March 29, 1927. 1,622,855

B. S. WARNER

WORK HOLDER

Filed Aug. 9, 1926

Fig. 1.

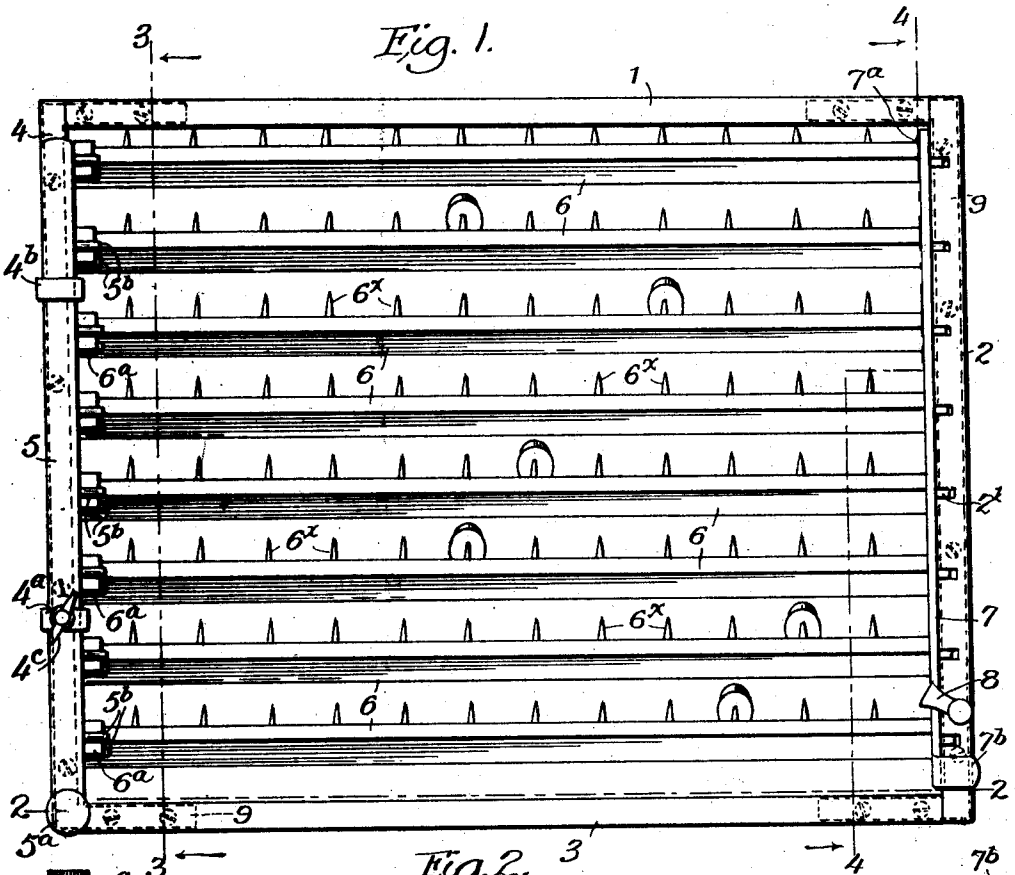


Fig. 2.

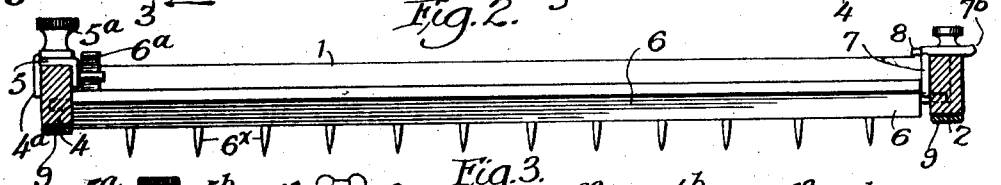


Fig. 3.

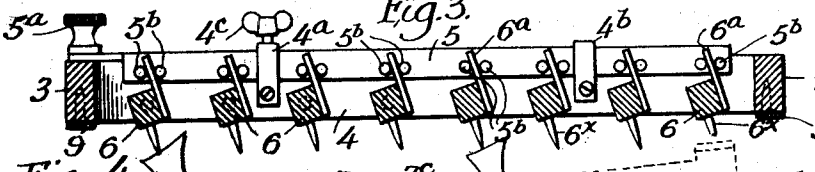
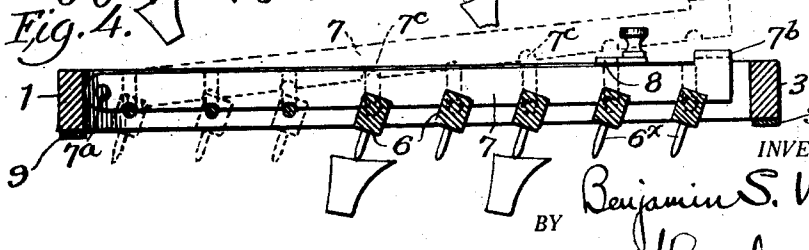


Fig. 4.



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UNITED STATES PATENT OFFICE.

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WORK HOLDER.

Application filed August 9, 1926. Serial No. 128,156.

This invention is a novel improvement in work holders for use in connection with the enamel coating machines and the like, and the principal object of invention is to provide a novel work holder having a plurality of parallel work-carrying bars rotatably mounted therein, such bars being each provided with means for holding the articles to be coated, and the bars being removable from the frame of the work holder for attaching the articles thereto; means being also provided for adjusting the angularity of all the bars simultaneously with respect to the frame of the work holder.

I will explain the invention with reference to the accompanying drawing which illustrates one practical embodiment thereof to enable others familiar with the art to adapt and use the same, and will summarize in the claims the novel features of construction, and novel combinations and parts, for which protection is desired.

In said drawings;

Figure 1 is a top plan view of the work holder;

Fig. 2 is a section on the line 2—2, Fig. 1;

Fig. 3 is a section on the line 3—3, Fig. 1;

Fig. 4 is a section on the line 4—4, Fig. 1.

As shown in the drawings, my novel work holder preferably comprises a square or rectangular frame consisting of parallel members 1, 2, 3, and 4, the dimensions of the frame being adapted to suit the particular elevator of the coating machine with which the work holder is to be used. Preferably the frame members are joined together by means of U-shaped plates 9 fitted to the bottom of the frame members at opposite ends thereof, the plates 9 being screwed or otherwise attached to the bottom side of the frame members to form a rigid frame.

Upon the top of one of the frame members, such as member 4, is a longitudinally movable slide 5 having a knob 5^a at one end by which the slide 5 may be reciprocated upon member 4, member 5 being guided by straps 4^a, 4^b, and one of the straps, such as 4^a, being provided with a thumb screw 4^c adapted to bind slide 5 in adjusted position upon frame member 4.

In the inner face of member 4 below the slide 5 are a plurality of holes or recesses adapted to form bearings for pins on the ends of the work-carrying bars 6, which are rotatably mounted between the opposed members 2 and 4 of the frame, and are provided with nails or spikes 6^x projecting from one face thereof, upon which the work, such as heels may be driven. In order to charge the bars 6 with heels or other articles, it is only necessary to turn the bars 6 upside down, and to drive the articles on the spikes 6^x by means of a hammer or other suitable tool.

On each of the bars 6 adjacent the member 4 are upstanding tongues 6^a which are passed between spaced pins 5^b on the inner side of slide 5, whereby as the slide 5 is reciprocated the bars 6 will be simultaneously rocked in the frame.

The opposite ends of bars 6 are provided with bearing pins adapted to fit in bearing holes in the opposite frame member 2 which grooves register with vertically disposed recesses 2^b in the member 2 whereby the adjacent ends of bars 6 may be readily raised out of their bearings in the member 2 and the strips removed from the frame.

On the inner face of member 2 is a bar 7 pivoted at one end as at 7^a, the opposite end being flanged as at 7^b and adapted to overlie the top of member 2 as shown in Fig. 1, the flange 7^b serving as a handle to lift or pivot the member 7, as shown on dotted lines in Fig. 4. In the bottom edge of member 7 are a series of recesses 7^c which register with the bearings in member 2 when the member 7 is in normal depressed position to prevent the bearing pins on the adjacent ends of bars 6 from rising out of their bearings in member 2.

Upon the top of member 2 is a pivoted lug 8, adapted when swung over the top of bar 7 as shown in Figure 1, to prevent member 7 from rising and thereby permitting the ends of bars 6 from becoming disengaged from their bearings.

In operation, when it is desired to drive the heels on the spikes 6^x of bars 6, preparatory to coating the heels, the pivoted lug 8 may be swung parallel with the member 2, thereby permitting the hinged member 7 to be raised into position shown in dotted lines in Fig. 2. When so raised, bars 6 may each be removed from the frame and the heels, or other articles to be coated, driven upon the spikes 6^x. When the bars have been thus loaded the bars may be re-inserted in their

proper positions in the frame with the tongue 6^a of each bar entered between its respective pair of pins 5^b on the slide 5 as shown in Fig. 3. When all of the bars have been thus reinserted in the frame member 7 may then be depressed and locked in position by lug 8, and the frame placed upon the elevator of the coating machine and lowered to proper depth to immerse the heels on the spikes 6^x in the coating solution in the vat of the machine. After the heels have been dipped and as they are being raised from the coating solution, the bars should be tilted simultaneously by adjusting the slide 5 by means of knobs 5^a. The tilting of bars 6 is desirable, and in fact necessary, because the tops of the heels are concave to fit the heel seats of the shoes, and when the bars 6 are properly tilted the coating solution in the cavities at the tops of the heels runs out. The heels may then be again swung into vertical position in order to cause the coating material to flow uniformly over the side surfaces of the heels. After the coating operation the bar 7 is again raised and the bars 6 with the coated heels thereon taken out of the frame and other bars 6 which have been loaded with heels may be re-inserted in the frame and the coating operation repeated.

I do not limit my invention to the exact form shown in the drawing for obviously changes may be made therein within the scope of the claims.

I claim:—

1. A work holder of the character specified comprising a frame; a plurality of parallel work-carrying bars each provided with a series of spikes rotatably mounted in the frame; and means for simultaneously rocking said bars.

2. In a work holder as set forth in claim 1, said bars each being removable from the frame; and means for retaining the bars in the frame.

3. In a work holder as set forth in claim 1, said rocking means comprising a slide mounted on the frame; and means connecting the slide to the bars respectively, whereby as the slide is reciprocated the bars will be rocked.

4. A work holder of the character specified comprising a rectangular frame; a plurality of parallel work-carrying bars each provided with a series of spikes, and pivoted at their ends in opposed members of the frame; and means for simultaneously rocking said bars.

5. In a work holder as set forth in claim 4, said bars being each removable from the frame; and means for retaining the bars in the frame.

6. In a work holder as set forth in claim 4, said rocking means comprising a slide mounted on the frame adjacent the ends of the bars; tongues on the bars extending adjacent the slide; and means on the slide engaging the tongues respectively, whereby as the slide is reciprocated the bars will be rocked.

7. A work holder of the character specified comprising a rectangular frame having sets of opposed bearings in the inner faces of opposite members of the frame, the bearings of one set being open normally; a plurality of removable parallel work-carrying bars rotatably mounted in the opposed bearings; and means for closing the set of open bearings.

8. In a work holder as set forth in claim 7, said means comprising a member pivoted on the inner face of the frame member carrying the open bearings, said member having recesses in its lower edge adapted to register with the open bearings.

9. In combination with a work holder as set forth in claim 7, means for simultaneously rocking the bars, comprising a longitudinally movable slide on the frame adjacent the ends of the bars; said slide having pairs of spaced pins on its inner face above the bars respectively; and tongues on the bars extending between their respective pairs of spaced pins.

10. A work holder of the character specified comprising a rectangular frame having sets of opposed bearings in the inner faces of opposite members of the frame, the bearings of one set being open at their upper ends; a plurality of removable parallel bars rotatably mounted in the opposed bearings; and bars each having a plurality of work holding spikes projecting from one face; and means for normally retaining the bars in said bearings.

11. In a work holder as set forth in claim 10, said means comprising a member pivoted at one end on the inner face of the frame member carrying the open bearings, said member having recesses in its lower edge adapted to register with the open bearings; and means for locking the member in position to close the open ends of the bearings.

12. A work holder comprising a frame; a plurality of parallel work-carrying bars rotatably mounted in the frame; a longitudinally movable slide on the frame adjacent the ends of the bars; said slide having pairs of spaced pins on its inner face above the bars respectively; and tongues on the bars extending between their respective pairs of spaced pins.

13. A work holder of the character specified comprising a frame; a plurality of parallel work carrying bars each provided with a series of spikes rotatably mounted in the frame; said bars each being removable from the frame; means for retaining the bars in the frame; a slide mounted on the frame; and means connecting the slide to

the bars respectively, whereby as the slide is reciprocated the bars will be simultaneously rocked.

14. A work holder of the character specified comprising a rectangular frame; a plurality of parallel work carrying bars pivoted at their ends in opposed members of the frame; said bars being each removable from the frame; means for retaining the bars in the frame; a slide mounted on the frame adjacent the ends of the bars; tongues on the bars extending adjacent the slide; and means on the slide embracing the tongues respectively, whereby as the slide is reciprocated the bars will be simultaneously rocked.

In testimony that I claim the foregoing as my own, I affix my signature.

BENJAMIN S. WARNER.