

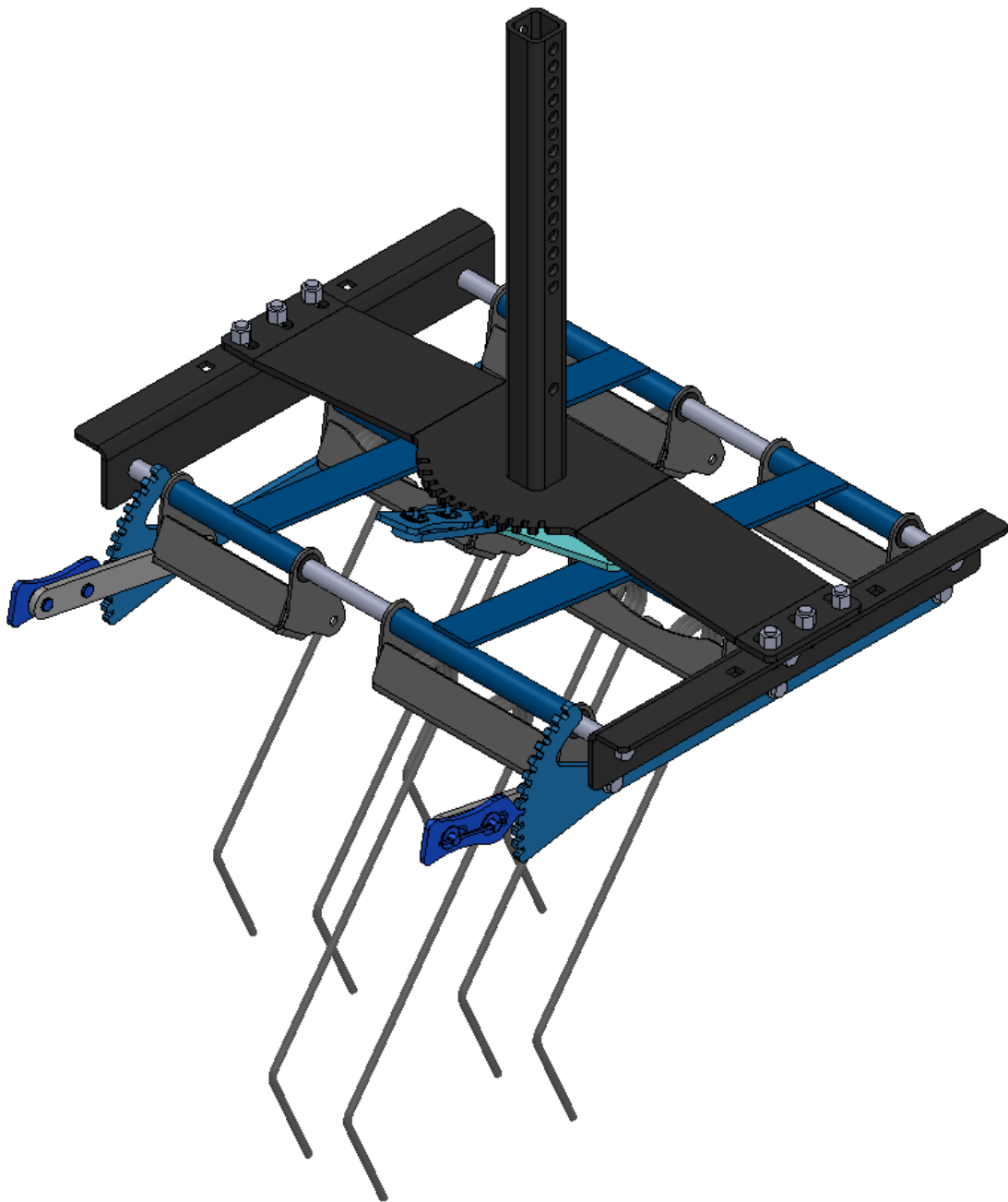
Tine Weeder Update

Thaddeus Hughes

13 NOV 2024

I. General Status

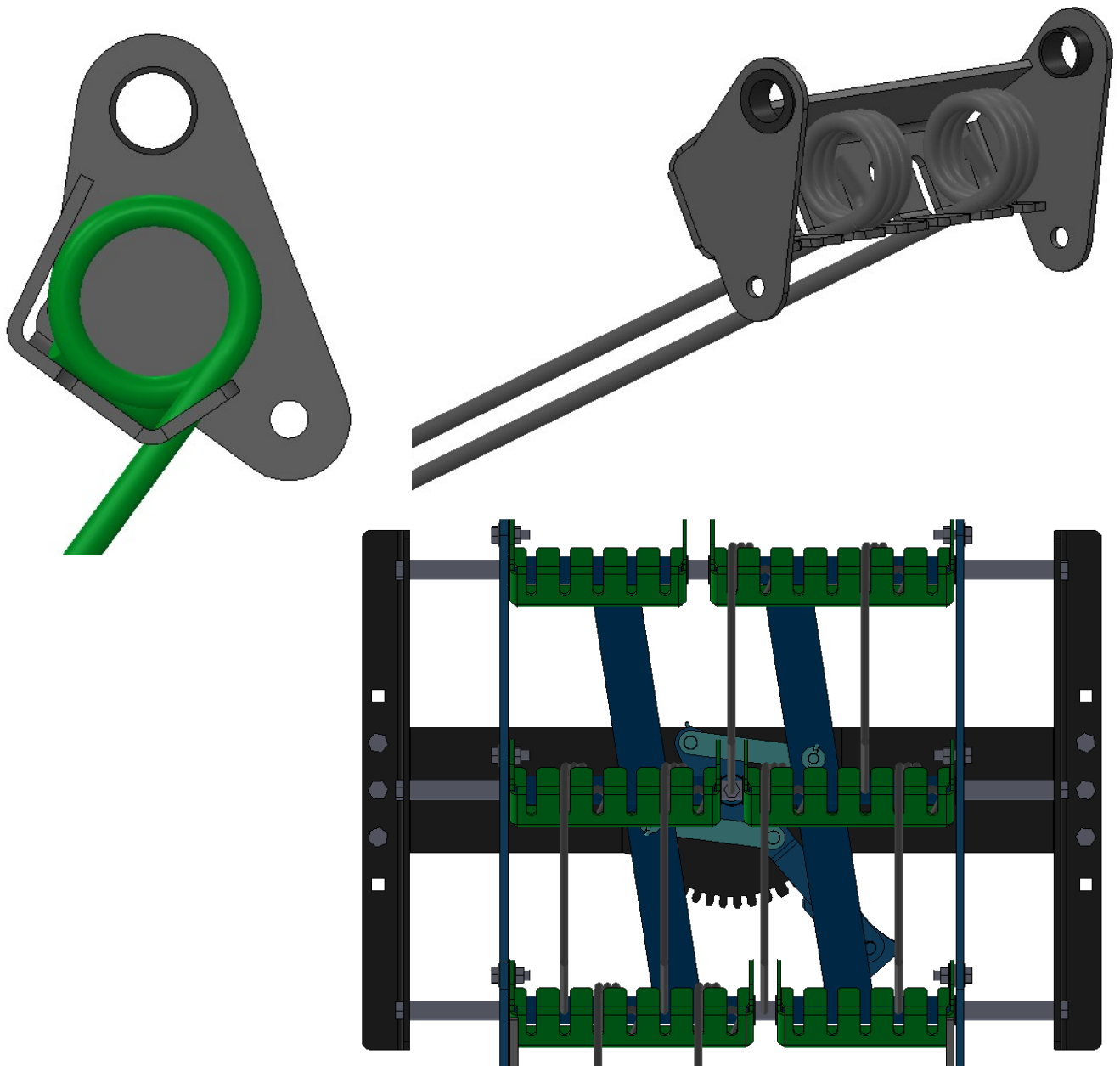
Fairly in-depth CAD of the weeder is complete. This includes all of the hardware except the tine mounting hardware.



II. Tine Gangs

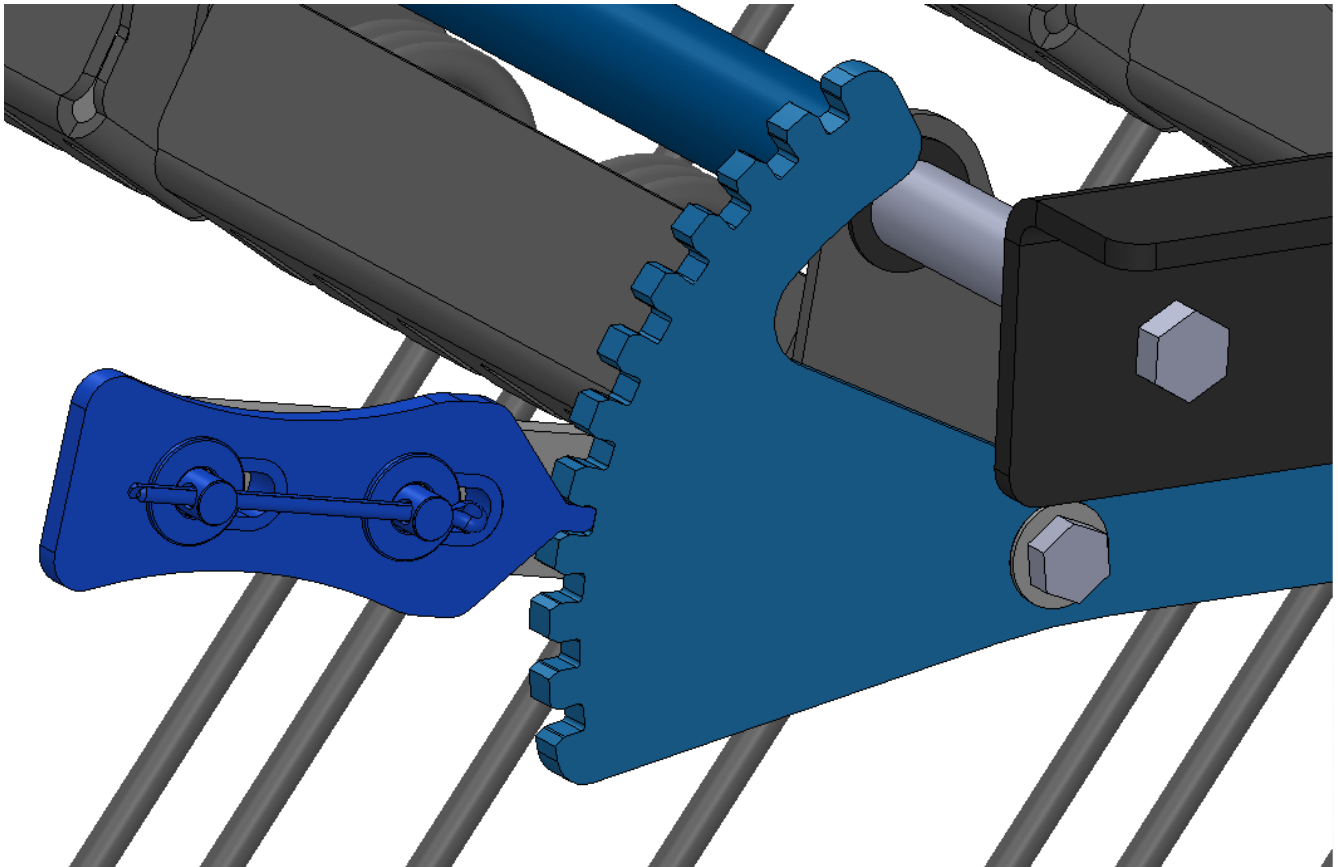
Tine “cradles” are formed out of a single piece of sheetmetal and include IGUS bushings (GFI-1011-08). The tines are bolted into a cradle of similar design to the existing tine weeder, but the cradle is tapered to provide a more positive seat. The tines, once unbolted, can be simply slid out for easier removal. The addition of the trusses above the tines makes this open slot practically necessary for tine removal.

The gangs of tines are staggered so that they can overlap.



III. Angle of Attack Adjustment

The handle and locking feature for the angle of attack adjustment uses two bistable plastic slots. Rather than using shoulder bolts (\$2 each and prone to rusting), pins pressed into sheetmetal are employed and captured with a cotter pin (McMaster-Carr 97245A283 and 98338A205).

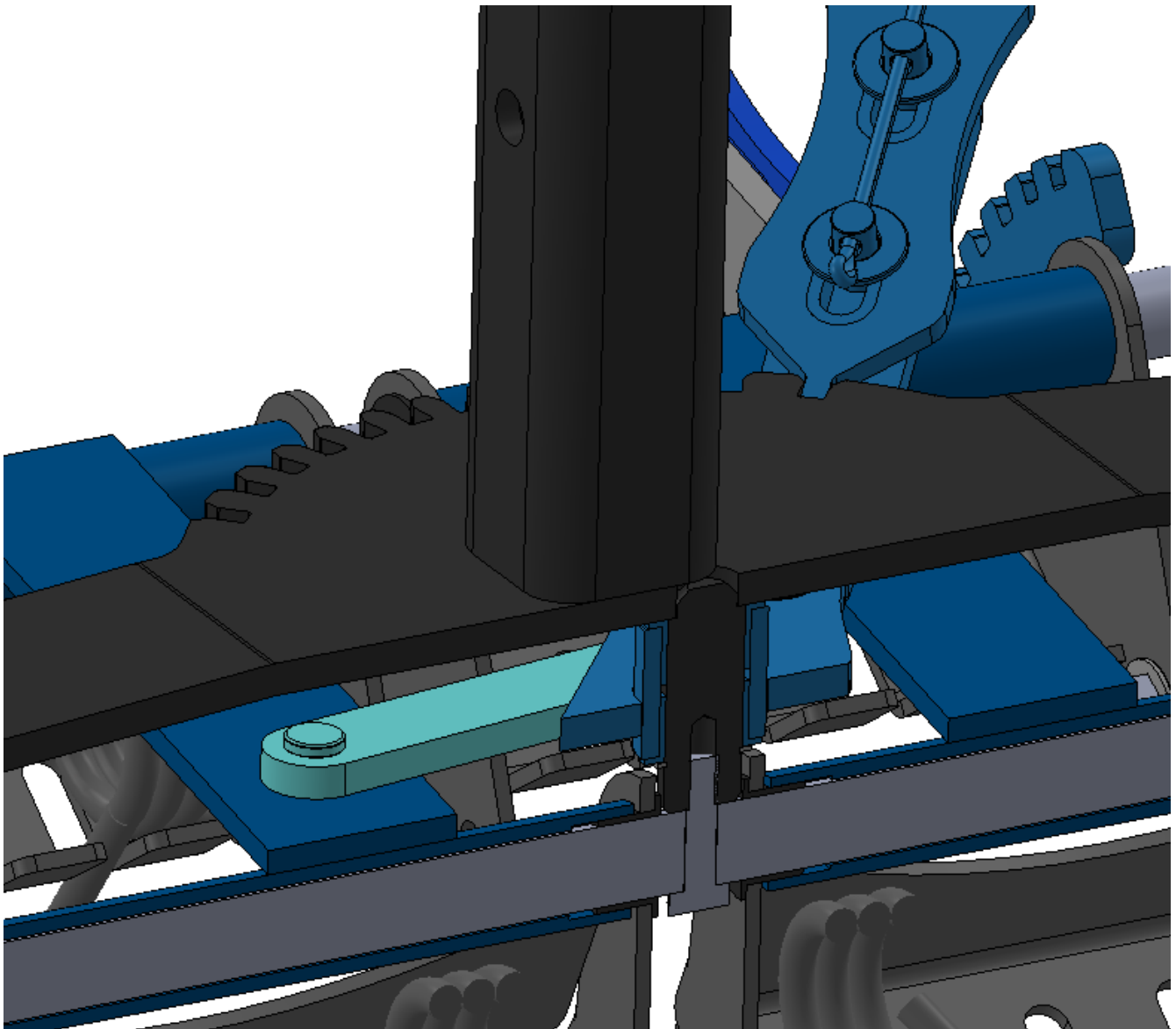


IV. Center Spacing Adjustment

The center spacing adjustment uses the same locking handle as the angle of attack. A watt's link mechanism drives each side in and out.

The tine cradles run on bushings on the tine axles. The adjustment truss runs on these same bushings.

The distance between the center tines is adjustable from 1" to 5 1/2" in 1/2" increments.



V. Comments, questions, and concerns

1. These things are worth testing before committing to a full production run:
 1. The fitment between pins (97245A283) and bistable plastic slots
 2. The fitment between tines and the cradles
2. IGUS bushings are currently specified in most locations. This may be overkill.
3. The tubes of the truss should perhaps be adjusted based on availability of DOM tubing