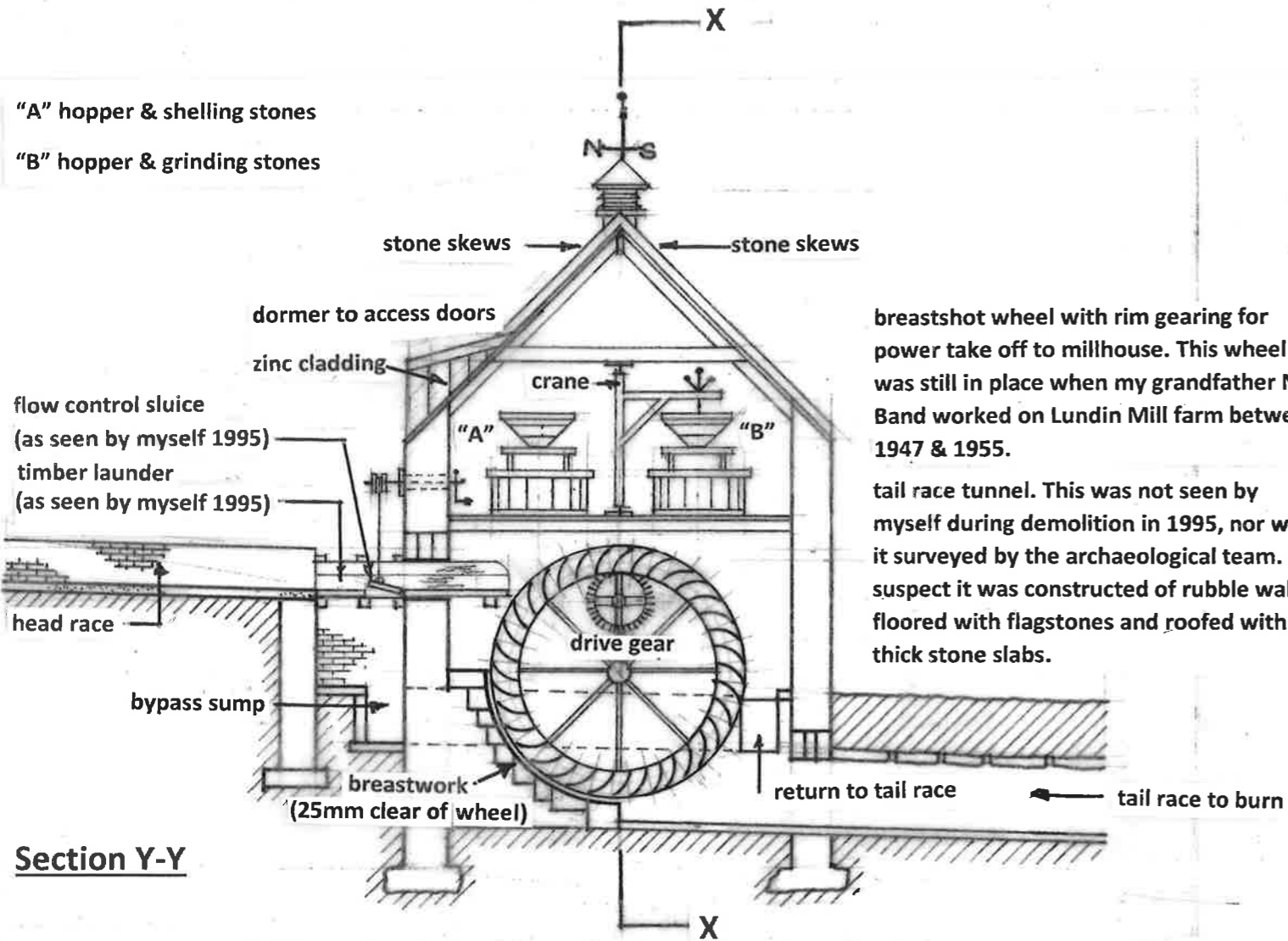


"A" hopper & shelling stones  
 "B" hopper & grinding stones



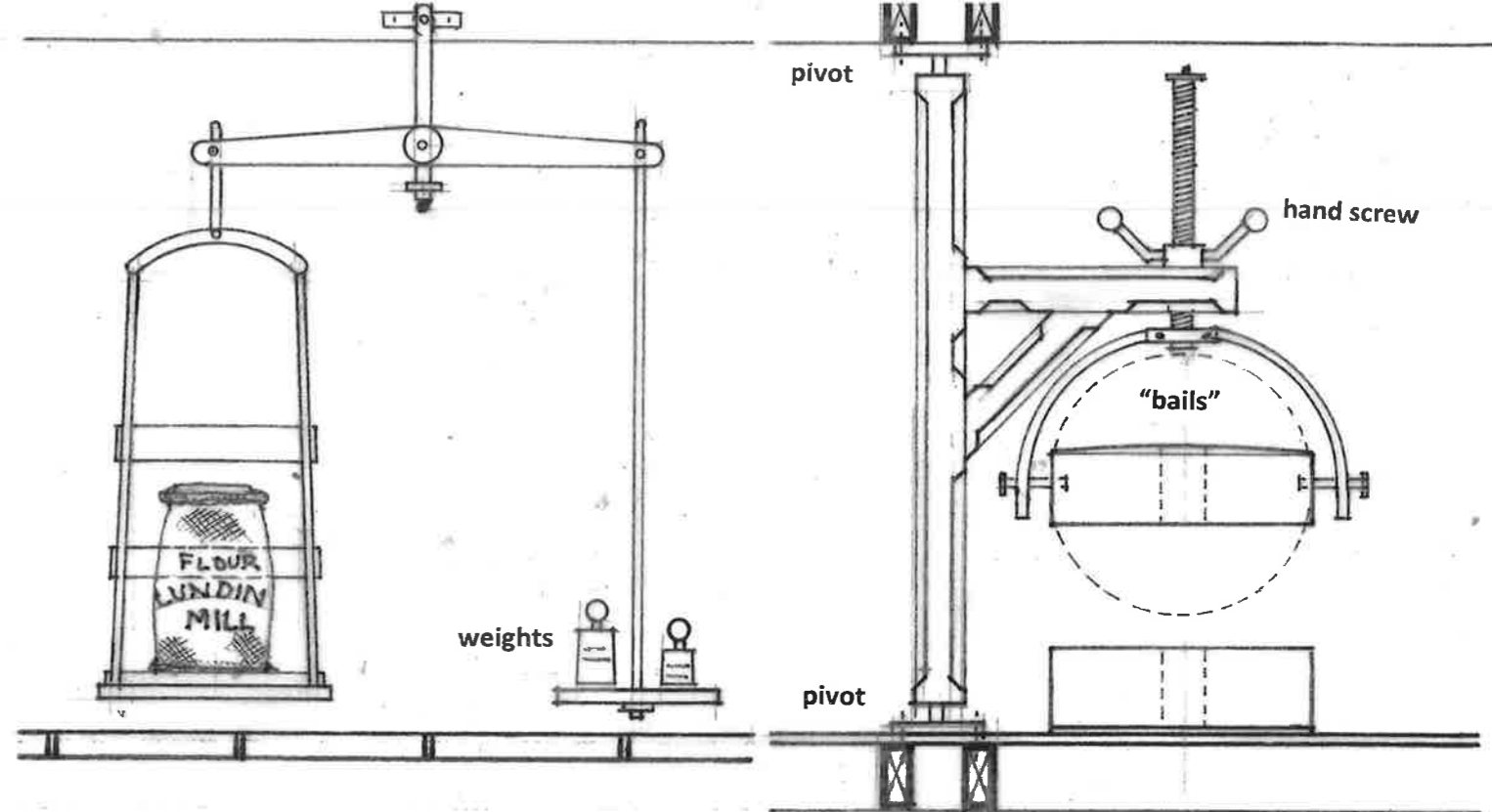
Section Y-Y

**Breast Waterwheel**

"Stronger Than 100 Men" by Terry S. Reynolds.

Perhaps the most significant of the changes in vertical wheel technology between 1750 & 1850 was the replacement of first undershot and then overshot wheels. Although the breast, or breastshot, wheel could have either blades or buckets it differed from undershot & overshot wheels in the point at which it received water. The overshot wheel took water over its summit; the undershot wheel took water from beneath. The breast wheel received its water at an intermediate point, between one & five 'o'clock. Breast wheels were often subdivided into high & low varieties. High breast wheels (sometimes called pitchback wheels) received water above the level of the axle; low breast below.

The breast wheel was probably conceived as a compromise between undershot & overshot, an attempt to combine the actions of impulse & weight. It was applied to falls of between approximately four & ten feet (1.2-3.0 metres) where there was some doubt over whether an undershot or overshot wheel should be installed. The wheel pit was built with close fitting masonry or even timber to hold the water in the buckets or behind the blades for the maximum amount of time to gain full advantage of the weight, with the flow of water reversing the direction of the wheel (as opposed to overshot) This made the discharging of the water at the base flow with the wheel direction preventing the problem of "back water" slowing the wheel, a problem with overshot wheels if the diameter was great and little clearance exists over the tail race at the base of the wheel.

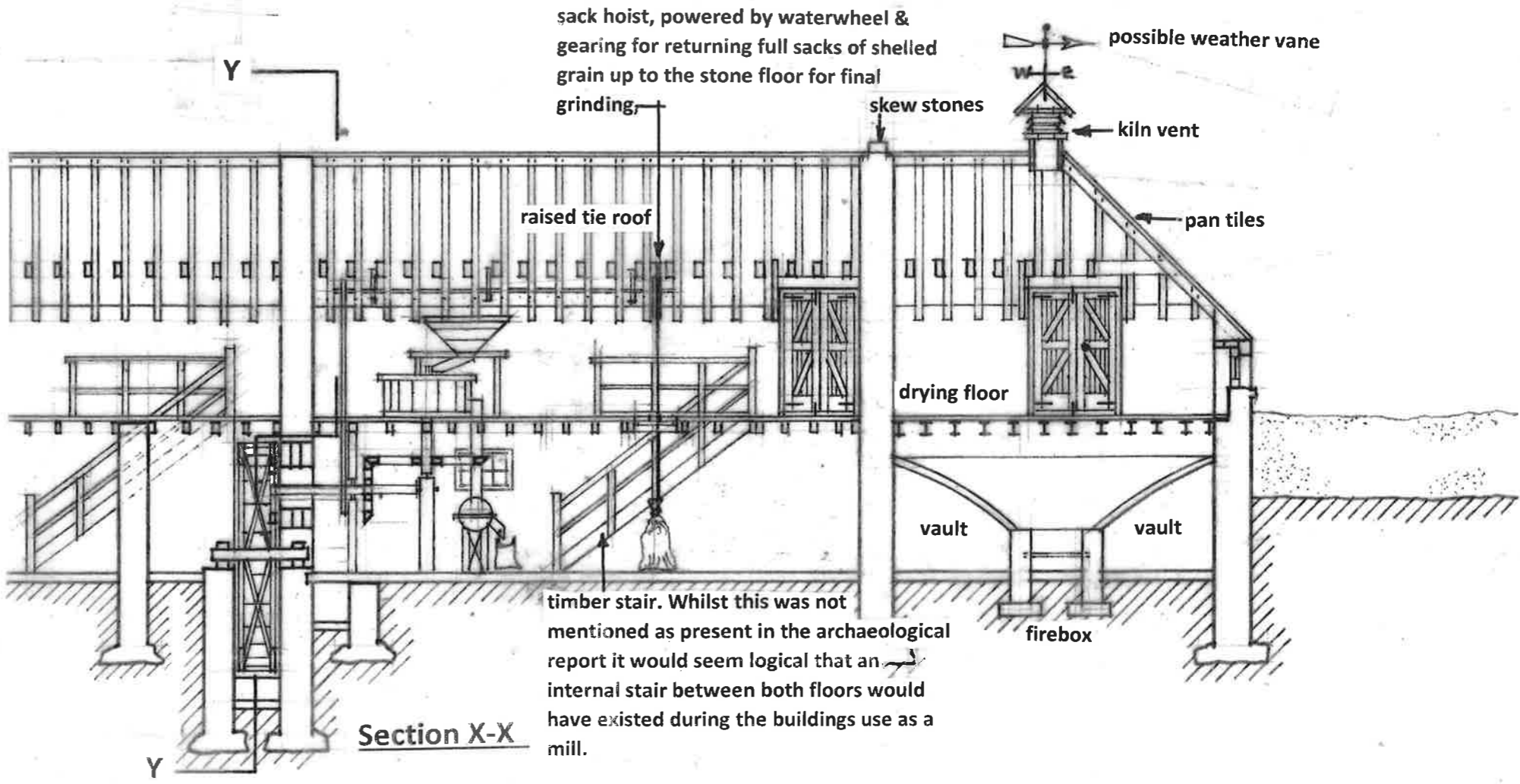


Beam scales

used for weighing sacks of flour.

Stone crane

used to lift & turn runner stones for dressing & replacing on bed stone spindle. Prior to lifting the timber casing or tun had to be removed.



Section X-X