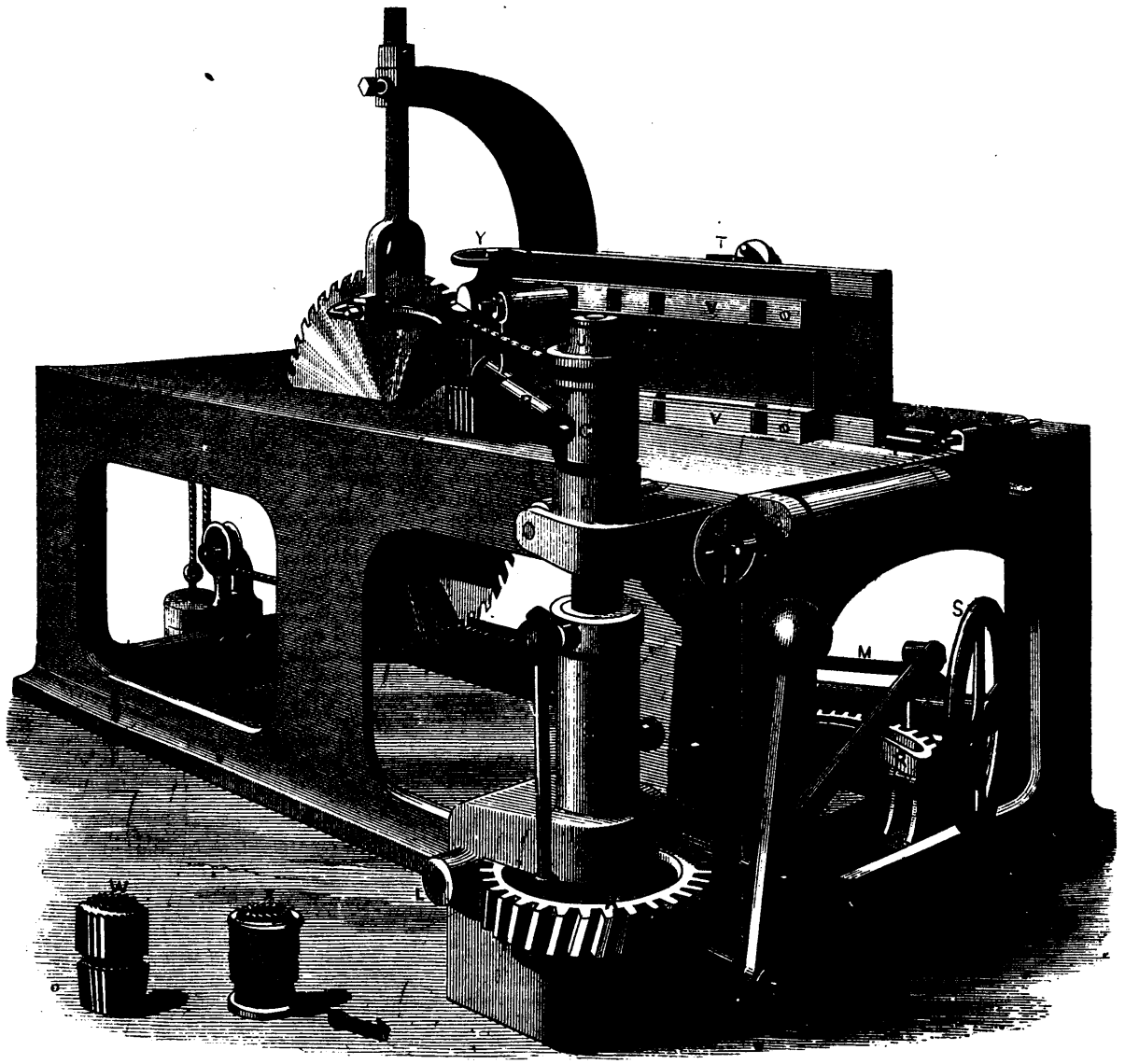

CASSON'S SAW BENCH WITH STEADYING APPARATUS.

We give herewith a perspective view of a circular saw bench made by Messrs. Oliver & Co. (Limited), of Chesterfield, England, which we take from *Engineering*. The chief features in this machine are that it is fitted with Mr. John Casson's patent feed gear and apparatus for steadying the saws. This feeding arrangement has now been in use some years, and has been fitted to a very large number of circular saw benches. This being the case, and the arrangement being very clearly shown by our engraving, it will be unnecessary for us to describe it in detail here.

The saw-steadying apparatus, with which the saw bench we illustrate is fitted, is a novel arrangement, recently patented by Mr. Casson ; in the present case it is applied to two saws.

The steadying arrangement consists of accurately fitted sliding jaws mounted on the arms of a forked support, so that they can be moved and adjusted only by fine threaded screws, the jaws having their surfaces next the saws, accurately parallel with the plane of the collar of the saw spindle ; these jaws, A, are fixed when the adjusting screws are at rest, and they are faced with strips of greenheart or other suitable timber, secured by countersunk screw bolts, these faces forming a perfectly true guide for the saw blades.

For a single saw the guides just described would suffice ; but for two or more saws the outside guides must be supplemented by others between the saw blades.

It will be noticed that the support, F, carrying the guiding jaws, has a square stem sliding through the head of a suitable standard, and it can be readily fixed at any desired height by means of the set screw.

The arrangement we have been describing is well carried out, and there can be no doubt that it will do good service, and enable thin saws to be efficiently used with a heavy feed. We have received very satisfactory reports of its performances.

MOLTEN CARBONATE OF SODA IN PUDDLING.—The *Iron Age* translates from a French authority an account of the efforts which E. Vanderkeyn has made to use molten soda in puddling. He states that the main benefit to be derived is the elimination of silicon, especially from coke irons, and that experience has taught him that 2½ times the amount of silicon in carbonate of soda is sufficient. The best time to charge the alkali is 3 or 4 minutes before the iron comes to nature, care being taken to close the damper so that the powdery material is not carried off by the draft. Mr. Vanderkeyn has also found that phosphorus and sulphur are reduced in amount, and he considers the manufacture of high-grade iron from ordinary pig possible by the use of alkalies. Inferring from experience in the metallurgy of another metal, we would add that the purifying action of molten caustic alkalies is still more energetic.