

two above the floor, which brings into play a friction arrangement on the back of the carriage, which immediately recedes, the knees or uprights of the carriage to which the log is attached pulling the log back with it, so that when the carriage returns to its starting position all that has to be done is to lift the outer levers of the Knight dog shown with a ball, which spring into their catches above, not shown in cut, where they are held, thus withdrawing the dog from the log. The log is then rolled over with its flat side on the log seat, or against the upright as wished, dogged again as before, and the operation is again proceeded with, taking off another slab. If in either case the slab taken off does not expose sufficient surface or width of face on the log, a second or third board is taken off. The log is thus partly squared to the size desired. The dogs are again withdrawn and the log turned a second time with its square corner toward the uprights and the flat surfaces against them and on the log seats. The operation explained before is then continued until a slab and one or two boards are taken off. Then if the log is to be made into timbers of different thicknesses, the set roller and timber gauge shown on the front corner of the frame is brought into play. The round wheel on the top of the gauge is marked off in quarters of inches from one inch upwards, so that if a piece of timber $6\frac{1}{4}$ inches thick is required to be cut from the log, the pin is dropped into the hole marked $6\frac{1}{4}$, and the handles shown on top of timber gauge are brought round to this pin. The sawyer then grasps the set handle again and sets the log up against this roller, and he knows that as soon as it strikes the roller it is set so that a piece $6\frac{1}{4}$ inches thick will be sawn the full depth of what the log happens to be. He can as easily, of course, set it to any size desired. On the slides, to which uprights are attached, (one to each of the slides) is a lumber and timber rule and pointer, so arranged with the pointer that the sawyer at a glance can tell what thickness of log he has remaining to be sawn, and can calculate readily to what size it is best adapted to be sawn into, without any measuring whatever.

After the timber is turned with its squared side to the uprights, the dogs shown in cut as holding the square timber are run back till they do not project more than half an inch from the face of the upright, so that the last board can be made as thin as 1 inch, or even $\frac{1}{2}$ inch or $\frac{3}{4}$ inch thick without removing the dogs. These dogs are worked in a very simple way. The inside small or short lever with the ball on the end, when raised, permits the dog to be raised up and down anywhere on the standard, and immediately the lever is released it falls of its weight and holds the dog in the position it is placed on the standard. If, therefore, it is left from the last log near the top, all that has to be done to make it engage the log is to lift this lever and drop it; it falls till the point of the dog strikes the timber where it is

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Returning arranged to friction wheel pinion on its wheels of the centric box of the rear side mandrel. B transmits the friction wheel or near side which the cone referred to be the rag shaft mandrel is co When the level the intermedi saw mandrel on rag shaft a

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