Indoor rock climbing is a healthy and exciting activity that is growing in popularity. However, indoor rock climbing is currently only a poor imitator of outdoor rock climbing. It does not take advantage of opportunities unique to the medium.

For the uninitiated, an indoor rock climbing gym provides a similar experience to rock climbing outdoors by bolting many pieces of rock to otherwise flat pieces of wall. Each of these pieces of rock is called a hold. Indoor walls add difficulty by limiting which holds a climber can use to scale the wall. A collection of holds used to scale the wall is called a route. Matching colored pieces of tape are placed near all the holds on a route to show the climber which holds they can use to complete the climb.

This system of using tape to mark out routes wastes employee time and tape. Climbers often find the pieces of tape hard to see and peeling tape or layered tape (which occurs either when the gym runs out of potential colors or if multiple routes use the same hold) can be confusing. Since the process is such a hassle, new routes are created rarely. Climbers inevitably feel left out if they have climbed the possible routes that they can handle or all the routes are either too easy or too hard. Overall, the interaction with the facility is limited and a gym may find difficulties maintaining the interest of the climbers.

Our solution solves these problems and provides new opportunities for gyms and hobbyists alike. We propose that transparent climbing holds be created with embedded multi-color LEDs and touch sensors to tell when a particular hold is in use. These holds would be communicated with wirelessly to allow effortless retrofitting and be controlled through a companion mobile application. This solution allows anyone to create their own routes, routes to be generated for a user of a certain skill level, games to be created that take advantage of the dynamic nature of the holds, and climbers could be ranked based on balance and time taken to complete a route. Users could even create their own custom routes and monitor their progress outside of the gym resulting in greater engagement with a particular gym.

We believe this solution has market potential with rock climbing gyms as it saves gym owners the constant cost of employee time spent taping up and re-taping routes, the novelty of the product would attract new customers, and it adds engagement outside of the gym through its companion apps and site which could allow gyms to better maintain customers. We also believe that the solution has market potential with hobbyists who create their own walls as the solution saves them effort, is novel, allows them to track their progress as a climber, and allows them greater control over their rock wall.

Our research has shown that there are existing patents for LEDs in holds, but no patent exists that involves any sort of touch sensor. As far as actual products are concerned, there are wired holds that light up, but those would require drilling holes through the wall and great effort to move. There is also no system exists to control them. There also exists a hold that contains its own battery, but it also cannot be controlled. This means that routes cannot be created.

We have already created and tested an initial wired prototype. We have also designed and are currently building a wireless solution. A companion mobile application and website are also in production. Also, we have contacted a local designer to aid with logo development and branding.

Our next step is to contact local gym owners to get feedback on the desirability of the design, the current cost to the owner, what the owner would be willing to pay for the solution, how the solution is purchased, if the owner would prefer an alternate finance system, and to ask them about any other problems they would like to be solved. We have waited until this point as we hope the demo wired climbing hold that we constructed will help clarify our ideas and back up our claims. We also plan to reach out to rock climbing wall builders and hobbyists for feedback and to learn more about the wall creating process.

With your help we hope to form an LLC and patent any part of our product that we can.