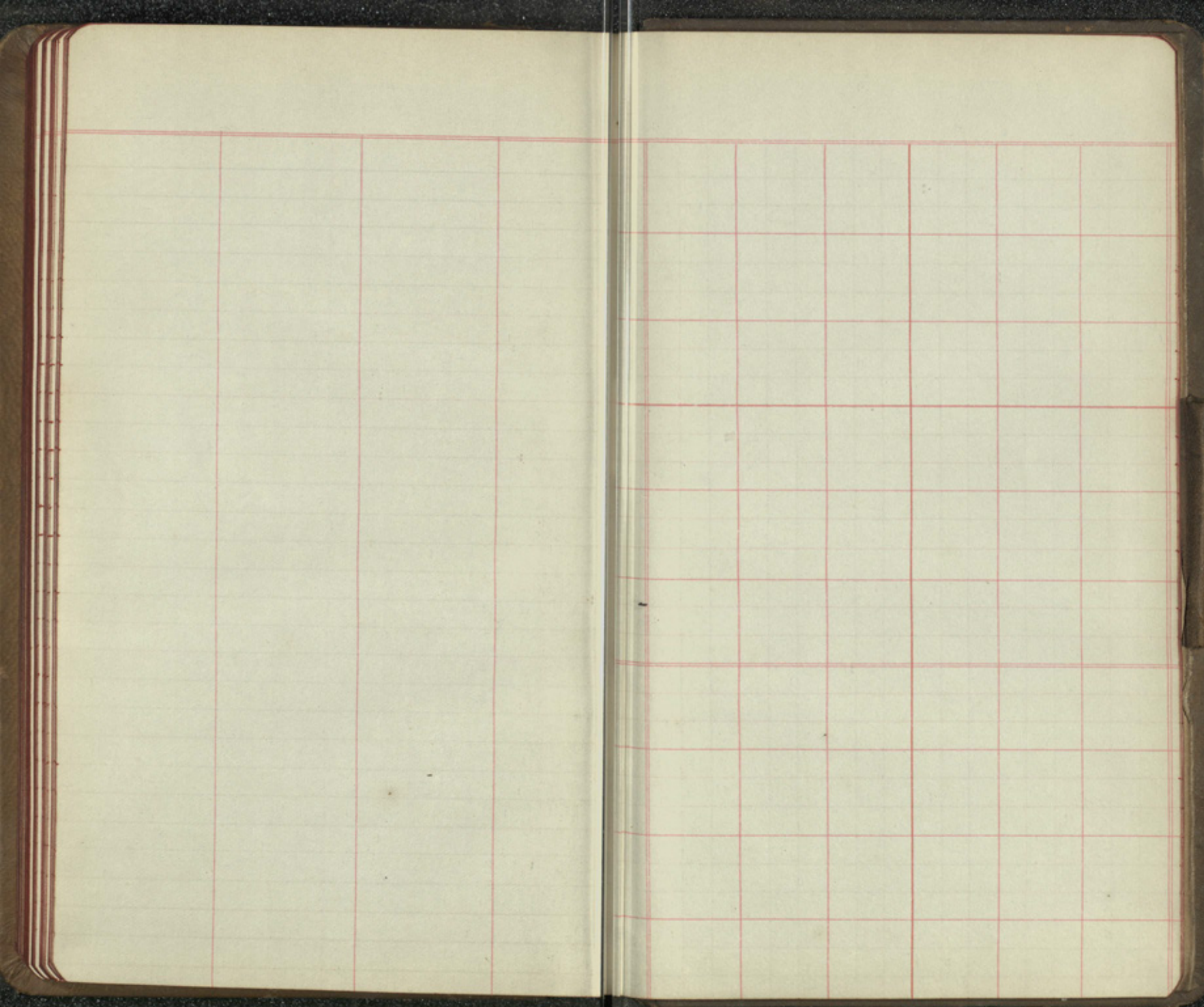


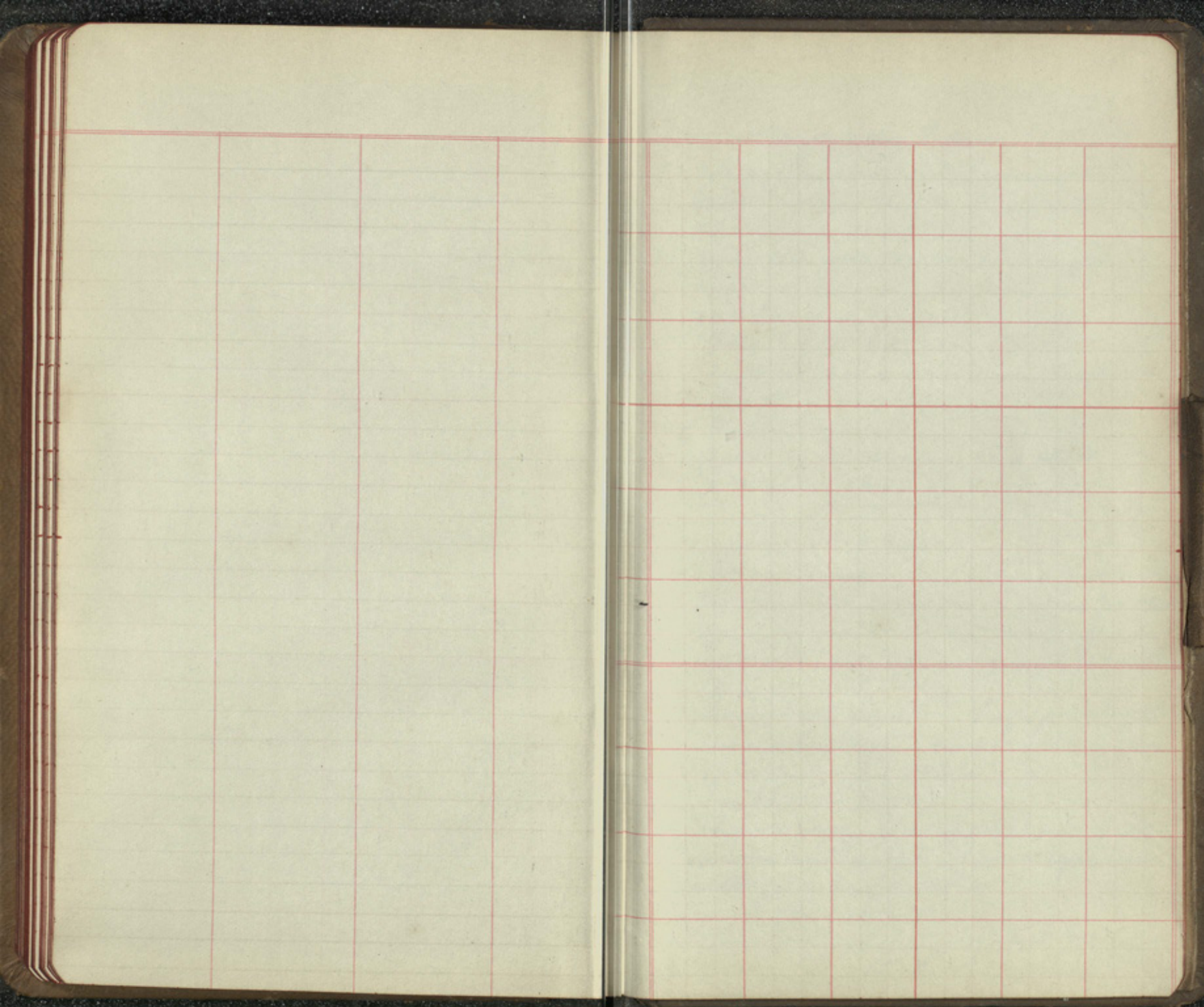










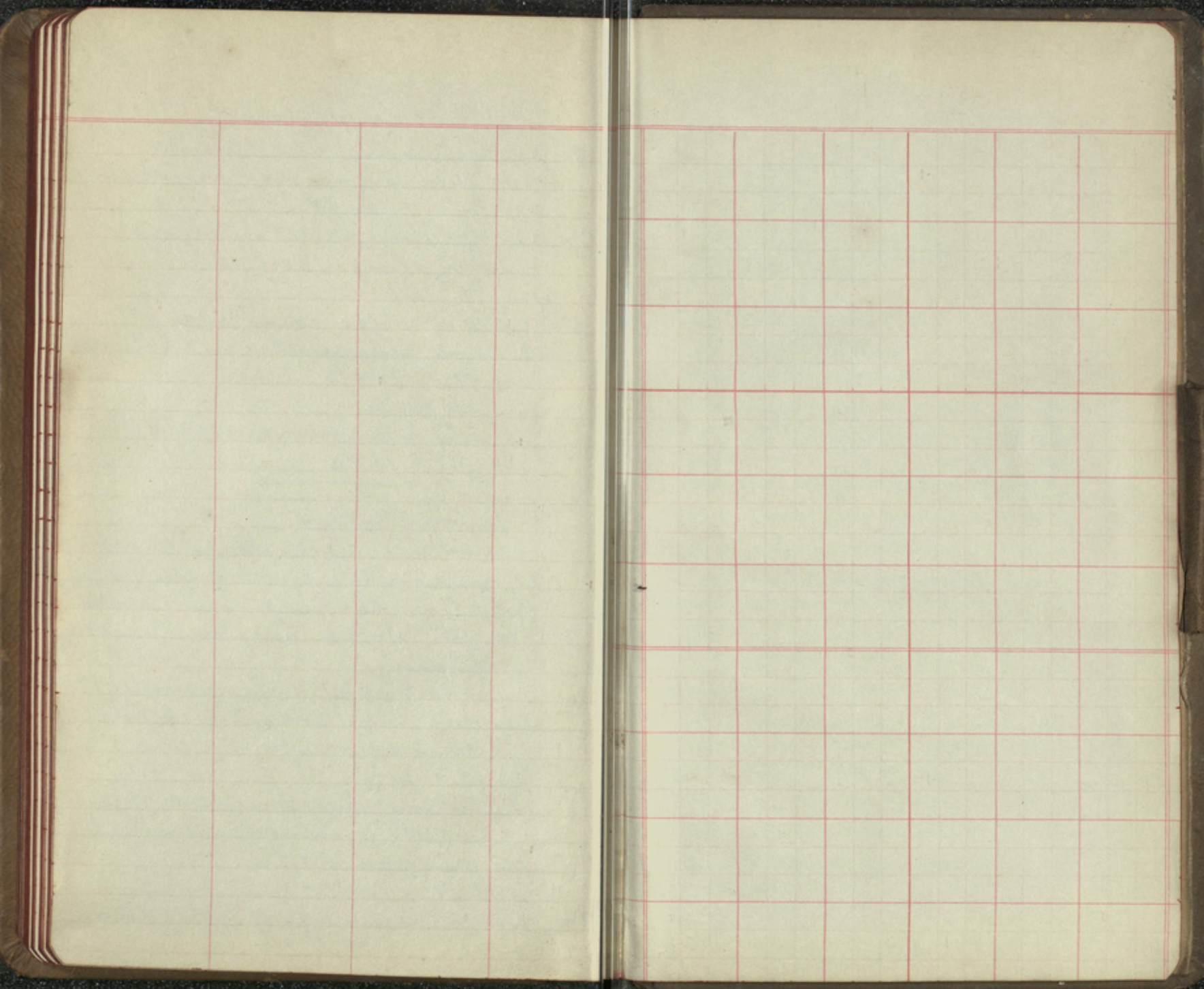


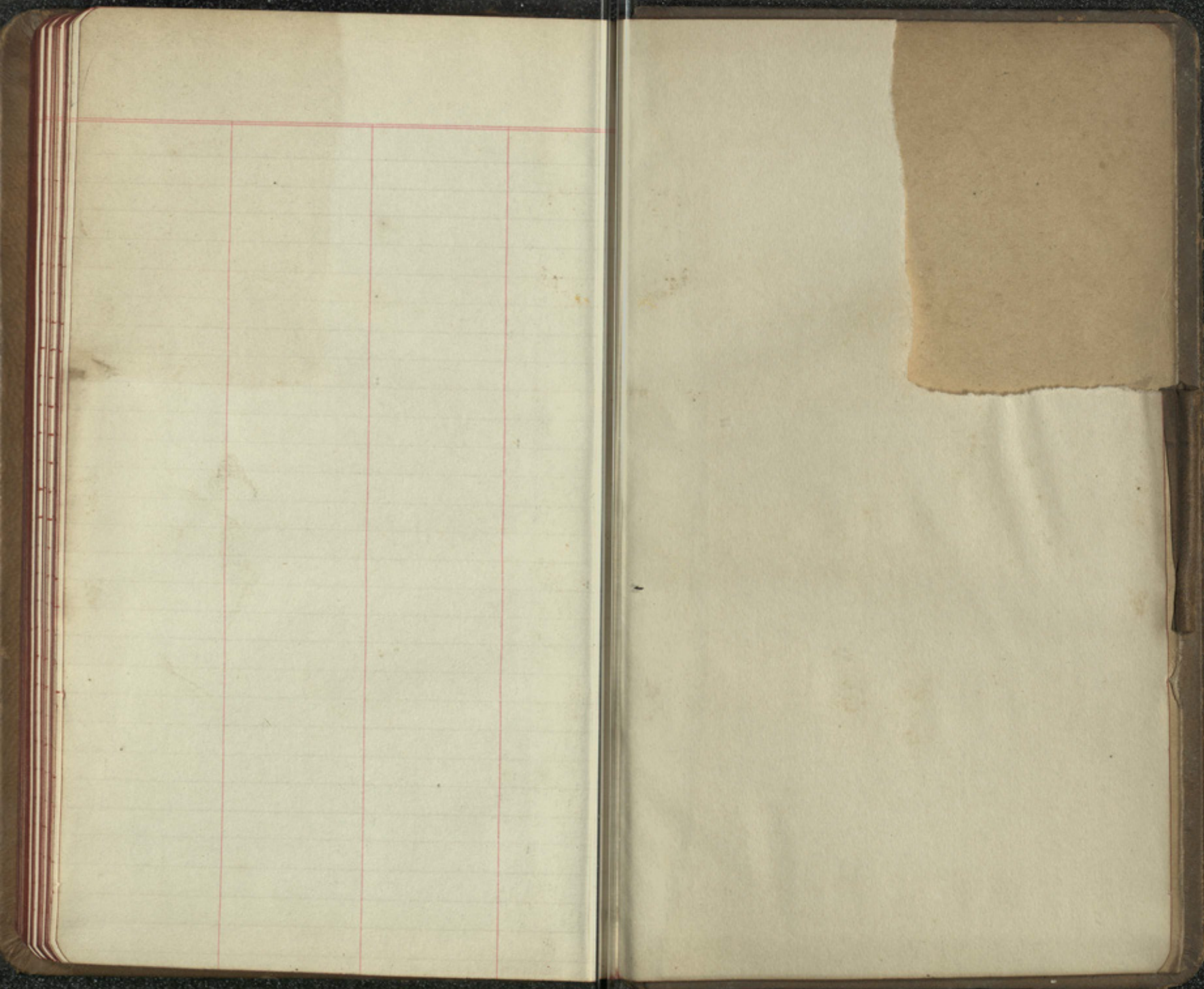
Silkwooddy Films 8/29/14

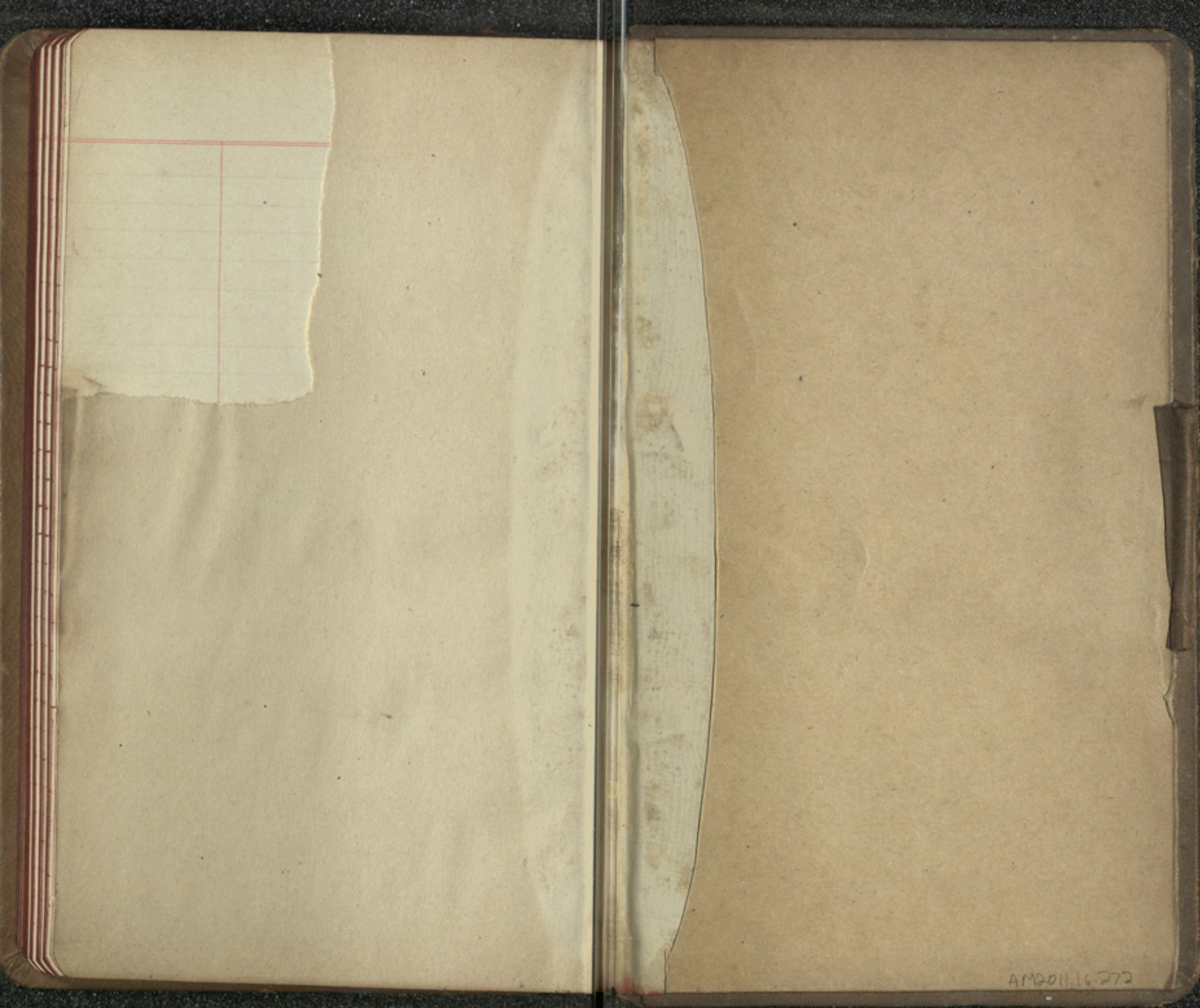
- 8 - 3 in afternoon, veiled sunlight
View toward glaciers - over water
22 - $\frac{1}{5}$ 100 ft
- 7 - 3 in afternoon, veiled sunlight
View of camp. - 50 feet
16 - to
- 9 - View of cliffs same time.
To show sedimentaries & intrusions
100 ft. 16 - to
- 10 - Same time
View of glaciers over water
100 ft. - 16 to
-

Second films.

- 1 - Same time. Light struck probably
by failure to adjust film properly.
View of motor boat over water
100 ft. 11 - $\frac{1}{2}$ 5 Long time because
of spoiling.
- 2 Ten o'clock 8/25/14 - Lazy sunlight
View up gorge to show both sides
of Silkwooddy Cañon.
100 ft. - 11 - $\frac{1}{2}$ 50.
- 3 Same time. View of right side of gorge
to show intrusion of dark igneous
into gray sandstone.
100 ft. - 16 $\frac{1}{2}$ 5
4. Same time View of Tent, Jot, Arlio
Abloyah. - 10 ft. 11 - $\frac{1}{2}$ 50.







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