

# The Graphic Laboratory of Popular Science

By Dr. Michael Ference

## Archimedes' Invention Has an Overhaul in Iowa

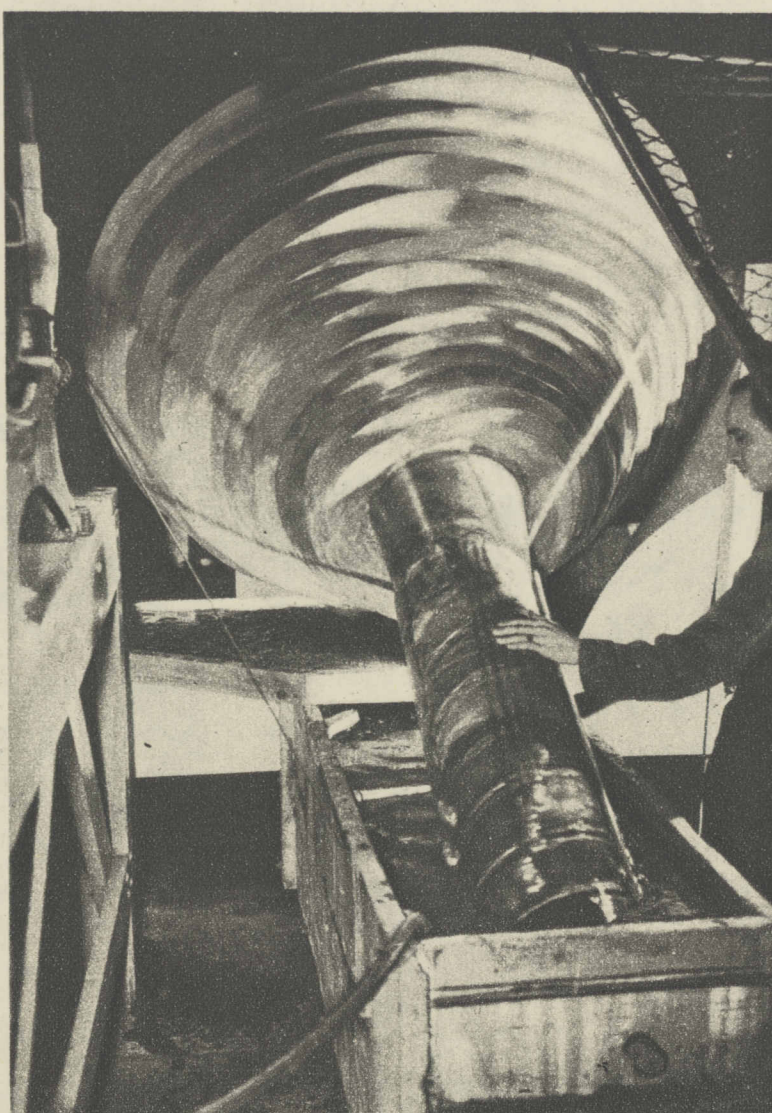
TWO HUNDRED years before the birth of Christ, King Hieron II. of Greece stood on the deck of one of his naval ships and watched a strange device bring water from the vessel's hold. His favorite scientist had invented the machine—a long pipe, open at both ends, that spiraled around a rod leading from the deck to the hold. As a sailor turned a crank that revolved the pipe around its axis, water spilled from the deck end and ran off into the sea. King Hieron was watching the first application of Archimedes' latest mechanical device—the screw of Archimedes. In the fields of Egypt later on similar screws were pumping water into irrigation systems. The device was not the most efficient

machine, according to modern standards, but it worked.

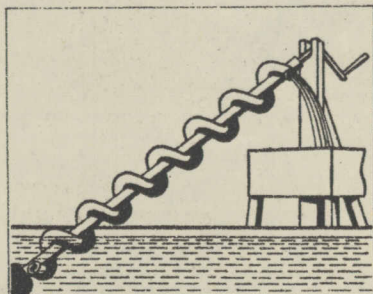
Today in a laboratory set in the corn and wheat fields of Iowa a young man watches a strange device rotate—drawing sewage up through its spiral pipes, letting it flow over wide flanges that expose great amounts of it to the air. He is Walter Rollman, graduate student in chemical engineering at Iowa State college at Ames. Rollman has hit upon a means of increasing the efficiency of Archimedes' screw until it takes on value as a practical machine in aerating sewage.

Rollman reasoned that as the screw revolved air pressure prevented more than a small amount of water from flowing through the tube. He inserted a series of air ducts leading from the lower end of the pipe to release this pressure and achieved a free flow. Rollman's device combines four screws which empty their load of water onto spiral flanges that form a funnel-like top to the device (see picture). Water bearing sewage is drawn up the four pipes and spread thinly over the flanges so that the air can purify it.

More than 2,000 years after its invention, Archimedes' screw comes into its own.



Walter Rollman with his modern version of the screw of Archimedes. Air pipes, secret of Rollman's adaptation, can be seen under his hand. The funnel-shaped end of the device consists of the spiral flanges for aerating the liquid.



(From drawing in Encyclopedia Britannica.)

One version of the original screw, used to pump water out of a ship's hold.

## Mostly About Dogs

By BOB BECKER



(Tribune photo.)  
Champion All American, a prize-winning Boston.

### The Biography of a Smart Breed—the Boston

HOW the Boston terrier originated is a question that commonly is asked by dog fanciers. The answer is one of the many interesting stories behind the majority of the breeds that are seen in America today. The Boston terrier (erroneously called Boston bull) resulted from a cross between the English bulldog and the white English terrier. Following the cross there was considerable inbreeding.

The story of the Boston goes back more than sixty years, when a dog fancier living in the city of Boston owned a dog that was a cross between an English bulldog and a white English terrier. This particular dog was more bulldog than terrier, weighing close to thirty-two pounds. From it and a twenty-pound white female came the foundation stock of the modern trim little Boston terrier which for years has been one of America's most popular breeds.



(Tribune photo.)  
Skid's Silver King, a bull terrier.

But it was not until 1893 that the American Kennel club recognized the Boston terrier. At that time the dog as a type was not standardized and much work had to be done to breed the Boston terriers more uniformly. During the last thirty-eight years breeders have made great progress in developing different strains by careful breeding, with the result that they have produced very good looking dogs with excellent heads, beautiful white markings, good eyes, and well formed, symmetrical bodies. Considering the present size, beauty, and disposition of the Boston, it is not at all surprising that the breed eventually went to the top in popularity. Thousands of dog lovers have been buying Bostons for pets in the home, and other thousands have been interested in them as show dogs.

The general appearance of the Boston terrier is that of a lively, very intelligent, gentle dog. And he is just that. He isn't quarrelsome. But he is able to take pretty good care of himself in an emergency. (The terrier-bulldog background is responsible for that!)

Being a short-haired dog, clean around the house, and possessing an even and gentle disposition, the breed naturally

has made a big hit with American dog fanciers and especially families with children. The terrier in the breed means that the Boston is keen about play. He's always ready for a romp with adults or children. We have noticed this trait in a Boston owned by a friend. We see a great deal of this dog. He's a very companionable fellow in the home, and we no sooner arrive than up he comes with his ball. He does a little expert pleading with his eyes, paws, and voice when he wants us to play with him. And he'll play ball by the hour.

The ideal Boston terrier expression should indicate a high degree of intelligence. In other words, the Boston is and should be a smart, vivacious animal. It wouldn't be a true Boston if it were slow and dull-witted. The sparkle in the breed is one of its most important assets. And there is no denying the intelligence of the breed. We know of one little female Boston that is the devoted companion of an invalid. The dog quickly learned the trick of going downstairs to get the maid of the house on command. Once given the command, the dog finds her and tells her by barking that she is wanted in the invalid's room.



•For attractive offers of dogs, turn to the Dogs, Cats, Birds, and Poultry columns in the want ad section of today's Tribune.

## THE PICK-UP

By W. E. Hill

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"Pleased to meet you, Mr. Astor and Mr. Vanderbilt! I'm Greta Garbo, and this here is my girl friend, the Duchess of Windsor!"



Timid movie patron afraid a bold man will try to pick her up. Knows all about how lone women get jabbed with drugged needles in the dark, and are sold into slavery.



This lovely girl whose intuition tells her she's going to be insulted by a perfect stranger who will follow and catch up with her, and maybe offer her a nut sundae, is peeking into her compact mirror to see that everything is looking its best.



Hail-fellow stuff at the bar. He's telling naughty stories, and she makes believe she's mad and pokes her elbow into him after each story. Soon they'll be singing "East Side, West Side."



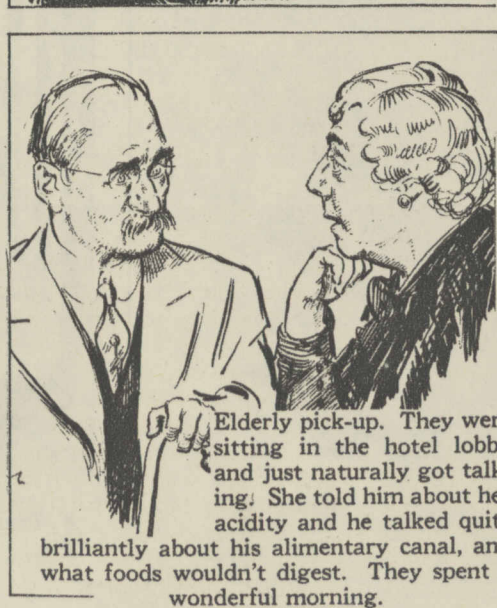
Fascinating man in hotel lobby, hurling one of those irresistible glances at the girl behind the cigar counter. Wants to know her.



The pick-up that didn't take. No, she never met him in Miami. Or Atlantic City, either. Her name isn't "Toots," and she has no desire to know him.



Bus pick-up. She asked if he could tell her if the bus stopped at Scranton, because she was sure the driver had told her wrong, and he was so kind and helpful. Showed her all the pretty scenery and lent her his Saucy Confessions magazine. Then she told him all about how mean her sister-in-law was, and it seemed like they had always known each other.



Elderly pick-up. They were sitting in the hotel lobby and just naturally got talking. She told him about her acidity and he talked quite brilliantly about his alimentary canal, and what foods wouldn't digest. They spent a wonderful morning.



The cruise pick-up, brought about by the lady, who had to have a boy friend to walk the deck with. They find they both know the Frankels of Nashville, so everything is all right.



### BIG NEWS FOR DOGS!

Dinner's ready Skip, Fuzzy, Tige—or whatever your dog's name is! The crunchiest, doggiest best-tasting meal any dog ever threw his lip over. Boy oh boy—how any dog will love FRISKIES! Rich with rib-sticking meat. Plus cereals! Plus cod liver oil for life-giving vitamins! Plus minerals for strength and stamina.

FRISKIES are the ALL-IN-ONE complete, scientifically compounded dog ration—in cube form—kennel-tested and

proved, for over three years, at the famous Carnation Farm Kennels before a pound was sold.

FRISKIES have corrected many stubborn cases of eczema, when fed exclusively.

25¢ for two-pound package. For sale wherever dog food is sold.

#### TUNE IN WMAQ

Friskies invite you to follow "Invisible Trails" with Jimmy and Gypsy every Tuesday and Thursday at 4:45 PM.

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