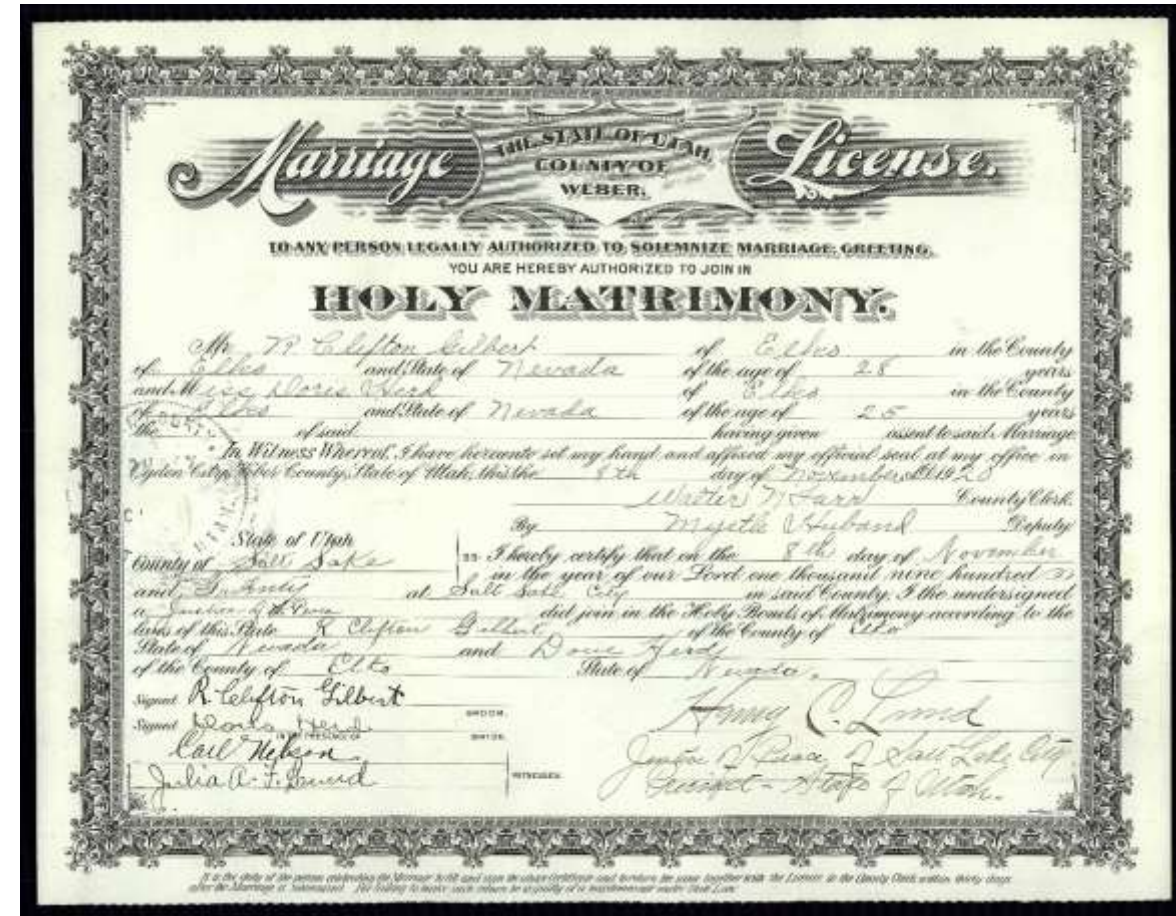
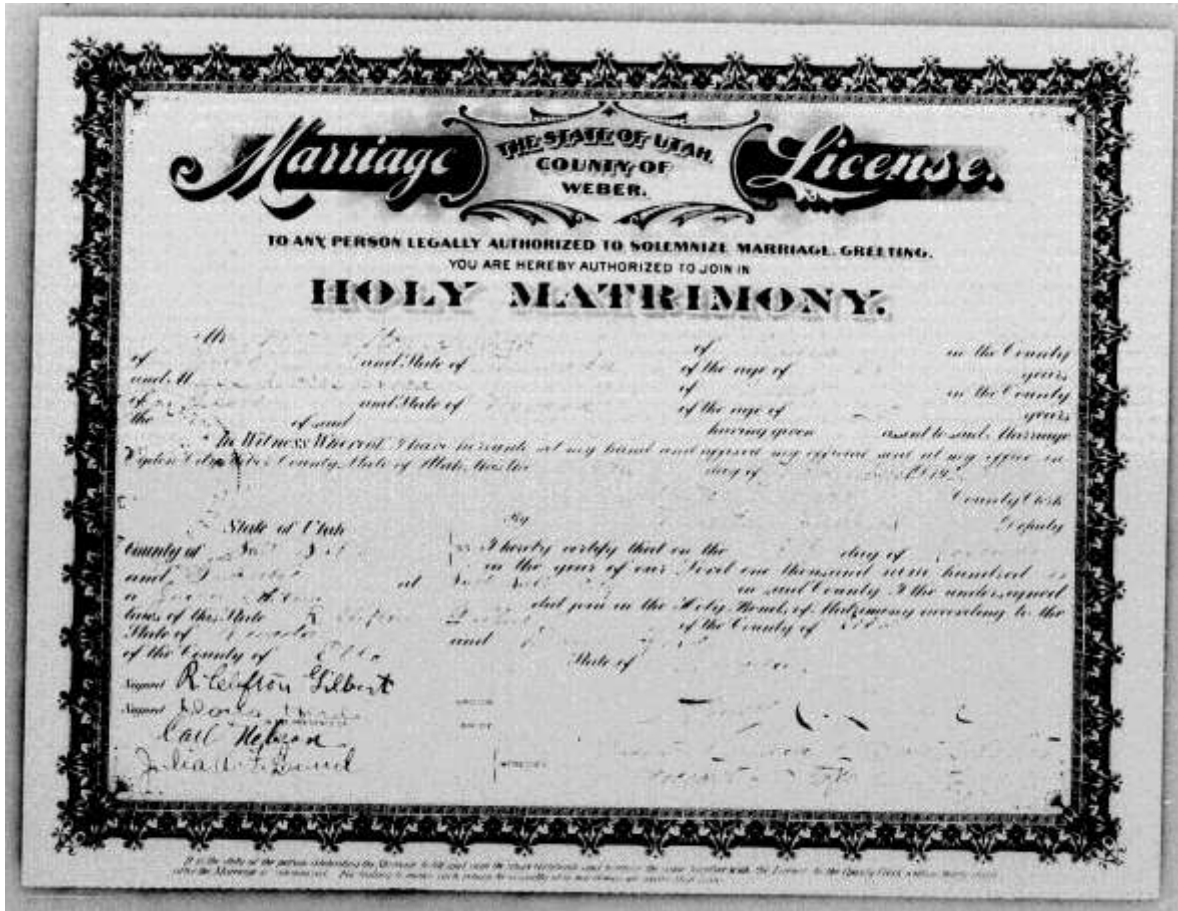


# Data Extraction from Historical Documents

Heath Nielson

FamilySearch

# Image Quality



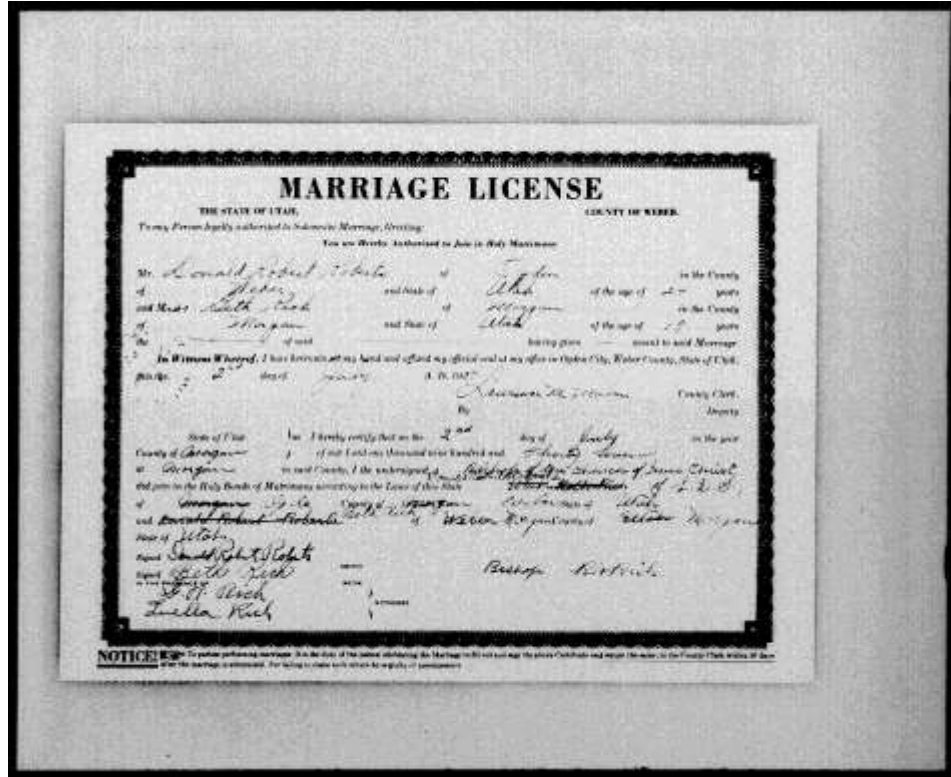
(DGS: 4581874, Frame no: 504, Captured: 21 Apr 1969)

(DGS: 100598259, Frame no: 1383, Captured: 19 Mar 2014)

# Image Quality

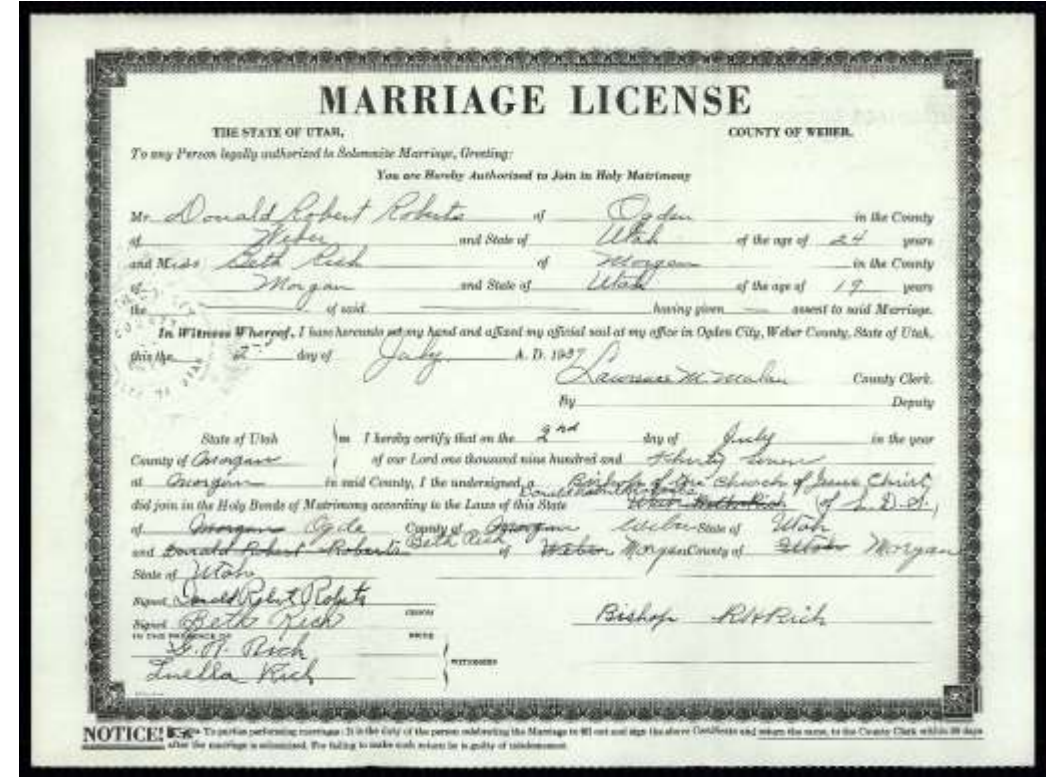
- Are there metrics which can be applied at point of capture to aid the camera operator?
  - Have investigated quality metrics
    - MSE (Mean squared error), PSNR (Peak Signal to Noise Ratio)
    - UQI – Universal Quality Index. Wang, Bovik [2006]
    - SFM – Spatial Frequency Measurement. Sakuldee, Ratchakit, et. Al [2008]
  - Image Characteristic measurements
    - Blur detection. Baker, Cannaday [2012]
- Rank images based upon quality
  - Retake opportunities

# Matching



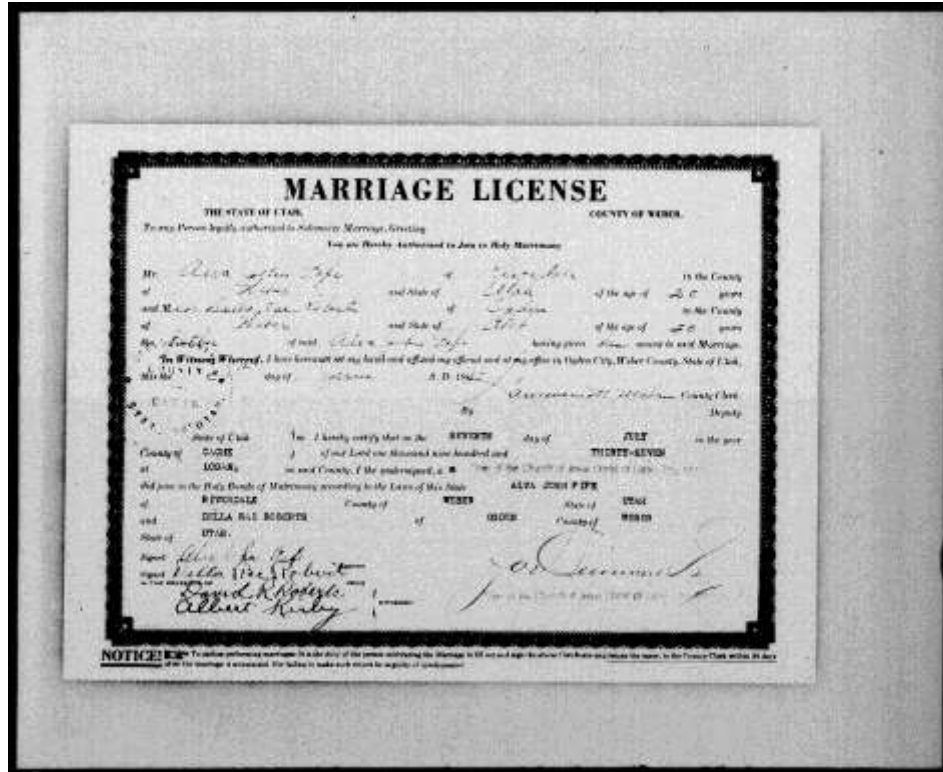
(DGS: 4581874, Image no: 79)

=



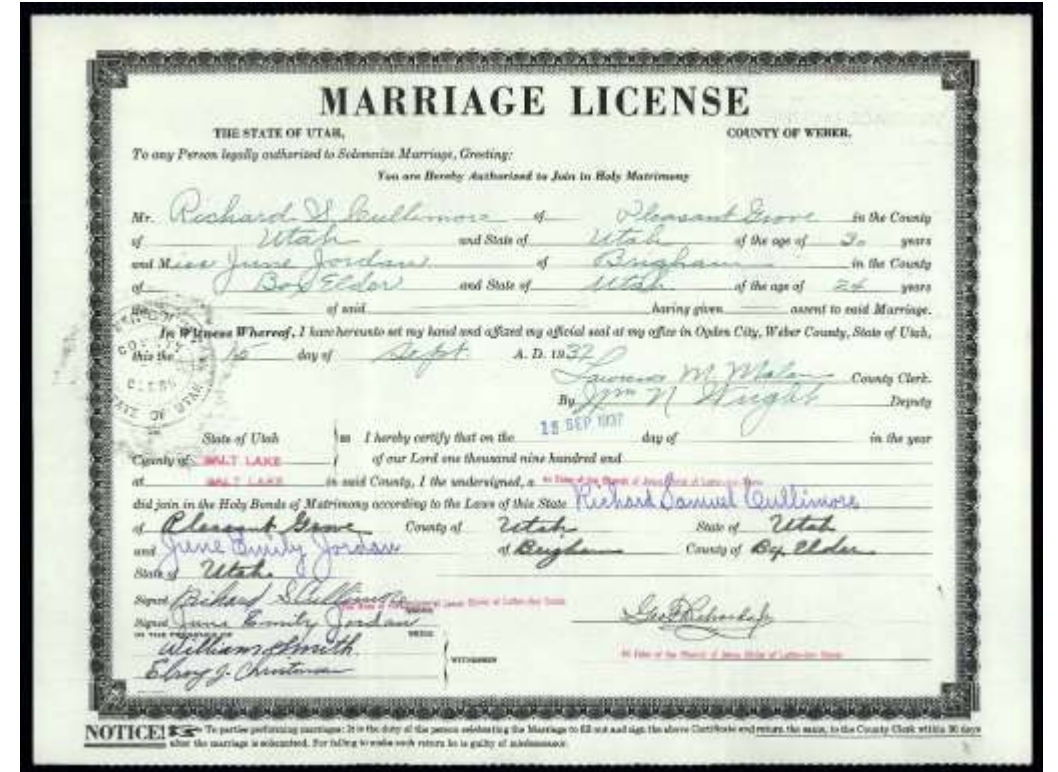
(DGS: 100598277, Image no: 636)

# Matching



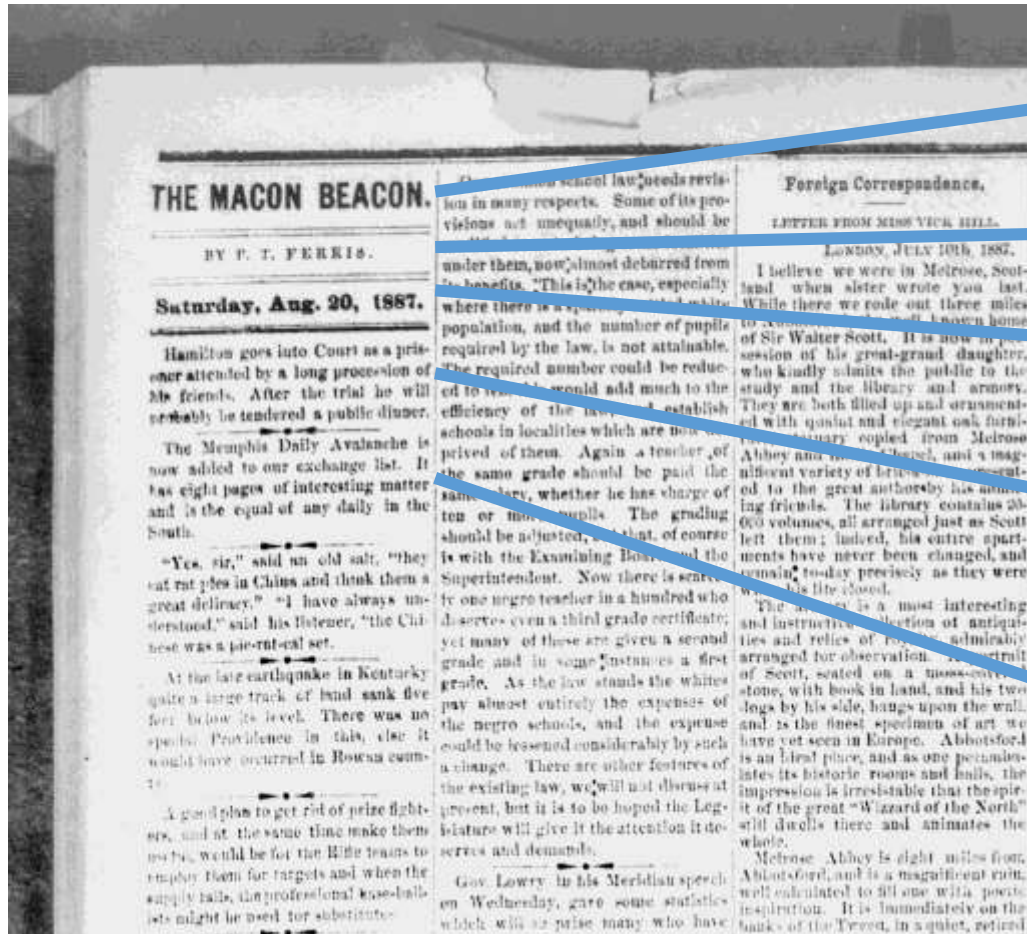
(DGS: 4581874, Image no: 73)

≠



(DGS: 100598277, Image no: 936)

# Zoning



## THE MACON BEACON.

BY P. T. FERRIS.

Saturday, Aug. 20, 1887.

Hamilton goes into Court as a prisoner attended by a long procession of his friends. After the trial he will probably be tendered a public dinner.

The Memphis Daily Avalanche is now added to our exchange list. It has eight pages of interesting matter and is the equal of any daily in the South.

"Yes, sir," said an old salt, "they eat rat pies in China and think them a great delicacy." "I have always understood," said his listener, "the Chinese was a pie-eating set."

At the late earthquake in Kentucky quite a large track of land sank five feet below its level. There was no special Providence in this, else it would have occurred in Rowena county.

A good plan to get rid of prize fighters, and at the same time make them useful, would be for the White teams to employ them for targets and when the supply fails, the professional nose-balls sets might be used for substitute.

## Foreign Correspondence.

LETTER FROM MISS VICK HILL.

LONDON, JULY 10th, 1887.

I believe we were in Melrose, Scotland when sister wrote you last. While there we rode out three miles to a country seat of my brother's home of Sir Walter Scott. It is now in possession of his great-grand daughter, who kindly admits the public to the study and the library and armory. They are both filled up and ornamented with quaint and elegant oak furnished with gaudy and elegant oak furniture. The library copied from Melrose Abbey and the church, and a magnificent variety of bronzes of different kinds, all arranged just as Scott left them; indeed, his entire apartments have never been changed, and remain to-day precisely as they were when he died.

The church is a most interesting and instructive collection of antiquities and relics of former times, admirably arranged for observation. A portrait of Scott, seated on a moss-covered stone, with book in hand, and his two dogs by his side, hangs upon the wall, and is the finest specimen of art we have yet seen in Europe. Abbotsford is an ideal place, and as one permeates its historic rooms and halls, the impression is irresistible that the spirit of the great "Wizard of the North" still dwells there and animates the whole.

Melrose Abbey is eight miles from Abbotsford, and is a magnificent ruin, well calculated to fill one with poetic inspiration. It is immediately on the banks of the Tyne, in a quiet, retired

school law needs revision in many respects. Some of its provisions are unequal, and should be

under them, now almost debarred from the benefits. This is the case, especially where there is a large population, and the number of pupils required by the law, is not attainable.

The required number could be reduced to two, which would add much to the efficiency of the law, and establish schools in localities which are now deprived of them. Again a teacher of the same grade, whether he has charge of ten or more pupils. The grading should be adjusted, so that, of course, with the existing law, and the Superintendent. Now there is scarce one negro teacher in a hundred who does not even a third grade certificate; yet many of these are given a second grade and in some instances a first grade. As the law stands the whites pay almost entirely the expenses of the negro schools, and the expense could be lessened considerably by such a change. There are other features of the existing law, we will not discuss at present, but it is to be hoped the Legislature will give it the attention it deserves and demands.

Gov. Lowry, in his Meridian speech on Wednesday, gave some statistics which will surprise many who have

THE MACON BEACON.

BY P. T. FERRIS.

Saturday, Aug. 20, 1887.

Hamilton goes into Court as a prisoner attended by a long procession of his friends. After the trial he will probably be tendered a public dinner.

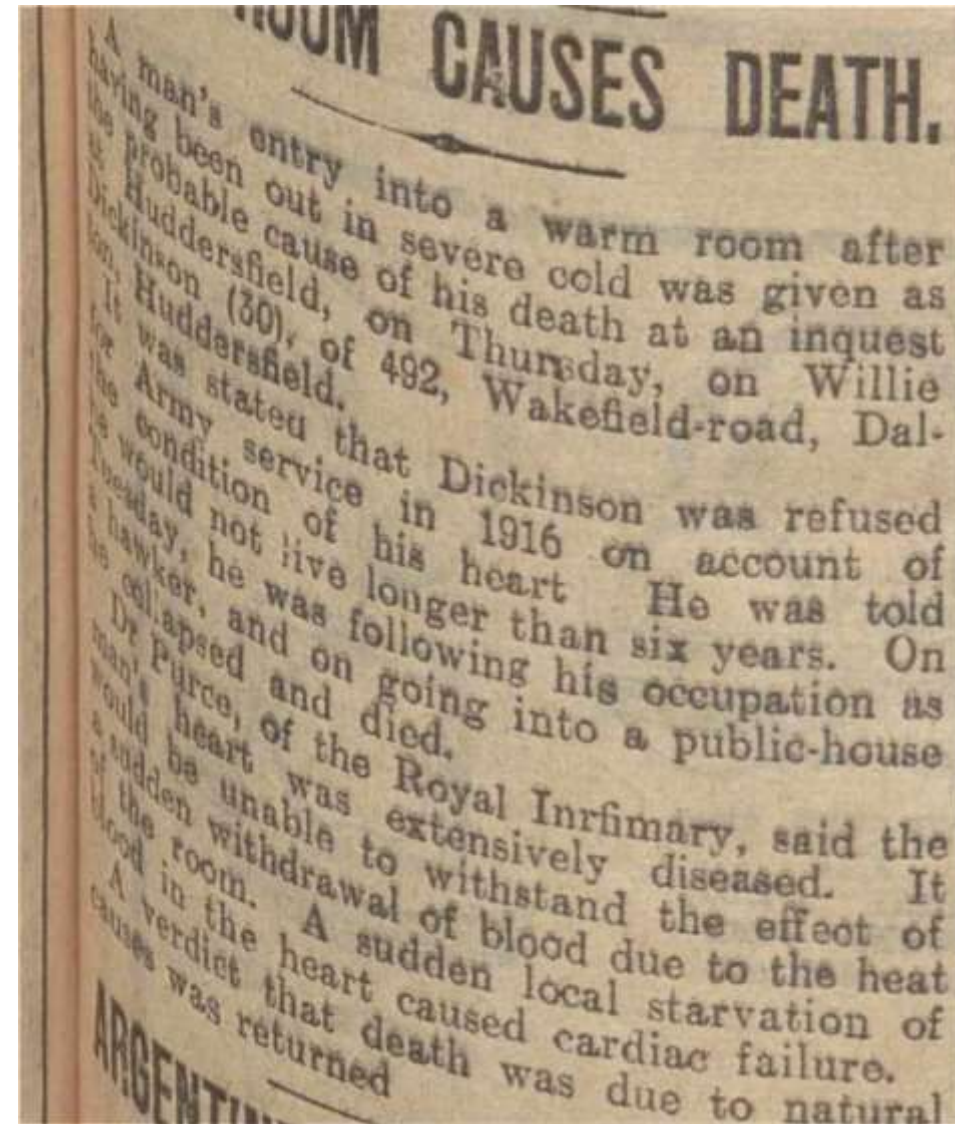
The Memphis Daily Avalanche is now added to our exchange list. It has eight pages of interesting matter and is the equal of any daily in the South.

# Enhancement

- Anything to help improve readability for a person and/or automated process
  - Gutter
  - Contrast Enhancement



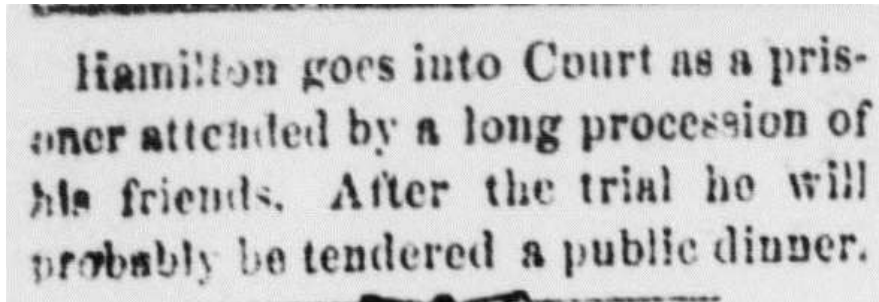
(DGS: 101918291, Image no: 675)



(DGS: 101918288, Image no: 294)

# OCR

Lots of good commercial solutions but OCR of historical documents still presents a challenge



Macon Beacon. 20 Aug 1887. Page 2.

<http://chroniclingamerica.loc.gov/lccn/sn83016943/1887-08-20/ed-1/seq-2/>

Hamilton goes into Court as a prisoner attended by a long procession of his friends. After the trial he will probably be tendered a public dinner.

Tesseract 3.02:

Hamilton goes into Court as a prisoner attended by a long procession of his friends. After the trial he will probably be tendered a public dinner.

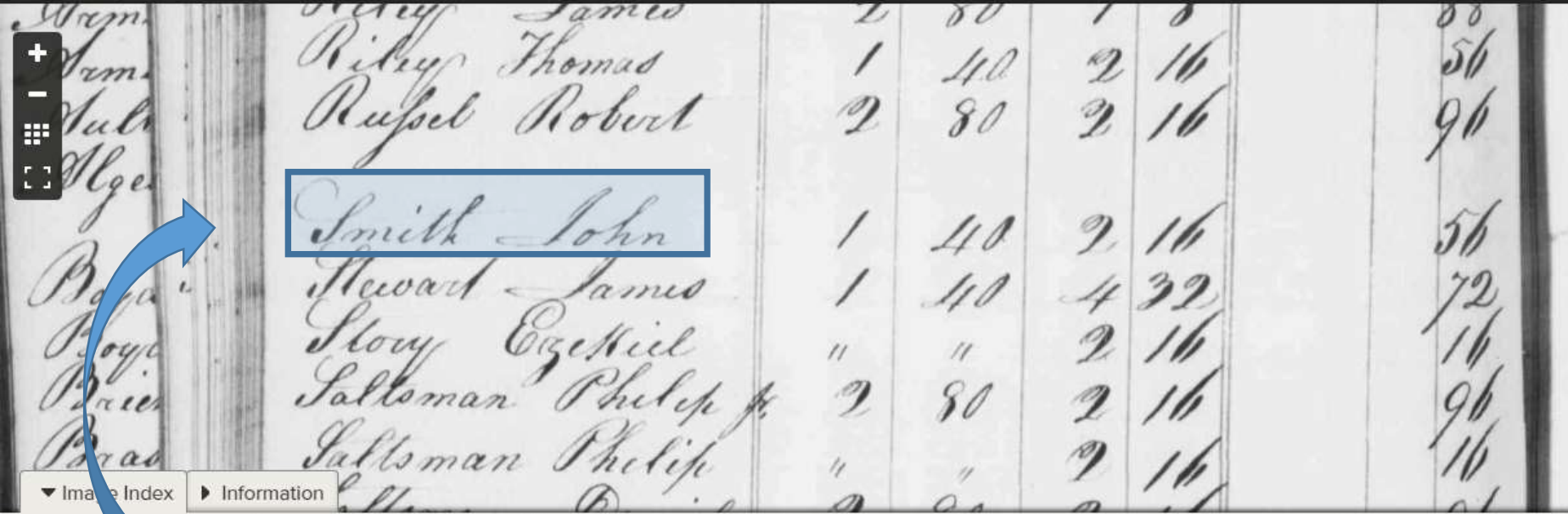
§A4\_ .-...\_~@~X.



# Forced Alignment

Ohio Tax Records, 1800-1850 ▾ Jefferson > Ross Township > 1826 > SOURCE BOX Attach to Family Tree

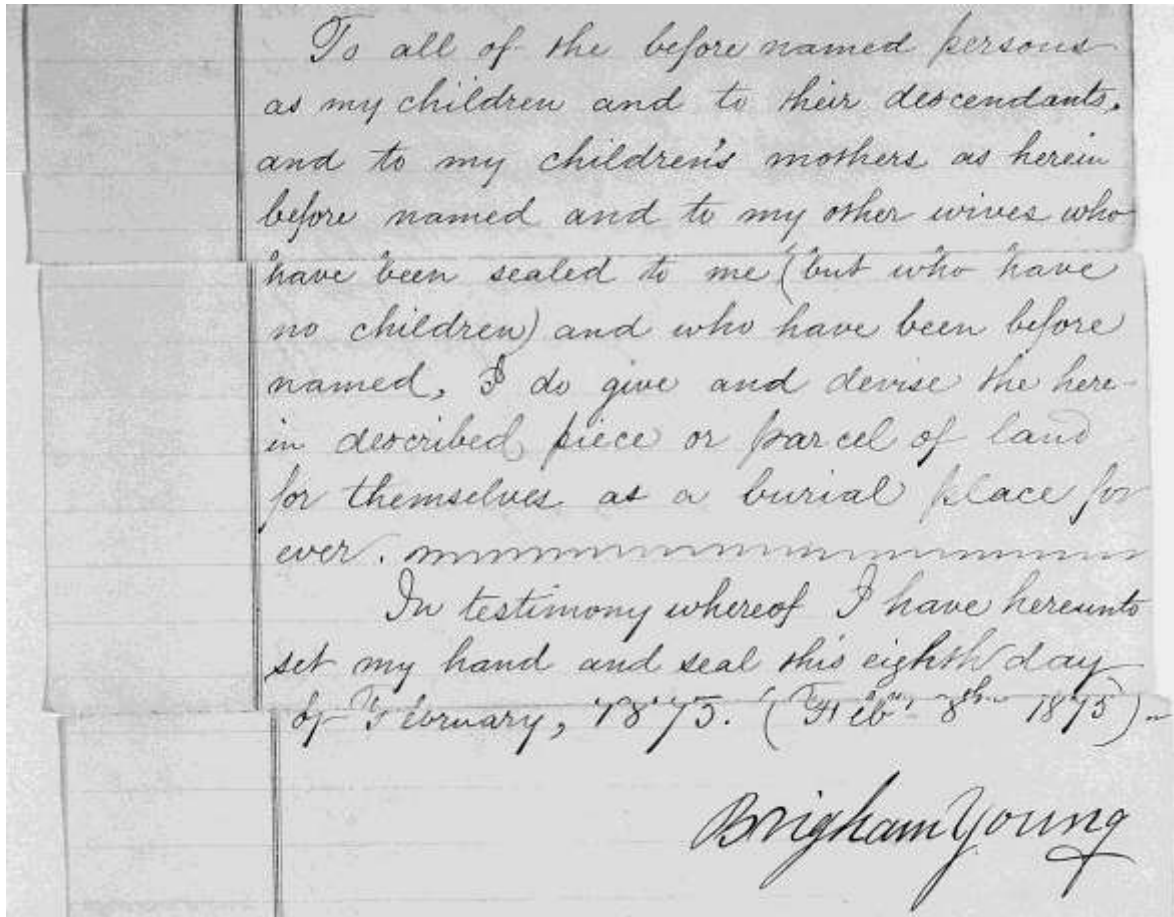
Image 7 of 8 Print Download Tools



A handwritten tax record from 1826 for Ross Township, Jefferson County, Ohio. The record is a table with columns for Name, Titles and Terms, Event Place, Taxation Type, and Event Date. The entry for John Smith is highlighted with a blue box. A blue arrow points from the highlighted name in the image to the corresponding entry in the structured data table below.

Name	Titles and Terms	Event Place	Taxation Type	Event Date
John Smith		Ross Township, Jefferson, Ohio	Personal	1826
James Stewart		Ross Township, Jefferson, Ohio	Personal	1826

# HWR – Handwriting Recognition

A snippet of a handwritten document on lined paper. The text is written in cursive and is partially obscured by a vertical line on the left side, suggesting it's a page from a larger document. The text is a legal declaration of land for a burial place.

To all of the before named persons  
as my children and to their descendants,  
and to my children's mothers as herein  
before named and to my other wives who  
have been sealed to me (but who have  
no children) and who have been before  
named, I do give and devise the here-  
in described piece or parcel of land  
for themselves as a burial place for  
ever. ~~~~~  
In testimony whereof I have hereunto  
set my hand and seal this eighth day  
of February, 1875. (Feb 8<sup>th</sup> 1875)  
Brigham Young

To all of the before named persons  
as my children and to their descendants,  
and to my children's mothers as herein  
before named and to my other wives who  
have been sealed to me (but who have no  
children) and who have been before  
named, I do give and devise the here-  
in described piece or parcel of land  
for themselves as a burial place for  
ever.

In testimony whereof I have hereunto  
set my hand and seal this eighth day  
of February, 1875. (Feb 8<sup>th</sup> 1875)

Brigham Young