

Dog Power and Dog Engines

Updated: 4 Mar 2015

More odd draught animals added

With some sidelights on goat engines & lion haulage

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This page deals with a power source that is now long gone- animal power. In earlier times horses and oxen walked in circles to grind corn, and a donkey in a giant hamster-wheel was used to draw water from the well in Dover castle. Dog-power, however, has always been limited in its application by the limited horsepower of the average dog.

TURNSPIT DOGS

Dogs were used in wheels to turn roasting spits in Britain, coming into use in the 1500's. There was even a special breed, called not unreasonably "the turnspit" for the purpose. [Turnspit dogs](#) were first classified as a breed in 1576 by Johannes Caius, royal physician to Elizabeth I at the time, in his book "Of Englishe Dogges". (He also found time to refound [Gonville & Caius College, Cambridge](#) in 1557) They were known by a number of alternate names including the kitchen dog and the Vernepator Cur, which is Latin for the dog that turns the wheel, and is about as exact a name as you could ask for. The breed's scientific name, given by Linnaeus, is *canis vertigus*, which literally translates to dizzy dog. Hilarious.

Left: Turnspit and dog-wheel: 1700?

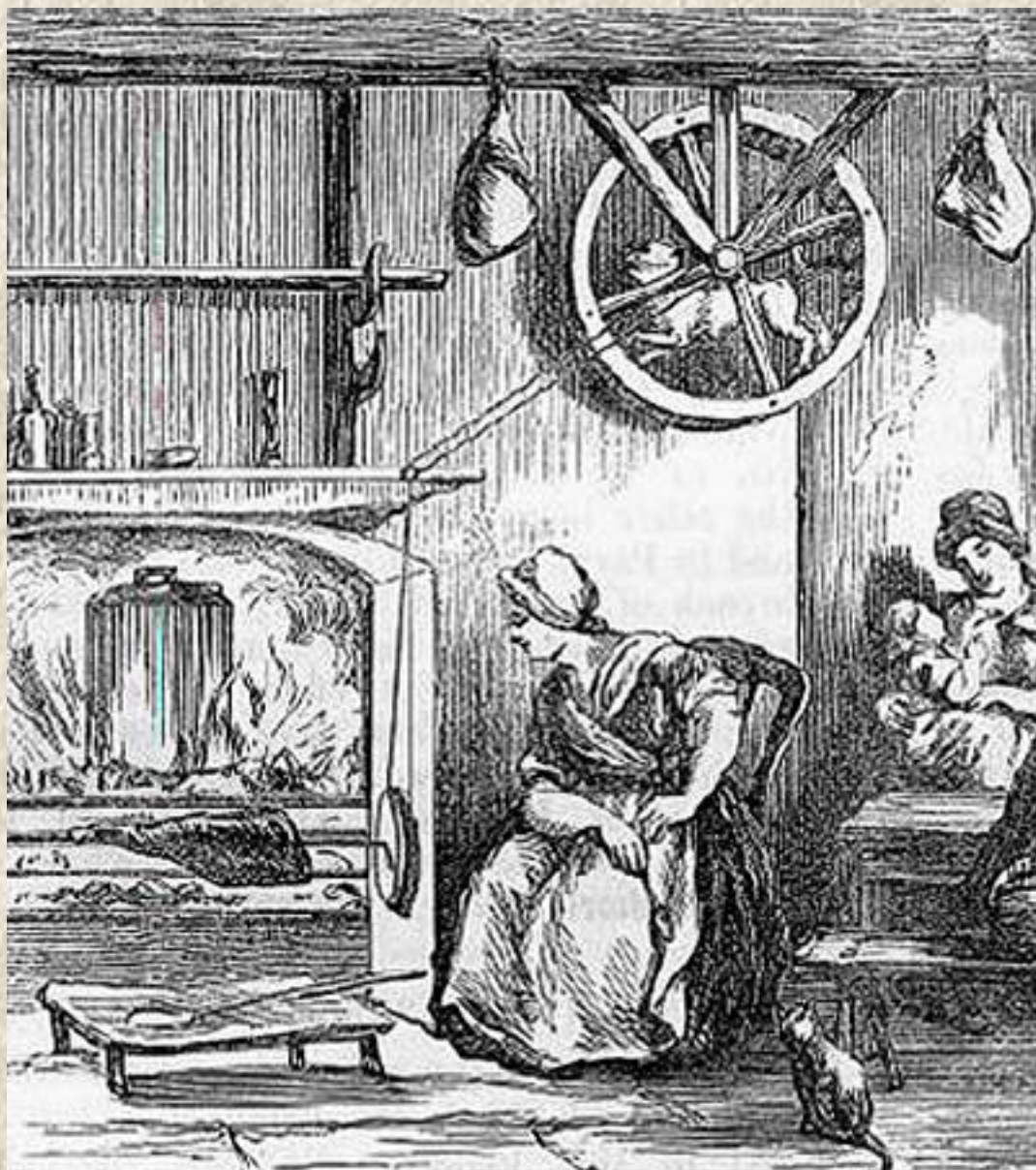
The artist seems to have completely messed up drawing the belt drive system, and this depiction probably should not be relied upon.

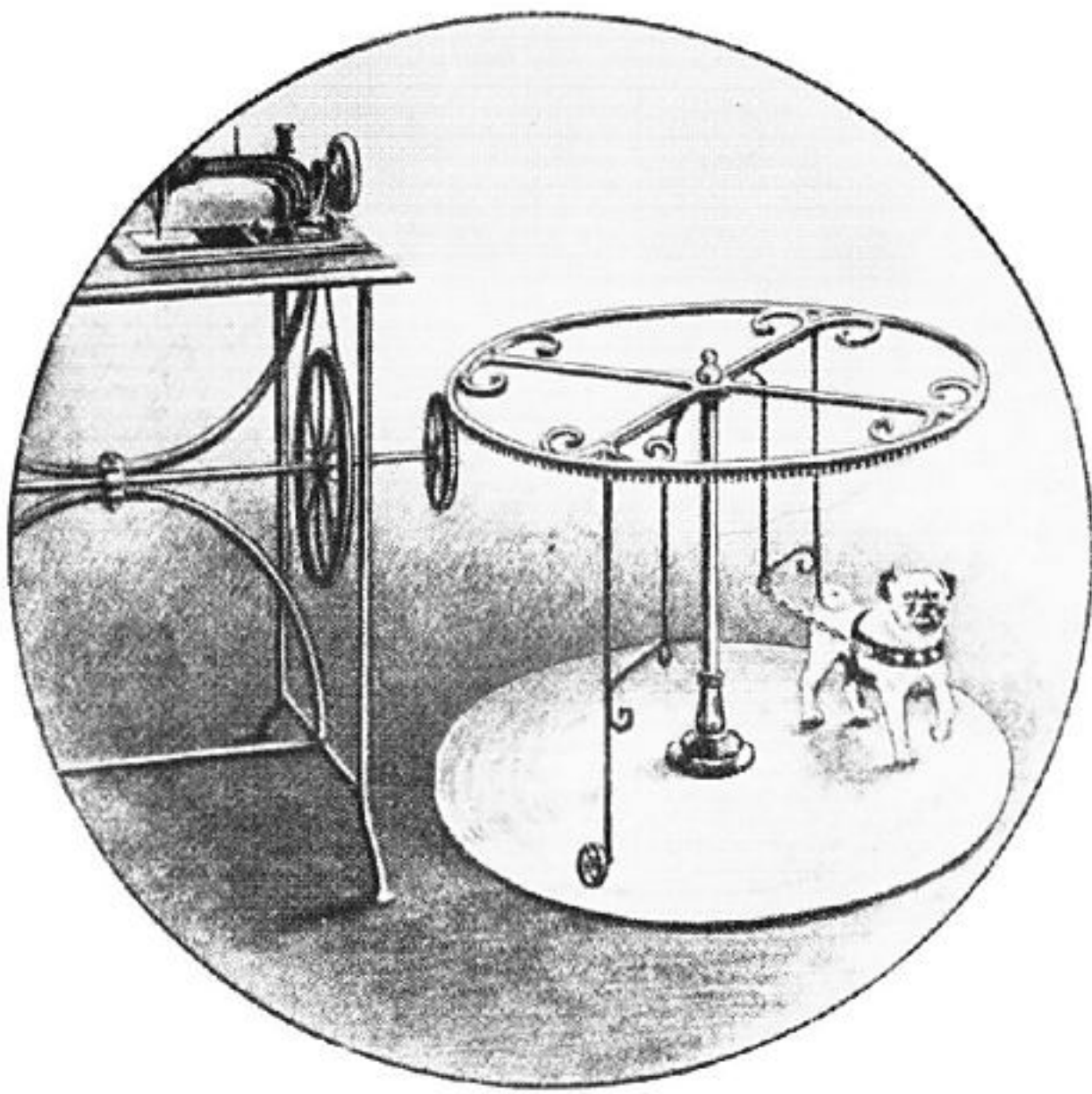
According to [John George Wood](#) in *The Illustrated Natural History (Mammalia)* published in 1853, a pair of turnspit dogs were often used to share the work: "The dogs were quite able to appreciate the lapse of time, and, if not relieved from their toils at the proper hour, would leap out of the wheel without orders, and force their companions to take their place, and complete their portion of the daily toil." According to Mr Wood's book, Queen Victoria kept retired turnspit dogs as pets.

Turnspit dogs seem to have fallen out of favour with the introduction of [roasting jacks](#) that turned the meat using clockwork, steam, or even a primitive sort of gas-turbine. By the end of the 19th century the breed was officially declared extinct. Intriguingly, it appears that even at the start of the 19th century, people were convinced that the turnspit breed wasn't going to last. For example, [Memoirs of British Quadrupeds](#) by William Bingley, published in 1809, states: "It is now on the decline; and, in the course of another century it will probably be extinct in Great Britain", which describes what actually happened with depressing accuracy.

Turnspit dogs seem to have been regarded as lowly creatures (another name used was 'underdog') and no-one seems to have paid them much attention. No photographs are known to exist, but we do have a single stuffed specimen called Whiskey.

Note the dog working hard and the cat doing nothing.





Left: English Dog-Engine: 1874

This dog-engine for sewing machine use was patented in England around 1874, but the actual patent has not so far been located.

I suggest this is a sketch of an impractical scheme rather than a drawing of real machinery. The dog-drive vertical shaft appears to be geared up by at least six times to the horizontal shaft, which is geared-up again by possibly eight times by the belt drive to the sewing machine itself. This would mean that Fido would have to exert a considerable torque as he paced round. Since he is shown here apparently as a small pug-dog, he does not appear to have what in a steam locomotive would be called "sufficient adhesive weight" to get the contraption moving. This is no doubt the reason for the disgusted look on his face.

Note that a hitching position for a second dog is provided, which would allow a "balanced drive".

From *Patent Applied For* by Coppersmith and Lynx. Co-ordination Press 1949.

THE CYNOSPHERE: 1880



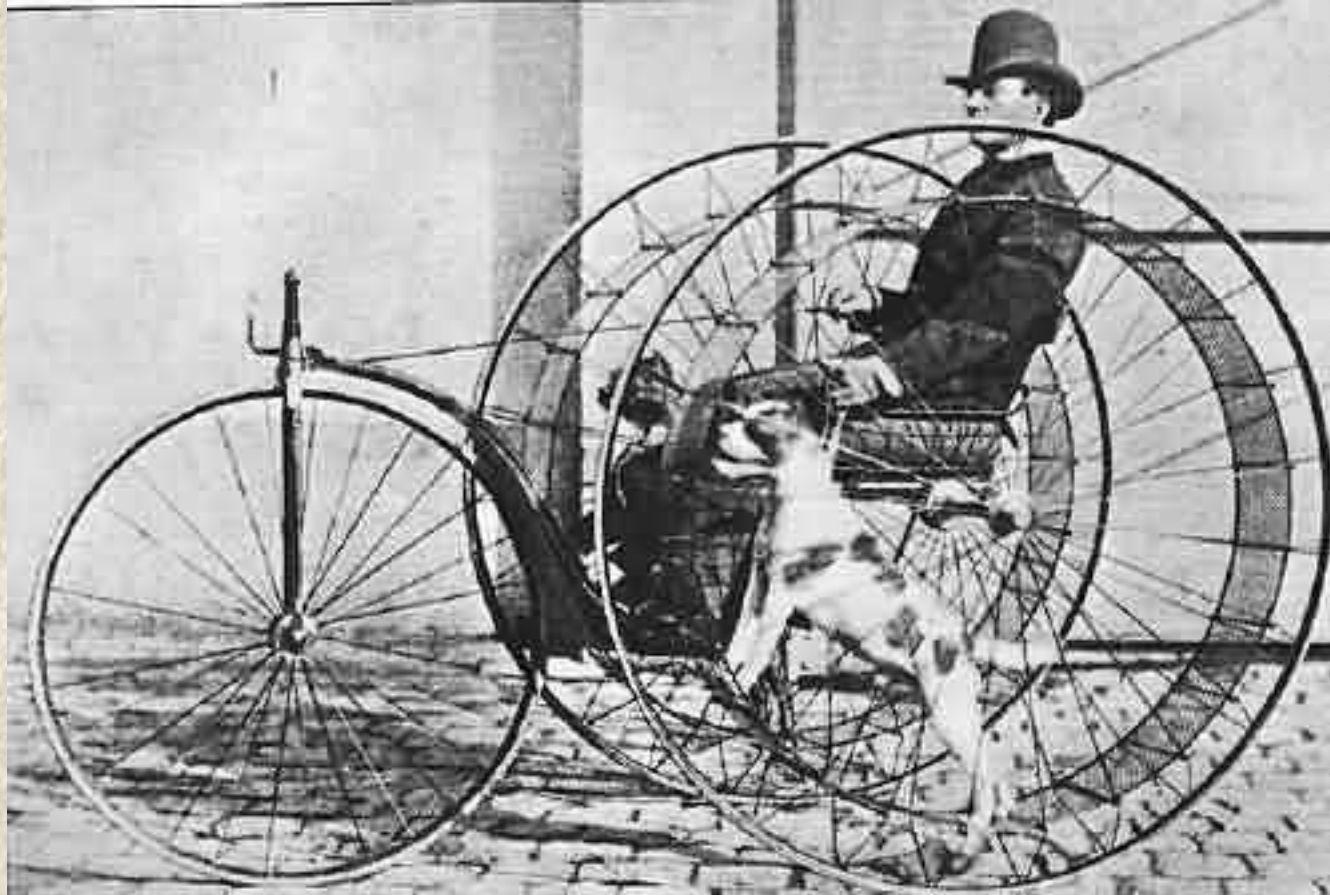
Left: The Cynosphere

This is an artist's impression from *Popular Science Monthly*. It seemed highly unlikely that such a daft vehicle had ever been built... but see the picture below.

From *Popular Science Monthly* Sept 1933

The Cynosphere, an 1880 inventor's idea of an automobile. Each of the two rear wheels contained a large dog. These propelled the vehicle forward by running on a track in the wheels, exactly as a squirrel whirls a ball inside its cage

Left: The Real Cynosphere: 1875?



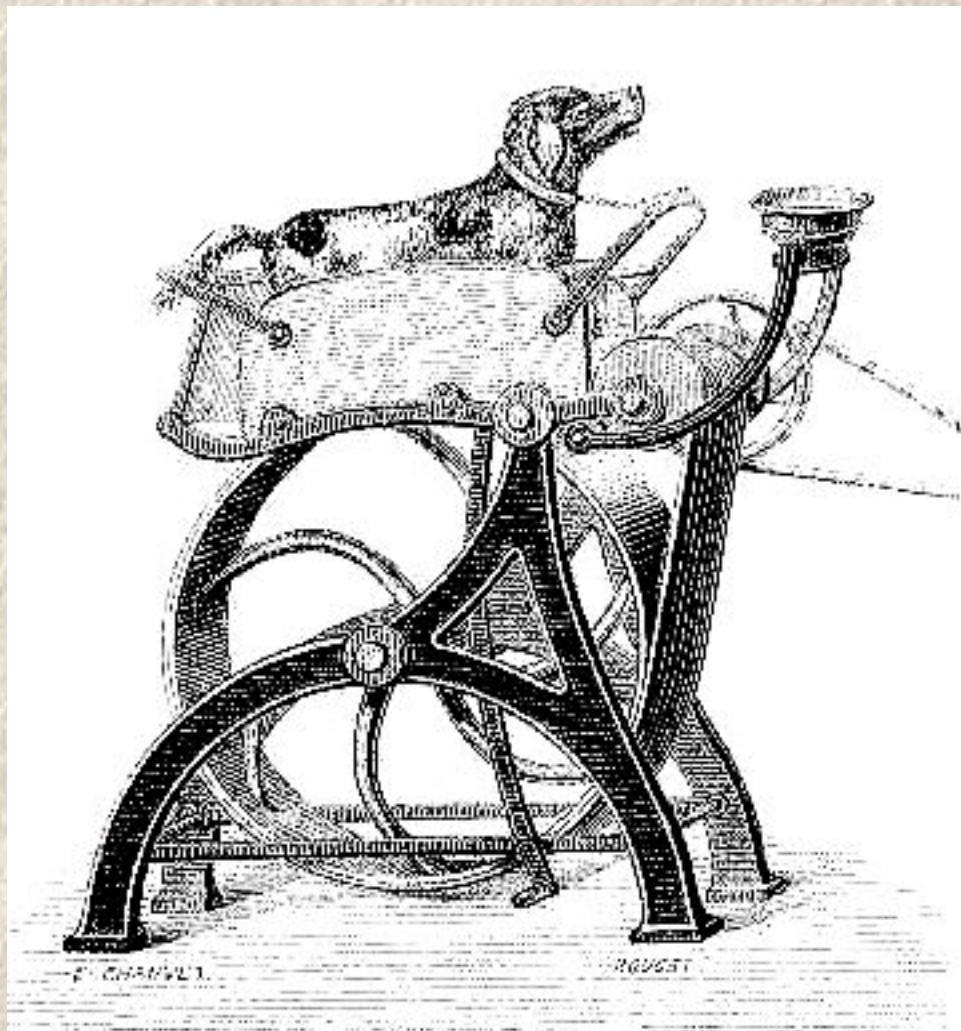
This is the real thing. Apparently it was built in France in 1875, but details are currently lacking.

Personally I think that heavier dogs than those shown would be needed. And how you balance the torque of two dogs I cannot imagine, so steering must have been interesting.

The name "Cynosphere" derives from the Greek word *kyōn*, "dog", though it's not clear where "sphere" comes in.

Source unknown

THE RICHARDS DOG-ENGINE: 188?



Left: The Richards Dog Engine

This machine was originated by a M. Richards of Paris, who employed a large number of sewing-machines to make military uniforms. It could apparently power four heavy sewing machines, working intermittently; I would have thought this would require a pretty heavy and active dog. Unfortunately the engraving gives no scale, so it is hard to guess how big dog and machine were.

The description given is very sketchy, but it seems the dog walked on the wide belt that runs round the large and small rollers. The power is taken off from the small roller, and judging by the angle of the belting running off to the right, is further geared up to drive the sewing machinery. This seems like further evidence of the need for a pretty heavy dog. The Rottweiler would seem to be a possibility; however, the aftermath of the Franco-Prussian war was probably not a good time to introduce German breeds to France.

The dog in the illustration is definitely *not* a Rottweiler.

From the French journal *Nature* 188?

It is only fair to add that *Nature* was not hell-bent on exploiting our four-legged friends. They said "This method always arouses grave objections, from the point of view of humanity as well as mechanics." They went on to point out that the sewing-machine work was intermittent, giving the poor dog frequent rests. Note that a bowl of water is thoughtfully provided in front of him; however I cannot rid myself of the suspicion that it might be placed *just out of reach* to encourage Fido to move forwards.

THE FELDT DOG-ENGINE: 1888

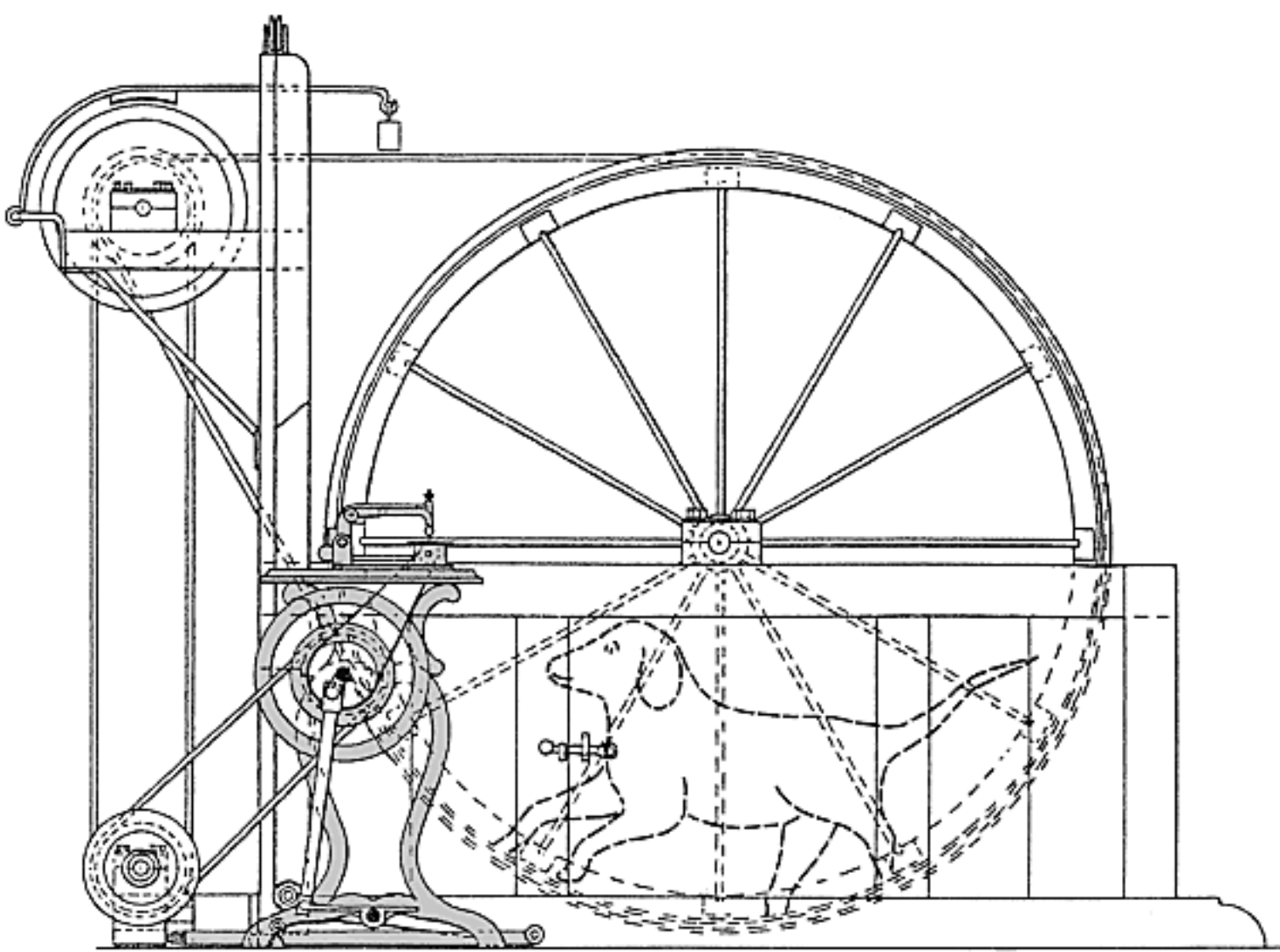
Left: The Feldt Dog Engine:

1888

This dog-engine to drive a sewing machine was patented by Heinrich Feldt of Hamburg.

At the top left there is a brake shoe held down by a weight, which can be lifted by a string attached to the sewing-machine treadle, to control the flow of dog-power. This crude and inefficient approach to speed control has not discouraged Fido, who from his expression remains doggedly optimistic about his job.

From *The Middle Ages of the Internal Combustion Engine* by Horst O Hardenberg



Feldt's one- "dogpower" sewing machine (1888)

DOG HAULAGE



Left: Bayeux, 1944

Not strictly a dog-engine, but a nice picture of two dogs lending their efforts to pull a cycle-drawn cart. In occupied France, most motor vehicles had been requisitioned and petrol was virtually unobtainable.

Dog carts pulled by two or more dogs were historically used in Belgium and The Netherlands for delivering milk, bread, etc. Dog-drawn carts were prohibited in Britain in the early 1900s on animal welfare grounds.



Left:
Belgium,
1908

A four-dog milk cart in Flanders, 1908. The official in the hat is not handing out a parking-ticket; he is a milk inspector.

The dog on the right seems to be wearing a bizarre muzzle that makes him look like [Magneto](#); Dogneto, perhaps?

Left: Brussels, Belgium

A two-dog milk cart in Belgium, with milk inspector at work, apparently testing the milk with a hydrometer to see if it has been watered down. Note the big sword he carries; Belgian milkmaids are clearly not to be trifled with.



Postcards like this were very popular, and many examples can be found on the Internet. Milk inspectors were often included to add interest, and this does not mean (as far as I know) that Belgian milkmaids were a pack of desperate criminals that required intensive policing.

Walter E Mason described the purpose-bred Draught Dog in "Dogs of All Nations" (1915):

"This is more or less of a nondescript variety, but he is worthy of a place in the sun [worthy of a mention] by reason of the inestimable service he renders to his master or mistress. Daily he may be seen in Belgium and Holland drawing the carts purveying milk, butter, vegetables and other similar household necessities. He varies in height from about 24 in. to 32 in. and weighs around 100 lbs. Fawns and brindles are the most common colors. In general appearance he is a cobbily-built strong dog capable of great endurance. Naturally he must be strongly 'made in back and loins, well boned in legs and with feet well padded. The tail is generally docked to about three inches."

The use of dogs to pull sledges in ice and snow is commonplace.

DOG-ENGINES IN GERMANY

Germany seems to have been a fertile field for the use of dog-power.

Left: Model of Dog Engine in Deutsch Museum, Munich

This dog-engine is shown in the model as driving a bellows for a small nail-making forge. According to the label, the nail-maker would shout orders to the dog to speed up. "Faster, Wulfi! I need more heat!"

The label further states that such dog-engines were in



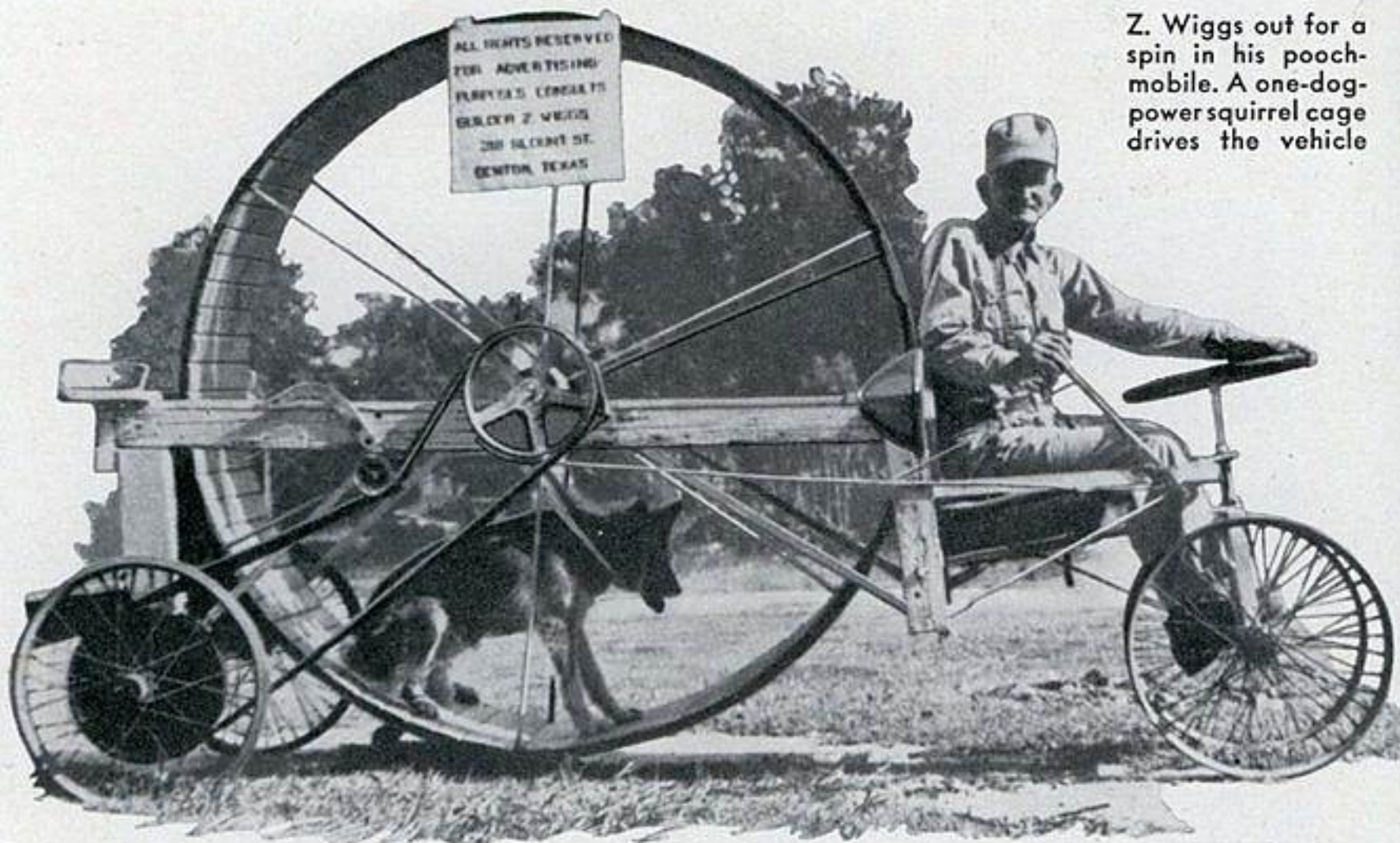
use by nail-makers up to 1930. This seems extraordinarily late- surely all nails were made by machine much earlier than that? Perhaps some sorts of specialised nails were made by hand in small quantities.

Author's photograph
June 2011

THE POOCHMOBILE: USA

Left: The Poochmobile: 1939

This surprisingly well-engineered vehicle was called the "Poochmobile". It was invented by eighty year-old dog trainer Z. Wiggs of Texas, who is presumably the



Z. Wiggs out for a spin in his poochmobile. A one-dog-power squirrel cage drives the vehicle

man at the wheel here. It even appears to be fitted with headlights. (by the driver's right elbow) Note the placard at the top, attempting to raise some advertising revenue.

The dog looks less than enthusiastic.

From Popular Science, Nov 1939

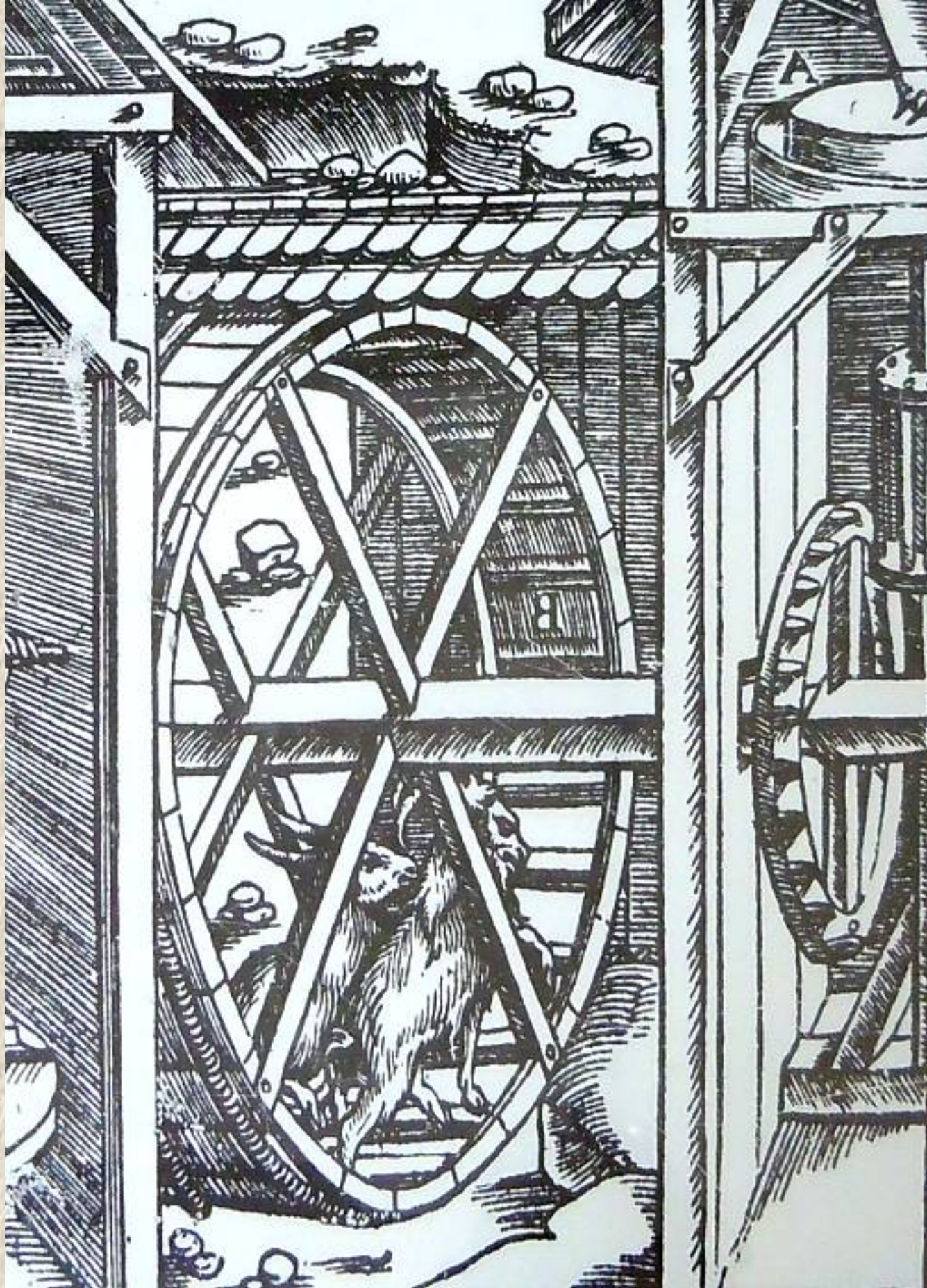
Walking the Dog Drives Poochmobile

DOG POWER drives an odd vehicle constructed by Z. Wiggs, eighty-year-old dog trainer and former railroad worker of Denton, Tex. Operating on the squirrel-cage principle, the dogmobile has a giant central wheel which is revolved as a dog walks or

runs on its inside surface. The four-legged canine engine is anchored to a central shaft by a special collar. Power is transmitted to rear drive wheels by means of a belt-and-pulley mechanism which the driver controls by a "gearshift" lever.

GOAT-ENGINES IN GERMANY

This picture also comes from the Deutsch Museum in Munich. (Apparently the largest science museum in the world, and having spent a whole day failing to even cover the ground floor, I am entirely prepared to believe it) Goat engines are a new idea to me. Goats are not as docile as dogs and I would have thought that they would not have co-operated. Nonetheless, a bit of research on Google shows that goat treadmills were used in the USA for driving small threshers (very small, surely?) and turning sharpening stones, which I find more plausible.



Left: Picture of Goat Engine in Deutsch Museum, Munich: 1550

A two-goat-power engine allegedly driving an ore mill in 1550. Surely that would need more power than you could get out of a couple of goats? Note that the drive is geared up considerably to turn what appears to be a grindstone at top right, which would appear to make the available torque even more inadequate.

Author's photograph June 2011

LION HAULAGE

Left: Lion haulage in America: circa 1930

A half-grown lion cub pulls a cart full of children at Luna Park Zoo in America circa 1930. Attempting this with a full-grown lion would be inadvisable.



OTHER UNUSUAL DRAUGHT ANIMALS

The usual draught animals are horses, mules, donkeys, oxen, reindeer, elephants, camels, and llamas, depending of course in which part of the world you are in.

An unusual way of using horse-power was to put them on a treadmill and thus turn a boat propellor. See the Experiment, a [horse-powered ferry-boat](#).

But now for unusual draught animals. Firstly, the [ostrich](#):



Left: An ostrich pulling a small carriage

From the costume of the attendant, this would seem to be in France or Belgium, round about the 1900's.

Actually, this is not that unusual. A Google image search on "ostrich cart" brings up dozens of different pictures.

Left: Driving zebras four-in-hand

This may not impress you greatly; much the same as horses, I hear you say.

No. Zebras are much harder to train



than horses; they are very prone to bit and kick, and panic easily.

The picture shows a team of zebras were seen pulling a coach through London. They were trained by a Mr Hardy, who was a noted horserider & trainer, for a bet made by Leopold de Rothschild, who knew of Hardy's abilities, and said that he could train any animal resembling a horse. After two years of hard work training the zebras, At 6 o'clock one morning, four zebras were seen pulling a coach through the streets of London for the first time.

Zebra-donkey and zebra-pony hybrids were also used for haulage.



Left: Pig pulling small cart

The load looks well within the capacity of the pig.

If these drawings and stories have inspired you to create your own dog or goat-power device, try these patent and investment specialists:

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