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WORSSAM'S TIMBER SAWING FRAME.

Figure 1.

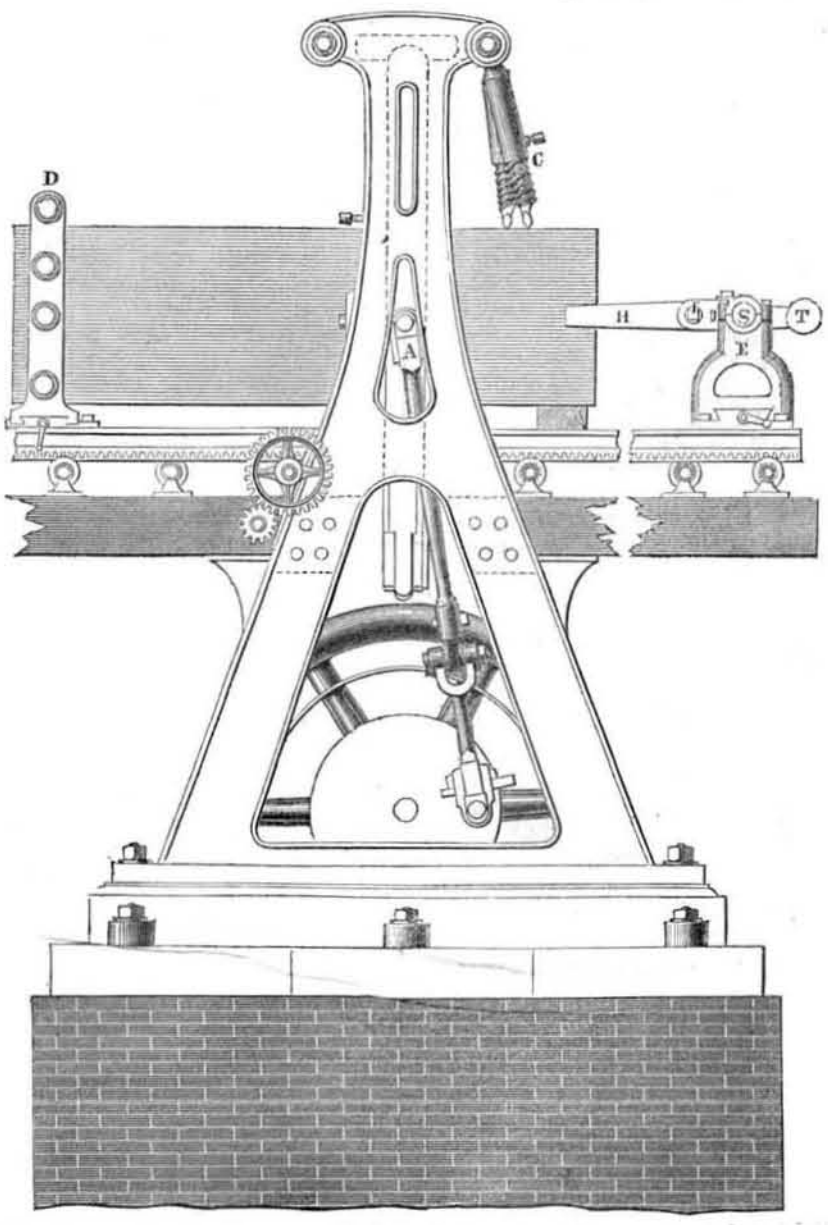
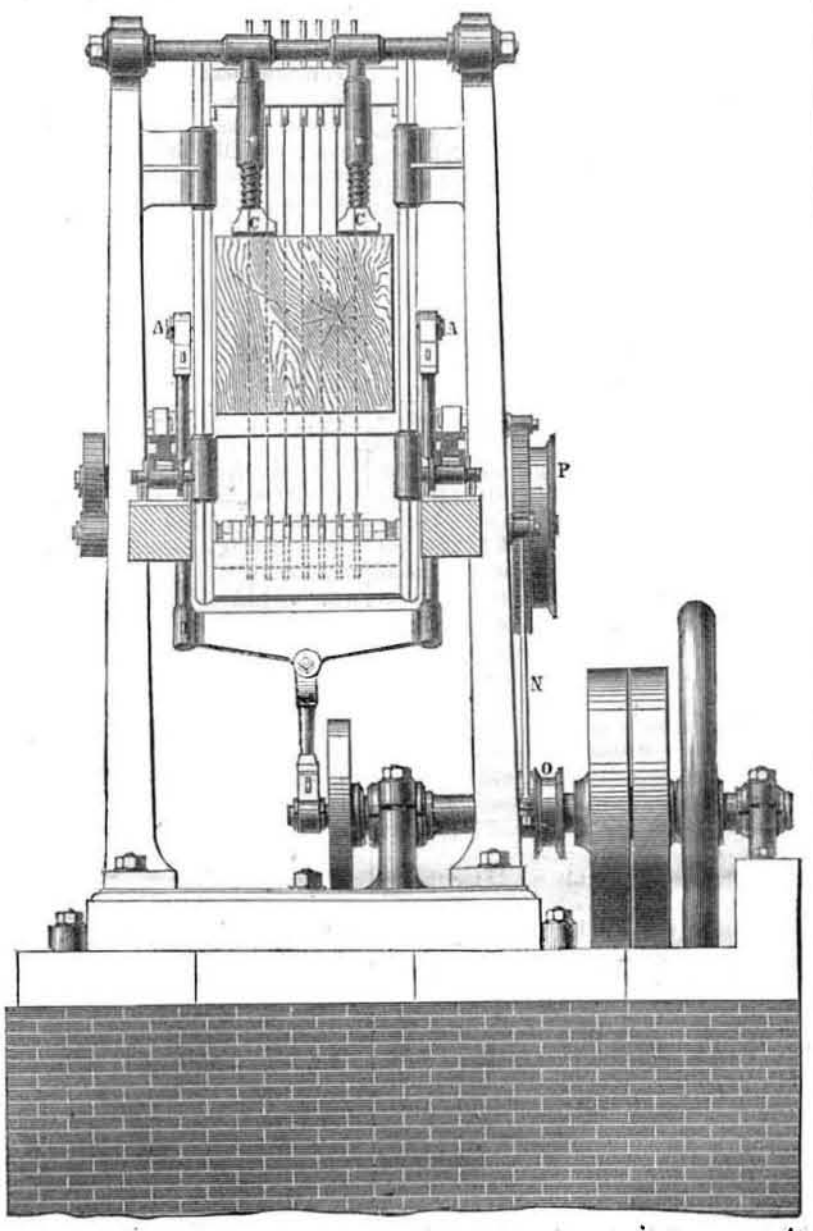


Figure 2.



The annexed engravings are a side elevation (figure 1) and a transverse elevation (figure 2) of a timber sawing frame, constructed by Messrs. Worssam & Co., engineers, of London. We have selected this from the London Artisan, knowing that a great number of our readers are interested in sawing machinery, consequently they like to see and know how such machinery is arranged, constructed, and used in other countries beside our own.

In arranging the building of a heavy timber frame, the foundations are ordinarily a heavy item, from the great depth required by the length of the connecting rod; and if this is curtailed, the evil is entailed of sufficient friction on the guides. In the case before us, the makers have sought to reduce the height of the machine, by making the connecting rod forked, so as to embrace the frame, to both sides of which it is attached at the points, A A. To admit the vibration of the connecting rod, the guides are suitably overhung.

In the guides themselves, attention has been directed to diminish the friction, which, in surfaces moving at such a high velocity, consume a large proportion of the applied power. With this object, the back and front guides are not both V-shaped, as usual, but whilst the working side is made so, the other side is made flat, and has a brass plate pressed in contact with it by means of a steel spring, set up by adjusting screws to the exact pitch to keep the frame from chattering.

The lower saw buckles are of S-shape, and hook on to a projecting feather on the frame. They are set up sideways by a longitudinal screw, passing through all the distance pieces, but not through the saw buckles, so that any saw can be taken out in a few minutes.

The timber is prevented from rising, when the saws are entering, by the two legs, C C, which are screwed, (with double threads) into sockets hanging from one of the strong distance pieces, between the sides of the framing. When adjusted to the proper length, they can be fixed in position by set screws.

Provision is made for setting the log transversely. The frames, D and E, on which the ends of the log are carried, are fitted up in the slide-rest style, and can be shifted by the screws across the rack-bed. They are made to suit the varying widths of timber, by one of the arms, H, being made a fixture on the shaft, S, whilst the other slides on the shaft, and is moved by a screw, I, to give the requisite grip of the wood. A balance-weight, T, facilitates the adjustment. The other end, D, is provided with set screws for the same purpose.

The feeding-motion is as usual; the eccentric rod, N, taking on to a ratchet-wheel, for the feed, and a strap between the riggers, O, and P, giving the quick return motion for the rack.

The London Artisan asks its readers to give some particulars about the indicated power required for saw frames. In America five horse-power is allotted for driving a large rip saw, and a large circular saw. Gang saws are now common in American saw mills; but the common mode of working the reciprocating saw, is nearly the same as that represented above. An engine of three horse-power will drive one of these saws, but it is best to leave a good margin of power as a surplus; it is more profitable to do this than to work an engine or water wheel up to its full indicated power.

The lumber (dressed timber) interests of the United States are greater than those of all the other countries in the world put together. Everything, therefore, connected with our saw mills is of importance if it is an improvement. Saws involve more expense than all the other parts of a saw mill, because they are continually subject to wear, as they expend the whole power of the engine or water wheel upon the logs. The engine, wheel, frame, &c., can all be built strong enough to endure without incessant repair, not so the saws; they are continually getting dull and have to be frequently sharpened. The more knotty and hard the lumber, the more wear there is of the saws; how important then to have good saws—tools that do not require a continual rasping with the file. For a long time we received our best saws from England, but this is not the case now. Saws of all descriptions are now *tempered* on an entirely new principle, and by a new process—which possess qualities of a far superior order to those ever before made in any part of the world. In our next number we will describe this process by which said saws are tempered; it is patented and is the invention of Mr. Waterman, of Williamsburg, N. Y. This process makes saws of a superior temper, and it requires no heating oil baths, dipping in water, &c., as is the case with tempering steel tools by the common methods. The tempering of a saw is performed in an instant, and by a most simple operation, which cannot fail to surprise our readers.

Improved Bridge.

We learn by the Troy, (N. Y.) papers, that a bridge has been erected over the creek in Second street, that city, by the inventor, Dudley Blanchard, in company with Louis Felloes, of that city. It is an iron truss bridge of 73 feet span, composed of 24 separate castings, after six different patterns—four to each. It weighs about 5 tons, of cast-iron, and has about 2 tons of bolting. It has been tested with 40 tons on it, and no sign of deflection exhibited. The usual plan of making truss frames, is to have all the braces equal with a a top and bottom cord of uniform size throughout the whole length. This bridge is constructed with braces and chords of various proportions—each part of the truss frame being made and proportioned to the strain which it has to sustain. He employs less material in making a bridge of equal strength to that of the uniformed trussed bridges.—Messrs. Blanchard & Fellows are good practical mechanics, and are now engaged roofing the extensive rolling mill of the Albany Iron Works, a building 336 feet long by 135 feet wide, with an iron roof, supported on the same principle.