



# Heartland Science



Ohio's Legacy of Discovery & Innovation



## Manufacturing

From Price Tags to Process Control

### SOS: Paper Grocery Bag

Charles Stilwell, a mechanical engineer in Fremont, OH, got a patent in 1883 for improvements in paper bag manufacturing machines, which led to the first machine-made folding paper bag. His design was a free-standing, flat-bottomed, brown paper bag. Dubbed the S.O.S., or Self-Opening Sack, it remains in widespread use today. It was particularly useful to grocers as it could hold more weight than prior designs.



### Folding and Gluing Too.

A woman inventor from York, ME, named Margaret Knight (1838-1914) is credited with inventing the process for automatically folding and also gluing paper to form a paper bag. She initially worked at the Columbia Paper Bag Company in Springfield, MA, where bags were manually glued. Her invention is on display at the Smithsonian Institution in Washington, DC.



### Find out more...

- [The History of Paper Bags](http://www.eurosac.org/uk/history.htm)  
([www.eurosac.org/uk/history.htm](http://www.eurosac.org/uk/history.htm))