

Innovative Brief

Invention: **Heated Faucet Cover**

Inventor(s): **Robert Kowalski**

Status: Patent Pending

Product Description:

Water damage caused by broken pipes has occurred throughout history presumably ever since plumbing was introduced into climates where temperatures can drop below the freezing mark for sufficient periods of time for the temperature to freeze water. Water encroaching into structures from broken or damaged water lines or pipes can cause enormous amounts of damage. The damage may affect the entire structure or just be a minor annoyance depending on the type of plumbing system that is installed.

Insulation of homes and business with interior plumbing systems can significantly reduce the possibility of freezing water pipes. Insulation alone with no heat source, however, will eventually become cold soaked if left for a long enough period in freezing temperatures. Any type of insulation that can protect pipes should be as tight as possible to prevent cold air from seeping into the interior of the insulation where it contacts the pipe material. Eventually, the insulation will absorb the cold and reach the same temperature as the outside air. After the insulation has been penetrated the material the pipes are constructed of can only hold off the plunge in temperature for so long as well as the water contained within. Once the water begins to freeze the tremendous force exerted by the conversion of liquid water into its solid form of ice can and will break the strongest piping material. Obviously when the inevitable rise in temperature begins to thaw the ice thaws and water damage will result unless the pipe has been repaired or the water pressure has been shut-off or eliminated.

A common type of insulation for an outdoor plumbing faucet is a Styrofoam cup that is designed to fit over the faucet and be drawn snug against the exterior wall to prevent air leaks. The exterior faucet is a particularly vulnerable plumbing location due to its exposure to the outside. Due to its exposed position, the exposed faucet is usually installed as a freeze-proof faucet where the valve to shut off the water is recessed into the wall where the temperature is warmer due to the proximity of the heated interior of the structure. Regardless of this feature or in instances where the freeze-proof faucet is not present many people still employ the insulated faucet cover or cup over exterior faucets.

The insulated faucet covers or cup is of limited value however, since the cover will eventually reach the same temperature as the outside air in a brief period of time. The insulated faucet cover is unheated, and without a heat source, it will become like any other object left out in the cold it will reach the temperature of the air shortly after installation rendering it useless as protection from freezing. Many people purchase these insulated faucet covers assuming that they will protect their outdoor faucets.

A heated solution for keeping exterior faucets from freezing is obviously needed to prevent any possibility of freezing during long cold winters. The solution must be inexpensive and easy to install and provide sufficient heat to keep the faucet above freezing temperatures on a consistent basis.

The **Heated Faucet Cover** is an elegant and innovative solution to protecting outdoor faucets from freezing during cold winters. The product is similar to the standard outdoor faucet cover in the manner that it is employed over the faucet. The cover is molded of polypropylene plastic and is insulated by at least 1 inch of polystyrene around all sides. Closed shell foam is used to form the seal against the exterior wall and the faucet cover and is located on the open end of the cover. A stainless steel threaded rod is mounted in the center of the cover. A hook is formed on one end of the rod to connect to the faucet, and the threaded end has a tightening wing nut attached to the other. Once the hook is around the faucet, the nut is rotated to tighten the cover snug against the wall of the structure completely encapsulating the faucet within the cover.

The interior of the cover has sufficient space to allow room for the specially installed heating system to function. On each side of the interior of the cover are two 7-watt incandescent long life bulbs. The bulbs are connected to a power supply that is controlled by a thermostatic control mechanism that will sense the temperature of the exterior of the cover and switch on the bulbs for heating. The thermostatic control is situated on the front of the cover and is connected to the **Heated Faucet Cover's** heating bulbs. Connected to the thermostatic control sensor is the power supply cord that is approximately 18 inches in length and is of outdoor quality and is to be attached to an outdoor extension cord for power. The **Heated Faucet Cover** will protect the exterior faucets from freezing by providing a heated environment for the faucet that will keep it safe for even extended periods of extremely frigid weather.

Unique Functions of Invention:

- Prevents exterior faucets from freezing
- Premanufactured or can be adapted to existing faucet covers.
- Fits snugly against outer wall of structure
- Thermostatic temperature sensing on exterior of product
- Works on common household 110 current with attached cord and plug
- Molded polypropylene case
- Polystyrene insulation at least 1 inch thick
- Easily attached to wall and faucet
- Low wattage bulbs heat interior of cover
- Closed cell foam seal for against exterior wall
- Inexpensive solution to freezing faucets