Terraria

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[Project] Hoiktronics: Reset Mechanisms

Discussion in '[TMEC] Terraria Mechanical Engineering Corps' started by DicemanX, Dec 22, 2014

DicemanX

ZeroGravitas released a video today showcasing the first ever Terraria computer:

[IMG]

The compactness due to hoiks being very efficiently used is amazing! As we utilize hoiktronics to build bigger contraptions, I wanted to take a quick opportunity to explore reset mechanisms because some of the more elaborate contraptions will need them to avoid having to pull a myriad of levers or switches. ZeroGravitas showcased a vertical reset in his video (which I'm hoping he'll elaborate on, since it's not so easy to follow the hoiking in such a compact structure), and in the meantime I present my two attempts at horizontal reset mechanisms. Here they are:

[IMG]

Wiring:

[IMG]

The idea is to send a skeleton pulse using the bottom hoik. In the bottom reset mechanism , any time the ground below one of the teeth is actuated, the skeleton takes the alternate path down, across, then up, passing over a pressure plate and re-setting whatever is attached via wire back to it's original state. The mechanism essentially checks every state (binary ON or OFF states) and reverts every state back to its original state.

The top reset mechanism is completely analogous, and the alternate paths are top, right, then down relative to the horizontal hoik.

There are two issues with both mechanisms:

1) They only work for skeletons, not for player NPCs or player characters
2) They only work underground, or at night (daytime above 0 altitude = skeleton gets stuck)

Now the good news is that they work perfectly underground so they apply to underground contraptions at all times, but I still want to see if reset mechanisms can be built that have no restrictions at all and remain fairly compact.

Can anyone propose better horizontal reset mechanisms?

[TMEC]

ZeroGravitas and mer6685 like this.

DTTile

Oh dammit this is hard.

DTTile

Yup, he's known for that type of things.

[IMG]

ZeroGravitas and DTTile like this.

DicemanX

Here's another approach:

[IMG]

Works with skeletons underground - still need to test above ground. There is sometimes a slight pause at one of the teeth, but the skeleton always goes through. Doesn't work well with NPCs because they can get stuck if they try to move to the left while in the hoik. The player character works though.

EDIT: Success!

[IMG]

I removed the in-between teeth in the upper hoik and now it works perfectly with skeletons day or night overground or underground. Very compact too.

So there we have it - a very efficient restart mechanism!

[TMEC]

Dudoy likes this.

DicemanX

> DicemanX said: ↑
> I removed the in-between teeth

Yup, that's what I was going to say. This is just like my reset design I've tried to explain before, I think. For those who don't understand, it works by tweaking the NPC/player's precise vertical position in the following step: bottom hoiks put you against the floor on the next step (hitting a floor plate, if there is one), while top hoiks leave you on the ceiling, slipping over the pressure plate without activating it!

DicemanX

> DicemanX said: ↑
> Very compact too

Not enough for my liking, tbh. The problem is that the plate has to be linked with the actuated teeth in the step behind it. This means that you need 2 steps per plate/wire to keep the wiring separate. You *can* get them adjacent, with interwoven wiring, but it requires alternating all 3 wire colours, which leaves no provision for overlapping wires for other mechanisms (that will inevitably be needed for more complex machines).

[TMEC]

ZeroGravitas

> DicemanX said: ↑
> ZeroGravitas released a video today showcasing the first ever Terraria computer

Oh, and to be fair, @connery9 already built a multiplacation machine using birds. At least, that's as much as I know of, maybe there even were bigger projects?

[TMEC]

connery9 likes this.

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stupidjjesse

> I Love Cheese 😄
>
> JOIN TMEC OR SUFFER!!!
> no kidding...

[TMEC]

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connery9

> ZeroGravitas said: ↑
> Oh, and to be fair, @connery9 already built a multiplacation machine using birds. At least, that's as much as I know of, maybe there even were bigger projects?

I'll try to bring all my stuff from TO over here once I have enough free time, though this thing seems a whole lot more compact than what I had built. And I love this hoik glitch I really have to look into that 😄

Forgotten Era
pk break, fantasy filled, post apocalyptic RP...

ZeroGravitas likes this.

ZeroGravitas

> connery9 said: ↑
> I realy have to look into that

Yes, 'fen you do. 😄

> connery9 said: ↑
> my stuff from TO

I've tried to link to most of it in the Definitive T-MEC List of Resources page, have I missed any big wiring stuff?

[TMEC]

Tutorial Threads and Info

ZeroGravitas

Got it! Took my brain-mush long enough, but finally iterated my way there. I don't think you'll be able to beat this for compactness:

[IMG]

8 bit reset line. Varies between 8 ticks and 16 ticks to run the length of the switches, depending on how many are in the 'on' state; it toggles between top hoik (2 tile strip left) and return high bottom hoik (1 tile step left), twice). After thinking up the mis-matched hoik types, the key was figuring out that I didn't have to actuate the second bottom hoik tooth in each pair. 😄

[TMEC]

DicemanX likes this.

Tutorial Threads and Info

DicemanX

> ZeroGravitas said: ↑

Ah, I missed this design possibility! I had a similar set up initially but I didn't space the top hoik teeth the way you did.

Still, I can't use this more compact version since in my lastest machine I need to shut off certain things that are connected with the same color wire, so I used my more spaced design.

[TMEC]

ZeroGravitas likes this.

DicemanX

> DicemanX said: ↑
> I need to shut off certain things that are connected with the same color wire, so I used my more spaced design.

You could probably make a compromise and have a 3 tile spacing, with another bottom tooth each repeat.

[TMEC]

Tutorial Threads and Info

ZeroGravitas

> DicemanX said: ↑
> You could probably make a compromise and have a 3 tile spacing, with another bottom tooth each repeat.

Yes, good point. Definitely will keep this approach in mind in the future. For my present machine everything is stacked in columns horizontally so the horizontal compression of the reset mechanism isn't important, but the vertical compression is (to at least be able to see the entire machine on screen at least).

[TMEC]

DicemanX

> ZeroGravitas said: ↑
> Got it! Took my brain-mush long enough, but finally iterated my way there. I don't think you'll be able to beat this for compactness:
> View attachment 16880
> 8 bit reset line. Varies between 8 ticks and 16 ticks to run the length of the switches, depending on how many are in the 'on' state; it toggles between top hoik (2 tile strip left) and return high bottom hoik (1 tile step left), twice)

I incorporated this into my newest version of the digi-comp which I will post later, and I found out that this set-up works if the skeleton runs from right to left - the mirror image set-up doesn't work because the skeleton gets stuck on the first up deactuated hoik (skeleton is stuck on the left in the pic):

[IMG]

Of course there's no problem when the mirror image of the reset mechanism is used, so this post is just a word of caution to those wanting to use this mechanism - make sure you build it running from right to left. Otherwise, it works perfectly. 😄 Good thing too because my newest version of the digicomp can use the more compact version!

[TMEC]

ZeroGravitas likes this.

DicemanX

> DicemanX said: ↑
> I found out that this set-up only works if the skeleton runs from right to left

Hmm, nice annoying symmetry breaking. Good catch. Guess I should have checked this myself... At least I haven't finished the video including this yet. Sure it won't get him started to mount the reset run with a foot height bottom hoik tooth? Presumably he'll just get stuck on the second actuated tooth pair instead then?... Wonder if the design can be re-jigged for this? Horizontally offset the counter-actuated teeth or something...

[TMEC]

Tutorial Threads and Info

ZeroGravitas

> DicemanX said: ↑

Hmm, nice annoying symmetry breaking. Good catch. Guess I should have checked this myself... At least I haven't finished the video including this yet. Sure it won't get him started to mount the reset run with a foot height bottom hoik tooth? Presumably he'll just get stuck on the second actuated tooth pair instead then?... Wonder if the design can be re-jigged for this? Horizontally offset the counter-actuated teeth or something...

I haven't tested other set-ups, but the lack of symmetry isn't an issue in your actual set-up since it really doesn't matter if the reset runs left to right or right to left. I switched the mechanism to run from right to left and it works perfectly. Good thing too, since I needed the compression in my vastly improved digi-comp machine (less reduced significantly - more on that in a bit).

[TMEC]

ZeroGravitas likes this.

Thread Status: Not open for further replies.