

26 APR 51

*Copy of pictures
pictures excellent**26 Apr. 1951**file*

DECIUS WADSWORTH DISC CIPHER

This cryptograph was invented by Decius Wadsworth in 1817 and was submitted to Eli Whitney, the inventor of the cotton gin and manufacturer of small arms for the U. S. Army, for examination. It is not known whether the device was ever used or whether more than one model was ever made.

These pictures were made from the device which was borrowed for a time from the owners -- the Hamden Historical Society of Hamden, Connecticut.

This device is particularly interesting since it not only antedates by half a century the invention by Sir Charles Wheatstone of a device employing the same principle, but also it incorporates certain features not included by Wheatstone in his device.

Very little is known about Wadsworth. He entered the army in 1774 from Connecticut as a captain of artillery, and served continuously until shortly before his death in 1821. He was in the engineers later on and became the first Chief of Ordnance, serving in that capacity as a colonel from 1812 to 1821. Around 1803 he was a major and an aide to General James Wilkinson, who was at that time the head of the U. S. Army. Wilkinson was a prolific user of cryptography, and no doubt was assisted by Wadsworth in compiling cryptographic systems. Wadsworth's connection with Eli Whitney is explained by the fact that as Chief of Ordnance he had dealings with Whitney who manufactured rifles for the Army. The cipher device apparently was a gift from Wadsworth to Whitney. The latter or his relatives bequeathed it to the Hamden Historical Society.

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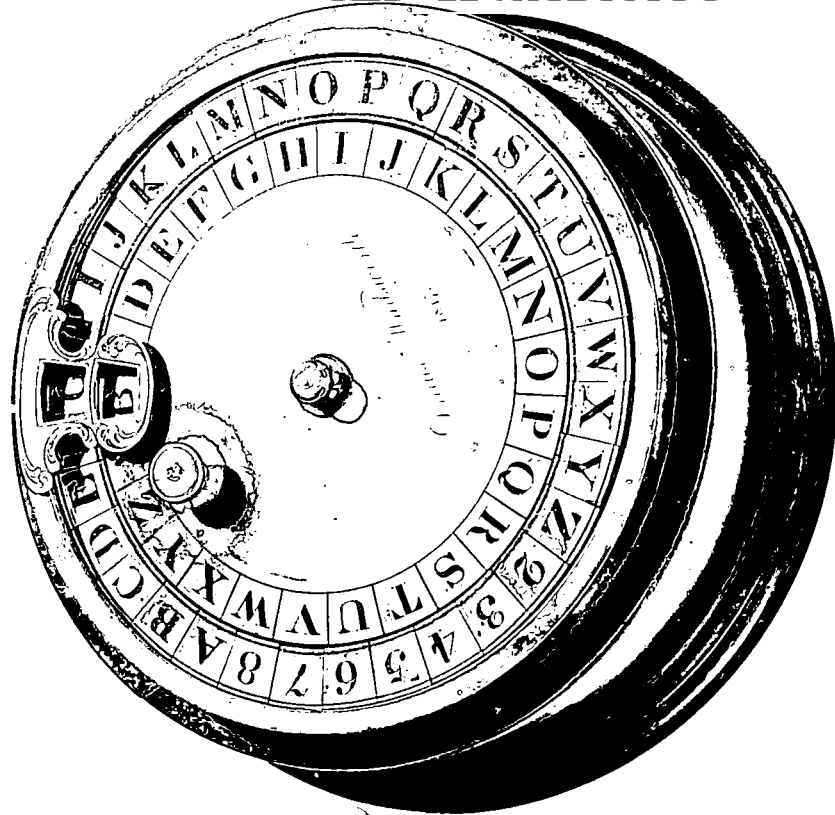
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Do NOT Destroy Return to the
NSA Technical Library when no longer needed

C-947 TL Copy No. 1

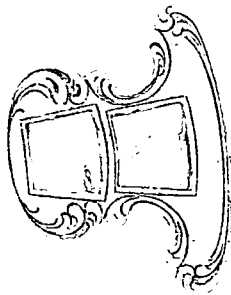
RECORD COPY

DO NOT DESTROY OR MUTILATE

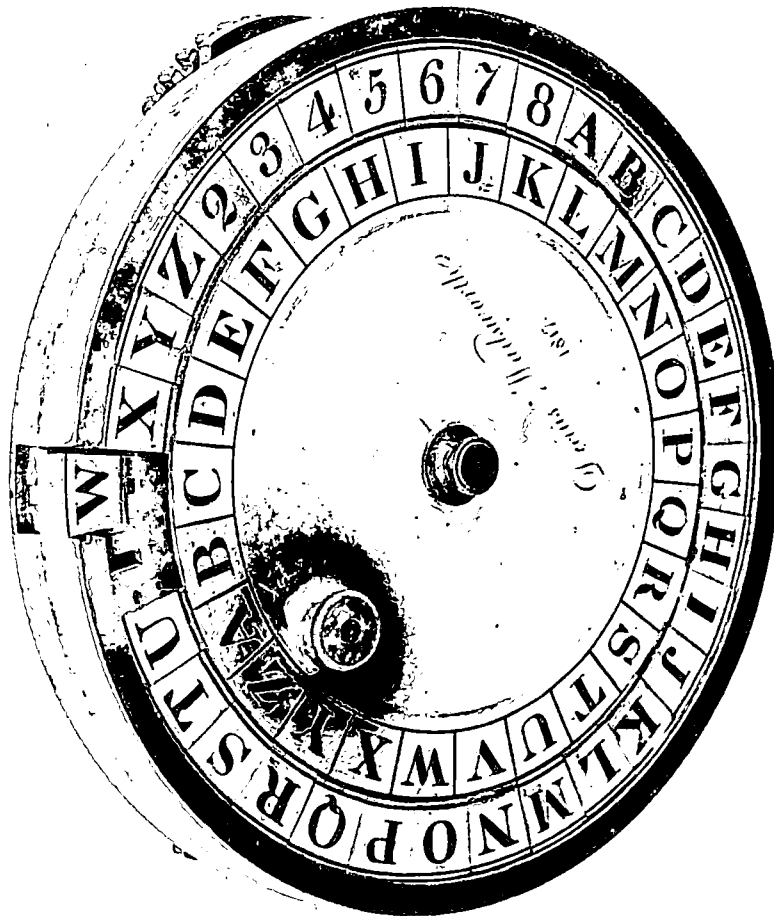


Lucius Watworth

1817



N



555
1817

Decius Wadsworth Deice
1817

2 June 1949

Miss Ella F. Wood, President
The Hamden Historical Society
2256 Whitney Avenue
Hamden 14, Connecticut

My dear Miss Wood:

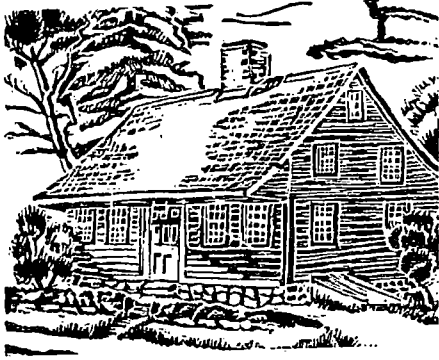
I have sent today the Decius Wadsworth cipher device by registered mail. You will note that on the package there is a receipt addressed to my office. If you will be so kind as to return the receipt upon the arrival of the package, I shall appreciate it.

Very truly yours,

WILLIAM F. FRIEDMAN

C-1502	Do NOT Destroy Return to be NSA Techn ca. L.D. any when no longer needed
TL Copy No. 1	

RECORD COPY
DO NOT DESTROY OR MUTILATE



THE JONATHAN DICKERMAN HOUSE—1770

THE HAMDEN HISTORICAL SOCIETY

INCORPORATED

HAMDEN, CONNECTICUT

May 24, 1949

Mr. William F. Friedman
 Special Assistant to the Chief
 Army Security Agency
 Washington, 25, D C.

My dear Mr. Friedman,

I have your letter of May 12, 1949, addressed to the Chairman of the Board of Directors of the Hamden Historical Society, in which you tell of the injury which has befallen the Decius Wadsworth cipher device which the Hamden Historical Society loaned for display.

Inasmuch as the Hamden Historical Society is planning a Tour of Old Houses for the first Saturday in June, on which occasion its house, the Jonathan Dickerman Homestead, will be open to visitors, the Board of Directors would like me to request you to send us the device so that we ^{may} display it at that time in Hamden. We regret the mishap which has come to the cover, but we are prepared to have it repaired, as you suggest, by a competent cabinet maker.

We wish at this time to thank you for the care that you have taken of the Decius Wadsworth device and to express to you the pleasure that it has been to us to know that it was on view in Washington. Since we are unable to tell until we have seen it how long it might take to have it repaired, perhaps it is as well not to commit ourselves about returning it to you. However, if you would like it again, it might be well to write us later.

As this is our most cherished possession, as I am sure you will understand, because of our proximity to the Whitney home and plant, I will appreciate it if you will insure it adequately and notify me when you mail it. I trust that there is ample time in which we may get it to have on display on June 4. If you feel that express or registered mail is preferable, please do not hesitate to use the best means of getting it back to us in the best condition possible.

Yours very sincerely,

Ella F. Wood

(Miss) Ella F. Wood, President

2256 Whitney Avenue

Hamden, Ct., Conn.

mailing address:

File under

Wadsworth, Decius,
Ciphen Deneb

26 August 1944.

Captain S. J. Keane,
2110 North Sabinas,
San Antonio, Texas.

Dear Captain Keane:

I am sure that you will be interested in the enclosed correspondence. The lead which you gave me back in December has turned out in a rather gratifying manner and I want to tell you how much I appreciate your thoughtfulness in writing me about it.

With very best regards, I am,

Sincerely yours,

William F. Friedman,
Director of Communications
Research.

Enclosures.

ARLINGTON HALL STATION

Date 16 Dec

TO

FROM

Commanding Officer
 Asst. Commandant
 Dir. of Com. Research
 Executive Officer
 Asst. Executive Officer
 Adjutant
 Asst. Adjutant
 Coordination Section
 Chief, Headquarters Branch
 Chief, A Branch
 Chief, B Branch
 Chief, C Branch
 Chief, D Branch
 Chief, E Branch
 Chief, F Branch
 Dir. of Training
 C. O. of Troops
 Property Officer
 Personnel Officer
 Provost Marshal
 Classified Mail Room
 Secretary to C. O.
 General Files
 201 Files

Comments and Return
 Recommendations
 Information
 Information and Return
 Inf. and Forwarding
 Your Information and File
 Signature, if approved
 See Note on Back
 As Requested
 As Discussed
 Your Action

I doubt that the American
 Society would want to send
 me the device, even on loan.
 but it wouldn't hurt to try.
 Maybe they would tell us
 more about it and send a
 photograph if they didn't
 want to let it go. WPC

CSGAS

12 May 1949

Chairman, Board of Directors
Hamden Historical Society
Post Office Box 1
Mount Carmel, Connecticut

Dear Sir:

On 2 May 1949 Mr. Howard W. Dickerman, Treasurer of the Hamden Historical Society, visited my office and requested that he be given an opportunity to examine on your behalf the Decius Wadsworth cipher device which had been generously lent us some years ago by the Society and which is at present on exhibition in our historical museum.

I was sorry not to be able to chat with Mr. Dickerman, being out of the city. In my absence, a member of my staff brought the device from the museum to Mr. Dickerman for his examination. As he may have indicated to you, the circular mahogany cover to the device has unfortunately become defective, it having, by a manner unknown to me, become cracked in two separate pieces. The device itself and all of its mechanism is, however, in excellent condition. Because of the age and value of the device it would be very advisable to have the cover repaired by an expert cabinetmaker. Inasmuch, however, as the device is the property of your Society, I have hesitated to take upon myself the responsibility for the repair without the specific consent of the Society. Mr. Dickerman suggested to my representative that the Board of Directors of the Society might be concerned with the present condition of the cover and might wish to send it to experts known to the Society for their skill in repairing old wood. Should the Society itself wish to undertake the repair, I shall be glad to send only the cover to you by insured parcel post, properly packed for its protection. Otherwise, we shall undertake the repair ourselves. I hope that the Board will extend the loan of the device for a few years longer.

In closing, I take this opportunity to express our appreciation to the Hamden Historical Society for the loan of this device and to assure you that its presence in our museum adds much to our exhibit of early American cipher devices. Attached is a copy of the card which identifies the device in the museum.

Sincerely yours,

WILLIAM F. FRIEDMAN
Special Assistant to the Chief
Army Security Agency

1 Incl

Decius Wadsworth Disc Cipher

This cryptograph was invented by Decius Wadsworth in 1817 and was submitted to Eli Whitney for examination. It is not known whether the device was ever used or whether additional models were made. The model on exhibition is presumably unique.

This device is particularly interesting since it not only antedates by half a century the invention by Sir Charles Wheatstone of a device employing the same principle but also it incorporates certain features not included by Wheatstone in his device.

The model on exhibition has been lent to the Army Security Agency through the courtesy of the Hamden Historical Society of Hamden, Connecticut, the home of Decius Wadsworth.

File
(Decius Wadsworth
File) *Wch*

27 May 1949

Miss Ella F. Wood, President
The Hamden Historical Society
2256 Whitney Avenue
Hamden, 14, Connecticut

My dear Miss Wood,

Thank you for your prompt reply to my letter concerning the Decius Wadsworth cipher device.

I shall be glad to send the device to you in order that it may be placed on display for the tour of Old Houses on 4 June. In order that the device may reach you safely and as expeditiously as possible I shall send it by insured express and shall notify you when it has been sent, probably 31 May.

May I again express my thanks to the Society for lending the device to this Agency for display and express my hope that you will consider a further loan of the device when it is convenient.

Sincerely yours,

WILLIAM F. FRIEDMAN

23 August 1944.

Mrs. Thomas S. Hartley,
2034 Whitney Avenue,
Hamden, Connecticut.

My dear Mrs. Hartley:

I cannot tell you how pleased I was to receive your nice letter of 12 August. I had begun to wonder what had happened and whether the pending decision with regard to the Decius Wadsworth cipher device had been overlooked.

I only wish I could have been a guest at the picnic of the Hamden Historical Society when this matter was discussed. It would have given me considerable pleasure to have presented some of the technical details which make the device of such interest to me. I do indeed intend at the soonest possible moment to deal with the story in a fitting manner in some journal, but I doubt whether it would be one of national circulation because of the limited appeal which such an article would have. In any case, we shall have to wait until the end of the war before something of this nature can be done. In the meantime I hope to have some opportunity to do a bit of historical research on Wadsworth himself, his relations with Whitney, etc. We shall probably find a very interesting mind behind the device. Will you please convey my thanks to Mr. Harte for his bit of information concerning Decius Wadsworth? The lead he has given with regard to the Yale Sterling Library should be profitable.

The device itself has been reposing safely in my office but within a short time it will be transferred to our historical museum. I ask your approval of the following legend to be placed upon the card which will accompany its display:

"The Decius Wadsworth Cipher Device.

The date engraved upon the dial definitely establishes American priority in inventing what is now known as the Wheatstone Principle, the latter having been described in a publication by Sir Charles Wheatstone, dated 1879.

This fine example of an early American cipher device of great interest has been loaned through the courtesy of the Hamden Historical Society, Hamden, Connecticut."

If there is anything that you would like to add or if there are any changes you have to suggest in the foregoing legend, I will be very glad to have them.

In closing, I wish to reiterate my sincere thanks for your cooperation in this matter and especially to extend my thanks to all the members of the Hamden Historical Society for their generosity in tendering the Decius Wadsworth Cipher Device as a loan for an indefinite period to our Museum.

Sincerely yours,

William F. Friedman,
Director of Communications
Research.

William F. Friedman
 Director of Communications Research
 Room 3C340 The Pentagon SPSIS-3
 Washington, D.C.

August 12, 1944

Dear Mr. Friedman:

Could it really have been last February that our last word was said in re the Decius Wadsworth coding device? I hope you haven't been biting your nails in anxiety ever since. The outcome of the long delay is, however, felicitous.

The Hamden Historical Society had a picnic at the Old Red House July 15, and the fine pictures you had sent us were displayed, as well as our correspondence. A ballot box and slips of paper, giving three choices of what to do about the device, were provided; and the resulting vote was to the effect that we want you to keep the device as an indefinite loan. In other words, we see no immediate likelihood of having so good an opportunity as you have, to exhibit or gain useful knowledge from it.

I had been fearful that the members would wish to have it back, and I hope you are pleased as I am that it may remain with you, at least for a probably reasonable length of time.

I am still very hopeful that you will write it up in a magazine of national circulation. You lacked information about Decius Wadsworth, and when you do get it, it seems as though the story would be quite exciting. The fact that an American and not an Englishman was responsible for this particular idea, and so many years earlier than history had noted, makes us feel very important.

Charles Rufus Harte, a Connecticut civil engineer of note, and one of our members, tells me that Decius Wadsworth was the son of William and Mercy Clarke Wadsworth of Farmington; born Jan. 21, 1768 and died Nov. 8, 1821 in New Haven. He wanted to be a lawyer, but became a captain of artillery and an engineer in the U.S. Army. He graduated from Yale in 1785; and I am sure that Yale Sterling library would have more about him in at least class records. Mr. Harte thinks it very likely that Eli Whitney constructed the device from Wadsworth plans.

Let me hear from you again, though the precedent I have set, gives you plenty of time!

2034 Whitney Avenue,
 Hamden, Conn.

Sincerely,

(Mrs. Thomas S.) Rachel M. Hartley

Extract

Date 25 Feb. 1944From: ^{capt.} ~~Mr.~~ Hotson - Room 1501 B

To:

Col. CordermanCol. CollinsLt. Col. McGrailLt. Col. CookLt. Col. BrownLt. Col. Kullback Mr. Friedman *W. H. M. MR*Maj. AurellMaj. FishMaj. MelstadMaj. RowlettMaj. SheetsCapt. ConnorCapt. OvertonCapt. C. TaylorLt. MundingLt. BaconDr. McCleskeyDr. OliverInformation and ^{file} ~~Return~~

VIA OFFICE COURIER

Mrs. L. is quite proud of having found
 Percius Wadsworth, and enjoyed the search.
 If you want more, the Army records
 should furnish it. J. L. H.

Rm. 3C340
The Pentagon
SPSIS-3

1 March 1944

Mrs. Rachel M. Hartley
2034 Whitney Avenue
Hamden, Connecticut

Dear Mrs. Hartley:

Thank you very much for your nice letter of February 27th.

I can very well understand that the Society might be unwilling to give up the device for the purpose of adding it to the government collection and I am entirely sympathetic with your point of view. In accordance with your suggestion I will keep the device safely here until official action on my request is taken by the Society at its next meeting.

I think you will be pleased to add to the information which you have with respect to Decius Wadsworth. One of my associates after diligent search through all reference works on biography in the various divisions of the Library of Congress finally came across the following after an appeal to the Manuscript Division of the Library:

"Wadsworth, Decius Conn. Conn. Capt arts [artillerists] and engr 1 June 1794; resd/resigned 19 July 1796; capt 2 arts and engr 1 June 1798; maj 2 arts and engr 9 Jan 1800; retained as maj arts 1 April 1802; maj engr 8 July 1802; resd 10 Feb 1805; col comsy gen of ord 2 July 1812; retained a col and C O [Chief of Ordnance] Feb 1815; hon dischd 1 June 1821; [died 8 Nov 1821]."

"Source: Heitman -- U.S. Army Register, vol 1 1789-1903. Library of Congress Call No. U11.05H6 Mss.Div. (Other Heitman issues for U.S. and states do not include this officer.) Publisher's note: "This is the unofficial work of a private compiler, purchased and published by the direction of Congress." [57th Cong. 2d Session. House Doc. No. 446.]"

"Decius Wadsworth letter to the Secretary of War, 1814, is among the President Monroe papers, but evacuated for the duration."

Rm. 30340
The Pentagon
SPSIS-3

1 March 1944

Mrs. Rachel M. Hartley
2034 Whitney Avenue
Hamden, Connecticut

Dear Mrs. Hartley:

That you very much for your nice letter of February 27th.

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Wadsworth, Decius Conn. Conn. Capt arts (artillerists) and engr 1 June 1794; resd (resigned) 19 July 1796; capt 2 arts and engr 1 June 1798; maj 2 arts and engr 9 Jan 1800; retained as maj arts 1 April 1802; maj engr 8 July 1802; resd 10 Feb 1805; col comsy gen of ord 2 July 1812; retained a col and C O (Chief of Ordnance) Feb 1815; hon dischd 1 June 1821; (died 8 Nov 1821).

"Source: Heitman -- U.S. Army Register, vol 1 1789-1903. Library of Congress Call No. U11.U5H6 Mss.Div. (Other Heitman issues for U.S. and states do not include this officer.) Publisher's note: 'This is the unofficial work of a private compiler, purchased and published by the direction of Congress.' (57th Cong. 2d Session. House Doc. No. 446.)

"Decius Wadsworth letter to the Secretary of War, 1814, is among the President Monroe papers, but evacuated for the duration."

- 2 -

It will give me a great deal of pleasure to prepare an article on the Decius Wadsworth device and I am sure that the readers of our scientific journal, The Signal Corps Bulletin, will be very much interested in it. The publication of the Bulletin has been suspended for an indefinite period but I am sure it will resume just as soon as possible.

I will look forward to having another letter from you sometime after the Society's next regular meeting.

Thanking your again, I am,

Sincerely yours,

William F. Friedman
Director of Communications
Research

ARLINGTON HALL STATION

Date _____

TO

FROM

Commanding Officer _____
 _____ Asst. Commandant _____
 _____ Dir. of Com. Research _____
 _____ Executive Officer _____
 _____ Asst. Executive Officer _____
 _____ Adjutant _____
 _____ Asst. Adjutant _____
 _____ Chief, Headquarters Branch _____
 _____ Coordination Section _____
 _____ Inf. and Liaison Section _____
 _____ Chief, A Branch _____
 _____ Chief, B Branch _____
 _____ Chief, C Branch _____
 _____ Chief, D Branch _____
 _____ Chief, E Branch _____
 _____ Chief, F Branch _____
 _____ Dir. of Training _____
 _____ 2d Sig. Serv. Bn. _____
 _____ Property Officer _____
 _____ Personnel Officer _____
 _____ Provost Marshal _____
 _____ Post Engineer _____
 _____ Classified Mail Room _____
 _____ Secretary to C. O. _____
 _____ General Files _____
 _____ 201 Files _____

_____ Comments and Return _____
 _____ Recommendations _____
 _____ Information _____
 _____ Information and Return _____
 _____ Inf. and Forwarding _____
 _____ Your Information and File _____
 _____ Signature, if approved _____
 _____ See Note on Back _____
 _____ As Requested _____
 _____ As Discussed _____
 _____ Your Action _____

Is this OK?

OK'd verbally

J.

25 February 1944

Memorandum

To: Capt. Hotson

From: Lyra T. Livingstone

Subject: Report on Fletcher Pratt, Harper's, May 1943
Information requested on an American named Decius
Wadsworth, 1800-1850

1. Fletcher Pratt made no references to the use of codes in his 4th article, "Americans in Battle," May 1943. I found this issue in the Industrial War College Library at The Pentagon yesterday.
2. I located references to Decius Wadsworth by an appeal to the Manuscript Division, after exhausting all reference works on biography in other divisions of the Library of Congress.

(a) Wadsworth, Decius Conn. Conn. Capt arts /artillery/ and engr 1 ^{istss}
June 1794; resd /resigned/ 19 July 1796; capt 2 arts and engr 1
June 1798; maj 2 arts and engr 9 Jan 1800; retained as maj arts 1
April 1802; maj engr 8 July 1802; resd 10 Feb 1805; col comsy gen of
ord 2 July 1812; retained a col and C O /Chief of Ordnance/ Feb 1815;
hon dischd 1 June 1821; /died 8 Nov 1821/

Source: Heitman -- U. S. Army Register, vol 1 1789-1903. Library of Congress Call No. Ull.U5H6 Mss. Div. (Other Heitman issues for U. S. and states do not include this officer.) Publisher's note: "This is the unofficial work of a private compiler, purchased and published by the direction of Congress." /57th Cong. 2d Session. House Doc. No. 446./

(b) Decius Wadsworth letter to the Secretary of War, 1814, is among the President Monroe papers, but evacuated for the duration. //

(I should also call attention to Decius Wade, eminent jurist, Montana, 1835-1905, Dict. of Am. Biog., if there is any confusion about the name.)

SPSIS-3

February 5, 1944

Mrs. Rachel M. Hartley, President
Hamden Historical Society
2034 Whitney Avenue
Hamden, Connecticut

Dear Mrs. Hartley:

We have had a good chance to study the Decius Wadsworth device and to take photographs of it. I had promised to indicate what we learned about the device and therefore I will proceed to tell you.

The device is intended, of course, for cryptographic purposes. It employs what we call two juxtaposed sequences for the production of cipher alphabets. When the device first arrived it appeared that both sequences were normal, that is, in the arrangement A, B, C, ... of the ordinary alphabet, but upon more careful examination it developed that the outside sequence could be made a disarranged sequence merely by removing the individual letters through a slot provided therefor and replacing them in a different order. Moreover, in this device, because the two sequences have an unequal number of characters (26 and 33) certain cryptographic relationships are developed which are of a somewhat complex nature but are well-known in the art.

I do not think that it is necessary or desirable to go into the exact manner in employing the device to encipher or decipher messages, even though this information is only of historical importance at this time. I think, however, it is most interesting to note that, so far as the literature of the subject is concerned, the first device of this nature, involving sequences of unequal numbers of characters, was invented by Sir Charles Wheatstone and first described in one of his scientific papers bearing the date 1879. It is, therefore, a source of considerable pride and interest to learn now that an American, Decius Wadsworth, has prior claim to this invention and by a good many years, since the Wadsworth device has engraved on it the year 1817.

The device is very well constructed and shows considerable ingenuity in reducing to practice the theoretical cryptographic considerations which Mr. Wadsworth must have entertained. I should say that he was far ahead of any other American of his day in his concept of cryptographic mechanisms. It would, therefore, be very interesting to know more about him. If the Society has no further information than is contained on the small slip of paper accompanying the device, I shall proceed to try to find out more by having a search made. Perhaps, however, you can save us some trouble if you have any additional historical information.

I envy the Hamden Historical Society in its possession of this most interesting relic and am frank to add, indeed, that I covet it for our own historical collection. Is there any chance that this device could be deposited as a loan for an indefinite period?

I think you may be interested in the photographs we have taken, and I am therefore inclosing a set with our compliments and as a slight token of our appreciation of your courtesy in submitting the device for examination.

Upon receipt of information to the effect that the Society wishes to retain the device in its own possession, I will be glad to return it promptly.

Very truly yours,

William F. Friedman
Director of Communications
Research

Incl.
Set of photographs

December 31, 1943

Mr. William F. Friedman,
 Director of Communications Research,
 Washington, D.C.

Dear Mr. Friedman:

Your letter of December 18th inquiring about the Hamden Historical Society's cipher device, was not answered sooner on account of the holiday mail congestion.

We are proud of the privilege of loaning this curiosity to you, and will send it by registered mail as soon as a Society member can conveniently get it from our Old Red House, which is now closed for the winter.

We are, of course, eager to know what you make of its intricacies, none of us ever having been able to figure it out. We would certainly not have felt competent to describe it to you. All that we know is that Decius Wadsworth was a government inspector who came to Hamden to inspect Eli Whitney's guns when he was making them for the government; and the cipher device was apparently a gift from him to Mr. Whitney.] *extract*

We feel that its value to us will be enhanced by the fact that it was of interest to you; and any data which you can give us after you have studied it, will be very much appreciated.

Very truly yours,

(Mrs.)

Rachel M. Hartley

President of the Hamden Historical Society.

2034 Whitney Avenue,
 Hamden, Connecticut.

Date _____

TO

FROM

- Commanding Officer _____
- Asst. Commandant _____
- Dir. of Com. Research _____
- Executive Officer _____
- Asst. Executive Officer _____
- Adjutant _____
- Asst. Adjutant _____
- Chief, Headquarters Branch _____
- Coordination Section _____
- Inf. and Liaison Section _____
- Chief, A Branch _____
- Chief, B Branch _____
- Chief, C Branch _____
- Chief, D Branch _____
- Chief, E Branch _____
- Chief, F Branch _____
- Dir. of Training _____
- 2d Sig. Serv. Bn. _____
- Property Officer _____
- Personnel Officer _____
- Provost Marshal _____
- Post Engineer _____
- Classified Mail Room _____
- Secretary to C. O. _____
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- Comments and Return _____
- Recommendations _____
- Information _____
- Information and Return _____
- Inf. and Forwarding _____
- Your Information and File _____
- Signature, if approved _____
- See Note on Back _____
- As Requested _____
- As Discussed _____
- Your Action _____

*I think you will remember
 Capt Keane.
 This note I regard as
 being quite important his-
 torically, because if I
 understood the description
 correctly the device would*

anticipate REF ID: A4146534

by a good many years.
What do you say to
writing them a letter
asking if they could
send the thing to us
for examination?

J.

XXXXXXXXXXXX
Army Service Forces

SPSIS-3

18 December 1943

The Curator
Hamden Memorial Society
Hamden, Connecticut

Dear Sir:

An old friend of mine, Captain S. J. Keane, U.S. Army Retired, has written me recently that while browsing in Connecticut a few years ago he came across a cipher device which is on exhibit by the Society and which he thought might interest me. It is labeled the "Decius Wadsworth Cipher Device (1817)" and was intended for transmitting secret intelligence.

I have always been interested in historical items of this nature and I am writing to ask whether it would be possible for the Society to send me detailed data and photographs, or better yet, the device itself as a loan for a very few days so that it may be studied.

I assure you that your courtesy would be appreciated and that if the device were sent it would be well taken care of and promptly returned.

This item, of course, has no practical usage now but would be valuable for historical purposes only.

Very truly yours,

William F. Friedman
Director of Communications
Research

2110 North Sabinas
San Antonio, Texas,
December 7, 1943.

Col. William F. Friedman,
Office Chief Signal Officer,
Washington, D. C.

Dear Col. Friedman:

While browsing in Connecticut
a few years ago I came across a
cipher device in the Hauden Memorial
Society which might interest you. I
took a few notes on it at the time,
which I discovered the other day
among my papers, and am inclosing
same for your information.

You may be interested to know
that for the past year or so I have been
working in Postal Censorship here in
the code & cipher section and find
it quite interesting.

With kindest personal regards -

S. J. Teare
Capt., USA Ret.

XXXXXXXXXXXXX
Army Service Forces

SPSIS-3

14 December 1943

Captain S. J. Keane
2110 North Sabinas
San Antonio, Texas

Dear Captain Keane:

Thank you very much for your letter of December 7, and for its inclosure which is interesting. I think it might be in point to write a letter to the Hamden Memorial Society to see if I could get a photograph and further data for our historical records.

It was nice to hear from you and to learn that you are doing such interesting work. Reciprocating your personal regards and with the season's greetings, I am,

Sincerely yours,

William F. Friedman
Director of Communications
Research

~~XXXXXXXXXXXX~~
Army Service Forces

SPSIS-3
Room 30340
Pentagon Bldg.

12 January 1944

Mrs. Rachel M. Hartley, President
Hamden Historical Society
2034 Whitney Avenue
Hamden, Connecticut

Dear Mrs. Hartley:

Thank you for your letter of the 31st of December. The Decius Wadsworth device arrived in good condition today and appears to be very interesting. As soon as we have had time to study it we will be glad to tell you what we have learned.

The Society's courtesy in making this device available for study is much appreciated.

Very truly yours,

William F. Friedman
Director of Communications
Research

REF ID: A4146B34
DEC IUS WADSWORTH ER DEVICE (1817)

Supposed to be an invention for transmitting secret intelligence in time of war and at other times.

Sent by the inventor to ELI WHITNEY for examination.

Given by MR WHITNEY to H.T. BLAKE'S father.

Now in the HAMDEN HISTORICAL SOCIETY (CONN)

Description:

Concentric circles geared together so that both rotate in the same direction when handle is turned, but at different speeds.

Inner circle makes 33 complete rotations while outer circle makes 26.

Inner circle has the 26 letters of the normal alphabet clockwise.

Outer circle has 33 interchangeable letters and numbers, including the 26 letters of the alphabet plus figures 2 to 8 incl.

There is an index under which letters of the inner circle may be brought to coincidence with those of the outer circle.

On a separate slip of paper is printed in india ink a series which is probably one arrangement of the outer circle. (See over)

One cipher alphabet REF ID: A4146534 with D. W. cipher:

2	A	G	H	P	R	4	N	U	Z	J	7	I	G	K	Y	8	C	X	B	S	V	W	Q	T	F	O	L	S	E	D	3	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

Would be interesting
to see the covering of
the key with the
SFR

Device is mounted on a circular mahogany base and has a similar cover.
The circles are of metal (brass or bronze). Diameter of outer circle about $5\frac{1}{2}$ "
Interchangeable letters and numbers are on sectors about $\frac{1}{2}$ " x $\frac{1}{2}$ ".

2 June 1949

Miss Ella F. Wood, President
The Hamden Historical Society
2256 Whitney Avenue
Hamden 14, Connecticut

My dear Miss Wood:

I have sent today the Decius Wadsworth cipher device by registered mail. You will note that on the package there is a receipt addressed to my office. If you will be so kind as to return the receipt upon the arrival of the package, I shall appreciate it.

Very truly yours,

WILLIAM F. FRIEDMAN

Do Not Destroy Return to NSA Techn. Serv. Div. when no longer needed	C-1502 TL Copy No. 1
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RECORD COPY
DO NOT DESTROY OR MUTILATE

Form 3511
Rev. 1-4-40

RETURN RECEIPT

Received from the Postmaster the Registered or Insured Article, the original of which appears on the face of this Card.

1. *Allen Wood*

(Signature or name of addressee)

2. *Mrs. J. Bernhardt*

(Signature of addressee's agent—Agent should enter addressee's name on line ONE above)

Date of delivery *6-5* 194*9*

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(GPO)
JUN 3
2 11 P.M.
1949
CON.

POSTMARK OF DELIVERING OFFICE

Return to Headquarters Army Security Agency
Attn: Mr. Friedman AS-14
The Pentagon, Washington 25, D.C.

REGISTERED ARTICLE

No. 902,001

INSURED PARCEL

WASHINGTON,

D. C.

CSGAS

12 May 1949

Chairman, Board of Directors
Hamden Historical Society
Post Office Box 1
Mount Carmel, Connecticut

Dear Sir:

On 2 May 1949 Mr. Howard W. Dickerman, Treasurer of the Hamden Historical Society, visited my office and requested that he be given an opportunity to examine on your behalf the Decius Wadsworth cipher device which had been generously lent us some years ago by the Society and which is at present on exhibition in our historical museum.

I was sorry not to be able to chat with Mr. Dickerman, being out of the city. In my absence, a member of my staff brought the device from the museum to Mr. Dickerman for his examination. As he may have indicated to you, the circular mahogany cover to the device has unfortunately become defective, it having, by a manner unknown to me, become cracked in two separate pieces. The device itself and all of its mechanism is, however, in excellent condition. Because of the age and value of the device it would be very advisable to have the cover repaired by an expert cabinetmaker. Inasmuch, however, as the device is the property of your Society, I have hesitated to take upon myself the responsibility for the repair without the specific consent of the Society. Mr. Dickerman suggested to my representative that the Board of Directors of the Society might be concerned with the present condition of the cover and might wish to send it to experts known to the Society for their skill in repairing old wood. Should the Society itself wish to undertake the repair, I shall be glad to send only the cover to you by insured parcel post, properly packed for its protection. Otherwise, we shall undertake the repair ourselves. I hope that the Board will extend the loan of the device for a few years longer.

In closing, I take this opportunity to express our appreciation to the Hamden Historical Society for the loan of this device and to assure you that its presence in our museum adds much to our exhibit of early American cipher devices. Attached is a copy of the card which identifies the device in the museum.

Sincerely yours,

WILLIAM F. FRIEDMAN
Special Assistant to the Chief
Army Security Agency

1 Incl

RDM-82

This box, from my earliest recollection, hung in a flannel bag in a closet in my father's house. I never learned exactly what it is or whom it came from but understood that it was supposed to be an invention for transmitting secret intelligence in time of war and at other times - also that it had been sent by the inventor to Mr Eli Whitney for examination and had descended from Mr Whitney to my father but how it worked I could never discover and I think nobody but the inventor (Decius Wadsworth) and perhaps Mr Whitney ever knew

H. T. Blake

Sequence shown on Wadsworth paper

2	A	6	H	P	R	4	N	U	Z	J	7	I	G	K
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Y	8	/	C	X	B	S	V	W	Q	T	F	O	L	5
16	17		18	19	20	21	22	23	24	25	26	27	28	29
E	D	3	M											
30	31	32	33											

2	A	6	H	P	R	4	N	U	Z	J	7	I	G	K	Y	8
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
C	X	B	V	W	Q	T	F	O	L	5	D	3	M			
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	

Sequence shown on Wadsworth paper

Z	A	6	H	P	R	4	N	U	Z	J	7	I	G	K
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Y	8	C	X	B	S	V	W	Q	T	F	O	L	5
16	17	18	19	20	21	22	23	24	25	26	27	28	29

E	D	3	M
30	31	32	33

REF ID: A4146534

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H. T. Blake

REF ID: A4146534

2 . A . 6 . H . P . R . 4 . N . ~~U~~ . Z . J . 7 . I . G . K . Y . 8 .
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

C . X . B . ~~N~~ . V . W . ~~Q~~ . T . F . ~~O~~ . L . 5 . E . D . 3 . M .
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33