Oct. 29, 1935. J. D. COUGHLIN 2,018,839

MACHINE FOR SEALING WIRE IN A WOODEN MEMBER

Filed April 8, 1933 2 Sheets-Sheet 1

Fig. 2

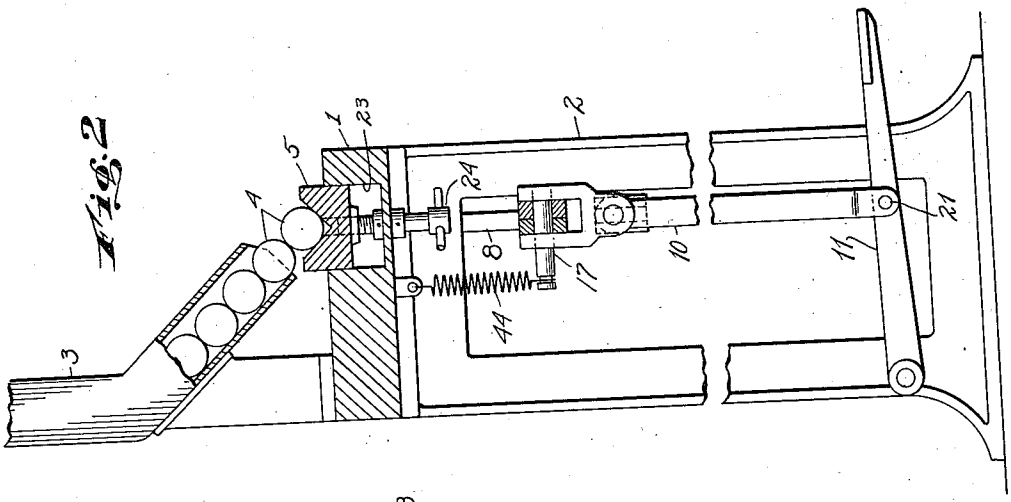
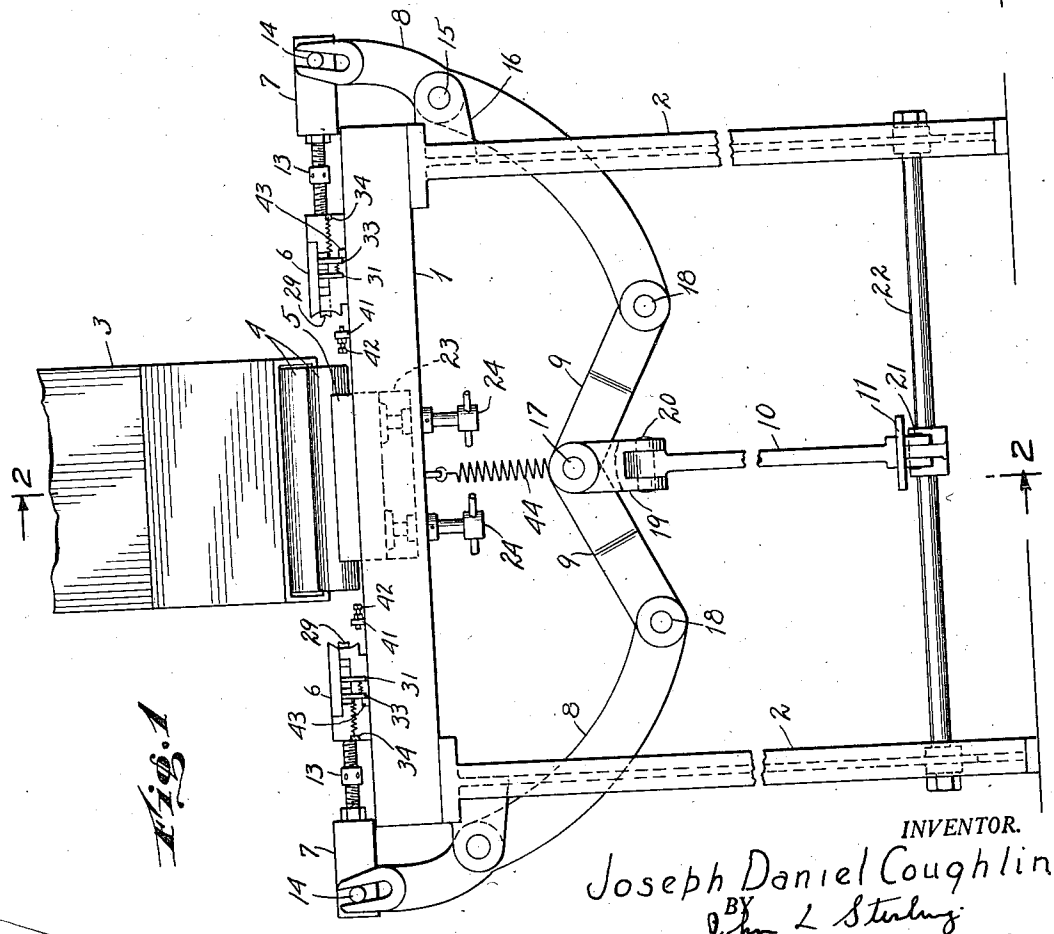


Fig. 1



INVENTOR.

Joseph Daniel Coughlin

BY John L Sterling

ATTORNEY

Oct. 29, 1935. J. D. COUGHLIN 2,018,839

MACHINE FOR SEALING WIRE IN A WOODEN MEMBER

Filed April 8, 1933 2 Sheets-Sheet 2

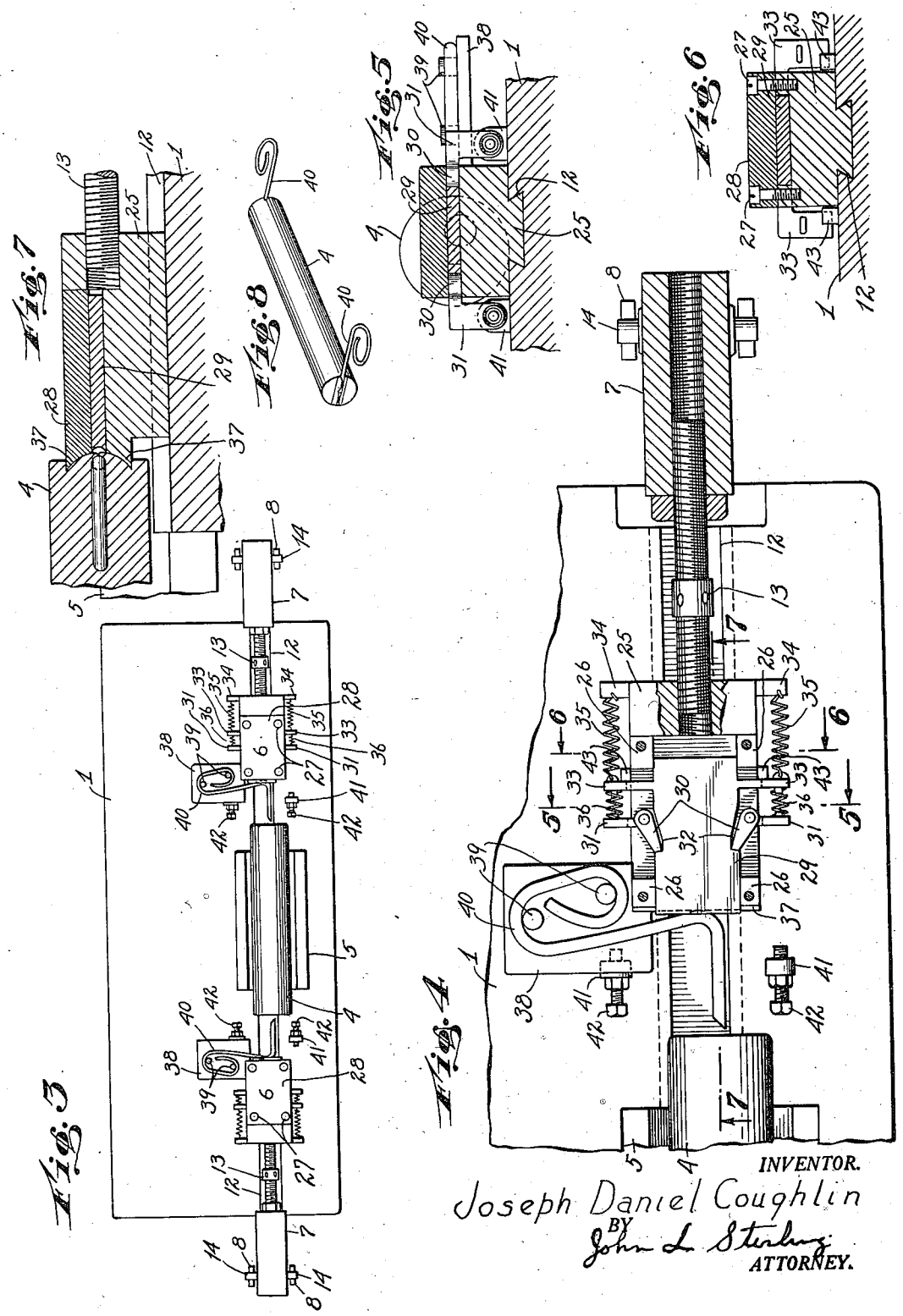


Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

INVENTOR.
Joseph Daniel Coughlin
BY
John L. Sterling
ATTORNEY.

Patented Oct. 29, 1935

2,018,839

UNITED STATES PATENT OFFICE

2,018,839

MACHINE FOR SEALING WIRE IN A WOODEN MEMBER

Joseph Daniel Coughlin, New York, N. Y., assignor to Jaydel Novelty Manufacturers, Inc., a corporation of New York

Application April 8, 1933, Serial No. 665,185

6 Claims. (Cl. 29—84)

This invention relates to a device for securing a wire member in the end of a wooden handle and more particularly to a machine for manufacturing package carriers comprising a handle member having cord engaging hooks secured thereto.

As is well known in the art there are many types of package carriers some of which comprise a hollow wooden handle member with a wire passing through the centre thereof and having cord engaging hooks formed on each end. Other types have the cord engaging members secured to the handles by means of fasteners of various types.

It is therefore the purpose of this invention to provide a machine for manufacturing a package carrier handle comprising a cylindrical grip member, of any suitable material, such as wood, having cord engaging hooks driven into the ends thereof and having the wood or other material sealed about the cord hooks.

The machine is adapted to drive a cord hook of wire or other suitable material into the end of a solid grip member of wood or other material, such as a dowel which has been cut to a predetermined length. The dowels are fed onto a V block and the hook members are preformed and placed on a guide which is a part of a driving and folding tool. The driving tool is retractable with relation to the folding tool. Both are driven forward by any suitable means until the hook member has been driven a predetermined distance into the end of the dowel, at which time the driving tool is retracted and the folding tool continues to move forward cutting a shallow slot in the end of the dowel and folding the wood about the hook member thereby sealing the wire into the wood and forming a substantially unitary structure.

It is therefore the principal object of this invention to provide a machine for assembling and forming a novel form of package carrier.

A further object is to provide a machine which is adapted to seal the cord engaging hooks of a package carrier handle into the grip portion thereof thereby forming a substantially unitary structure.

A still further object is to provide a machine which is simple in operation and which will efficiently and effectively seal wire members in the end of a wooden handle.

A more clear conception of the construction, operation and further objects of the invention may be had from the following specifications, taken in conjunction with the accompanying drawings in which:

Fig. 1 discloses the invention in front elevation,

Fig. 2 is a cross section thru 2—2 of Fig. 1,

Fig. 3 is a plan view of the invention,

Fig. 4 is an enlarged representation of the driving, cutting and folding tools, with the top plate removed,

Fig. 5 is a cross section thru 5—5 of Fig. 4,

Fig. 6 is a cross section thru 6—6 of Fig. 4,

Fig. 7 is a cross section thru 7—7 of Fig. 4 and

Fig. 8 is a view in perspective of a finished package carrier.

As disclosed in Figs. 1, 2 and 3 the machine embodying the invention comprises a bed plate 1 supported by any suitable means such as framework 2. Mounted on the bed plate 1 is a hopper and chute 3 from which the dowels 4 are fed to a V block 5 centrally located on the bed plate. Situated in line with and on each side of the V block are the driving and sealing tools 6 which are adapted to be moved into and out of engagement with dowel 4, positioned on V block 5, by means of arms 7, bell crank levers 8, and link members 9, which are in turn operated by draw bar 10 pivotally connected to a foot pedal 11. It is obvious that other means such as a motor operated cam and lever may be used in place of the bell crank and foot pedal. The tool 6 is positioned in a gib or guideway 12 cut in the bed plate and is connected to arm 7 by a right and left handed adjustment screw 13 by means of which the distance travelled by the tool 6 may be varied in accordance with the length of dowel used. The arm 7 has a stub shaft 14 projecting from each side thereof which is adapted to cooperate with a fork formed in the end of bell crank 8. The bell crank is pivoted on a pin 15 carried in a boss 16 formed on the framework 2. The links 9 are pivotally connected together by pin 17 and to bell cranks 8 by pins 18. The pin 17 also connects the links 9 to a hanger 19 formed as shown. The hanger is in turn connected to draw bar 10 by means of pin 20. A tension spring 44 connects hanger 19 to the under side of base 1. A pin 21 pivotally secures bar 10 to the foot pedal 11 which is in turn pivotally mounted on shaft 22 carried by frame 2.

The V block 5 is positioned in a slot 23 cut in the bed plate and is vertically adjustable thereto by means of adjustment screws 24 thus permitting the V block to be raised or lowered thereby centering a dowel carried thereon directly opposite the driving tool regardless of the diameter of the dowel.

The tools 6 are identical in structure so therefore a description of one will clearly define their construction and operation. The main body or base 25 of the tool is formed as shown in Figs.

4 and 7, having a tenon formed on the bottom thereof cooperating with guideway 12. The rear portion of the base is formed as shown having a hole tapped therein to accommodate an adjustment screw 13. Four bosses 26 are formed on the base which are tapped to accommodate screws 27 which are used to secure a cover plate 28 in place. The bosses 26 are slightly taller than the thickness of the driving plate 29 which is positioned therebetween. This allowance is made to permit free movement of the driving tool or plate. Pivotally mounted on base 25 are two pawl members 30 which are formed as shown in Fig. 4. The pawls have L shaped arms 31 formed integral therewith as disclosed in Fig. 5. The driving tool 29 is a flat plate having an arcuate notch cut in the front face thereof, as shown in Fig. 7, which is adapted to hold the wire hook member while being driven into the dowel. The driving plate has a notch 32 cut in each side adapted to cooperate with the pawl 30. The locking action of the pawls and notches causes the driving plate to be carried forward by the base or folding tool 25. The driving plate also has an arm 33 formed on each side thereof as shown in Figs. 4 and 6. Base 25 also has an arm 34 formed on each side near the end. A tension spring 35 connects arms 33 and 34 and a compression spring 36 is positioned between arms 31 and 33. The function of these springs will be hereinafter described. The front edges of base 25 and cover plate 28 are provided with cutting edges 37 as shown in Fig. 7 thereby forming the cutting and folding tool. The base 25 has a plate 38 formed integral therewith which is provided with a pair of pins 39 and acts as a carrier and guide for the wire hook member 40.

Formed on or secured to the bed plate 1 in any well known manner are a pair of lugs 41 which are tapped to accommodate an adjustment screw 42 which is in turn adapted to engage the arm 31 on the pawl 30 and cause the pawl to be withdrawn from the notch 32. These adjustment screws 42 may be so positioned that the pawl is withdrawn at a certain predetermined point in the stroke of the machine. Two additional lugs 43 are formed on bed plate 1 and are so positioned that they cooperate with arms 33 and are used to reset the pawls 30 after a complete stroke of the machine has been finished. When the pawl is withdrawn from the notch 32 by the action of arm 31 against the screw 42 the tension spring 35 retracts the driving tool until the arm 33 strikes the boss 26. The driving plate remains in this position until on the return stroke the arm 33 strikes the lug 43 thereby holding the driving plate stationary and the folding and cutting tool is drawn back until the pawl 30 again engages the notch 32.

In operation the machine completes a cycle in the following manner: a dowel 4 is fed to the V block by gravity and the pre-formed wire hook 40 is positioned on the pins 39. The operator then actuates the foot pedal 11 thereby drawing links 9 down against the tension of spring 44 thus forcing the bell crank levers 8 outwardly. The bell crank levers pivoting on pins 15 move the tools 6 toward the dowel through the action of the fork on pins 14 and the medium of arms 7 and adjustment screws 13. The tools 6 with the plates 38 carry the wires 40 forward and they are forced into the end of the dowel by the driving tools 29 until a predetermined point is reached at which time the arms 31 come in contact with adjustment screws 42 thereby tripping the pawls 30 and permitting the driving plate to be withdrawn as shown in Fig. 7. The cutting edges 37 now cut a small slot in the end of the dowel and the wood thus cut is folded over the wire hook. The operator then releases the foot pedal 11 and the tension spring 43 draws the arms 9 up, in turn drawing in the end of bell crank levers 8 thereby withdrawing the tools 6. The tools 6 are withdrawn until the arms 33 come into contact with the lugs 43 thereby holding the plate 29 until the pawls 30 again engage the notches 32. In the meantime the operator has removed the finished carrier handle thereby allowing another dowel to fall onto the V block. Another set of wire hooks is then positioned on the pins 39 and the machine is ready for another cycle.

It is obvious from the above description the uses of this machine are not limited to the manufacture of carrier handles but may be successfully used in the manufacture of any article in which a wire member is driven into a wooden block and sealed therein such as certain forms of brushes and light tools.

I claim:

1. In a device of the type described, means for driving a wire member into the end of a wooden member and means for folding the fibers of said wooden member about said wire member.

2. In a machine of the type described, a work holding member, a tool head comprising a driving plate and a cutting and folding tool, said driving plate being carried by and extending beyond the end of said cutting and folding tool, a pawl mechanism adapted to hold said driving plate in operative position with relation to said tool head, means for causing the operation of said pawl mechanism to effect the retraction of said driving plate.

3. In a machine of the type described, a bed plate, a tool head, a driving plate slidably mounted in said head, a plurality of pawls carried by said head and adapted to cooperate with said plate to maintain said plate in operative position with relation to said head, said pawls having arms formed thereon, lugs formed on said bed plate adapted to cooperate with said arms to cause the disengagement of said pawls with said driving plate to effect the retraction of said driving plate, and means on said bed plate for causing the reengagement of said pawls with said driving plate.

4. In a machine of the type described, a tool head having cutting and folding edges formed thereon, a driving plate positioned in said head, operating means adapted to give said head a reciprocating motion, means carried by said head and adapted to cooperate with said plate to permit the retraction of said plate at a predetermined position in said reciprocating motion, said machine having means thereon for holding a wooden dowel, said tool head having a guide thereon adapted to carry a wire member, said driving plate being adapted to drive said wire member into the end of said dowel, and said cutting and folding edges being adapted to cut and fold the wood of said dowel about said wire member.

5. In a machine of the type described, a tool head having cutting and folding edges formed thereon, a driving plate slidably positioned in said head between said cutting edges, a V block for holding a wooden dowel, a guide formed on said head and being adapted to carry a wire member, reciprocating means adapted to cause said driving plate to drive said wire member into said

dowel, a pawl carried by said head and adapted to cooperate with said plate to maintain said plate in operative position with relation to said head and means for releasing and restoring said pawl at predetermined positions.

6. In a machine of the type described, a V block for holding a wooden dowel, tool heads comprising a driving member and cutting and folding members, said cutting and folding members having a guide thereon for a wire hook member, means for giving said heads a reciprocating movement thereby driving said wire members into said dowel and cutting and folding the fibers thereof about said wire members.

JOSEPH DANIEL COUGHLIN.