April 3, 1928. 1,664,423

C. JOBST

MULTIPLE WORK CLAMP FOR BRUSH MACHINES

Filed May 14, 1923

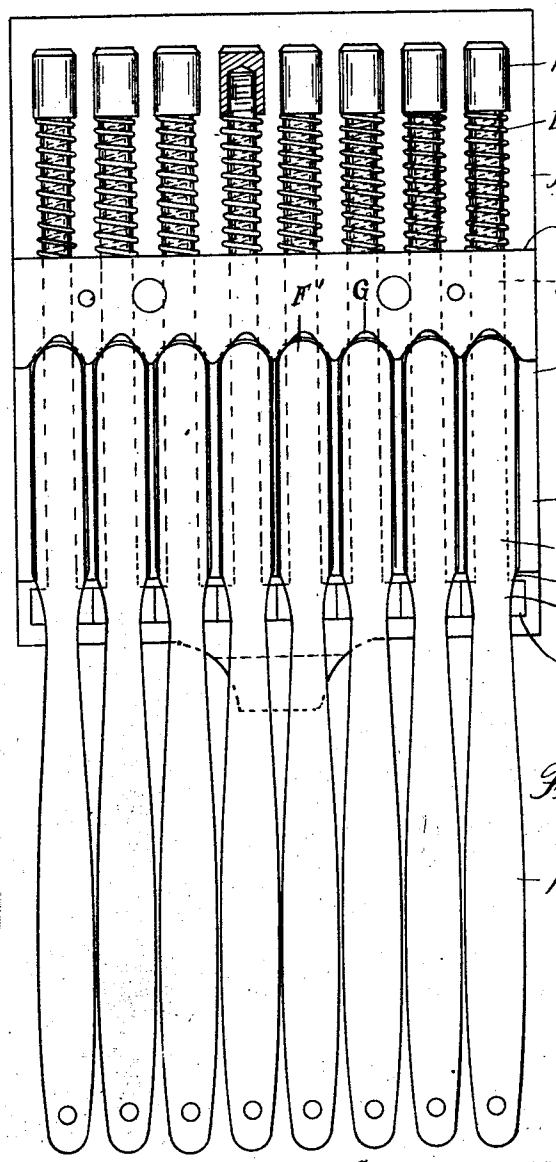


Fig. 1.

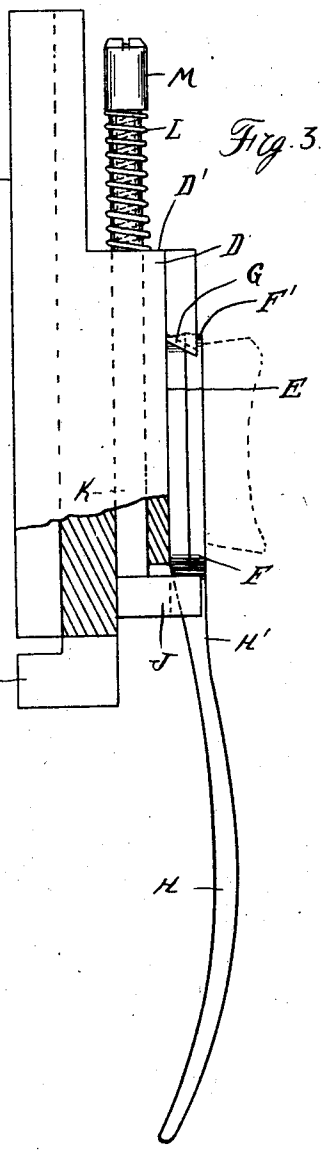


Fig. 3.

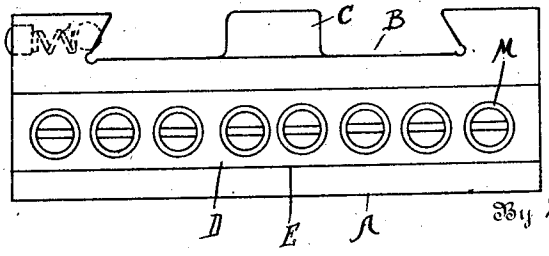


Fig. 2.

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UNITED STATES PATENT OFFICE.

CONRAD JOBST, OF TOLEDO, OHIO, ASSIGNOR TO THE TOLEDO AUTOMATIC BRUSH MACHINE COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

MULTIPLE WORK CLAMP FOR BRUSH MACHINES.

Application filed May 14, 1923. Serial No. 638,908.

The invention relates to an improvement in work holders to be used in conjunction with brush machines adapted for the manufacture of small brushes, such as tooth brushes. A machine of this general type has been described in my copending application, Serial Number 527,592, filed January 7, 1922, and consists in an arrangement whereby a plurality of brush backs are mounted upon a common holder and subjected to successive operations by drilling, tufting and trimming mechanisms. The holder is so fashioned that it may be exactly positioned in the machine in order to register with the respective mechanisms, the brush backs themselves remaining clamped in the holder until all of the operations are finished.

The object of this invention is to provide a multiple clamp work holder in which the brush backs may be quickly loaded and unloaded and yet will be firmly held in position during the operation of the machine. This is accomplished by certain novel features of construction which are illustrated in the accompanying drawings, in which:—

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

Figure 2 is an end view thereof;

Figure 3 is a side view.

The work holder comprises a base A which is formed with a dove-tailed guideway B on its underside for engaging corresponding ways on a suitable brush machine in order to secure exact alignment with the operating mechanisms. A projecting lug C is also provided for engaging with cooperating bearings on the machine to secure an exact position longitudinally of the ways.

On the upper side of the work holder there is an upstanding portion D having a plane surface E on which are mounted the brush backs F, the forward ends F′ of which engage notched abutments G. These abutments are preferably undercut to firmly press the backs against the surface D and to normally prevent disengagement.

The brush backs F, as shown, are provided with integral handles H formed with a contracted portion H′ adjacent to the back thereby forming the rounded shoulders I. For engaging these shoulders there are the bifurcated clamping jaws J which extend transversely from rods K slidably arranged in the upstanding portion D of the work holder and extending longitudinally of the same. A spring L is sleeved upon the opposite end of each rod K between a collar M and the end surface D′ of the work holder. The spring yieldingly holds the jaws J in a position to clamp the brush backs firmly to the work holder.

For loading the backs into the work holder, the shoulders I are engaged with the yielding jaws J and the handle is moved slightly against the action of the spring L whereupon the forward end of the brush back F′ may be entered in the notched abutment G and the back snapped into place. Thus, it will be seen that I have provided a simple arrangement whereby the brush backs may be quickly loaded and unloaded yet they will be securely held in position during the operation of the machine. It will be noted that the handles of the brush backs extend out from the work holder and this forms a convenient means for transferring the work holder to the various units of the machine in which the drilling, tufting and trimming operations are to be performed.

What I claim as my invention is:—

1. In a brush making machine, a holder for the brush back of the type provided with an integral handle having a contracted portion, comprising a fixed abutment for engaging the end of said brush back, a bifurcated abutment for engaging the contracted portion of said handle and yieldable in the lengthwise direction of the brush back, and resilient means for urging said yieldable abutment toward said fixed abutment.

2. In a brush making machine, a holder for a brush back of the type provided with an integral handle having a contracted portion, comprising spaced abutments for respectively engaging the end of said brush back and the contracted portion of said handle one of said abutments being movable towards the other in the lengthwise direction of the brush back, and resilient means for urging said movable abutment towards the other.

3. In a brush making machine, a holder for a brush back of the type provided with an integral handle having a contracted portion, comprising a V-shaped abutment having an under cut for engaging one end of said brush back, a yieldable bifurcated abut-

ment for engaging the contracted portion of said handle, and resilient means for urging said bifurcated abutment towards the V-shaped abutment.

4. In a brush making machine, a work holder comprising a base, a fixed abutment secured to said base, a rod slidable in said base and provided with a bifurcated end projecting above said base, and a spring sleeved on said rod for urging said bifurcated end towards said fixed abutment.

5. In a brush making machine, a work holder for a plurality of brush backs comprising a base having a series of laterally aligned fixed abutments for engaging the ends of the respective brush backs, a series of yieldable abutments for engaging the opposite ends thereof, said two series of abutments being respectively arranged in substantially straight lines parallel to each other, and resilient means for urging said yieldable abutments towards said fixed abutments.

6. In a brush making machine, a work holder for a plurality of brush backs comprising a base having a supporting surface, a series of V-shaped fixed abutments arranged transversely of said base and projecting above said surface, a series of cooperating bifurcated abutments spaced from said fixed abutments, and resilient means for urging said bifurcated abutments toward said fixed abutments.

7. In a brush making machine, a work holder for a plurality of brush backs comprising a base having a supporting surface, a series of V-shaped fixed abutments arranged transversely of said base and projecting above said surface, a series of cooperating bifurcated abutments spaced from said fixed abutments, a series of rods secured to said bifurcated abutments and longitudinally slidable in said base, collars on said rods, and springs sleeved upon said rods between said collars and said base.

8. In a brush making machine, a work holder comprising a base having a supporting surface, a fixed abutment on said base, a rod slidable in said base, a movable abutment carried by said rod, and means for yieldingly urging said movable abutment towards said fixed abutment in a direction lengthwise of said rod.

9. In a brush making machine, a holder for a brush back of the type provided with an integral handle having a contracted portion comprising a base, an abutment for engaging the end of said brush back, a bifurcated abutment spaced from the first mentioned abutment and adapted to engage the contracted portion of the handle, one of said abutments being fixedly mounted on said base and the other abutment being movably mounted thereon, and resilient means for urging said movable abutment longitudinally of the brush back toward said fixed abutment to clamp said brush back in position.

10. In a brush making machine, a holder for a plurality of brush backs of the type provided with an integral handle having a contracted portion comprising a base, a series of laterally aligned abutments for engaging the ends of the brush backs, a series of laterally aligned bifurcated abutments for engaging the contracted portions of the handles, the abutments in one laterally aligned series being fixedly mounted on said base and the abutments in the other laterally aligned series being movably mounted on said base, and means for resiliently urging said movable abutments toward said fixed abutments to independently clamp the respective brush backs in position on said base.

In testimony whereof I affix my signature.

CONRAD JOBST.