

Harvesting Technology

Gathering



Paleolithic representation of honey gathering.



Women gathering grain 5000-6000 BCE. Tassili n' Ajjer, Algeria.



Modern reconstruction of a Neolithic sickle.

Harvesting in Ancient Egypt



Hand Harvest



Tending Vines, from a XIII Century miniature.



This family of 11 took pride in picking more than a bale of cotton (500 lb) in a day. With a modern four-row, mechanical cotton picker, one person can now harvest 80 bales a day. (Photo: USDA)

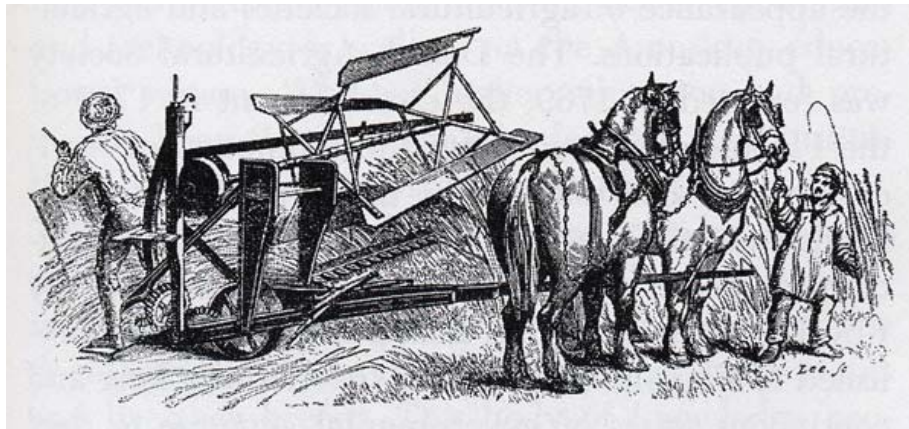


Harvesting wheat with a cradle. The woman binds the sheaves, twisting the stalks of wheat like twine. (Photo: J.C. Allen and Son)



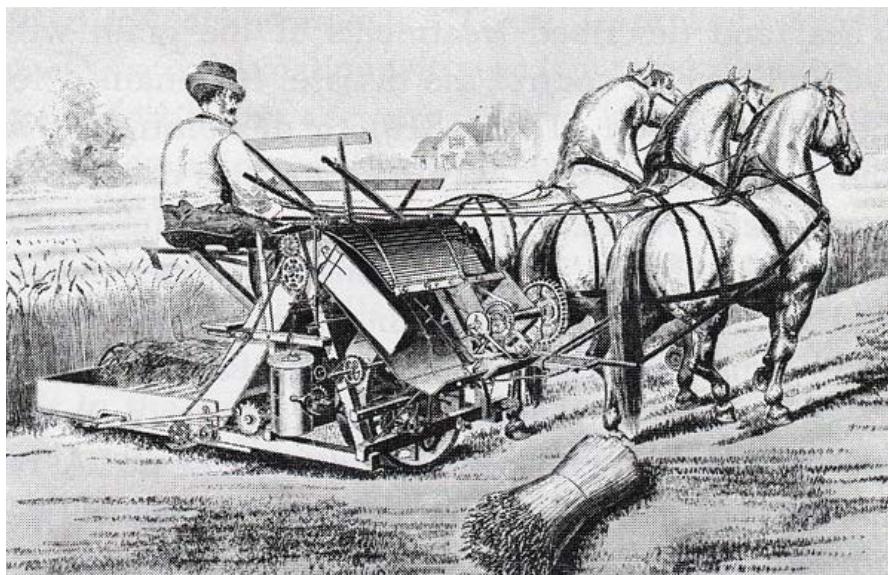
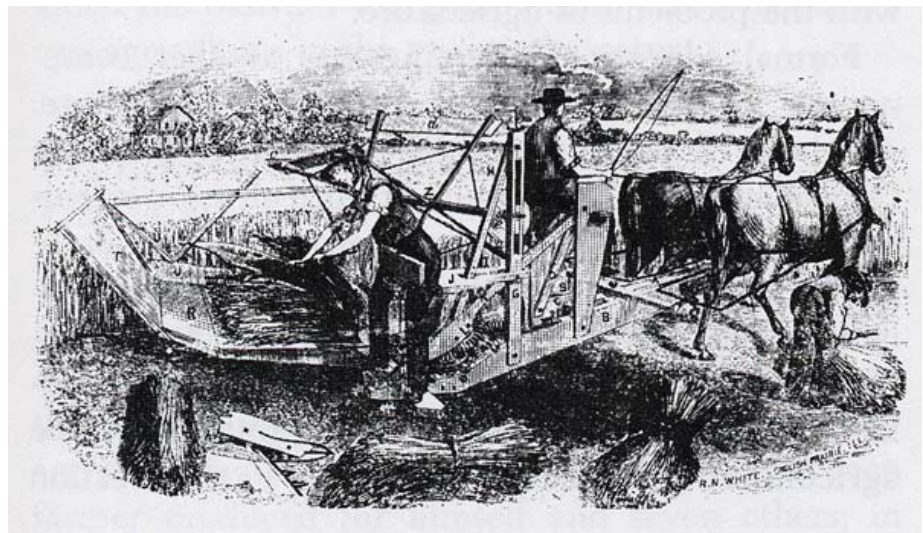
Cutting grain with scythes. (Photo: USDA, Centennial Collection)

Development of the Reaper



Cyrus McCormick's first reaper, 1831

The 1851 reaper



The twine binder (1881) reaped and tied sheaves of grain in one operation



Wheat harvest in El Centro, California. (Photo: USDA, Tim McCabe)



Smallford Hydrapick black currant harvester.



Mechanical harvesting of tomatoes.



Tomato harvester



Robotics tranplanter

Milling



Saddle quern and rubbing stone – Basalt and limestone – 7000 BCE – Harvested grains were ground with a crudely shaped rubbing stone. It was pushed back and forth over grain that had been placed on the surface of a wider, heavier stone, called a quern, which was set in the ground. Alveolate basalt was an ideal stone for making querns because it has a very rough surface and is very hard.



Mortar and pestle – Basalt – 1500 BCE – Materials were crushed by the movement of the handheld pestle against the motionless mortar. This method was used to crush small quantities of grain or bits of minerals in order to obtain pigments that entered into the composition of paints or cosmetics.



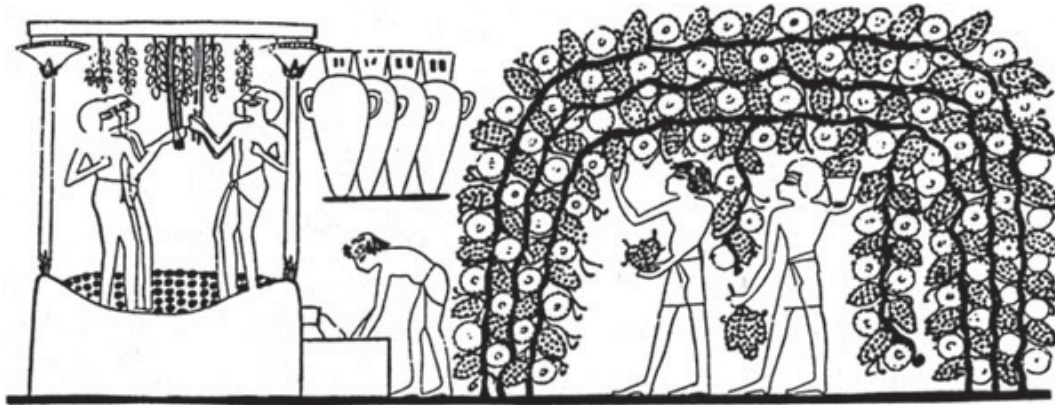
Circular millstones – Basalt – 1500 BCE – this type of milling instrument, with one circular stone set on another, represented an improvement on the quern and rubbing stone because grain could be poured onto the grinding surface through the space near the central pivot at the same time that the upper stone was being rotated to produce flour. The ground flour escaped from the sides and fell onto a piece of cloth or basketry that was placed under the millstones.



Using a grindstone in a Bedouin village in the Syrian Jezireh.

Presses

Egyptian Wine Presses



Ancient and Modern Presses



Ancient olive press, Israel.



Ancient olive press, Israel.



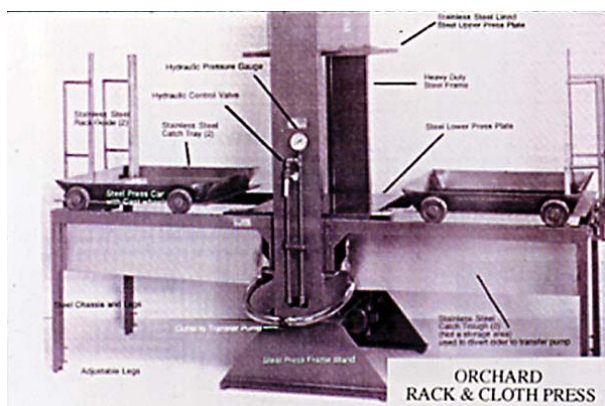
Medieval olive press, Portugal.



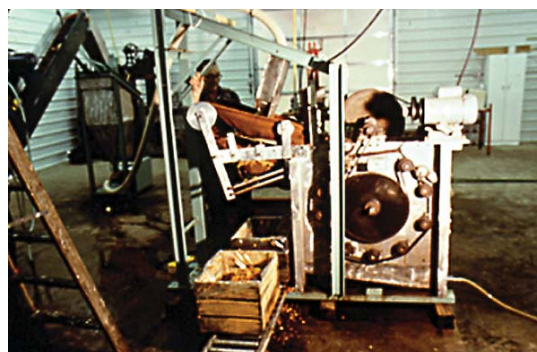
Guercino, Allegory of winemaking, ca 1626.



Cider press, 1900s.



Rack and cloth press, late 20th century.

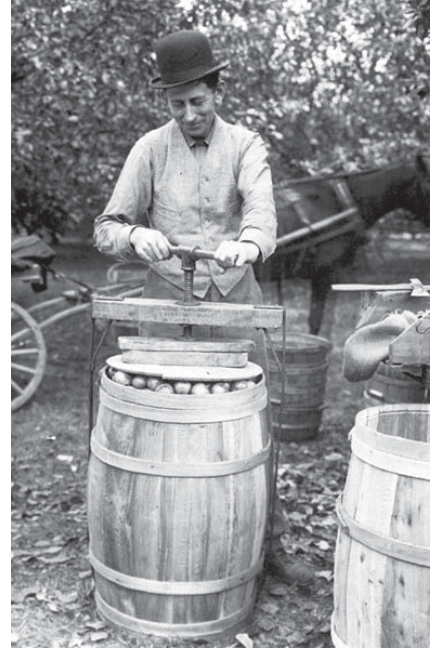


Contineous cider press, 1990s.

Packing Fruit



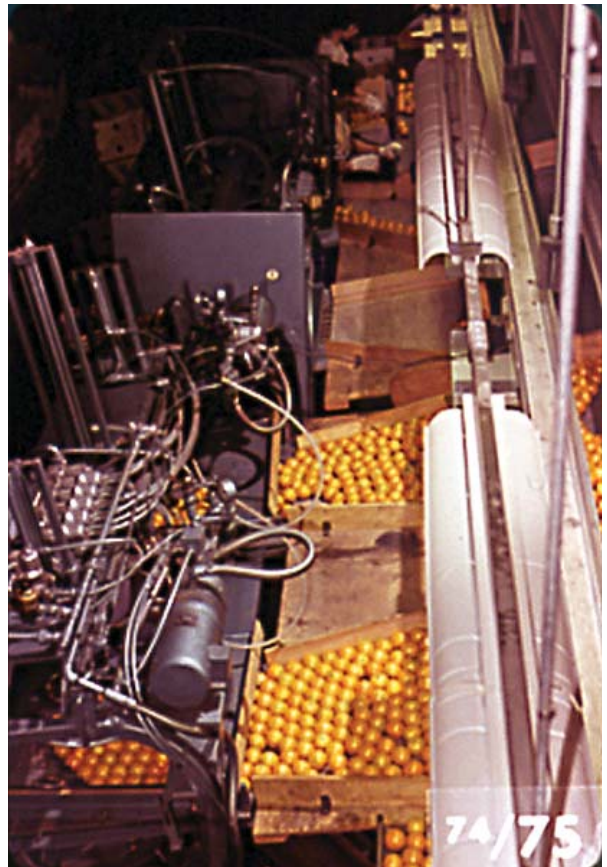
Packing Figs, 1900 BCE.



Packing apples in a barrel, ca 1900.



Grading and packing oranges, California.

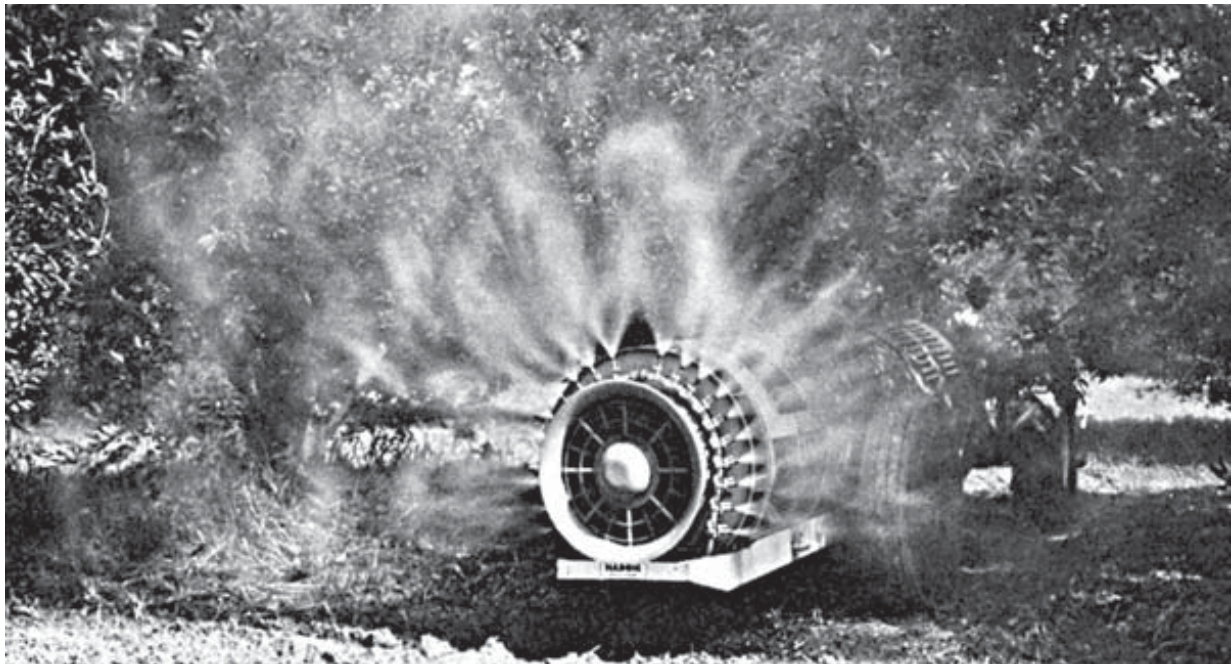


Automatic box filler.

Spraying Orchards



1900s



Orchard speed sprayers use a blast of air as the carrier for highly concentrated sprays. [Photograph courtesy Farm Equipment Institute.]