

W. J. ROUSSEL.
CIPHER CODE SYSTEM.
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916,606.

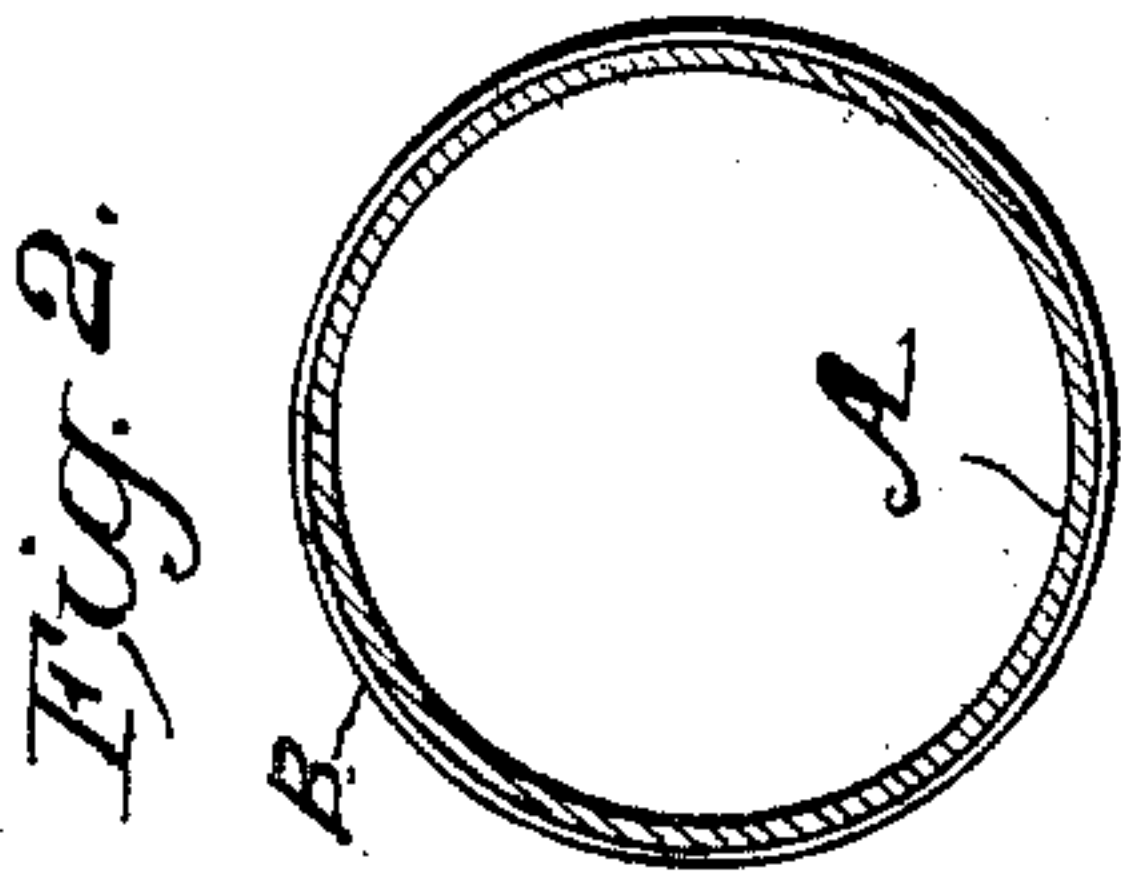


Fig. 1

A

Fig. 1

S	C	A	X	N	P	Z	T	H	J	S	L	Q
H	U	V	S	L	O	E	Y	Q	I	B	K	U
M	F	G	A	X	N	P	Z	T	H	J	S	L
Q	O	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
X	W	D	M	F	V	G	C	A	X	N	P	Z
V	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
Y	Q	I	B	K	U	R	W	A	X	N	P	Z
Q	A	X	N	P	Z	T	H	J	S	L	Q	
P	L	M	K	U	R	W	A	X	N	P	Z	T
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[illegible]

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CIPHER-CODE SYSTEM.

No. 913,606.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed September 1, 1908. Serial No. 451,185.

To all whom it may concern:

Be it known that I, WILLIS J. ROUSSEL, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Cipher - Code Systems, of which the following is a specification.

This invention relates to cipher code systems of that type disclosed in the United States Letters Patent No. 642,721, and granted to me on February 6, 1900, and consists of a code index of classified cipher-words and phrases represented thereby, together with letters, numerals or other symbols employed in translating or locking and unlocking the cipher words, the translating of one or more words into or out of cipher being carried on by means of an index or key.

The present invention has for its principal object to provide an improved key which is of comparatively simple and inexpensive construction and so designed as to be readily manipulated.

Another object of the invention is the provision of a key consisting of a cylinder or other suitably shaped body having printed or arranged on its peripheral face groups or lines of letters with which coöperates a ring having letters, numerals or other symbols arranged in alphabetical, numerical or other predetermined order so as to be used with the letters, numbers or other symbols on the cylinder for translating messages into or out of cipher, the ring being mounted to be adjusted laterally between the ends of the cylinder or revolved around the same to bring the characters on the ring into operative relation with the characters on the cylinder.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing which illustrates one embodiment of the invention, Figure 1 is a side view of the key. Fig. 2 is a transverse section on line 2—2, Fig. 1. Fig. 3 is a view representing the cylinder developed.

Similar reference characters are employed to designate corresponding parts throughout the several views.

The key is adapted to be used in connection

with an index such for example, as that shown in my patent hereinbefore referred to, the index being in the nature of a classified list of cipher-words arranged alphabetically and each having a phrase or sentence to be represented by the cipher word and arranged opposite the cipher words are key letters or key numerals which are used in translating a message into or out of cipher.

Referring to the drawing, A designates the cylinder or body of the key which may be made of sheet metal, cardboard or the like and has at its ends heads 1 that are of larger diameter than the cylinder so as to form annular flanges at their extremities that serve as stops for the index ring B which loosely fits on the cylinder to move from one end to the other thereof or turn thereon to effect any desired combination of letters, numerals or other symbols. Although a body of cylindrical form is shown it is to be understood that a flat or oval body may be used without departing from the scope of the invention.

On the cylindrical surface of the body A are twenty-six rows of letters arranged in a circular or transverse manner each row containing twenty-six letters of the alphabetical set in irregular order but less rows may be used if it should be desired to reduce the size of the key. These rows of letters are spaced apart a distance equal to the width of the ring B so that the latter can be moved into immediate proximity to any desired letter occurring in any circular row of the cylinder. The letters on the ring occur in alphabetical order and extend entirely around the same and evenly spaced to aline with any and every longitudinal row 3 of letters on the cylinder. This ring can be moved backwardly or forwardly, or revolved around the cylinder entirely or partially so that the letters thereon can be alined with any desired letter on the cylinder in the manipulation of the key. Although key letters are shown it is to be understood that numerals of other symbols may be employed.

For the purpose of greater security in transmitting a message and preserving a perfect secrecy for its contents I prefer to use two cipher words, one of which is the dummy of the cipher word actually transmitted to enable the receiver of the message to ascertain the true cipher word which is intended. It is also possible to use two or more such

dummy cipher words if desired and thus add to the intricacy of deciphering the message.

The sender of the message selects a combination of letters, numerals or symbolic signs according to the key being used, which he sends to his correspondent as the combination by which all ciphers are to be locked. For example, when using a key composed of letters only, this combination can be used, viz: "I have been to see you once today". The combination contains twenty-six letters and will allow a change for each row or column on the cylinder.

The cipher-words that will give the exact language intended for the message are first selected from the code book and the operation of locking proceeds. The first cipher word intended is locked by the first letter of this combination, *i. e.* the ring B is adjusted to bring the first letter I of the sentence opposite the letter A on the cylinder occurring in the first row of letters. Each cipher word in the code book, it will be remembered, is also provided with a key letter, key numeral or key symbol as will be understood by reference to my aforesaid patent. This key letter is found opposite the cipher word and sought for on the ring of the key and the letter opposite this key letter on the cylinder will give the key letter opposite the dummy cipher word in the code book which is to be used in the transmission and this dummy cipher word is substituted in the message for the cipher word intended. The next cipher word will be locked with the second letter of the combination which is the letter H in the sentence above quoted and the ring is moved to the second row of letters on the cylinder and adjusted so that H will be opposite B of the second row on the cylinder when the operation continues as hereinbefore described, the key letter opposite the cipher word in the code book suggesting the key letter opposite the dummy word that is to be used, and that dummy word inserted in the message. The receiver of the message practically operates his key in the same manner but the steps are reversed. He has the same combination or sentence to set his key namely the words "I have been to see you once today". The receiver proceeds to place the ring with the letter I opposite A in the first row of letters on the cylinder. The dummy cipher word received in the message gives him the key letter which he seeks in the first column of letters on the cylinder and this letter will be found to be opposite the

key letter which will denote in the code book the real cipher word intended. This operation is repeated with the other letters taken successively.

Of course it is apparent that any numbers of ways and combinations can be resorted to by the users of this cipher system in manipulating the key.

Having thus described the invention, what is claimed as new is:—

1. A key for cipher code systems comprising a body having lines of key characters thereon and spaced apart, an element adjustable over the body in the direction parallel with the lines of characters and also transversely thereto, and characters on the element arranged in a predetermined order and adapted to cooperate with the characters on the body for translating a message into or out of cipher.

2. A key for cipher code systems comprising a cylinder having lines of letters, numerals or symbols arranged longitudinally on the cylindrical surface thereof, the corresponding letters, numerals or symbols of the several lines being arranged in circular rows extending around the cylinder with the rows spaced apart; a ring slidably mounted on the cylinder for movement around and longitudinally thereof, and letters, numerals or symbols arranged on the ring in predetermined order and spaced to register with the longitudinal lines of letters, numerals or symbols on the cylinder, the ring being of such width as to occupy the space between two adjacent circular rows on the cylinder.

3. A key for cipher code systems comprising a body, cipher characters arranged on one of the faces of the body and disposed in longitudinal and transverse rows, the transverse rows being spaced from each other, a strip-like member extending parallel with the transverse rows and of such width as to occupy the space between two adjacent transverse rows, and characters on the outer face of the strip for cooperation with the characters on the body for use in the translation of messages into or out of cipher, said strip being movable back and forth over the body in directions parallel with both sets of rows.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIS J. ROUSSEL.

Witnesses:

L. J. REGOTTAZ,
CLARENCE J. COCKE.