

Drill Press Vise

The need is for a device that can hold a material securely in place while it is being drilled on a drill press. The vise must be simple to operate, and easy to secure to the drill press table. In addition, it must be robust, and the jaws must be square. The jaw width will be between 2" and 2.75", height between 1.125" and 2.5", and must open 2"-3.5". The base of the vise will be no more than 6" long. The vise must be aesthetically pleasing, while also being relatively easy to machine. Lastly, it must feature replaceable jaw capable of holding round material, and all fasteners must be standard.

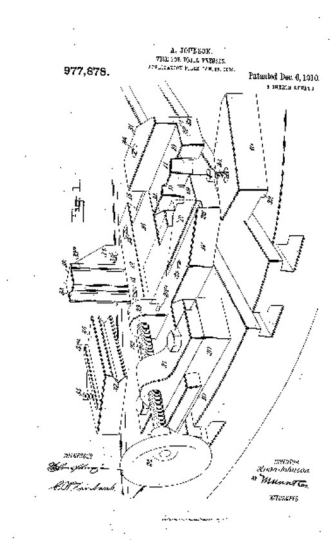
Background Research

Most cheap drill press vises on amazon have a similar design, with a solid baseplate, and a jaw that rides a slot in the middle of the base plate. A less popular design (at least for low price range) features round rails for the jaw to ride on. Some issues with current designs include difficulty mounting to the drill press table, burrs and unfinished surfaces causing damage to parts being clamped and hazard to user, cheap construction, and slop in the lead screws. Some things people liked in current designs, were vises that are quick and easy to use, have solid build quality, and easily sliding parts. Some vises have a slide that allows them to be re-positioned on the table without being remounted.



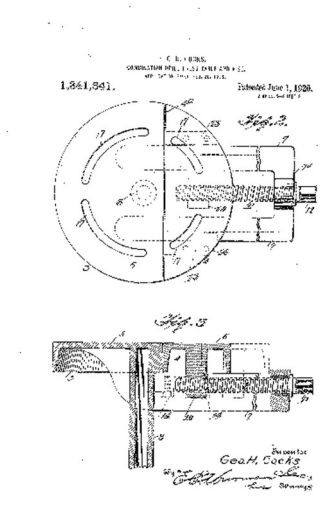
1. https://www.amazon.com/Irwin-Tools-Drill-Press-226340/dp/B0001LQY4O/ref=sr_1_5?ie=UTF8&qid=1536676632&sr=8-5&keywords=drill+press+vise#customerReviews
2. https://www.amazon.com/Bora-Drill-Press-Vise-551027/dp/B00F5XU07A/ref=sr_1_1_sspa?ie=UTF8&qid=1536676632&sr=8-1-spons&keywords=drill+press+vise&psc=1#customerReviews
3. https://www.amazon.com/Hardware-Factory-Store-4-Inch-Compound/dp/B00L5RXFTU/ref=sr_1_7?ie=UTF8&qid=1536676632&sr=8-7&keywords=drill+press+vise#customerReviews

One patent shows a design for holding smaller objects. This design clearly has limitations in its application, but it does present a solution to the issue of ease of mounting the vise.



Patent US977878A

Another patent that addresses the ease of mounting shows a vise built into the drill press table. While this also has limited applications, in that its much more complicated, and requires compatibility between the new table and drill press, it does remove the issue entirely of mounting the vise to the table.



Patent US1341841A