

**Object(s):** Punch and Seed Drill

**Object Number(s):** STMEA:A.1449 and STMEA:1984-35.1

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## Punch and Seed Drill

An important part of the agricultural year involved planting seed from which the next crop would grow. These two items in our collection, link together a famous Suffolk company and one of the seed drills that they invented and produced to help farmers to sow their fields.

**STMEA:A.1449**, is an iron punch containing the manufacturers name 'SMYTH'S' and it was used to stencil that name on the seed drills that they manufactured. The full company name was; 'James Smyth and Sons Ltd, of Peasenhall'.

**STMEA:1984-35.1**, is a Seed Drill manufactured by Smyth's of Peasenhall, which was used on a local farm until the early 20<sup>th</sup> Century. It is currently on display at the Museum.



Image: Smyth's Seed Drill at the Museum of East Anglian Life by Richard Hall.<sup>1</sup>

The seed drill operates in such a way that a regular flow of seed can be delivered, at the correct depth, into furrows in the soil, made by the 'Coulters', which are the tines you can see underneath the drills seed hopper. The seed flows at a controlled rate, from the hopper, into the Coulters at such a speed as the distribution of the seeds into the soil can be controlled to ensure regular planting.

The hopper on our seed drill bears the name of both Smyth's of Peasenhall, the manufacturer and the farm on which the drill was used, stamped on the side. Our punch would have been used to create part of the wording on the hopper.

## Evolution of the Seed Drill

As long as we have grown food, the seed that it grows from had to be planted or scattered by hand over the land. Over large areas, scattering seed, known as 'Broadcasting', was very labour intensive

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<sup>1</sup> Hall R. Smyth's Seed Drill at the Museum of East Anglian Life. 2020. No Attribution required.

and the amount of food actually produced, the 'yield', uncertain. Farmers needed a more productive way of sowing a reliable crop.

The earliest simple seed drills were attributed to the Babylonians<sup>2</sup> around 1400 BC, although there is no evidence that this technology ever reached Europe. It is believed that the Chinese also had multi-tube seed drills as early as the 2<sup>nd</sup> Century BC. These early seed drills were capable of being pulled over the land by either oxen or later by the horse.

In Europe, early seed drills were used in modern day Italy and its use rapidly spread throughout Europe. In England, the man accredited with inventing the modern seed drill in 1701 was the renowned agriculturalist, Jethro Tull (1674-1741)<sup>3</sup>. He saw the benefits of ensuring the correct sowing depth and space were maintained to increase yields.

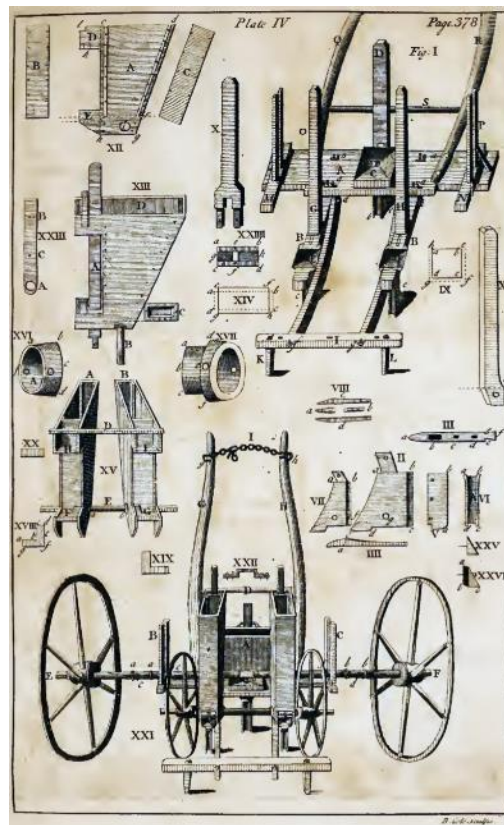


Image: Tull's Seed Drill<sup>4</sup>

<sup>2</sup> Seed drill [Internet]. En.wikipedia.org. 2020 [cited 1 September 2020]. Available from: [https://en.wikipedia.org/wiki/Seed\\_drill](https://en.wikipedia.org/wiki/Seed_drill)

<sup>3</sup> Jethro Tull (agriculturist) [Internet]. En.wikipedia.org. 2020 [cited 1 September 2020]. Available from: [https://en.wikipedia.org/wiki/Jethro\\_Tull\\_\(agriculturist\)](https://en.wikipedia.org/wiki/Jethro_Tull_(agriculturist))

<sup>4</sup> Tull J. Tull's Seed drill (Horse-hoeing husbandry, 4th edition, 1762 [Internet]. 1762 [cited 1 September 2020]. Available from: By Jethro Tull - Horse-hoeing husbandry by Jethro Tull 4th edition, from 1762, plate IV, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=5204229>

Tull's seed drill, not only planted the seed at the correct depth and spacing, it also drew the soil back over the top of the seed to allow perfect growing conditions and was to become the forerunner of all subsequent seed drill designs. The motivation behind Tull's invention, it is suggested, was born out of conflict with his servants who actively resisted what they viewed as a threat to their livelihoods and undoubted ploughing skills.

Although a significant innovation, the cost and reliability of seed drills meant that many farmers continued to use traditional methods of sowing by hand or by use of a portable 'Bow Fiddle' which was simply a sack (the hopper), carried over the shoulder, with a spinning wheel underneath. The wheel was powered by hand using a pole which was pulled backwards and forwards, giving the Bow Fiddle its name.

By the middle of the 19<sup>th</sup> Century, industrial methods of iron and steel forging methods had improved significantly, reducing the cost of mass-produced items. Parts needed for the seed drill became cheaper and more readily available, with the result that their use became more widespread.

### **James Smyth and Sons Ltd**

A reliable source on the history of James Smyth was produced in 2005, by Kemp<sup>5</sup>, who tells us that at the turn of the 19<sup>th</sup> Century, James Smyth (1775-1843) ran a Wheelwright business in the village of Peasenhall. James and his brother Jonathan worked together to develop a more effective version of the seed drill mechanism, making use of new cast materials which were becoming increasingly available at the time. This might seem like a significant leap from Wheelwright to Agricultural engineering, but essentially similar skills were at use.

The business was carried on by James and his sons, from what was essentially a village workshop but quickly developed into a small factory and thanks to some very effective marketing via local agents; produced six or seven seed drills every week by the end of the 19<sup>th</sup> Century. They exported seed drills all over Europe, Russia and the African continent. James Smyth and Sons were probably one of the very few Suffolk companies at that time who could boast an office in Paris!

James Smyth, proved to be a clever inventor. Ransome<sup>6</sup> described the essential improvements Smyth made to the original seed drill design in what became known world-wide as the "Suffolk Drill":

1. A mode of adjusting the coulters to distances apart from each other, from four and a half inches and upwards;
2. An improved manure box, and cups for the delivery of manure (*fertiliser*) with the corn;
3. A plan to drill in manure and corn and sow small seeds at the same time;
4. The swing steerage, by which means the man attending the drill can move the coulters to the right or to the left hand, so as to keep the straight and parallel lines for sowing the seeds; and

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<sup>5</sup> Kemp. Sowing Seeds in Lines - A Genealogy of the Smyth's, Wardley's and Kemp's in Sweffling and Peasenhall. 1st ed. Kemp; Pages 23- 28;2005.

<sup>6</sup> Ransome J. The Implements of Agriculture. 1st ed. Ridgeway; 1843.



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5. Various improvements in gearing and driving the wheels, barrels (which carried the cups for scooping the seed and transferring it to the delivery tubes) etc.

To protect their innovations, James (son of the founder of the business) took out a patent (Patent 637/1900) in May 1844.

The Suffolk Drill, and its overseas variants “The East African Flax Drill” and the “Colonial Nonapareil Drill” set the standard for all future developments by other manufacturers such as Garrett of Leiston. James Smyth and Sons continued producing seed drills in Peasenhall, contributing much to the life of the village including assembly rooms, a school, reading rooms and social activities for staff and the community. Russell<sup>7</sup> reviewing a book by Leslie Lardner for the East Anglian Daily Times provides a potted history of the company and its Peasenhall roots. The factory, which once employed of 100 men and boys finally closed its doors in 1967 having survived two world wars and an agricultural depression in the early 20<sup>th</sup> Century.

James Smyth and Sons are truly a part of Suffolk’s agricultural past whose name lives on today both in the village of Peasenhall, and our collection.

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<sup>7</sup> Russell S. Finding intrigue on his doorstep. The East Anglian Daily Times [Internet]. 2010 [cited 1 September 2020]; Available from: <https://www.eadt.co.uk/ea-life/finding-intrigue-on-his-doorstep-1-199833>