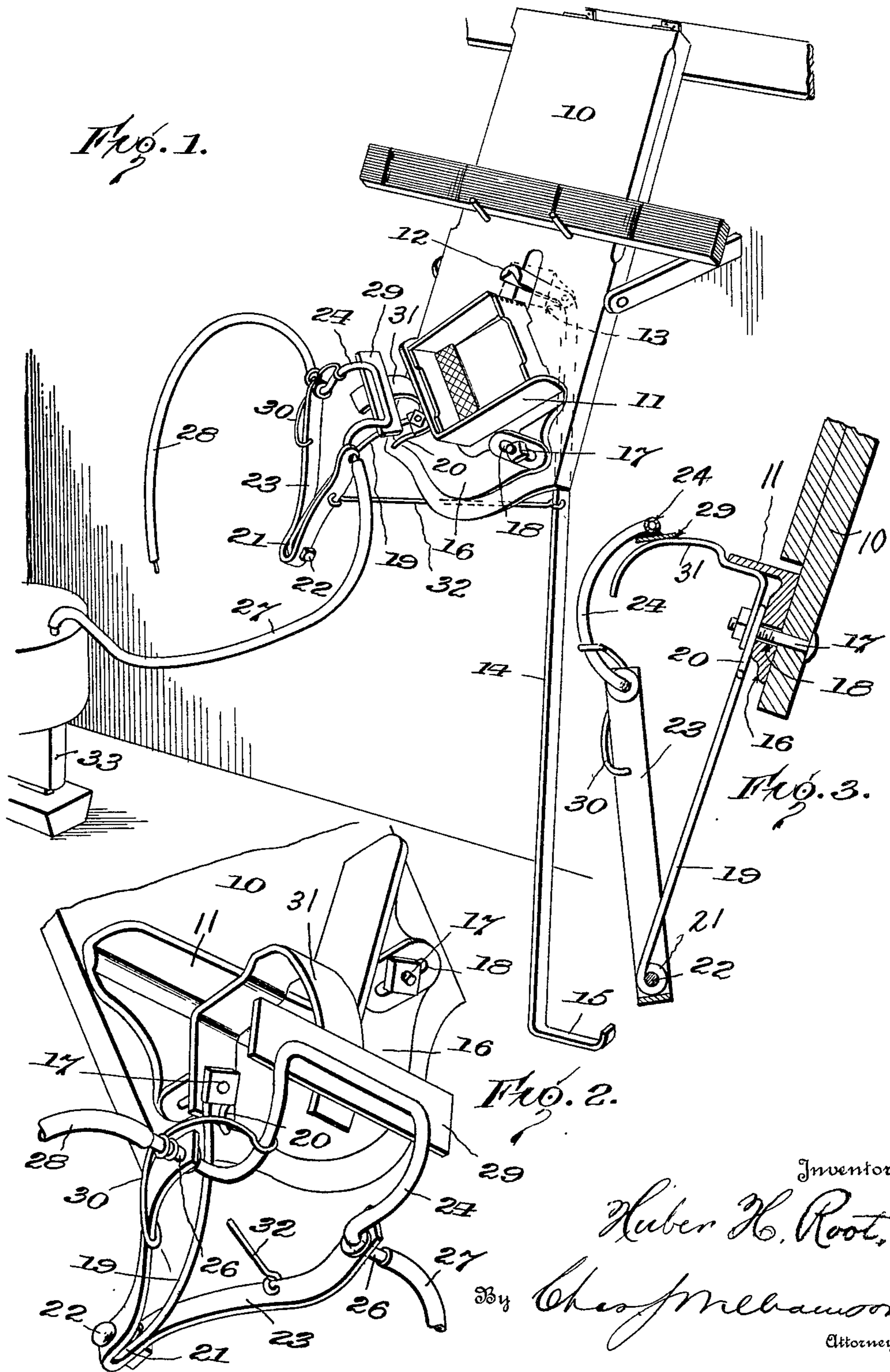


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FOUNDATION FASTENER.  
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# UNITED STATES PATENT OFFICE.

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FOUNDATION-FASTENER.

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Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, HUBER H. ROOT, a citizen of the United States, and resident of Medina, in the county of Medina, and in the State of Ohio, have invented a certain new and useful Improvement in Foundation-Fasteners, and do hereby declare that the following is a full, clear, and exact description thereof.

The rectangular honey boxes, or sections (sometimes square, sometimes oblong) in which the bees store honey, are commonly made of a strip of wood, that at three places is partially severed by V-cuts, so that the strip may be folded to form a right angle at each of these three points, and at the ends of each strip are notches that when the ends are brought properly together interlock, and thus the strip, folded into a rectangle, keeps its shape and is ready for use. This folding and interlocking operation is performed on what is known to the trade as a Root section press.

Before this section can be placed in a bee hive to be filled with honey by the bees a piece of comb foundation has to be inserted attached to one side of the section in the middle. This acts as a pattern on which the bees build the comb. It also prevents them from building the comb crosswise which they might do if allowed to build to build it of their own accord. This comb foundation has been on the market for the past thirty-five or forty years.

There are various tools for attaching this thin sheet of wax to one side of the section, the most satisfactory of which and the most rapid of which employ a metal plate heated by a lamp underneath. This hot plate when brought into position quickly melts some of the wax on the edge of the sheet of foundation, and when the plate is removed the sheet is slid down touching the side of the wooden section where the melted wax adheres firmly, holding the foundation in position.

Ordinary hot-plate machines are objectionable because of the difficulty in maintaining a constant and even temperature, because soot from the lamp often gets on the hot plate and is transferred to the white wood of the section spoiling its appearance, and because it is disagreeable and even dangerous to work over the lamp. Occasion-

ally a little melted wax runs off the hot plate and may drop down on to the lamp, sometimes causing same to blaze up.

The object of my invention, broadly stated, is to obviate the foregoing, obviously serious drawbacks to the plate machines, and to do so by instrumentalities that can readily be applied to those section presses (of which the Root press is a well known type) that are already in use, and for the attainment of these objects, and advantages which will be readily appreciated when the invention is more fully explained hereinafter, my said invention consists in the foundation fastener constructed substantially as hereinafter specified and claimed.

One form of my invention is shown in the accompanying drawings in which—

Figure 1 is a perspective view of a section press embodying my invention;

Fig. 2 is a like detail view thereof, from a different point;

Fig. 3 is a perspective detail view from still another point of view.

The press shown is a Root press, and consists of a supporting board or base that is suspended from a wall by a suitable support so that in use it inclines outward and downward, and a section clamp that comprises a lower V-shaped bracket 11, in which the folded section strip is placed, and a movable jaw or finger 12 that is situated opposite the angle of the bracket 11 and engages the notched ends of the strip and forces them together. The jaw or finger 12 is pivoted to a bracket 13 on the underside of the board 10, and it has a long downward extension, or arm 14 that terminates at its lower end in a horizontal treadle 15 by which the foot of the operator, sitting before the press may swing the clamp jaw 12 to and fro.

The stationary V-shaped clamp member 11, has at its bottom a flange 16 which at opposite sides is attached to the board 10 by nuts and bolts 17, the bolts passing through horizontal slots 18 to enable such lateral adjustment of the member 11 as is needful to suit the press to sections or boxes of somewhat diverse form. I use one of the bolt and nut devices for the attachment of a downwardly extending arm 19 of heavy wire, or rod that is provided at its upper end with a loop or hook 20 to pass around the bolt, and at its lower end has an eye 21

for a horizontal bolt 22 for the pivotal connection thereto and support therefrom of an upwardly extending forked or bifurcated arm 23. Pivoted to the divergent upper, 5 free ends of the arm 23 is a three sided frame 24 formed of metal pipe or tubing, preferably copper, the pipe extremities 26 at the open side of the frame 24 being extended outward through the forks of the 10 arm 23 to form the pivot and said extremities are, respectively connected to a section of flexible pipe 27 that leads to and supplies steam from a suitable source (such as a small boiler conveniently at hand) and a 15 section of flexible pipe 28 that leads the steam from said frame 24, so that steam circulates, or passes through the frame. At 20 tached to the pipe frame 26 parallel with the pivotal axis thereof, is a thin, flat metal plate 29 of a length something less than the side of the honey section lying on one of the sides of the V shaped clamp member 11, so that by the swinging of the forked 25 arm 23 on its pivot bolt, said plate may be swung into and out of the honey section resting upon said clamp member 11, and by reason of the pivotal connection of the pipe frame 26 with said forked arm the plate may slide or pass in contact with and over 30 the inner surface of said section lying upon the clamp member 11. A coil spring 30 is placed upon one of the pipe extremities 26, with an extension engaging the adjacent pipe frame and an extension engaging the 35 adjacent fork of arm 23, and said spring yieldingly swings the plate toward such inner surface of the section side, the movement of the plate under the action of the spring being limited or controlled by a 40 curved metal arm 31 secured at one end by the same bolt which clamps or holds the fork supporting arm 19. To cause the swinging movements of the plate carrying forked arm 23 to take place automatically 45 and concurrently with the movements of the clamp jaw 12, I attach said arm 23 by a link 32 to the treadle member 14.

The plate 29 is, of course, heated by steam passing through the pipe frame 26. If then, 50 a strip or piece of wax foundation, or "starter", as it is called, is placed by the operator within a folded honey section lying on the board 10, between the clamps 11 and 12, and with one edge contiguous to the side 55 of the section over which the plate travels, it will be evident that the advancing edge of the hot plate will touch or be touched by the edge portion of the wax starter and melt the same, so that if it then be pressed 60 against the section side it will adhere thereto. Any surplus melted wax, by the sliding movement of the plate in its return, is wiped over the adjacent section side surface, where it remains, and it will be utilized 65 by the bees, although not much is so disposed

of, for the melted wax in the larger part flows to the starter edge and acts to cement the starter firmly in position. Thus no melted wax is wasted.

It will be seen that by my invention, 70 whereby steam is used to heat the plate, the latter is always at just the right temperature; there is no hot lamp, or stove to work over, for the lamp or stove 33 for generating the steam (which may be a single 75 burner kerosene stove) may be located a safe, comfortable distance away, since the steam is conveyed therefrom by the flexible supply tube 27; there is no danger of soot getting 80 on the sections; and the work is done conveniently, comfortably, rapidly and efficiently. An important advantage in the use of steam, and the employment of the flexible discharge tube 28, is that it enables 85 the moistening of the V-grooves in the section before they are folded, in a convenient and most efficient manner for the tube 28 can be handled to direct the jet of steam issuing therefrom, to said V-grooves, as the 90 supply of straight strips lies, (as is customary), upon a support on the base board 10, above the movable clamp jaw 12. The steam, by moistening the wood prevents the fibers of the wood from breaking, when the folds are made to give the strip the rectan- 95 gular form of the section. The common practice is to moisten the wood with a wet sponge or brush, a procedure clumsy and slow, and fraught with danger because, unless care is taken, the wood will be made 100 too wet with the result that it will swell, or thicken where the folds are made and thus prevent the section being given the necessary square shape at the corners.

Of course, my invention is applicable to 105 the putting of wax comb foundation on brood frames, for which purpose the hot plate would be made longer than for sections, and it is to be understood that I include this application of it; and it is to be 110 understood that variation in the proportion and the construction of parts in other respects may be made without involving any departure from the principle of my invention, which in its broadest aspect compre- 115 hends a starter or foundation engaging plate or tool and means associated therewith in an organized relation for heating the same.

Having thus described my invention what 120 I claim is—

1. As an improvement in devices of the class described, a section or frame support, a plate of a size and shape to move into the section or frame into contact with a starter 125 placed therein, means movably connecting said plate to said support, said plate having an attached steam passage, a source of supply of steam and a flexible connection between said source and said passage that per- 130

mits movement of said plate, and means to move said plate toward and from the starter in the section or frame.

5 2. As an improvement in starter attaching devices, a starter engaging tool, means for supplying steam to said tool to heat the same, and a pipe having a steam outlet whereby steam may be applied to unfolded section strips.

10 3. As an improvement in starter attaching devices, a starter engaging plate, a pipe

connected thereto, a pivotal support for the plate and pipe to which the pipe is pivotally connected, a spring acting to move the pipe and plate in one direction, a guide 15 to control the position of said plate in its to and fro movement with the steam pipe, and means for connecting one end of the steam pipe with a source of supply of steam.

In testimony that I claim the foregoing 20 I have hereunto set my hand.

HUBER H. ROOT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."