

Jagged is a “stack of wheels”. The key is a stack of vectors of different length, and it’s the sum of the first elements of all these vectors that does most of the work. This sum is called the “stack.” Then all those first elements are modified. The ciphertext symbol is added to each of them, mod n . Finally, all of the wheels are turned one unit. Since the wheels have different sizes, the changes caused by a particular ciphertext symbol are quickly diffused throughout the key. The essence of the program is in these three functions:

```
function twist!(f,a,n)
    for i in eachindex(f) f[i][1] = mod(f[i][1] + a,n) end
end
function roll!(f)
    for i in eachindex(f) f[i] = circshift(f[i],1) end
end
function encode(p,f,n)
    c = Int64[]
    for i in eachindex(p)
        push!(c, mod( stack(f) + p[i], n))
        twist!(f,c[i],n)
        roll!(f)
    end
    c
end
```