G. H. FARRINGTON.

DOWELING MACHINE.

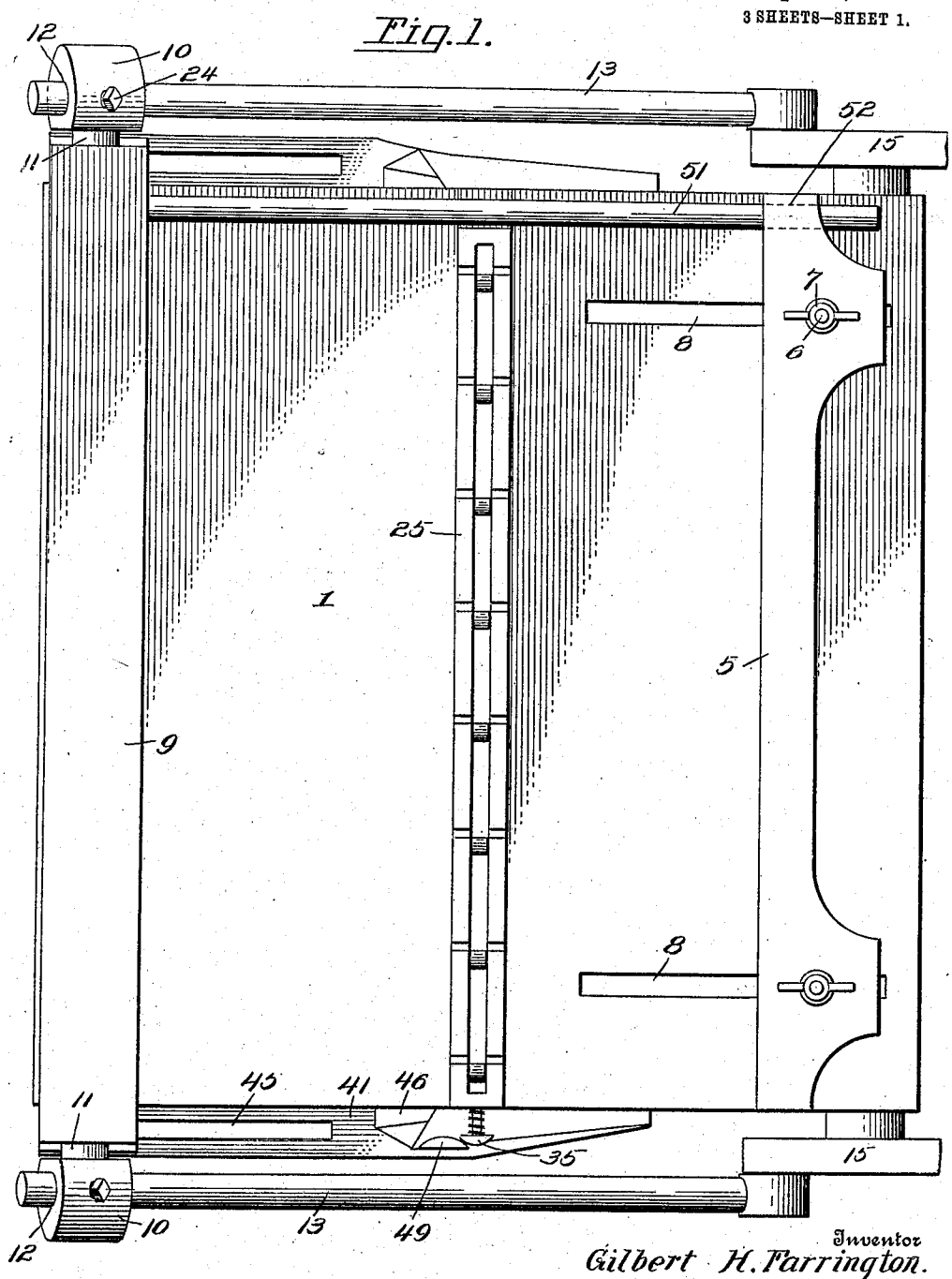
APPLICATION FILED FEB. 25, 1908.

918,986.

Patented Apr. 20, 1909.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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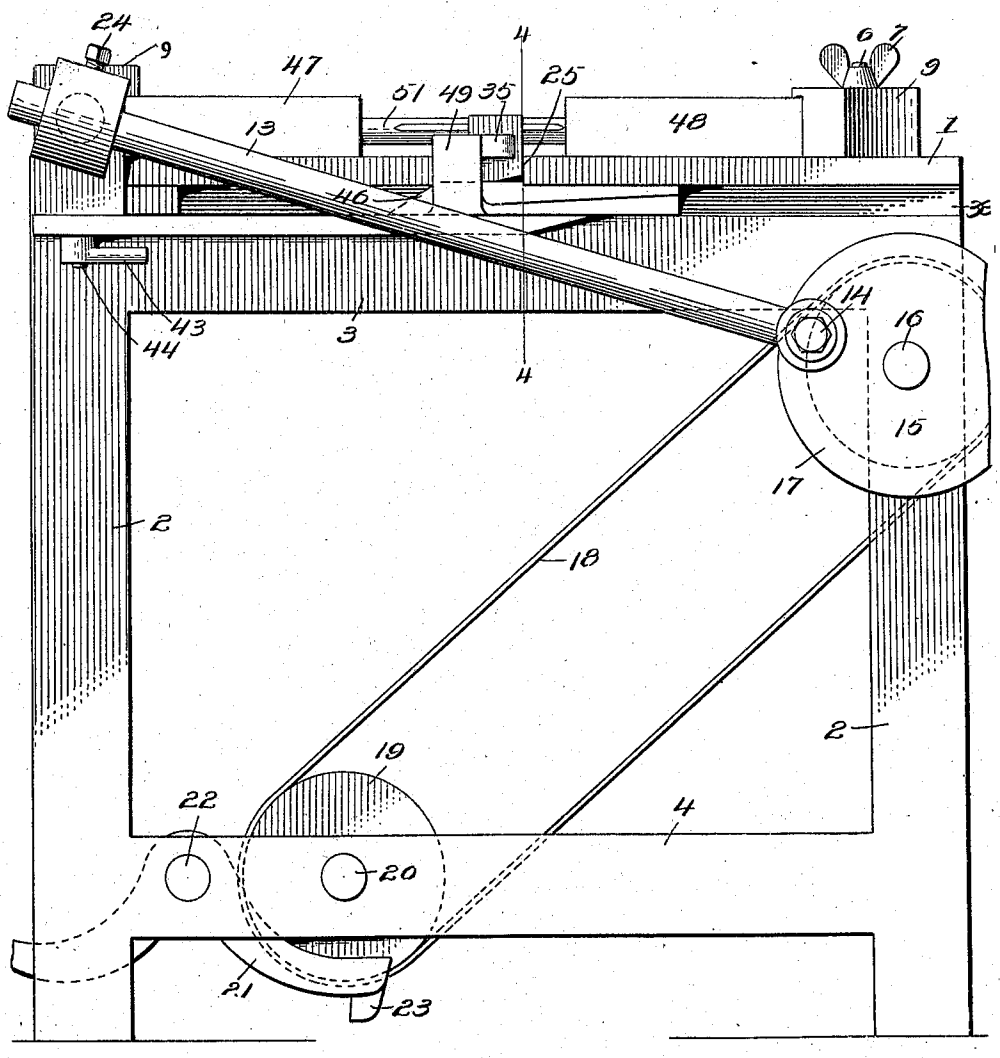
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

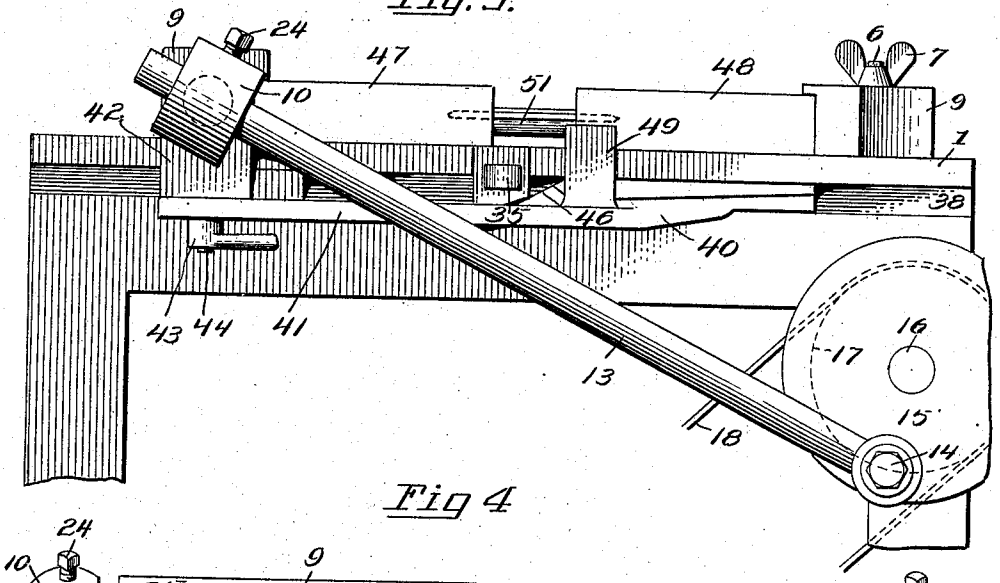


Fig 4

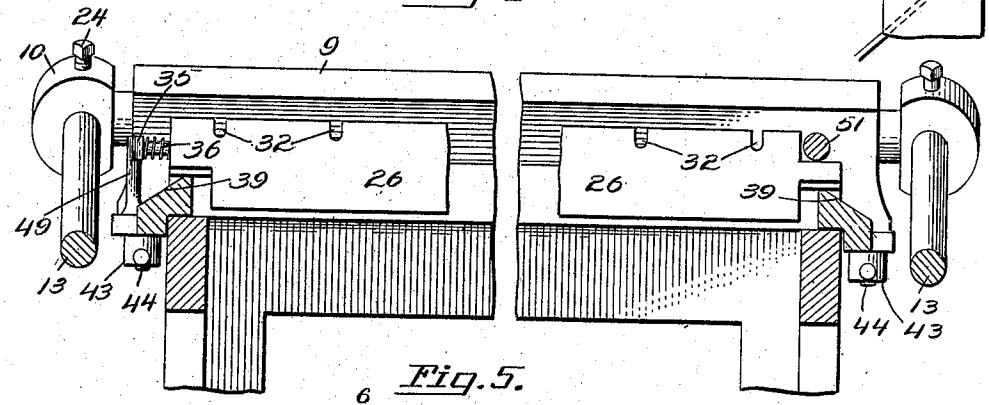


Fig. 5.

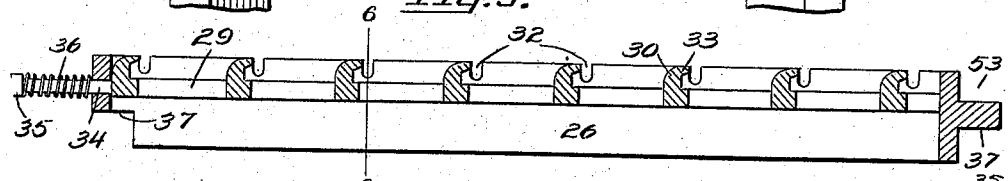


Fig. 6.

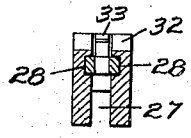
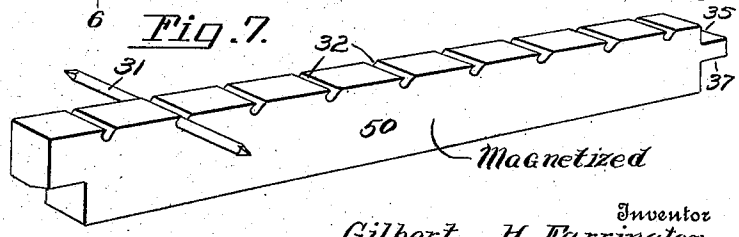


Fig. 7.



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UNITED STATES PATENT OFFICE.

GILBERT H. FARRINGTON, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO ELIPHALET HENDRICKSON, OF BROOKLYN, NEW YORK.

DOWELING-MACHINE.

No. 918,986. Specification of Letters Patent. Patented April 20, 1909.

Application filed February 25, 1908. Serial No. 417,666.

To all whom it may concern:

Be it known that I, GILBERT H. FARRINGTON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Doweling-Machines, of which the following is a specification.

This invention relates to doweling machines, the object in view being to provide a machine which will operate with precision to press together the jointing edges of the work and position the dowels between the jointing edges preparatory to pressing said edges together, whereby a doweled joint is effected without previous preparation of the dowel holes and without measurement.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a plan view of a doweling machine embodying the present invention. Fig. 2 is a side elevation of the same. Fig. 3 is a similar view of the upper portion of the machine showing the operation partially completed. Fig. 4 is a vertical section on the line 4—4 of Fig. 2. Fig. 5 is a vertical, longitudinal section through the dowel pin holder. Fig. 6 is a cross section through the same on the line 6—6 of Fig. 5. Fig. 7 illustrates a modified dowel pin holder.

In the preferred embodiment of the machine, the latter comprises a work support or table 1 mounted upon a frame embodying legs 2 and connecting cross bars 3 and 4 whereby the work support is upheld at a suitable elevation.

5 designates a ledger bar or abutment for the work at one side of the table, said ledger bar being preferably arranged adjacent to the rear edge of the table or work support and being made adjustable by means of clamps preferably in the form of bolts 6 and clamping nuts 7, which bolts pass through slots 8 in the work support, thereby adapting the ledger bar 5 to be adjusted forward and backward on the table to bring the same to the desired distance from the doweling point or line which extends about centrally across the table as shown in Figs. 1, 2 and 3.

Operating over the opposite side of the table is a presser bar 9 provided at its opposite ends with swiveled heads 10 having rounded shanks 11 which are received in corresponding sockets bored in the ends of the presser bar as clearly indicated in the drawings. The swiveled heads are provided with holes 12 extending through the same and receiving oppositely arranged connecting rods 13 the opposite or forward ends of which are connected to crank pins 14 on a pair of crank wheels 15 mounted fast on the opposite ends of a crank wheel shaft 16 journaled in suitable bearings on the frame of the machine, the shaft 16 being provided with a band wheel indicated by dotted lines at 17 which receives a driving belt 18 from a drive pulley 19 mounted on a drive shaft 20, 21 designating a foot operated shifting lever fulcrumed at 22 on the machine frame and provided with a wedge-shaped cam 23 which operates against the side of the drive pulley 19 and serves to press said pulley, which is normally loose on the shaft 20, into engagement with a second pulley, (not shown), which latter pulley is fast on the shaft, the construction referred to providing for throwing the pulley 19 into and out of engagement with the shaft 20 for stopping and starting the doweling machine. The connecting rods 13 are adjustably connected with the swivel heads 10 by means of set screws 24 which enable the presser bar 9 to be adjusted to the desired distance from the doweling point to conform to the width of the pieces to be connected by a dowel joint.

The work support is provided with a central slot or opening 25 and in said opening is mounted a dowel pin holder 26 shown in detail in Figs. 5 and 6. This dowel pin holder is in the form of a bar which extends parallel with the ledger bar 5 and the presser bar 9, as shown in Fig. 1. The dowel pin holder, in the preferred embodiment of the invention is formed with a central longitudinal slot 27 and also provided with oppositely arranged guideways 28 in which is mounted a retainer slide 29 having extending parallel therefrom a series of retainers 30 for temporarily holding the dowel pins one of which is shown at 31. The upper face of the holder is transversely notched or grooved to form pockets 32 for the reception of the dowel pins 31 which are pointed at both ends as shown in Figs. 2, 3 and 7. The notches 32 are deeper than the diameter of the dowel points, enabling said pins to be held temporarily in the notches by means of the retainers 32, the up-

per portions of which are in the form of hooks 33 adapted to project over the dowel pins and hold the same down in the notches 32 as will be readily understood from Fig. 5, in which it will be further observed that the retainers 30 lie within the plane of the upper surface of the dowel pin holder. The slide 29 which carries the retainers 30 is provided with a stem 34 which passes through an opening in one end of the holder and is provided with a shoulder or head 35 while a retracting spring 36 encircles the stem 34 between the shoulder 35 and the adjacent end of the holder, which spring acts to move the retainers out of engagement with the dowel pins which lie in the notches 32. The holder is further provided at its opposite ends with working shoulders 37 by means of which the holder is moved upward and allowed to move backward as will hereinafter appear.

Just beneath the work support or table 1, the frame is provided with horizontal grooves 38 having one or both walls thereof undercut or dove-tailed as shown at 39. In the grooves are arranged runners or slides 40 provided with slotted arms 41 which are connected to pendent extensions 42 on the under side of the movable presser bar 9, the connection between the arms 41 and the extensions 42 consisting preferably of clamps 43 shown in the form of nuts provided with handles and mounted upon threaded studs 44 projecting downward from the extensions 42 through the slots 45 in the arms 41, the construction described permitting the presser bar 9 to be adjusted to the desired distance from the doweling points. The slides 40 are provided with inclined shoulders 46 which, at a suitable interval in the complete operation of the machine, ride against the working shoulders 37 of the dowel pin holder and elevate the holder simultaneously at both ends causing the latter to rise from the position flush with the upper surface of the table or work support, to a position in which it projects far enough above such upper surface of the work support to position the dowel pins in proper relation to the jointing edges of the work which is shown in Figs. 2 and 3 as consisting of two strips or boards 47 and 48. One of the slides is provided with an upstanding tappet 49 which operates to press the stem 34 of the retainer slide inward, causing the retainers to engage and hold the dowel pins in place in the notches 32. When the tappet 49 moves out of engagement with said stem, the spring 36 retracts the retainer slide and frees all of the dowel pins.

Another form of dowel pin holder is illustrated in Fig. 7 consisting of a bar 50 which is magnetized thereby adapting it to attract and hold the dowel pins 31 in the notches in the upper side thereof, in which event the mechanical retaining device above described and illustrated in Figs. 5 and 6 will not be necessary. It is also preferred to provide the presser bar 9 with a guide rod 51 which plays back and forth through a corresponding opening 52 in the ledger bar 5. Where such guide rod 51 is employed, the adjacent end of the holder 26 will be rabbeted or cut away as shown at 53 to allow for the up and down movement of the holder without interference on the part of the guide rod 51.

In operation the two pieces of work 47 and 48 are placed upon the work support or table at opposite sides of the slot or aperture 25 and while the holder 26 is raised the double pointed dowel pins 31 are placed in the notches 32. Then as the machine is set in motion, the first action is to operate the retainer slide and clamp the dowel pins in place. The presser bar 9 then advances one piece of work toward the other until the pointed ends of the dowel pins penetrate the adjacent edges of the two pieces of work. Just after this occurs, the retainer slide is released and retracted to free the holder from the pins, and then the shoulders 46 move out of engagement with the working shoulders 37 of the holder, allowing said holder to move down out of the way to the position shown in Fig. 3. The further inward movement of the presser bar 9 forces two pieces of work into close abutting contact at their jointing edges and thereby completes the doweled connection between said pieces. No previous measuring off or preparation of the pieces of the work is required under the arrangement hereinabove set forth.

Having thus described the invention, what is claimed as new, is:—

1. A doweling machine comprising means for pressing together the jointing edges of the work, a holder for positioning the dowel pins between the jointing edges of the work preparatory to pressing said edges together, a retainer slide for said pins, and means independent of the work for moving said retainer slide to holding and releasing positions.

2. A doweling machine comprising means for pressing together the jointing edges of the work, a holder for positioning the dowel pins between the jointing edges preparatory to pressing said edges together, said holder embodying pin-receiving notches, a sliding retainer for holding the pins in said notches, and means independent of the work operating to move the holder with a positive action into the path of the work and shift the retainer to release the pins.

In testimony whereof I affix my signature in presence of two witnesses.

GILBERT H. FARRINGTON.

Witnesses:
P. J. LEHAN,
J. D. H. BERGEN.