Tinkering

Tinkers are practical problem solvers who can augment simple tools to make them more useful. They not only add complexity to the item's capabilities, but also to the handling of the item; adding triggers, power sources, and faults.

Far from the Artificers that create tinkered monsters and clockwork limbs, real tinkers are engineers who create complicated contraptions that have real world applications, allowing tinkers to expand their capabilities and perform otherwise impossible tasks. Their designs follow natural laws and the preservation of motion that require no magic to function.

Creating a Schematic

Creating the schematic for a contraption requires three things: a week of drafting, an original item that is being augmented, and a Tinker's Kit for experimenting with drafts.

When drafting a schematic, you must choose an item and an augmentation. Roll to determine a power source and the trigger, and the schematic gains those properties, as well as the "Sensitive" Fault. You must spend one hour every day writing the schematic, and spend the rest of the day pondering the schematic. Pondering the schematic can be done while participating in other activities throughout the day, but only one schematic can be pondered at a time.

Creating a Contraption

A Contraption can be created using a schematic. This contraption has all the properties detailed in the schematic, and requires custom materials such as cogs and gears that must be created by a Blacksmith. The cost in materials for a contraption is the same as the cost for a Blacksmith to create the original item, but the time to smith the gears will increase by one hour for each augmentation and each pound of the original item.

Once the materials are acquired, it takes one hour to assemble the contraption, unless it is abnormally large. This contraption must be assembled by a tinker, or by someone who is under the supervision of a tinker.

Checks with Contraptions

When a check is made with a contraption, that check is made with the tinkering proficiency bonus that the schematic creator had at the time of the design. The user of the contraption does not need to make a check, unless the check is unrelated to the intended use of the contraption. Additionally, unless the check is unrelated to the intended use of the contraption, they cannot choose to use their own proficiency.

Units

Contraptions require energy to be used, which can be acquired manually and stored within the contraption. This energy is counted in Units, and each contraption has a set amount of Units that are required for each use.

Faults

When designing a contraption, a tinker can decide to add more augmentations, or to choose the power source or trigger of the contraption instead of determining them randomly. The contraption gains an additional Fault for choosing the trigger, choosing the power source, and for each augmentation after the first. Roll randomly to determine the new fault and apply its properties to the schematic of the contraption.

These faults are a result of an overambitious or uncompromising tinker. Reducing the total faults in a design requires a simpler contraption, and for the tinker to allow schematic to emerge naturally without predetermining the power-source or trigger.

The sensitive fault is common to all contraptions. This largely due to the delicate gears that are easily bent or knocked out of place.

Wooden Contraptions

A blacksmith can make contraption materials from wood instead of steel. Wood is an easier material to work with, and can make contraption materials faster and cheaper. Wooden items and Contraptions are both naturally sensitive, and the combination of the two creates a contraption with the Volatile property.

Volatile: This item breaks if it is dropped, attacked, or if its holder becomes wounded or falls prone while it is being held or stored on their person.

Reworking a Design

When working on a schematic, Tinkers are often forced to make difficult tradeoffs in order to resolve a design, leading to awkward triggers, an undesirable power source, or a fault that makes the contraption unusable. Tinkers can resolve this problem by reworking the design, focusing on specific problems and changing the contraptions configuration.

When Reworking a schematic, the Tinker requires another seven full days of pondering, with one hour spent drafting the schematic each night. The Tinker chooses at the beginning of the week one or more parts of the schematic they want to change, although they cannot change the base item or the augment. At the end of the week, reroll the parts that are being reworked. The new configuration cannot be the same as the original, but can contain some of the same parts.

Light Materials

When working with lightweight materials such as Dour Wood or Mithril, the device's Unit Size will be reduced. An item made from a material that is considered One Size Smaller will have a reduced Unit Size that is 1/4th the Contraptions weight. A material that is Two Sizes Smaller will be reduced to a Unit Size that is 1/8th the contraptions weight.

Momentum

When creating a vehicle or spinning blade, the contraption may build up momentum so it doesn't stop immediately after being activated. A calculation of momentum is only necessary if the contraption uses momentum as a core feature, and the contraption will generally lose all momentum when it collides with something else. The simple equation to determine the current speed of a vehicle or other contraption based off momentum is:

(Speed + Acceleration) - (Gravity x Friction)

The **Speed** is the distance the Contraption travelled last round.

The **Acceleration** is the distance the Contraption travels when used. If the device is not being used, the Acceleration is 0.

The **Gravity** is the force the world exerts on all objects, which is always 10 as long as you are on this plane.

The **Friction** is the resistance of the ground, air, or the contraption itself. The Contraption itself is 0.1 if well oiled and maintained. The addition of air resistance would make the total friction 0.2. On normal roads the total friction is 0.5 and in Rough Terrain the total friction is 1.0.

As a most cases, Vehicles will generally lose 5ft of movement at the end of each round, unless the contraption is activated again.

Augments:

Tinkers can Augment items and weapons to give them additional properties. Each augment is activated as part of an action or movement. When you choose an Augment for your contraption, define how it is designed to function.

Rotating: This contraption spins wildly and violently. With spinning barrels and blades, this augment can be made to give a weapon multi-attack, to swap items in a clip, to reload a contraption, make a contraption travel on wheels or legs, or anything else that requires rotating.

This Augment can be taken multiple times to increase the speed, torque or amount of rotations, to increase the multi-attack further, or to reload another contraption or weapon.

Injector: This contraption can inject liquids into objects and enemies. Weapons augmented with injectors can inject liquids directly into or onto enemies or objects. They can also be used to administer potions, to spray liquids at a target up to 10ft away, or to safely apply a liquid to the contraption itself.

This augment can be taken multiple times to increase the amount of liquid displaced, to spray or apply more viscous liquid, or to increase the distance of the spray another 10ft.

Folding: This item folds to save space, to increase concealment, or to change the appearance of the object. The contraption is considered one size smaller while folded, but is unusable while in that form. This can make folding shields, or collapsing runes.

This augment can be taken multiple times to decrease the size of the weapon further, change to have multiple collapsing forms, or anything else that requires folding.

Quick Spring: This contraption can spring into action, allowing the contraption to be used quickly, independently, or without supervision.

This could be used to make self-launching grappling hooks, switch activated lanterns, or a crossbow booby-trap.

Transfer: This contraption is able to transfer its Units into another contraption, allowing it to be used as backup storage.

This augment is universally adaptable to every contraption. It can transfer 5 Units per round, and can be taken multiple times to increase the amount of units transferred by another 5.

Torsion: This contraption has an increased Unit Capacity, allowing it to be used longer and better.

This augment increases the Unit Capacity of a contraption by half its total Unit Capacity, and can be taken multiple times to further increase it.

Powersource

Whenever an Augmentation on an contraption is used, such as a axe rotating or a shield unfolding, the stored Units are expended to make the action possible. A Unit is a measurement of potential energy.

Unit Requirements.

You must determine the Contraptions weight and the distance it moves to learn the item's Unit Requirements. A Contraptions Unit Requirement is the number of Units it needs to perform one action. The equation is as such:

(Size Units) x (1 + Distance Units) = Unit Requirement

Unit Capacity & Size Units

Each contraption can only hold a certain amount of Units safely. Most Tinkers put in safeguards to prevent the item from exceeding their Unit Capacity.

Each contraption has a Unit Capacity that is double their weight. Similarly, the Contraptions Size Units are half its total weight.

Distance Units

1 Distance Unit is added to the contraption for every 5ft the contraption is required to move, always rounding down to a multiple of 5. If the contraption doesn't move, but rather pivots, then measure the furthest angled distance that the pivoting edge has to travel and treat it as a straight line.

Ranged:

For some contraptions, the purpose is not to move itself but to propel something else. In this case, the Unit Requirement of the contraption is added to the Unit Requirement of the ammunition. The equation is as such:

(Unit Requirement) + (Ammo Size Units) x (Ammo Distance Units) = Ranged Unit Requirement.

Units Generators

These generators will convert energy into Units that the contraption can use to activate its features. The energy transferred from the generator will negate from its origin, reducing total damage or movement in exchange for the units. This cannot reduce the damage from incoming attacks, however, if an attack is blocked and the contraptions function is to defend, it may be able to absorb the appropriate amount of damage or movement.

Generators

Roll 1d6 to determine the Generator randomly, or choose your Generator and add a fault to your design. Reroll on a six.

(1) *Impact*: This lever turns kinetic energy into mechanical energy.

Gain 1 Unit per Strength or Force damage.

(2) *High Gear*: This tiny gear requires a lot of strength to wind. This requires an action and a Strength ability check, providing one Unit per 5 points of the check

(3) *Low Gear*: This huge gear need a lot of winding to rotate.This requires an action and a Dexterity ability check, providing one Unit per 5 points of the check

(4) *Pull*: This cord is almost impossible to pull without anchoring it first.

Gain 1 Unit per 5ft movement. Must be anchored to something solid first.

(5) *Boiler*: Steam pours out of these superheated vessels. Requires a heat source and 1 ounce of water per 100 units.

Gain 1 Unit per Fire damage.

Triggers

Every Contraption has a trigger to activate it, which allows the Contraption to be used in specific circumstances. Triggers are always attached to the contraption itself, although larger contraptions may be partially hidden in walls and floors.
Using a Contraption is typically done as part of an action or movement.

Roll 1d6 to determine the Trigger randomly, or choose your Trigger and add a fault to your design.

(1) *Switch*: The contraption is activated by a lever or switch that must be turned or pulled.

(2) *Pressure Pad*: The contraption is activated by putting pressure on a button or pad.

(3) *Pull-Pin*: The contraption is activated by pulling or removing a pin from the contraption.

(4) *Clock*: The contraption is activated by a timer, either set to a specific time of day or on a countdown, with a minimum time of six seconds.

(5) *Air Pressure*: The contraption is activated by a quick change in air pressure, usually from being thrown too high or falling into water. Gentle changes in external pressure will allow the trigger to adjust and will not activate the contraption.

(6) *Shock Tumbler*: The contraption is activated by intense shaking, like crashing into a wall or tumbling down a hill.

Design Faults

When a design becomes too complicated, it's bound to have faults. A fault is a negative and unintended consequence or a flaw in a design that could not be resolved. All designs have the sensitive feature by nature, but more faults are acquired where the designer refused to compromise. When adding faults to a design, roll 2d8 to determine each fault randomly. The same fault can be picked multiple times, but this has no further effect and is treated as if there was only the original fault.

(Necessary) Sensitive: This item breaks if it is dropped or handled poorly, including if the item is being held by a character who becomes wounded or knocked unconscious. If the item breaks, it must be repaired by a tinker, and takes an hour to repair. This comes with an associated cost equal to 1/5th the item's construction cost for replacement parts.

(2) Unreliable: This weapon doesn't always work, and when activated the contraption has a 25% chance not to function that turn. This does not consume any units and can be tried again next turn.

(3) Slippery: Due to the oil use in the mechanism, this contraption often slips out of characters' hands when used. The item requires a Dexterity check with a DC 15 to hold onto after using the Augmented feature. Oil must be wiped off as an action.

(4) Expensive Parts: This contraption requires especially intricate parts, and its labor time doubles for creation. Repairs now cost half the total manufacturing cost.

(5) Bulky: Large gears require extra room. This contraption is double the weight of the original, and is one size larger than originally designed.

(6) Second Trigger: Randomly choose a second trigger. Both triggers must be used for the contraption to function.

(7) Second Power Source: The contraption requires more power. Randomly choose another Unit Generator. Both generators contribute to the contraptions total power, but after using one, it cannot be used until the other is used.

(8) Hot: This contraption can get so warm it burns to the touch. After using the Augmented feature, the item deals 1d6 fire damage to anyone touching it directly for one round.

(9) Guzzler: This contraption eats through its fuel, and requires twice the amount of Units used by the power source for each activation.

(10) Delicate: This contraption is fussy, and will not function when covered in sand, frost, or water.

(11) Hair-trigger: If powered, any impact to the object or the wielder being knocked prone or moved by force will accidentally activate the contraption.

(12) Loud: Clashing metal makes an absurdly loud noise, and when activated the contraption is heard from up to a mile away.

(13) Complicated: This item often baffles its users, and requires a Intelligence check with a DC 15 for each use of the augmented feature.

(14) Unwieldy: This item is unbalanced and hard to use. Attacks and checks made with this contraption are at disadvantage and Ranged Weapons cannot fire past their normal range.

(15) Full Loading: Reloading this contraption is a manual process, requiring an action to reload the contraption in order to use the Augmented feature again.

(16) Recoil: This contraption packs a punch, and when activated it requires a move action to brace, or will otherwise be dropped when activated.