Lego Combination Safe

by **merijnvw** on June 25, 2009

Table of Contents

intro: Lego Combination Safe 2
Video 2
step 1: The Rotors 2
step 2: The Frame 4
step 3: The Door 8
step 4: The Dial 10
step 5: The Last Steps 12
Related Instructables 14
Advertisements 14
Comments 14

intro: Lego Combination Safe

Do you need a place to store your money, but you don't want to spend a lot on a strongbox? Then try this lego version, it's a little less theft-proof than a real one, but it comes close.

I've seen a few combination safes on youtube, but they all used an at least 5 times bigger mechanism than this one. So if you build *this* safe you have less chance to run out of lego bricks before you're finished.

IMPORTANT: Before you decide to build this, look at the second picture below! Those are the fancy pieces needed. The first, the nine curved bricks, are absolutely required, but not necessarily in red. The two springs, are not extremely important; without it, the door doesn't 'jump' open as you can see in the video below. All other pieces I used, are common lego pieces which belong in an average lego collection, or are well replaceable by a surrogate.

CLICK TO PLAY VIDEO

So if you decide to build it, proceed to the next step!

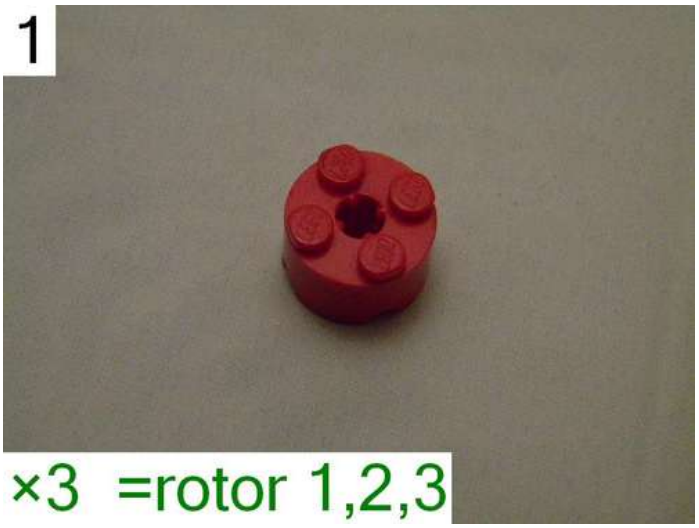
× 9

× 2

step 1: The Rotors

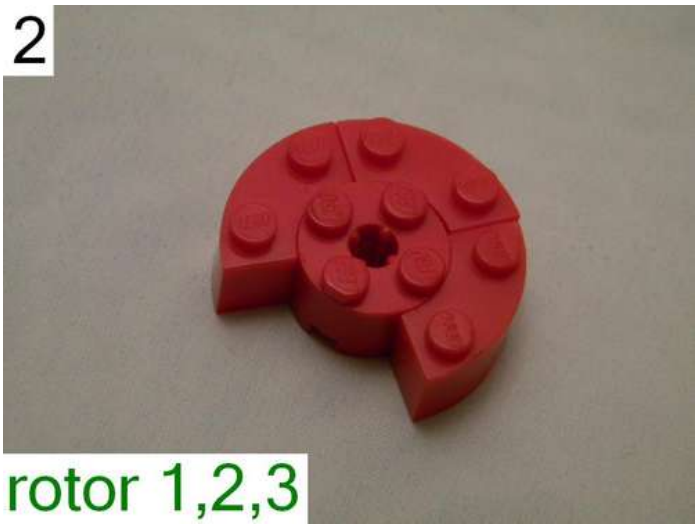
1: A round brick. Take three of these, as you can see in the bottom of the image. Each will be a rotor, number them 1,2, and 3, because later on, we'll treat each one different.
2: Place three curved bricks around it, leaving a gap which will be the rotor's notch.
3: A 4x4 plate on top of it.
4: Another round brick, on top of the plate.
5: Cover the rest with tiles.
6: Another plate, on top of the round brick, only for rotor 1 and 2.
7: Now place a 1x1 round brick on the top plate, the place of it will influence the number sequence of your safe. See the next image, an animated gif, to learn where you can put it.
8: Rotor 2 should be exactly like this. Rotor 3 aswell, but without the plate plus 1x1 round brick at the end. For rotor 1 you only need to add the two round plates at the beginning, without the stuff sticked in them.

1



×3 =rotor 1,2,3

2



rotor 1,2,3

3

rotor 1,2,3

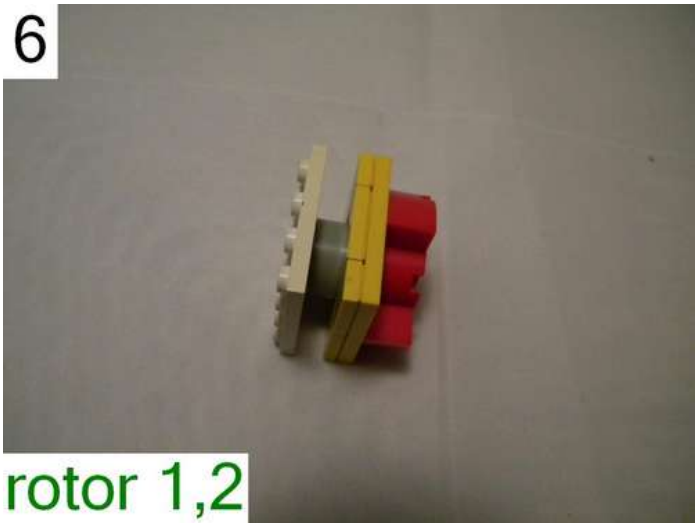
4

rotor 1,2,3

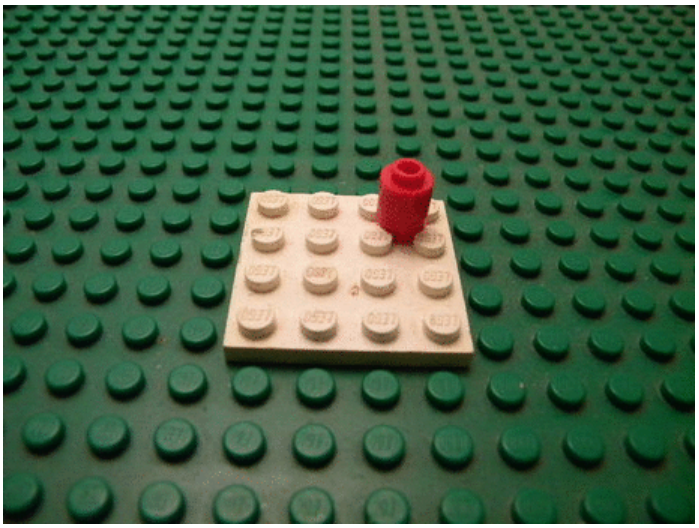
5

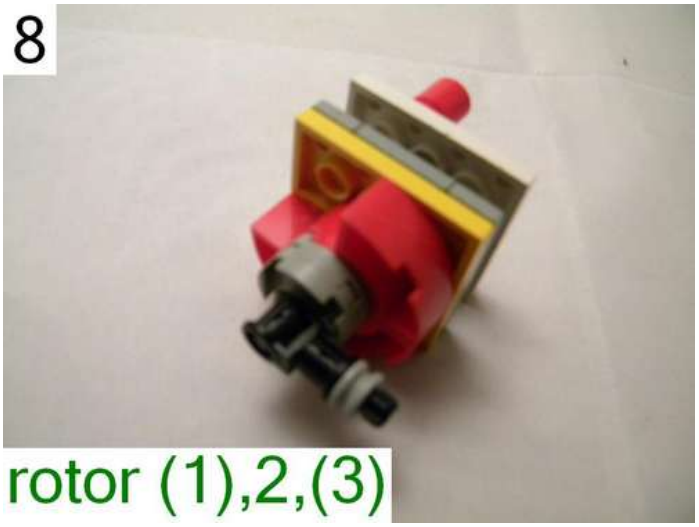
rotor 1,2,3

6



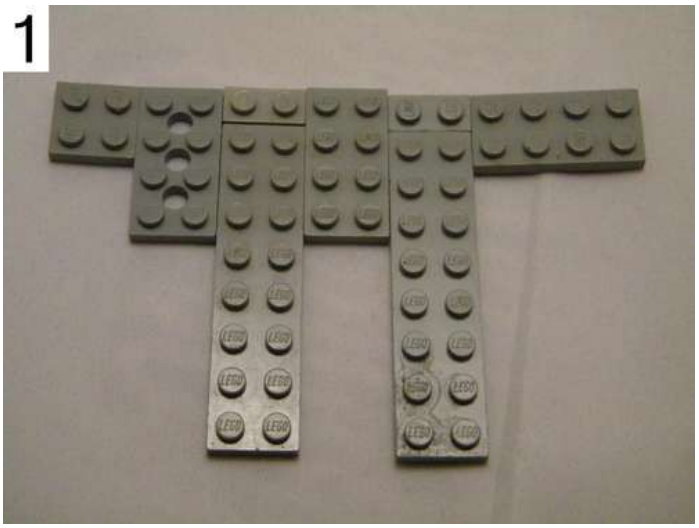
rotor 1,2

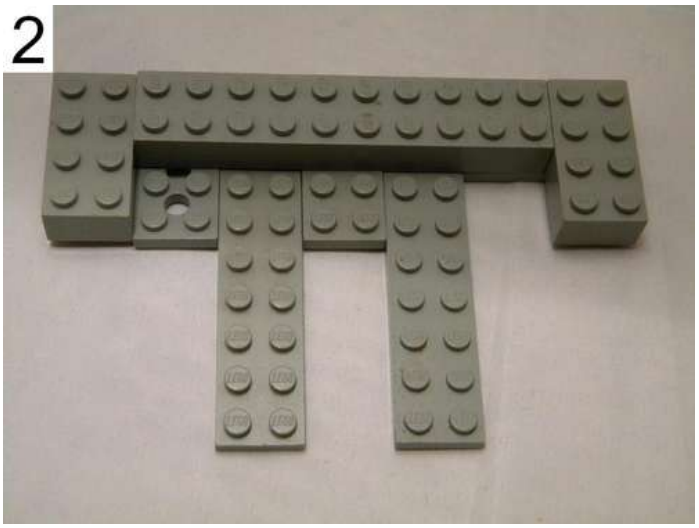


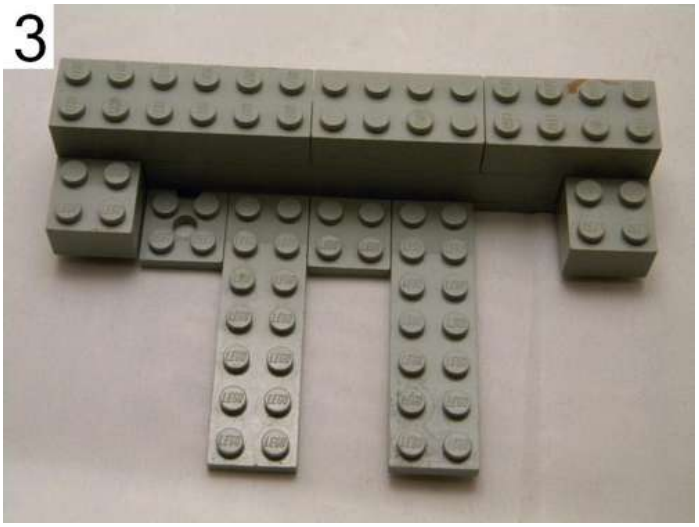


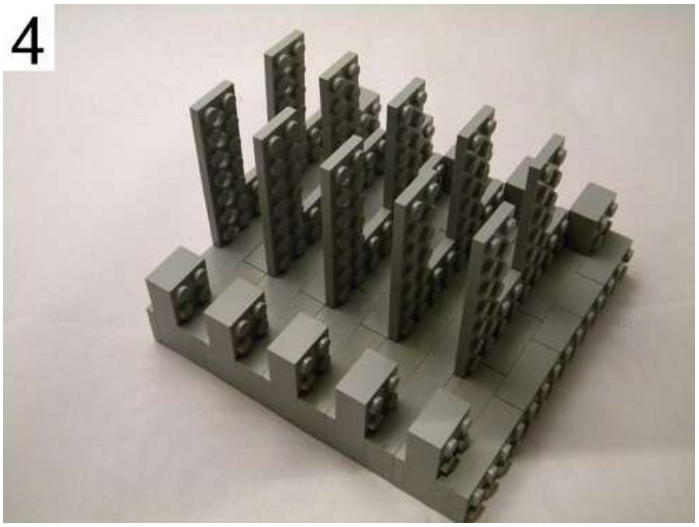
step 2: The Frame

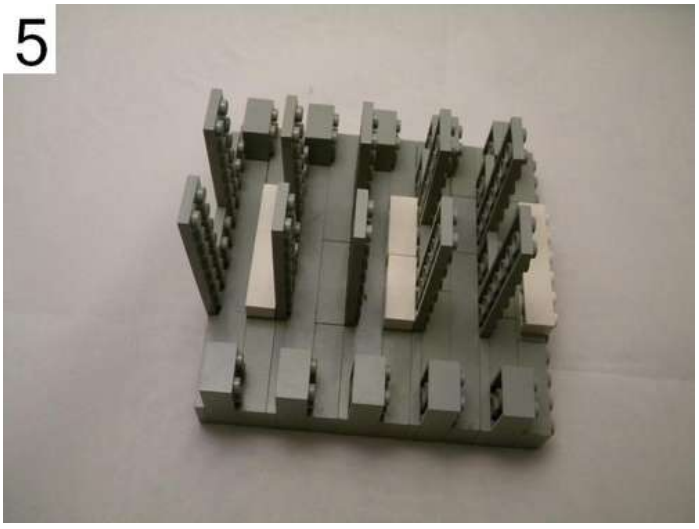
1: Lay down these plates. The 4x2 one with holes in it, is needed.
2: Add bricks like this.
3: And another layer.
4: Make another four of that, and stack them together.
5: Place 6x1 bars on these places.
6: Just a temporary plate to hold the brick where it should be.
7: Also a temporary plate, because those long holed plate break off fast without something behind it.
8: Maybe you already noticed you can insert the rotors in the frame. Also notice that their connection caps should point in the opposite direction compared to the frame's bricks!
9: These are the pins that will fall into the rotors. The one on the left is different because it will also open the door.
10: You need these staves plus connection element, to hold the pins you just made.
11: Take out the rotors again, for just a moment. First, from the right side, take the longer stave and slide it into the holes, and through the two small pins. Put the connection element at the end.
12: Now, form the left, slide in the smaller stave inside, through the longer pin. All pins should be above a 6x1 bar.
13: A little plate on the end to cover the stave.
14: Add holed bars like this. See the next two steps.
15: 3x2 plates to enclose the rotor's axes.
16: Add more holed bars and 1x4 plates. Not necessarily *all* bars need to have holes, see step 3.11 and 5.5 to see where there need to be holes, to hold the springs. I'm saying this because if you don't have a lot of holed bars, you don't have a problem. I filled this all with holed bars, because I will need a lot of grey bars *without* holes on the outside of the safe, and when I use those now, I could run out of un-holed bars when I need them.
17: Make two layers of plates on the back, leaving open the place of the last rotor's axis. I made the last face in black because I didn't have enough grey plates. You *can* cover the axis aswell, I didn't, because it's not necessary. Maybe you think that it would reveal the place of the 1x1 tab of the rotor, that's true, but it doesn't reveal the code. Because if you only know where the tab is, you don't know yet where the notch(the absent curved brick) of the rotor is.











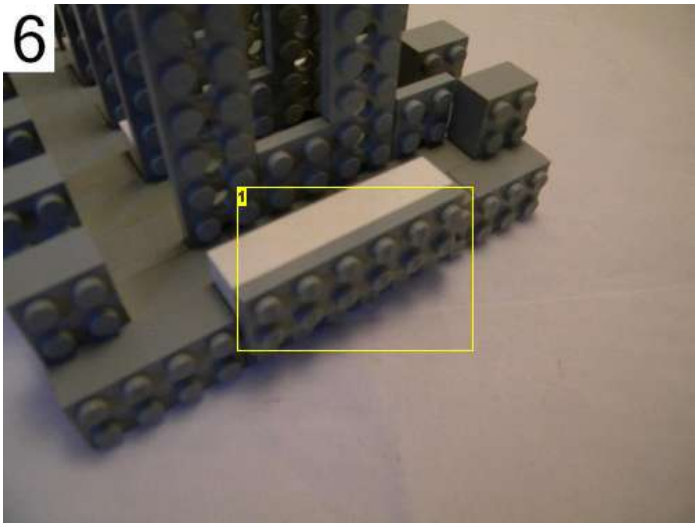


Image Notes
1. this

7

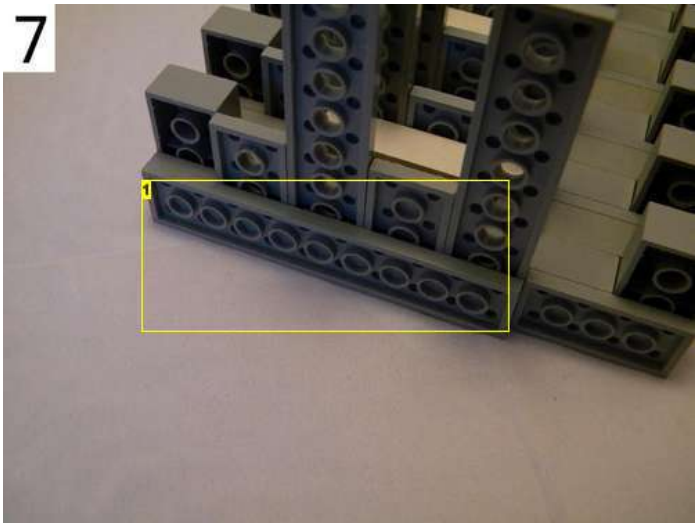


Image Notes
1. this

8

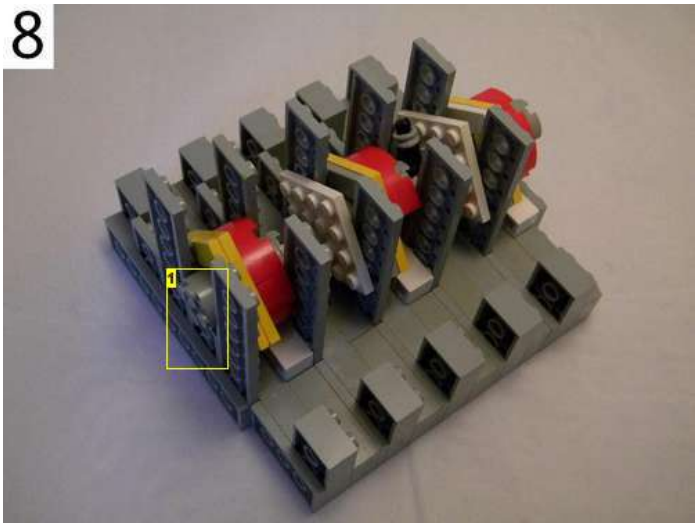
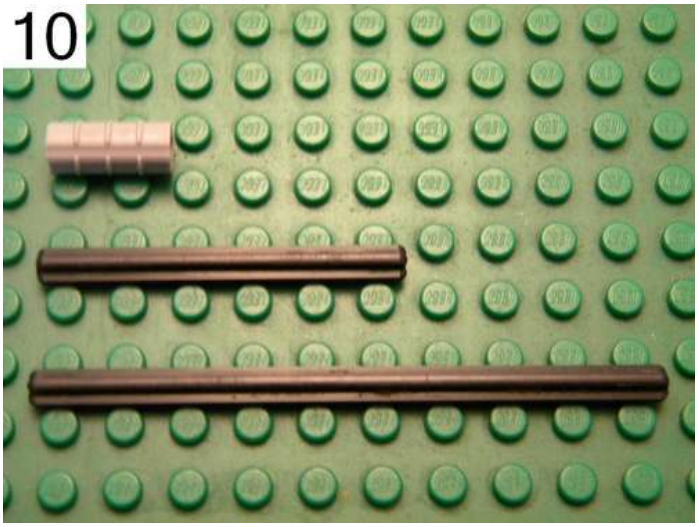


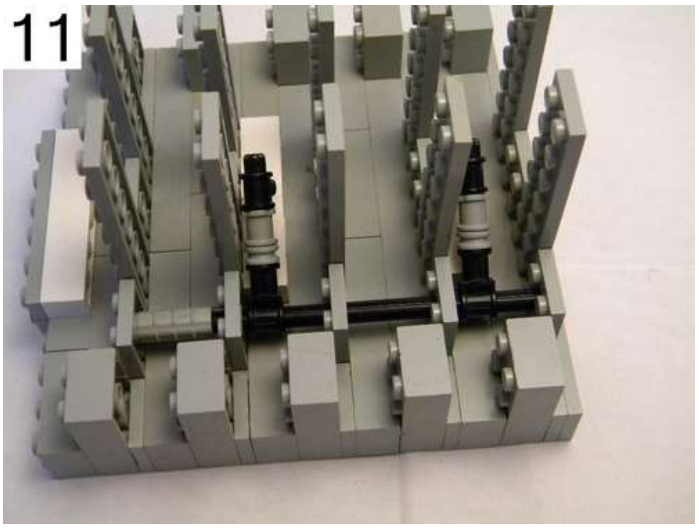
Image Notes
1. pointed in the other direction!

9

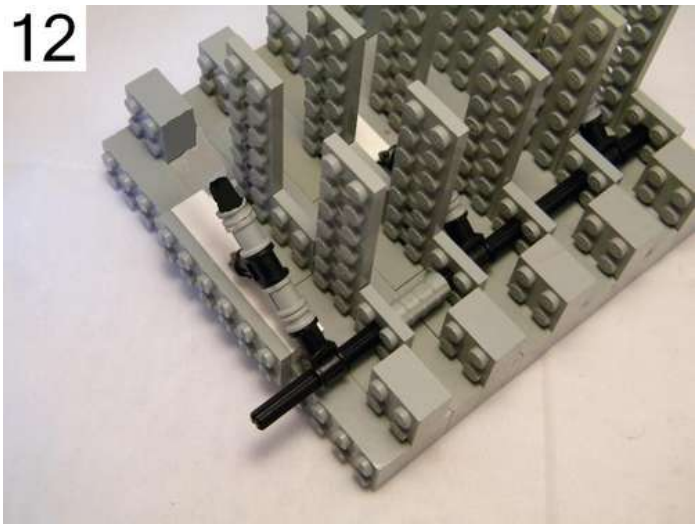
10



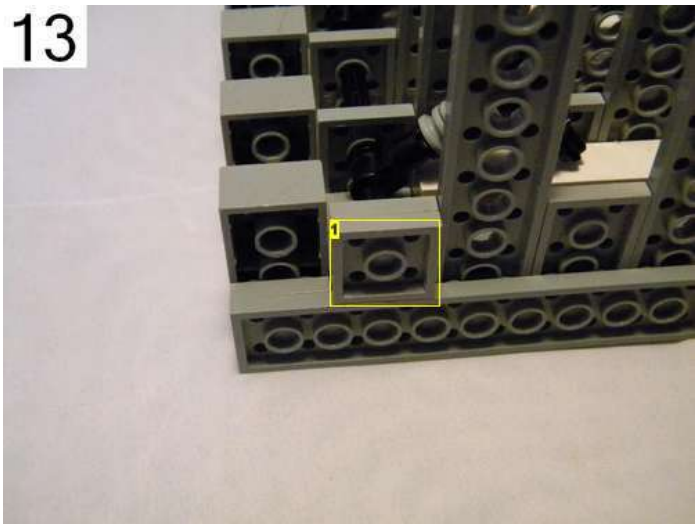
11



12



13



14

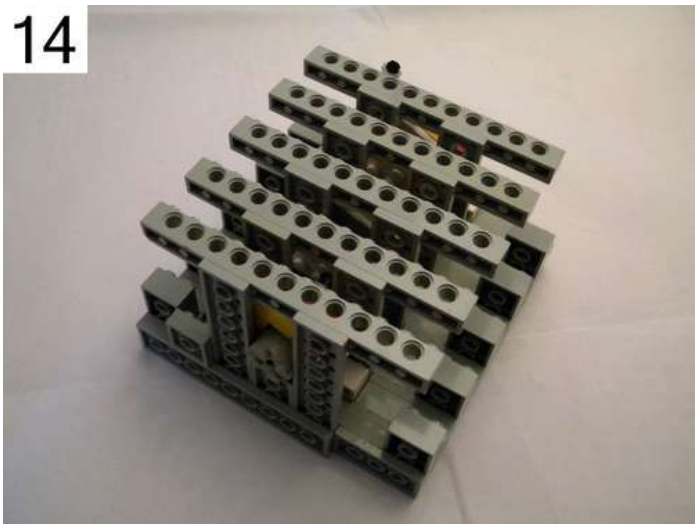
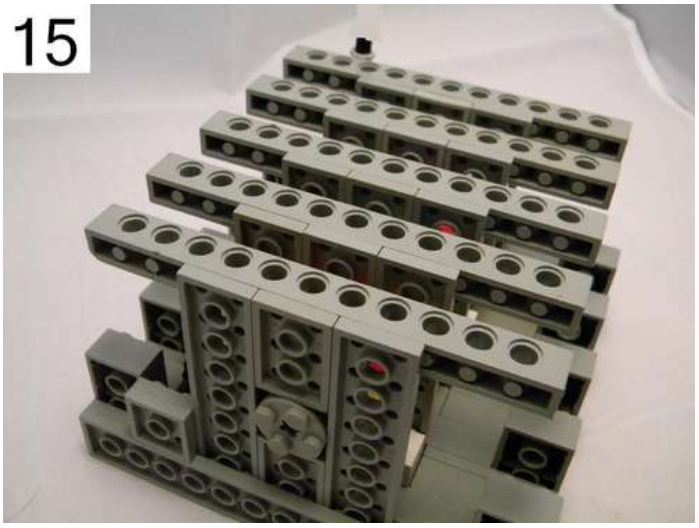


Image Notes
1. this

15



16

17

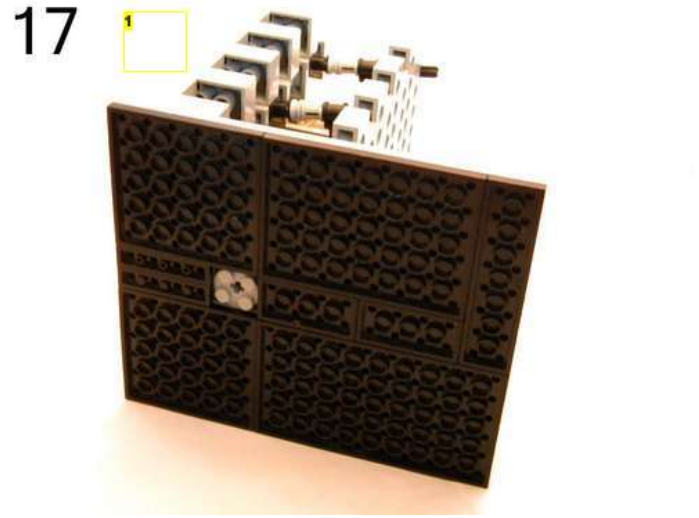
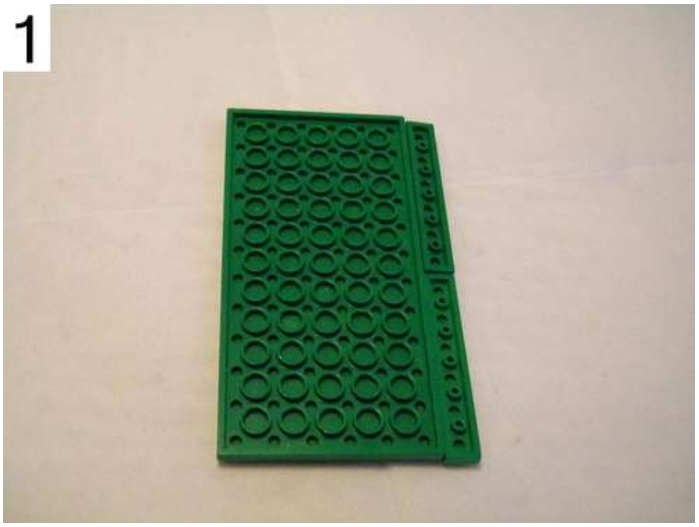
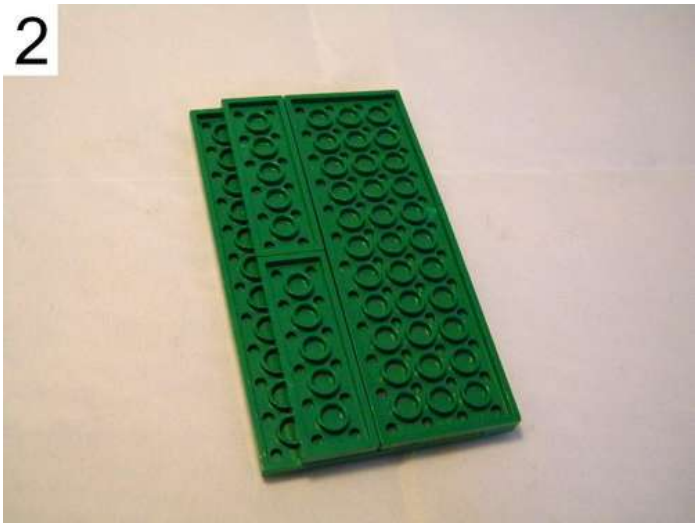


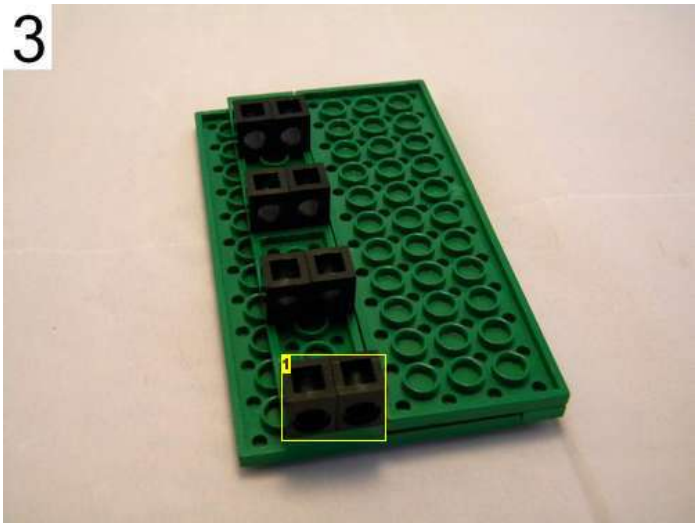
Image Notes
1. The photo is overexposed because there's so much black.

step 3: The Door

1: compose a 12x7 plate.
2: Put a 12x6 plate on top of it.
3: Add eight 1x1 holed bricks(or four 2x1 bricks with two holes, even better)
4: Put connection staves in the holes. connect 4 holed-bars to it. It's no problem if you don't have exactly these ones! I composed them from two different bricks, but that's also not necessary. The important thing is, that there's are holes just over the ridge of the door, with a round edge. They need to be round, because they're going to be the hinges. There are a lot of bricks like this, they dont need to be with four holes, you can also use them with six holes. And the hole on the end doesn't even need to be +-shaped. It may also be O-shaped.
5: Take a twelve-long stave, and build the thing on the left, with 1x1 holed bricks on it.
6: Join them together.
7: Fill the back of the door with bricks like this.
8: add plates, like this.
9: Take the spring and these other things.
10: Join them together.
11: Put it on the holed bars from the frame like this. It will push the door open. Also add those black connection sticks to hold the springs in place.







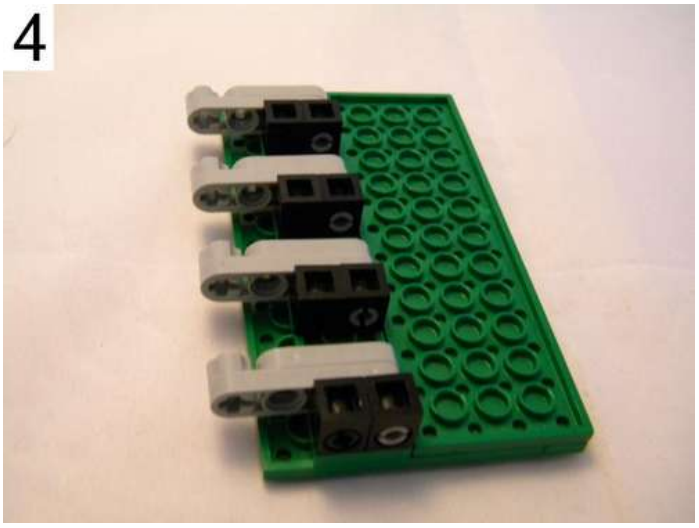
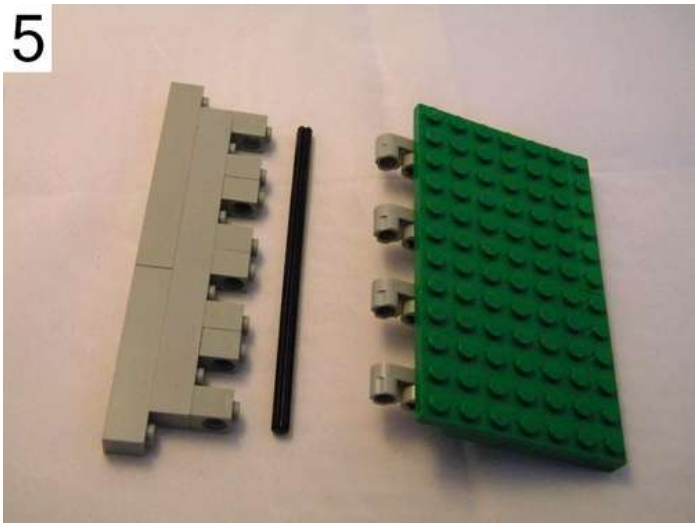
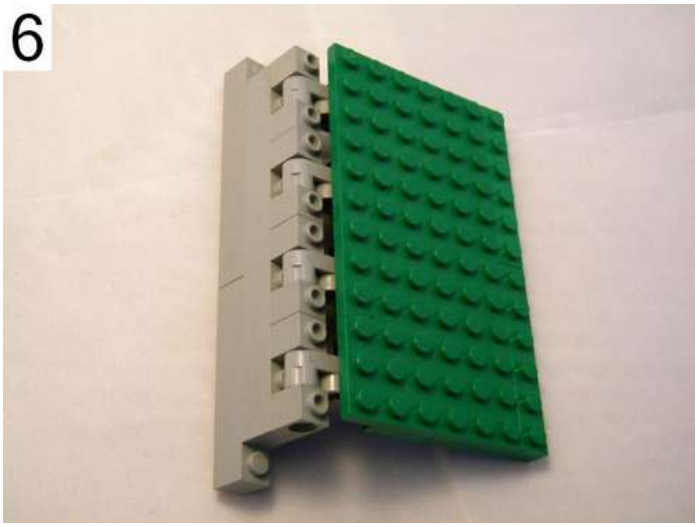


Image Notes
1. These exist as one brick aswell

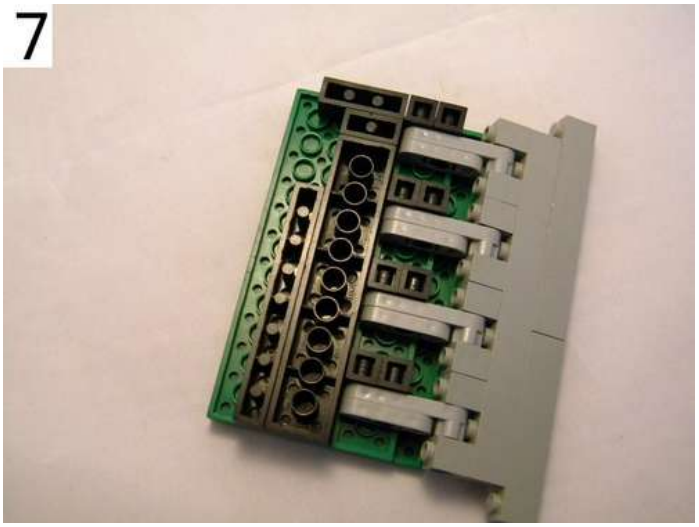
5



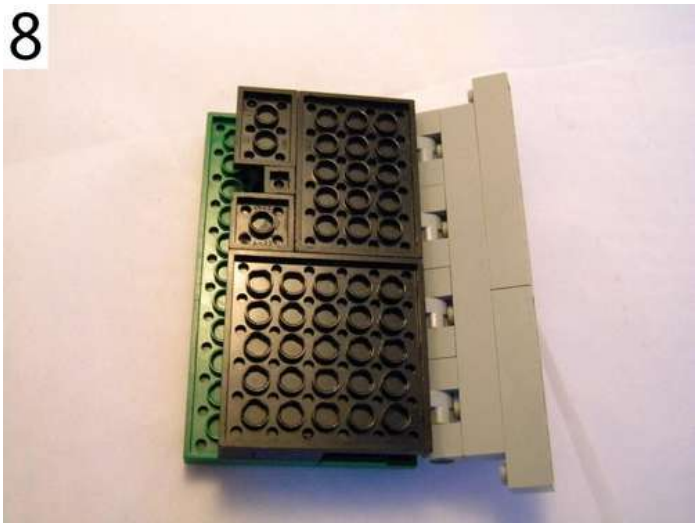
6



7

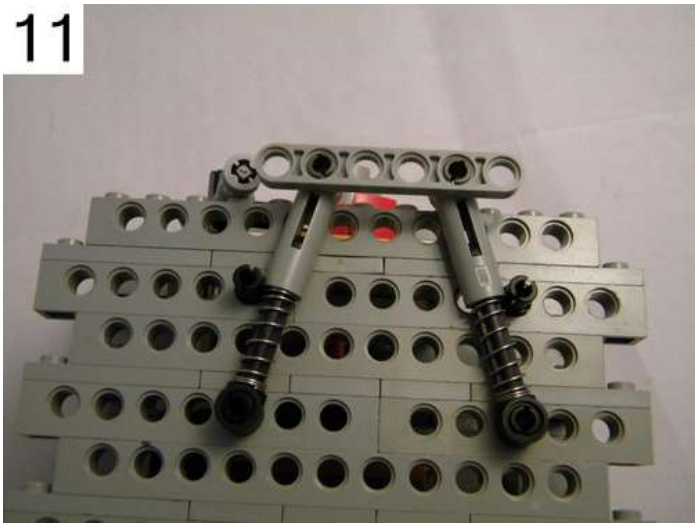


8



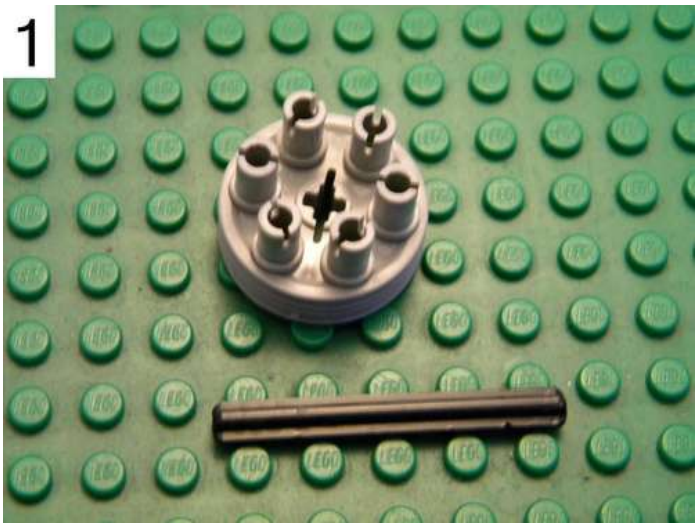
9

10

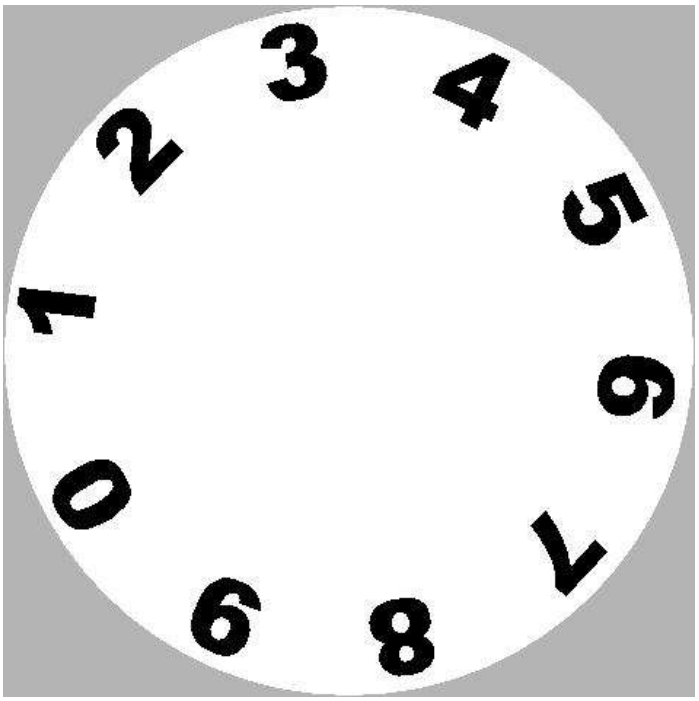


step 4: The Dial

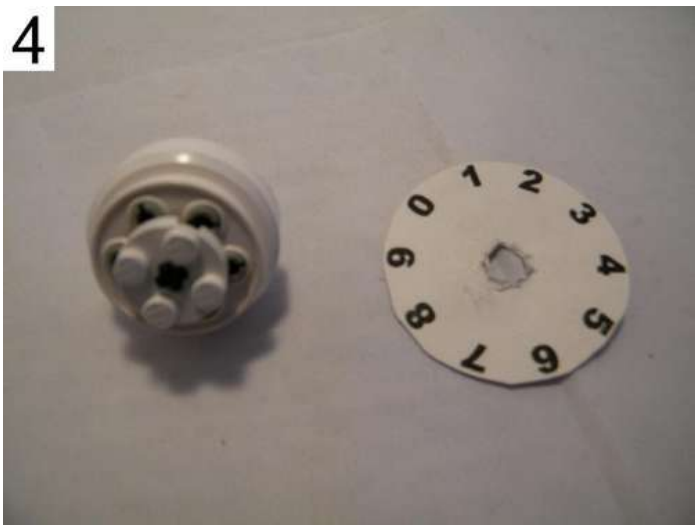
1: Take two discs with six connection sticks, and a five-length stave.
2: Take some pieces which will be the part of the dial to hold in your fingers when turning it. I took the inner part of a wheel and a round 2x2 plate, but I can understand if you don't have the weel rim. Use similar lego pieces, there exist a lot of them like this, or other discs to use for the dial, so this shouldn't be a problem.
3: Join it all together.
dial design: print this with the size of 4,5x4,5 cm(or 1,77x1,77 inch) on hard paper.
4: Make a hole in the middle, so, that a black stave fits in.
5: Put some hobby glue on it, You can use just a very little bit if you're going to execute step 7 and 8 aswell. If you don't want to get a little glue on your lego, you can enclose this paper between the two holed discs, but then there's a chance that later on the paper will move, and the combination you've remembered doesn't work anymore.
6: Hold it for a moment as the glue dries.
7: For the best result, take six *really* small nails.(even these are a bit too big)
8: Press them through the paper, on the places of the disc's connection sticks' holes.
9: insert the dial into the first rotor, and carefully(because the first rotor isn't fully enclosed yet) test what your combination is. You should check this, because now you can see what happens with the rotors. In the next step we will build it in, so you can't see it anymore. If you disagree with the number, you can get the dial out, turn it it a quarter-revolution, and put it in again. Then repeat the test.



3



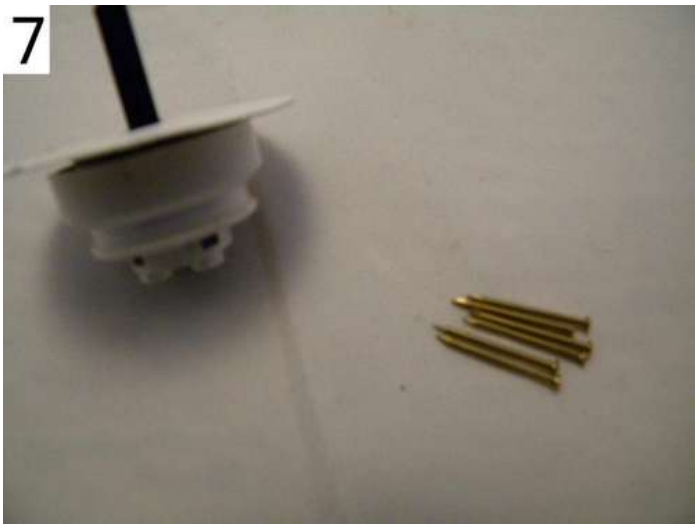
4

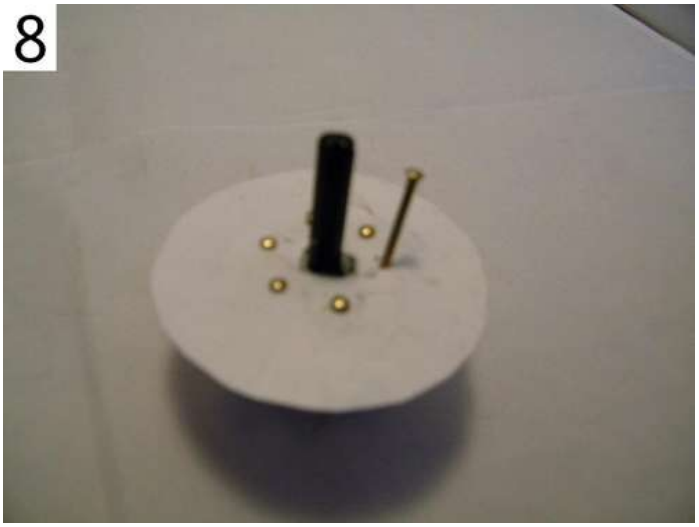


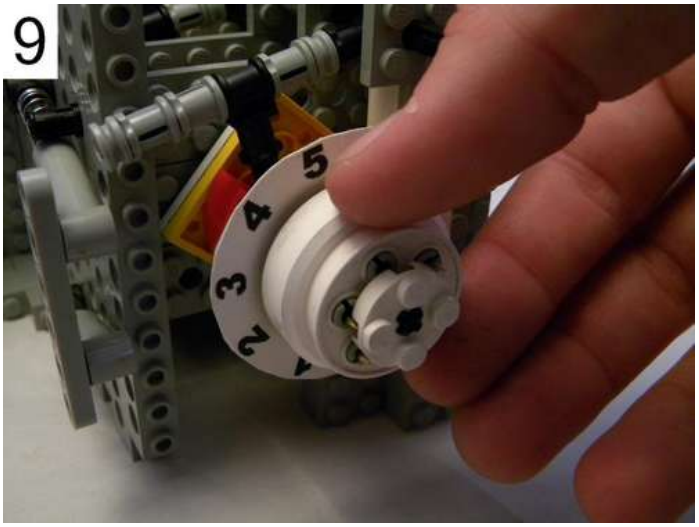
5

6

7







step 5: The Last Steps

1: Build the walls of the safe, and add the door. Do it with bricks with one in width. Be careful when building the walls, because you need to loosen the openings between the 4x2 bricks everytime, to get the bars between them. If you loosen them, don't pull them out of eachother too far, because then you'll break a rotor! And repairing is hard as you can hardly reach the rotors after a while. So contstantly keep checking if the rotor pieces are still together, because later on, you won't be able to reach the rotors at all and you can't repair them; so you don't want them to break them due to weakening during this step.
2: Place two layers of plates on it. Plus a holed place for the stave to come through. And leave a 2x2 gap around the axis between rotor 1 and the dial.
3: take a 4x2 plate and place two flat round plates under it.
4: Slide it on the stave.
5: Change the composition of the springs like this! In my first design, there was so much pressure, that the door would fly open fast, but it would fly off aswell. So if you like that, you can keep it the way it is, but i recommend to chache it like this. The connection sticks on the bottom are both moved one hole to the outside, as well as the black connection sticks above it. The spring are upside down, so that the grey solid part touches the black sticks - if the spring part touches the black stick when compressing, the movement may stagnate.
6: In the door, place a flat 2x1 tile, to let the opening of the door run more smoothly.
7: It's finished!
8: Optional: If you have lego crocodiles, you can place them on top of the save, to scare lockpickers off.

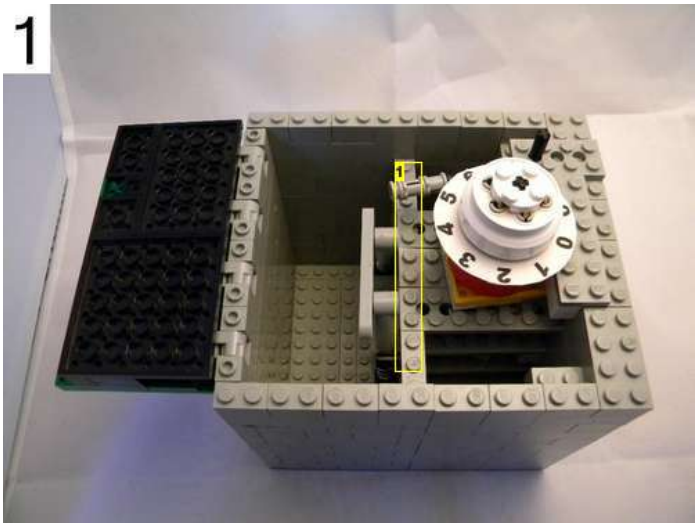


Image Notes
1. remove the holed bar that was here!

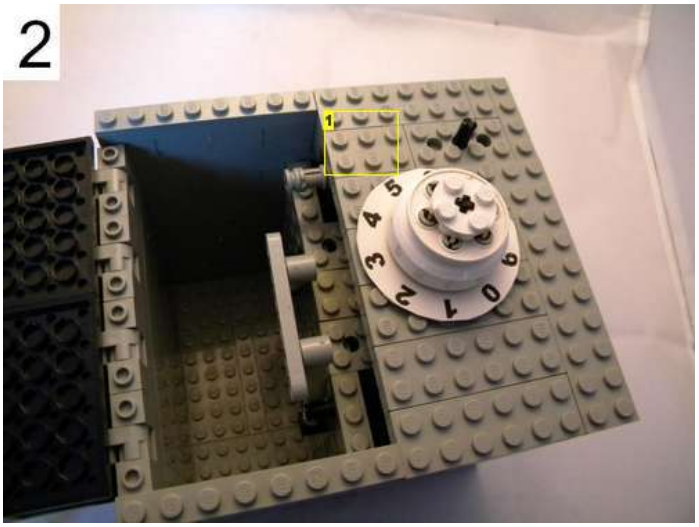
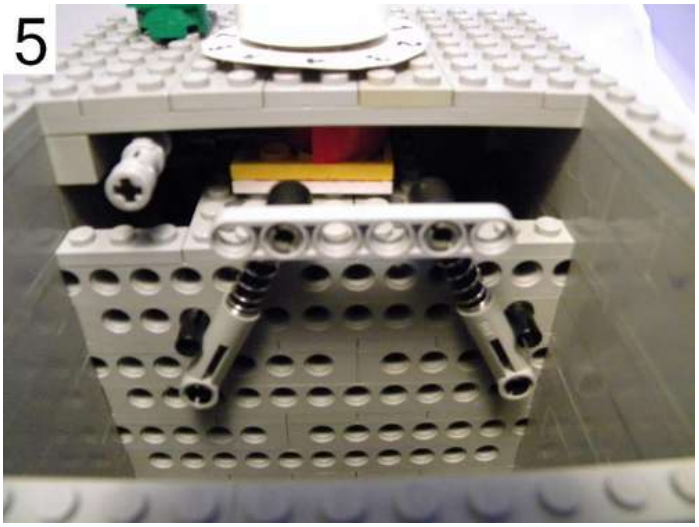


Image Notes
1. point with a lot of pressure - here it should be firm.



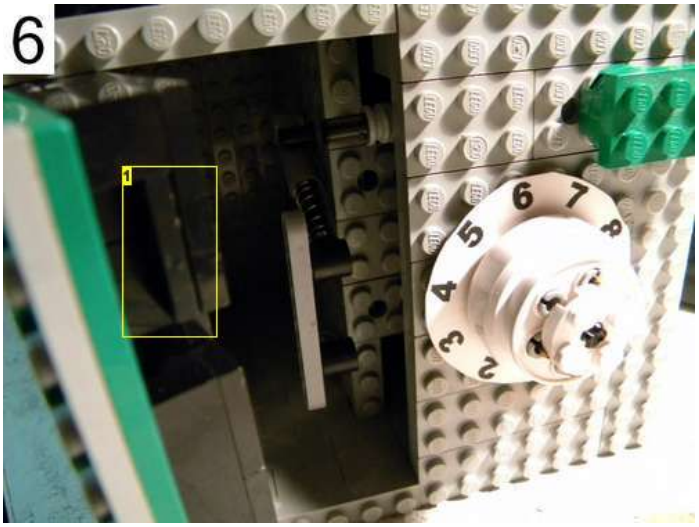
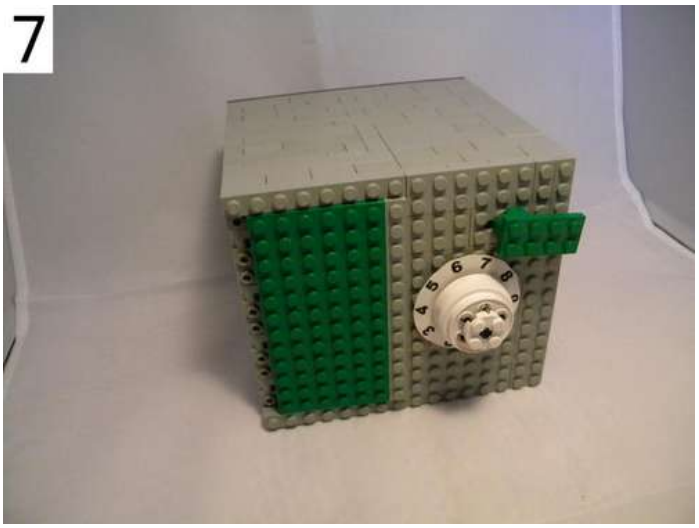


Image Notes
1. flat tile



Related Instructables

How to keep your bike from being stolen by Fuzz2050

Home Made U-Lock Bicycle Lock by TimAnderson

cheap mans lock picks by twitchy

A bit of safe cracking... by killerjackalope

Have someone hopelessly lock them self in a room! BEST PRANK EVER! by DuFFxP93

Hacking DVD/Videogame Physical Security by slyfox117

Self Stirring Mug using Lego by cooblades

Safe by kaysievers

Comments

50 comments **Add Comment** **view all 58 comments**

gamer-x says: Jun 29, 2009. 8:02 AM **REPLY**
love the aligators i have some so i will do this and put it into a moat i have ill take some pictures of it

gamer-x says: Jun 29, 2009. 7:57 AM **REPLY**
if u really wanted to put your real money in the safe u could just put it into it and put that safe into another REAL safe???

atokad33 says: Jun 28, 2009. 6:27 PM **REPLY**
sweet ill have to make this with my metal legos I have a friend that works for a company with a CNC milling machine and he made me a bunch of metal legos at my insistence

that's awesome btw

merijnvw says: Jun 29, 2009. 7:20 AM **REPLY**
Metal legos??? Never heard of that!

Allowance10 says: Jun 28, 2009. 9:01 PM **REPLY**
SOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO Sick!!!!!!!!!!!!!
You rule!

shaneomacmcgee says: Jun 28, 2009. 7:12 PM **REPLY**
great, but the people after MY money have HAMMERS lol

great 'ible man, very cool!

dollardude says: Jun 28, 2009. 4:24 PM **REPLY**
Great instructable but i dont think i could build that

Broom says: Jun 27, 2009. 7:54 AM **REPLY**
meijnvw, you are officially now my god. Dank u wel.

merijnvw says: Jun 28, 2009. 4:04 PM **REPLY**
i'm flattered

icewolf says: Jun 27, 2009. 11:59 AM **REPLY**
Actually, meRijnvw :)

Nice instructable, BTW. I wouldn't have thought of that.

merijnvw says: Jun 28, 2009. 4:05 PM **REPLY**

you're right, he doesn't even know his own god's name!

Broom says: Jun 28, 2009. 10:05 PM **REPLY**

A TRUE god wouldn't mind... take j*h*v*, for instance. Ack! You're a mere mortal! Begone!

RMConstruction says: Jun 29, 2009. 9:53 AM **REPLY**

actually, it begins with and i. i*h*v*

RMConstruction says: Jun 29, 2009. 9:53 AM **REPLY**

but the i is pronounced like a j

earnst2w8 says: Jun 27, 2009. 9:12 AM **REPLY**

nederlander!!! (of belg) maakt niet uit :P

merijnvw says: Jun 28, 2009. 6:51 AM **REPLY**

ja klopt haha

robot797 says: Jun 29, 2009. 3:16 AM **REPLY**

ik ook

Wareagle says: Jun 28, 2009. 3:07 PM **REPLY**

wow this thing is really cool! i will attempt to make it, but i don't have the spring parts. is there a way to make it without them?

merijnvw says: Jun 28, 2009. 3:12 PM **REPLY**

Yes sure, then you just have to pull the door open by yourself! Or you can take springs from a big pen, with a spring that fits around a black technic stave, and make the spring mechanism yourself.

poparoo4 says: Jun 28, 2009. 9:24 AM **REPLY**

iTS AMAZING but couldn't you just take the bottom off. Maybe glue the peices together?

merijnvw says: Jun 28, 2009. 3:09 PM **REPLY**

Yes that's true but i don't feel like gueing my legos

shiakazee says: Jun 27, 2009. 8:25 PM **REPLY**

man, this would be really useful for me. when I remember the combo I do the combo, when I forget I can always dismantle the safe and get my own monopoly money =)

raimen says: Jun 28, 2009. 10:43 AM **REPLY**

lmao xD

klee27x says: Jun 28, 2009. 12:24 AM **REPLY**

This is very neat. I can think of worse ways to spend 2 hours. Can you source all the parts and make a kit with some instructions? Better yet, take your plans to Lego and see if they'll make it. I'd buy one!

dla888 says: Jun 26, 2009. 12:30 PM **REPLY**

But would a burgalar think that you keep real money in a lego safe?

tanmanknex says: Jun 27, 2009. 9:34 PM **REPLY**
no, and that's the beauty of it.

dannydutton says: Jun 27, 2009. 12:43 PM **REPLY**
He does now.

GuardianFox says: Jun 26, 2009. 4:44 PM **REPLY**
Gluing the model would be the logical next step.

Iridium7 says: Jun 27, 2009. 4:35 PM **REPLY**
and gorrilla glue

Iridium7 says: Jun 27, 2009. 4:33 PM **REPLY**
there should be a glue that was like: duct tape, krazy glue, super glue, elmers glue, elmers wood glue all in a blender. we shall call it Norris glue!

Broom says: Jun 27, 2009. 7:52 AM **REPLY**
Incorrect. Mastering the ancient art of Lego(tm)-safecracking would be the logical next step... followed by apprehension, a swift but fair trial by 12 Lego(tm) peers, and then 20 years to learn to break out of Lego(tm) jail.

Captain Molo says: Jun 26, 2009. 4:33 PM **REPLY**
...Wow... But if you really wanted to get in you could just smash it

Holden_vy_s says: Jun 27, 2009. 5:13 AM **REPLY**
So i cant use this too keep my millions of dollars in?
Damn.

Iridium7 says: Jun 27, 2009. 4:30 PM **REPLY**
does your name happen to be Monty P. Moneypants?

daikan says: Jun 27, 2009. 6:27 AM **REPLY**
Yes you can put your`re million dollar in it, no one who is going to steal you're money thinks you put it in a lego save ;)

Broom says: Jun 27, 2009. 7:49 AM **REPLY**
Brilliant!

dark sponge says: Jun 27, 2009. 12:45 PM **REPLY**
But then some kid might walk away with it because they just wanted legos...

lemonie says: Jun 27, 2009. 12:55 PM **REPLY**
I wouldn't have thought it possible, fantastic!

L

ChrysN says: Jun 26, 2009. 4:33 PM **REPLY**
The crocodiles are a nice touch!

Broom says: Jun 27, 2009. 7:50 AM **REPLY**
Agreed! And, without this comment, I wouldn't have noticed them.

Human Being says: Jun 26, 2009. 5:27 PM **REPLY**
no offence, but if a robber wanted ur monet THAT badley, he would just smash his fist on it and it would shatter. other than that, cool 'ible :@)

Broom says: Jun 27, 2009. 7:50 AM **REPLY**
No offense, but duh.

mikeasaurus says: Jun 26, 2009. 8:45 AM **REPLY**
ahhh....lego, is there anything you can't build?
This is a very clever project, ironically not-so-safe considering the material. The true genius is teh use of Monoply money.

I like it! Great job!

1up says: Jun 26, 2009. 4:53 PM **REPLY**
If you superglued the bricks together, it'd be a lot stronger. ;)

MegaMaker says: Jun 27, 2009. 7:07 AM **REPLY**
Really?

Broom says: Jun 27, 2009. 7:48 AM **REPLY**
No.

I mean, yes!

But I'd use duct tape, cuz I love it so much.

Scoboy says: Jun 27, 2009. 4:39 AM **REPLY**
LOL lacoste

vandalex says: Jun 26, 2009. 8:33 PM **REPLY**
i think its cool, a little super glue, model cement or something might actually make it sort of practical

Shadow Ops says: Jun 26, 2009. 12:07 PM **REPLY**
A lego safe! Not practical, but a neat concept!
<smashes on ground and runs away>

Bartboy says: Jun 26, 2009. 1:25 PM **REPLY**
Haha... the knex version can't be smashed!

view all 58 comments