

SYSTEM FOR AUTOMATIC FLUSHING OF URINALS AND METHOD THEREOF

IITM Technology Available for Licensing

Problem Statement

- Existing technology in market for automatic flushing of urinals **requires electricity for operation** which make them **unsuitable for use in large scale public toilets** where power sources are limited.
- Low pressure heads** for flushing creates unhygienic conditions.
- There exists a need for an automatic flusher that does not use electric power and flushes right amount of water in an affordable and simple manner.

Intellectual Property

- IITM IDF Ref. **1581**
- IN 378028 - Patent Granted**

TRL (Technology Readiness Level)

TRL - 2: Technology concept formulated

Technology Category/ Market

Category-

Civil Infrastructures & Structural Engineering

Industry Classification:

- NIC (2008)- 43221-** Installation of plumbing for water, gas and sanitation equipment
- NAICS (2022)- 332913-** Plumbing Fixture Fitting and Trim Manufacturing

Applications- Public toilets, urinals, Rural sanitation

Market Drivers-

- Global Public convenience building market** expected to be USD 56.81 Billion in 2024

Research Lab

Mr. Garimella Haripawan Kishore,
Dept. of Mechanical Engineering,
IITM

Flushing Mechanism

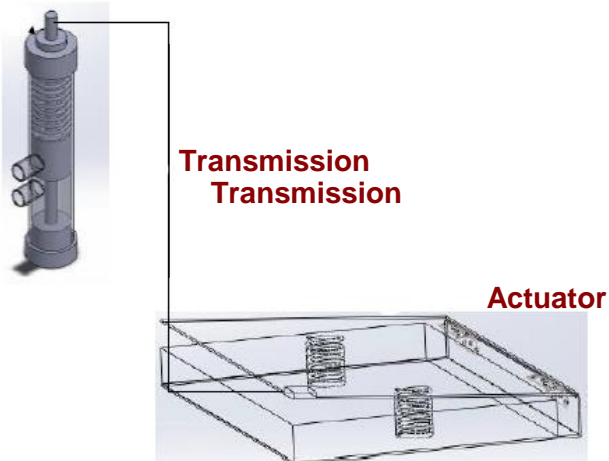


Figure: Schematic of the automatic flushing mechanism and actuator

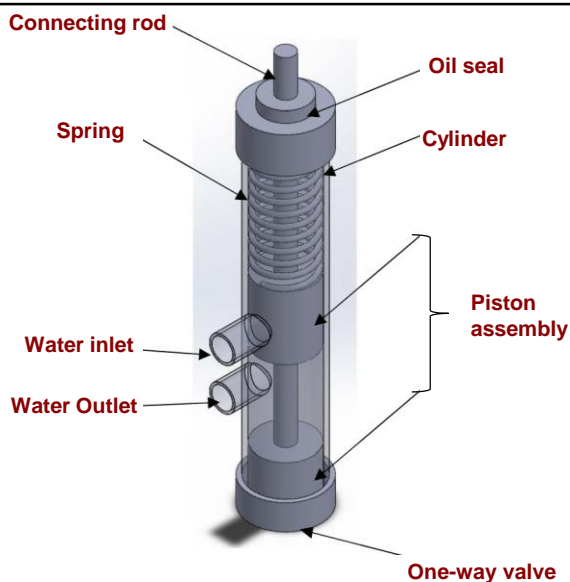


Figure: Schematic of the automatic flushing mechanism

CONTACT US

Dr. Dara Ajay, HEAD-TTO
Technology Transfer Office,
IPM Cell- IC&SR, IIT Madras

IITM TTO Website:
<https://ipm.icsr.in/ipm/>

Email: smipm-icsr@icsrpiis.iitm.ac.in
sm-marketing@imail.iitm.ac.in

Phone: +91-44-2257 9756/ 9719

SYSTEM FOR AUTOMATIC FLUSHING OF URINALS AND METHOD THEREOF

IITM Technology Available for Licensing

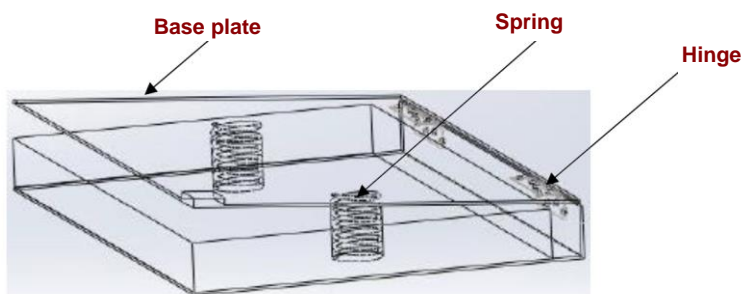


Figure: Schematic of the automatic of the actuator mechanism

Technology

- 1 A hinged foot plate biased against one or more springs below it and adapted for angular displacement in response to the pressure on the foot plate on which the user stands
- 2 flushing mechanism comprising of a cylinder having an inlet and outlet enclosing two pistons, an upper piston and a bottom piston through a connecting rod
- 3 Upper piston biased against a spring positioned between the upper piston and the cylinder cap, and an one-way valve to allow air inside the cylinder
- 4 The transmission means acts as a link between the actuator and that of the flushing mechanism

Key Features / Value Proposition

- The automatic flusher uses a damping mechanism, which can be fit in existing plumbing pipes as an add-on **reducing installation costs** compared to conventional automatic flushers that require additional fixtures such as flush tanks.
- Floorboard can be placed within the floor to improve aesthetic appeal of the product
- Base plate designed to cause substantial displacement for even small children.
- Amount of water flushed can be controlled thereby helping in **conservation of water** compared to conventional urinals which have constant flush volumes depending on size of flush tank or use excess water due to user-controlled valves.
- The flushing mechanism uses no electricity enabling its use in large scale public toilets in remote areas.

CONTACT US

Dr. Dara Ajay, HEAD-TTO
Technology Transfer Office,
IPM Cell- IC&SR, IIT Madras

IITM TTO Website:
<https://ipm.icsr.in/ipm/>

Email: smipm-icsr@icsrpis.iitm.ac.in

sm-marketing@imail.iitm.ac.in

Phone: +91-44-2257 9756/ 9719