

April 6, 1926.

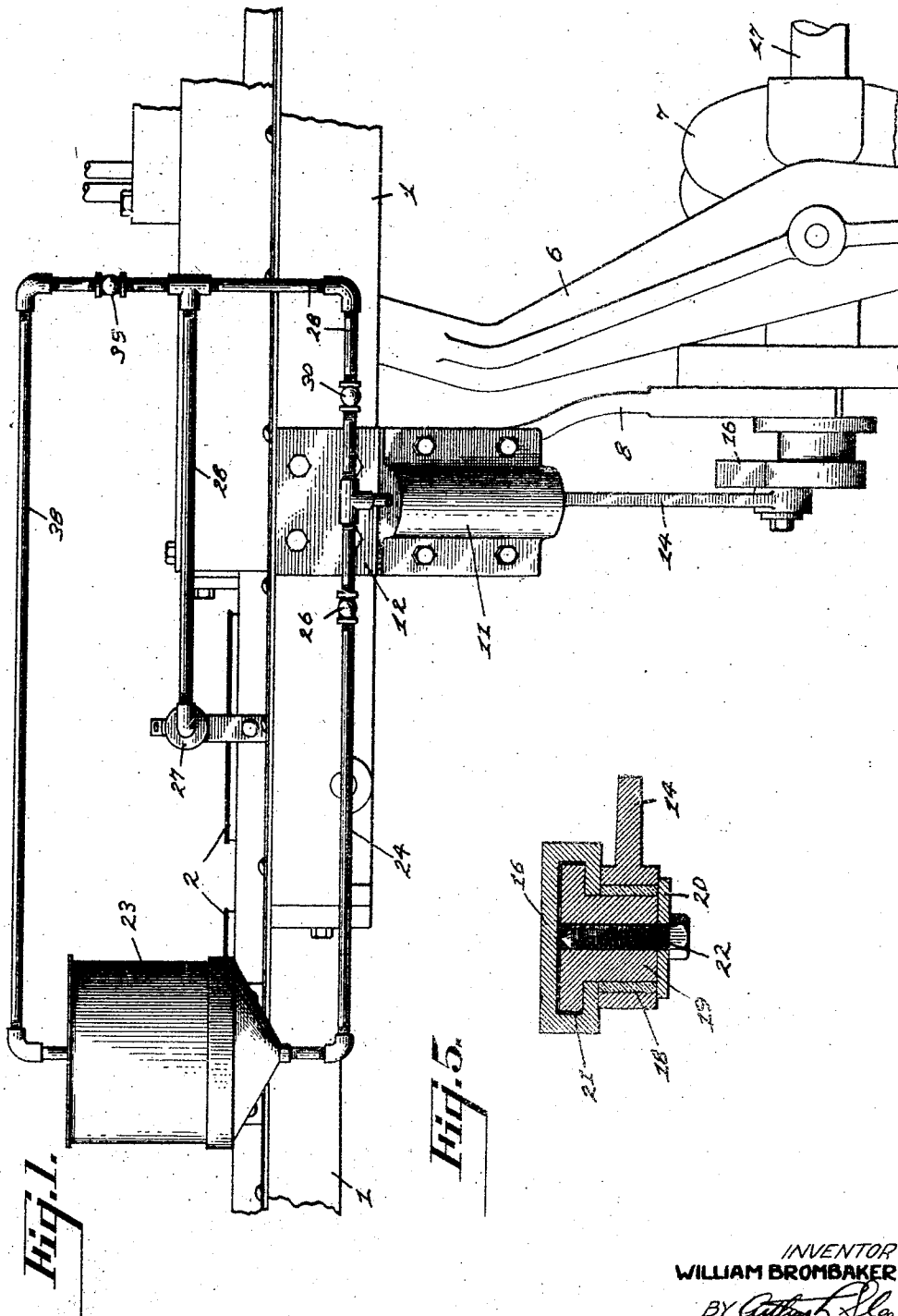
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1,579,434

SAUCE INJECTING ATTACHMENT FOR CAN CLOSING MACHINES

Filed Dec. 15, 1924.

3 Sheets-Sheet 1



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Fig. 2.

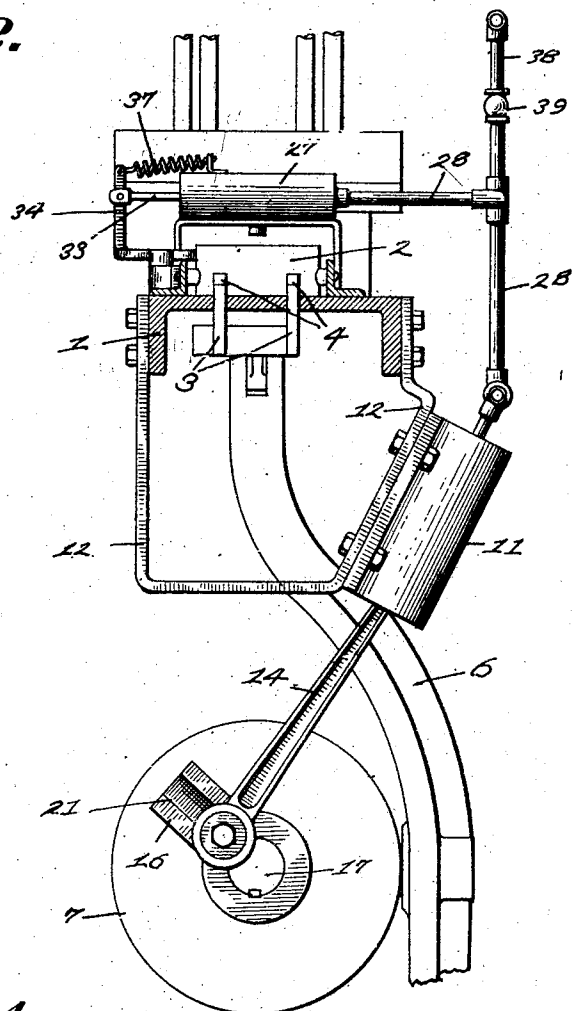
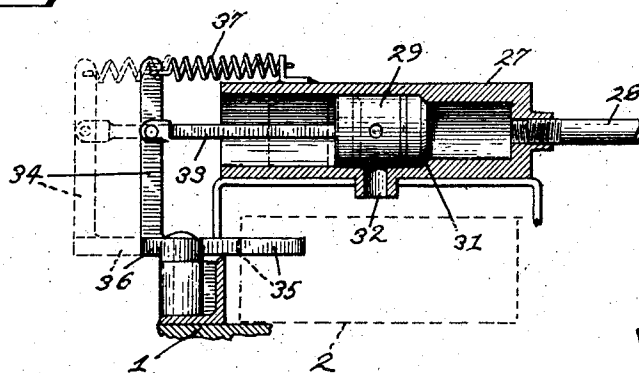


Fig. 4.



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Fig. 3.

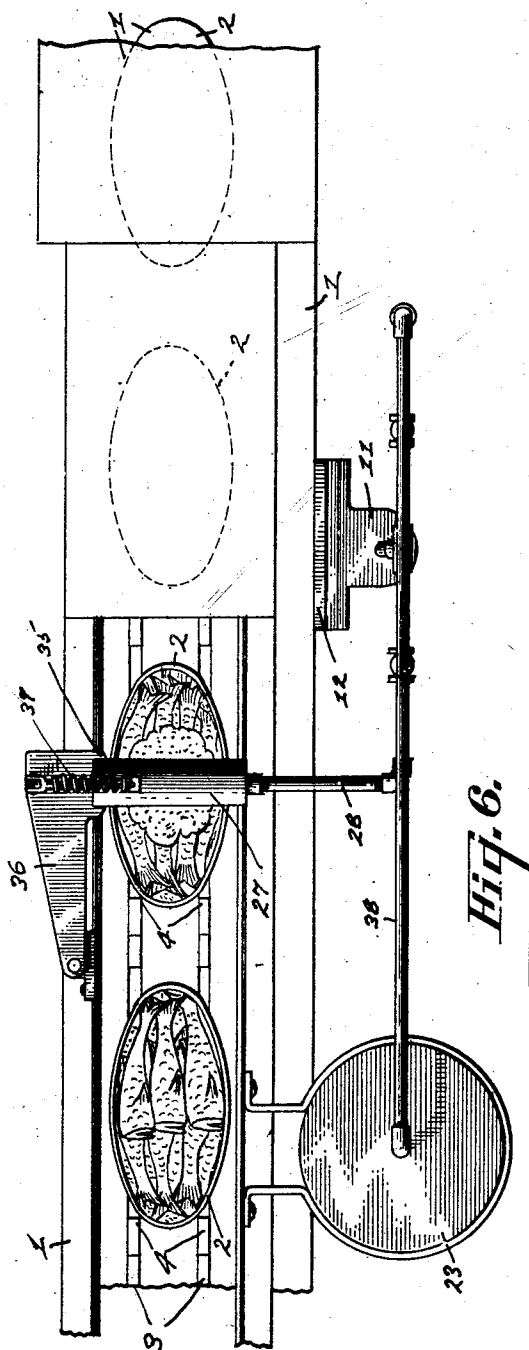
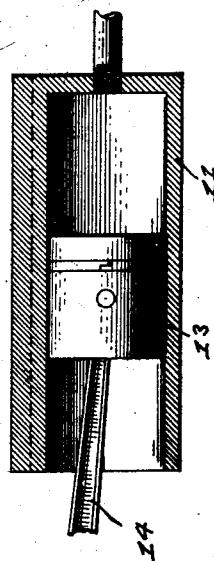


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM BROMBAKER, OF MONTEREY, CALIFORNIA.

SAUCE-INJECTING ATTACHMENT FOR CAN-CLOSING MACHINES.

Application filed December 15, 1924. Serial No. 755,991.

To all whom it may concern:

Be it known that I, WILLIAM BROMBAKER, a citizen of the United States, residing in the city of Monterey, in the county of Monterey and State of California, have invented a new and useful Improvement in a Sauce-Injecting Attachment for Can-Closing Machines, of which the following is a specification.

My invention relates to improvements in attachments for can clinching machines whereby sauce or dressing of a desired character may be injected without waste into cans after said cans have been filled with the product being canned and just prior to the placing of the cover thereon.

The present invention is directed particularly to an improved device for injecting sauce or dressing into cans previously filled with sardines, the device being attached directly upon the can clinching machine and attached directly from the main drive shaft of said machine to automatically inject a predetermined quantity of sauce into the can.

In the present practice of canning sardines and other similar foodstuffs canned in sauce or dressings of various kinds, the sauce or dressing is placed in the cans manually or by means of independently operated dispensing devices of various kinds before the sardines are packed in the cans. This method results in a great waste of the dressing and renders the quantity of sauce or dressing ultimately sealed into the can uncertain and not uniform. This is due to the fact that the amount of sauce dispensed into the can is not accurately regulated and to the further fact that, of the quantity of sauce initially placed in the can, a considerable portion is displaced from the can when the sardines are being packed therein, the displaced quantities of sauce being entirely wasted and causing an undesirable muss about the packing table.

My invention is therefore directed to an improved sauce injecting means adapted to overcome these objectional features of the present practice, the primary object of the invention being to provide an improved device which will facilitate the introduction of the sauce or dressing into the cans without causing muss and without wasting said sauce or dressing.

Another object of my invention is to provide a device which is attached directly in

connection with the can clinching machine and actuated in common therewith to introduce the sauce or dressing into the cans after filling and just prior to the closing or clinching of the cans.

A further object is to provide a device which will dispense a predetermined quantity of sauce into each can or which will automatically return the charge of sauce to the source of supply when no can is in position to receive the charge.

A still further object is to provide a device which may be readily attached upon the standard can closing or clinching machine at a nominal cost and without material alteration thereof and without impairing or interfering in any manner with the operation of the machine.

I accomplish these and other objects by means of the device disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout said specification and drawings and in which,

Fig. 1 is a broken side elevation of the forward end of a can clinching machine showing my improved sauce injecting device attached thereon.

Fig. 2 is a broken transverse vertical section of the machine showing the relation in which the pump and dispensing receiver are mounted thereon.

Fig. 3 is a broken plan view of the machine as shown in Fig. 1.

Fig. 4 is a sectional detail of the pump connecting rod bearing mounting.

Fig. 5 is a sectional detail of the dispensing receiver and plunger and the actuating means therefor.

Fig. 6 is a sectional detail of the pump.

Referring to the drawings the numeral 1 is used to designate in general the frame of a can clinching machine of the character in common use for applying and clinching the covers upon cans 2. Machines of this character are of well known construction and operation and no particular description is herein necessary other than that such machines are provided with carrier bars 3 provided with a plurality of upwardly disposed extensions 4 arranged to engage the cans 2 and move the same intermittently through the machine, said carrier bars being reciprocated by means of a rocker arm 6 actuated by a cam 7 and at the same time alternately

raised and lowered by means of a member 8 connected between the cam 7 and the carrier bars whereby the bars are raised to bring the extensions 4 into engagement with the cans during the forward movement of the carrier arms to carry the arms forward and to lower the carrier bar during the return movement thereof thereby permitting the extensions 4 to be moved rearwardly into engagement with the next succeeding can a number of cans being intermittently moved through successive steps in the can closing operation.

My attachment consists of a pump designated by the numeral 11, secured upon a bracket 12 adjacent the forward end of the frame. The pump is provided with a plunger 13 and a connecting rod 14 pivotally connected between said plunger and a crank arm 16 secured upon the end of the main shaft 17 of the machine immediately in front of the cam 7. The connecting rod is provided with a bearing portion 18 engaging a bearing pin 19 slidably mounted at its inner end within a slot 21 formed in the face of the crank arm 16. The bearing portion 18 is held in engagement with the pin 19 by means of a collar 20 secured by a screw 22 threaded into said pin and extending axially there-through into engagement with the back of the T slot 21 whereby a tightening of the screw 22 will clamp the bearing pin in a desired position along the crank for a purpose hereinafter more fully explained.

A supply tank 23 is mounted in any convenient manner adjacent the forward end of the machine 1, said tank being adapted to receive a supply of the sauce or dressing of any desired character. The tank 23 is connected with the pump 11 through a connection 24 whereby sauce may be drawn from the tank into the pump above the plunger during the suction stroke of the pump. A check valve 26 of any suitable construction is mounted within the connection 24 to prevent the return of the sauce to the supply tank during the succeeding pressure stroke of the pump.

A dispensing receiver designated in general by the numeral 27 is mounted above the frame 1 of the machine immediately over a point momentarily occupied by successive cans 2 just before said cans are moved under the cover applying mechanism of the machine. The receiver 27 is connected to the pump 11 through a conduit connection 28 whereby sauce may be forced from the pump to said receiver, said connection 28 being provided with a suitable check valve 30 to prevent the return of sauce to the pump during the suction stroke thereof.

A plunger 29 is slidably mounted within the receiver 27, said plunger being normally seated against a beveled shoulder 31 so positioned that the body of the plunger will normally close a dispensing opening 32

formed in the lower side of the receiver. The plunger is provided with a stem 33 extending outwardly from the receiver and connected to an upwardly extending arm 34 formed upon an actuating member 36 pivotally mounted upon the frame 1 of the machine adjacent the receiver. A spring 37 is connected between the end of the arm 34 and the receiver to hold the actuating member 36 and the plunger 29 in normal position. A laterally disposed extension 35 is formed upon the inner side of the member 36 in a position to be engaged by the adjacent edges of cans moved under the dispensing receiver 27 whereby the actuating member is swung outwardly to move the plunger to dispensing position as shown in dotted lines in Fig. 4 of the drawings.

A conduit connection 38 is connected between the conduit 28 and the supply tank 23, said connection being provided with a suitable valve 39 operating to normally close said connection 38 and being adapted to be opened by pressure to permit the return of sauce to the supply tank should the dispensing receiver remain closed during a pressure stroke of the pump 11 as hereinafter more fully explained.

As above mentioned, the present invention is primarily intended for use in the canning of sardines. In this connection the operation is as follows. The cans 2, which are of the ordinary oval shape, are initially filled with sardines in the ordinary manner. After the cans are filled they are moved by a suitable conveyor into position to be engaged by the carrier arms 3 of the machine whereby the cans are moved intermittently through the machine to be subjected to successive stops in the securing of the covers thereon. The carriers are driven from the main shaft of the machine as above described, a full forward and return movement being made for each revolution of the shaft. The pump plunger is also driven from the main shaft and caused to make a full pressure and suction stroke during each revolution of the shaft, the movement of the pump plunger being timed to cause the pressure stroke to occur during the time the cans remain stationary and the suction stroke to occur during the time the cans are being moved forward to their next positions.

As the cans are moved under the dispensing receiver the edge of the can engages the actuating member and moves it outwardly thereby causing the plunger 29 to be moved to uncover the opening 32. When now the pump 11 makes its pressure stroke the sauce drawn from the supply tank during the preceding suction stroke will be forced through the conduit 28 into the receiver and thence through the opening 32 into the can.

If for any reason a can 2 fails to be moved into position under the dispensing receiver, the plunger 29 will be held seated against shoulder 31 thereby preventing
 5 sauce from being dispensed. In this event the pressure which will be caused in the connection 28 will overcome the normal resistance of the valve 39 in the connection 38 whereby the sauce supplied from the
 10 pump will be delivered back through said connection 38 into the supply tank, in this manner avoiding all waste of the sauce.

In order to regulate the quantity of sauce dispensed into each can I have provided
 15 means for adjusting the throw of the pump plunger 13. This is accomplished by adjusting the position of the connecting rod bearing pin along the actuating crank arm 16 as above explained. By increasing the
 20 distance from the center of the bearing pin to the center of the shaft 17 the total movement of the plunger will be increased and a proportionally greater quantity of sauce will be drawn into the pump and
 25 dispensed through the dispensing receiver at each operation, in this manner affording a convenient means of adjusting the quantity of sauce dispensed to the cans. For
 30 any particular adjustment the quantity of sauce dispensed at each operation will of course be uniform.

While I have illustrated the preferred construction of my device as used in the
 35 canning of sardines, the device may of course be modified in numerous ways and adapted for use in canning of other products. I therefore do not wish to restrict myself to the specific form and construction
 40 of the device or its particular application as herein described, but desire to avail myself of all modifications which may fall within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. An attachment for can clinching machines of the character described comprising a pump having a plunger actuated in timed
 50 relation to the movement of cans moved intermittently through said machine; a supply tank connected to the pump for supplying sauce to the pump to be injected into the cans; a dispensing receiver mounted upon the machine above a point occupied by
 55 successive cans just prior to reaching the cover applying mechanism of the machine and connected to the pump to receive sauce from the pump; said receiver having a dispensing opening; a plunger slidably mounted within the receiver and normally closing the dispensing opening in said receiver; and an actuating member pivotally mounted upon the machine adjacent the receiver and connected to the plunger therein, said member
 60 being provided with a lateral extension

adapted to be engaged and moved by a can when moved under the receiver whereby the plunger is moved to uncover the dispensing opening while the can is thereunder and during the pressure stroke of the pump thereby
 70 permitting sauce to be forced into the can.

2. An attachment for can clinching machines of the character described comprising a pump having a plunger actuated in
 75 timed relation to the movement of cans moved intermittently through said machine; a supply tank connected to the pump for supplying sauce to the pump to be injected into the cans; a dispensing receiver mounted upon the machine above a point occupied
 80 by successive cans just prior to reaching the cover applying mechanism of the machine and connected to the pump to receive sauce from the pump, said receiver having a dispensing opening; a plunger slidably mounted
 85 within the receiver and normally closing the dispensing opening in said receiver; and an actuating member pivotally mounted upon the machine adjacent the receiver and connected to the plunger therein, said member being provided with a lateral extension
 90 adapted to be engaged and moved by a can when moved under the receiver whereby the plunger is moved to uncover the dispensing opening while the can is thereunder and during the pressure stroke of the pump thereby
 95 permitting sauce to be forced into the can; and a by-pass adapted to deliver sauce back to the supply tank when the dispensing opening of the receiver remains closed due to the absence of a can thereunder during
 100 said pressure stroke.

3. An attachment for can closing machines of the character described comprising
 105 a pump having a reciprocating plunger actuated in timed relation to the movement of cans moved intermittently through a can closing machine; a supply tank having a connection to the pump for supplying sauce to the pump to be injected into the cans, said
 110 connection being provided with a check valve adapted to prevent the return of sauce therethrough to the supply tank during the pressure stroke of the plunger; a dispensing receiver mounted upon the machine and having
 115 a dispensing opening above a point occupied by successive cans just prior to reaching the cover applying mechanism; a conduit connected between the pump and the receiver to deliver sauce into said receiver, said conduit being provided with a check valve
 120 adapted to prevent the return of sauce from said conduit and receiver during the suction stroke of the pump plunger; a plunger slidably mounted within the dispensing receiver and normally closing the dispensing opening therein; a stem secured to the plunger and extending outwardly from the receiver; and an actuating member pivotally mounted upon the machine adjacent the receiver and con-
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needed to the plunger stem, said member having a lateral extension adapted to be engaged and moved by the cans when moved under the dispensing receiver whereby the plunger is moved to uncover the dispensing opening in the receiver to permit sauce to be forced by the pump into the cans.

4. An attachment for can closing machines of the character described comprising a pump having a reciprocating plunger actuated in timed relation to the movement of cans moved intermittently through a can closing machine; a supply tank having a connection to the pump for supplying sauce to the pump to be injected into the cans, said connection being provided with a check valve adapted to prevent the return of sauce therethrough to the supply tank during the pressure stroke of the plunger; a dispensing receiver mounted upon the machine and having a dispensing opening above a point occupied by successive cans just prior to reaching the cover applying mechanism; a conduit connected between the pump and the receiver to deliver sauce into said receiver, said conduit being provided with a check valve adapted to prevent the return of sauce from said conduit and receiver during the suction stroke of the pump plunger; a plunger slidably mounted within the dispensing receiver and normally closing the dispensing opening therein; a stem secured to the plunger and extending outwardly from the receiver; and an actuating member pivotally mounted upon the machine adjacent the receiver and connected to the plunger stem, said member having a lateral extension adapted to be engaged and moved by the cans when moved under the dispensing receiver whereby the plunger is moved to uncover the dispensing opening in the receiver to permit sauce to be forced by the pump into the cans; and a bypass adapted to deliver sauce back to the supply tank when the dispensing opening of the receiver remains closed due to the ab-

sence of a can thereunder during the pressure stroke of the pump.

5. An attachment for can closing machines of the character described comprising a pump having a reciprocating plunger actuated in timed relation to the movement of cans moved intermittently through a can closing machine; a supply tank having a connection to the pump for supplying sauce to the pump to be injected into the cans, said connection being provided with a check valve adapted to prevent the return of sauce therethrough to the supply tank during the pressure stroke of the plunger; a dispensing receiver mounted upon the machine and having a dispensing opening above a point occupied by successive cans just prior to reaching the cover applying mechanism; a conduit connected between the pump and the receiver to deliver sauce into said receiver, said conduit being provided with a check valve adapted to prevent the return of sauce from said conduit and receiver during the suction stroke of the pump plunger; a plunger slidably mounted within the dispensing receiver and normally closing the dispensing opening therein; a stem secured to the plunger and extending outwardly from the receiver; and an actuating member pivotally mounted upon the machine adjacent the receiver and connected to the plunger stem, said member having a lateral extension adapted to be engaged and moved by the cans when moved under the dispensing receiver whereby the plunger is moved to uncover the dispensing opening in the receiver to permit sauce to be forced by the pump into the cans; and means for varying the stroke of the pump plunger to regulate the quantity of sauce dispensed into each can.

In witness whereof I hereunto set my signature.

WILLIAM BROMBAKER.