No. 830,596. PATENTED SEPT. 11, 1906.

S. C. KEITH, JR.

APPARATUS FOR STRAIGHTENING MILK CANS.

APPLICATION FILED FEB. 7, 1905.

3 SHEETS—SHEET 1.

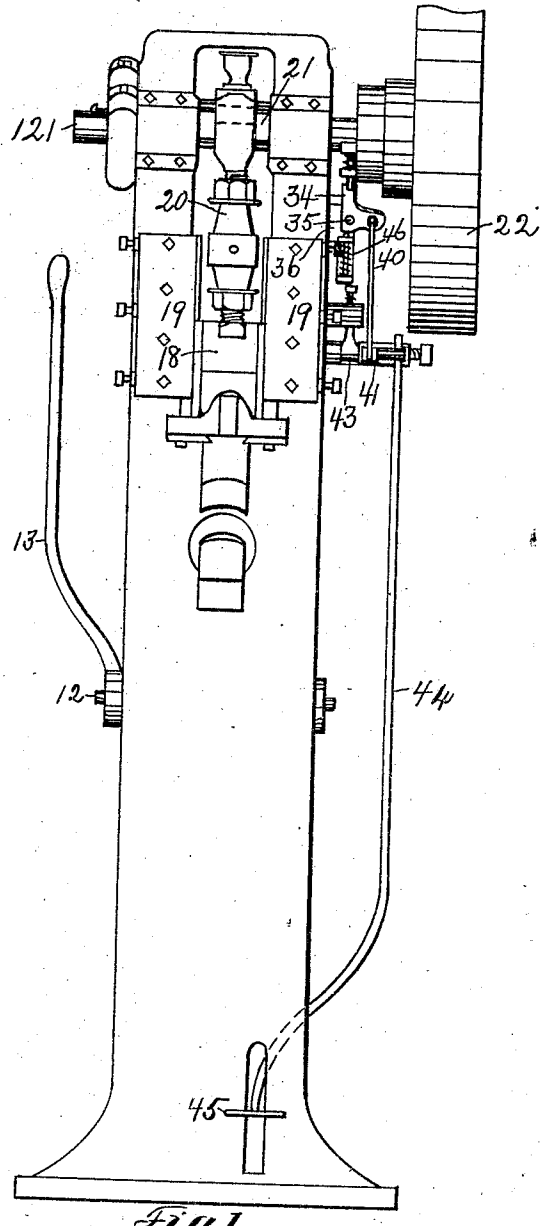

Fig. 1.

Witnesses.
E. H. Garnett
J. Murphy

Inventor.
Simeon C. Keith Jr.
by Jas. H. Schmeiser
Atty.

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3 SHEETS—SHEET 2.

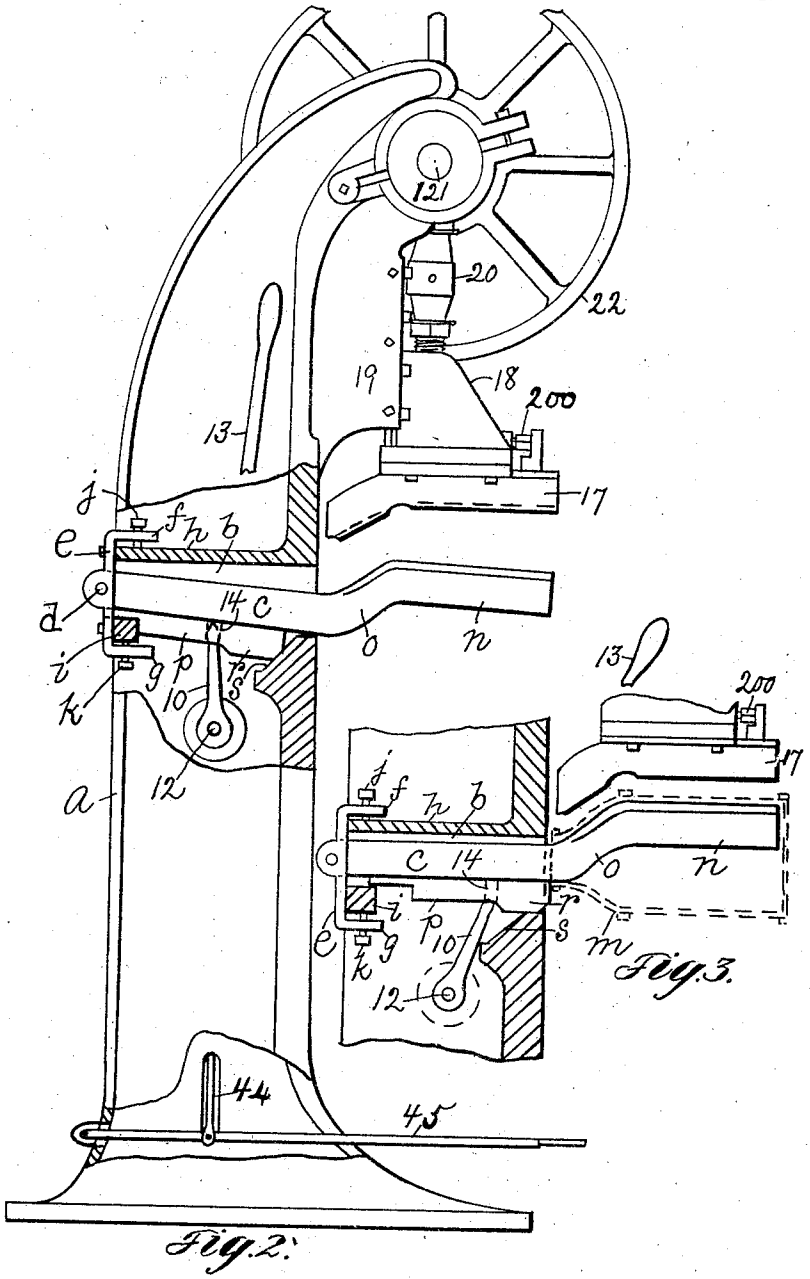

Fig. 2.

Fig. 3.

Witnesses.
C. B. Emmett
J. Murphy

Inventor
Simeon C. Keith Jr.
by Jas. H. Churchill
Atty.

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3 SHEETS—SHEET 3

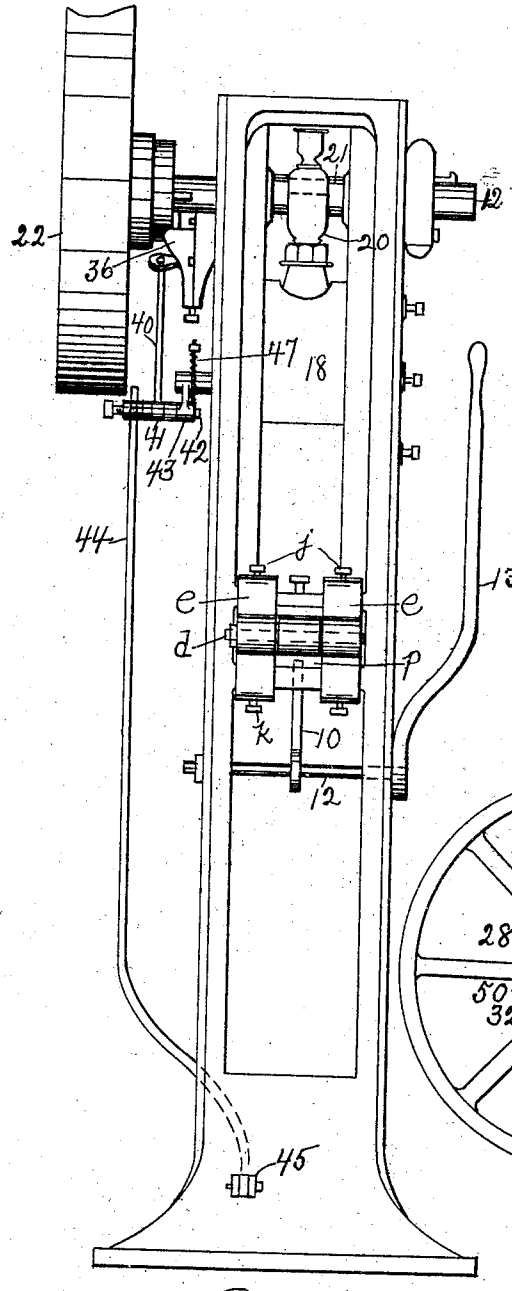

Fig. 4.

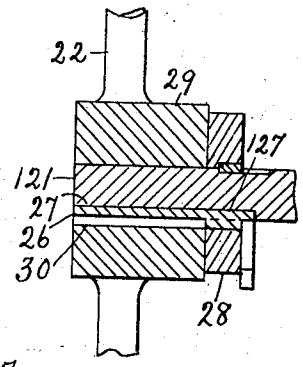

Fig. 6.

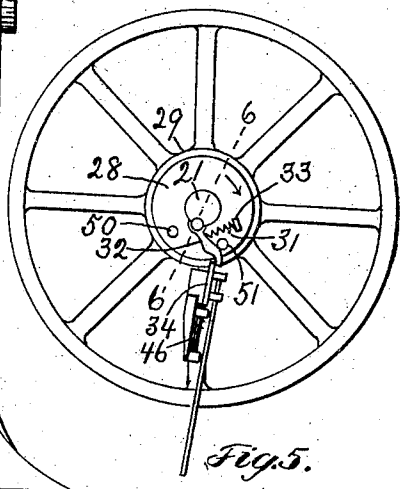

Fig. 5.

Witnesses
C. H. Garnett
J. Murphy

Inventor:
Simeon C. Keith Jr.
by Jas. H. Churchill
Atty.

UNITED STATES PATENT OFFICE.

SIMEON C. KEITH, JR., OF SOMERVILLE, MASSACHUSETTS.

APPARATUS FOR STRAIGHTENING MILK-CANS.

No. 830,596. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed February 7, 1905. Serial No. 244,570.

To all whom it may concern:

Be it known that I, SIMEON C. KEITH, Jr., a citizen of the United States, residing in Somerville, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Apparatus for Straightening Milk-Cans, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to an apparatus for pressing or straightening hollow objects, and is especially designed and adapted to be used for taking the dents out of milk-cans or like receptacles.

In order that the invention may be clearly comprehended, I will hereinafter describe the same in connection with a milk-can. For this purpose I employ a former, upon which the milk-can is placed and which is shaped to conform to the breast and body portion of the can. The former referred to is preferably made movable in a vertical direction to facilitate putting on and taking off of the can, and for this purpose said former is pivoted to an upright support or standard and has coöperating with it a slide block or bar which coöperates with a cam or inclined surface on the standard to effect upward movement of the pivoted former. The slide block or bar may be actuated by a lever, as will be described. The supporting-former, which is extended into the can, has coöperating with it an external former, which may and preferably is power-operated, as will be described, and is controlled by the foot of the operator. The external former may be adjustably supported to enable it to be adjusted longitudinally for a purpose as will be described. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is a front elevation of an apparatus embodying this invention; Fig. 2, a side elevation with parts broken away of the apparatus shown in Fig. 1 looking toward the right; Fig. 3, a detail in section and elevation to be referred to; Fig. 4, a rear elevation of the machine shown in Fig. 1; Fig. 5, a detail of the starting mechanism to be referred to; and Fig. 6, a sectional detail to be referred to, the section being taken on the line 6 6, Fig. 5.

Referring to the drawings, *a* represents a hollow standard or upright constituting a supporting-framework, which is provided with a transverse slot or opening *b*, extended from the rear to the front of the standard and into which extends the rear portion of a supporting-former *c*, which is mounted on a pivot pin or rod *d*, supported by bars *e*, having arms *f g*, extended over and under the upper and lower walls *h i* of the slot or opening *b* and secured thereto by screws *j k*, by means of which the rear end of the supporting-former *c* may be vertically adjusted in said slot or opening. The former *c* projects beyond the front face of the standard a sufficient distance to receive the can *m* to be straightened, the said projecting portion comprising a substantially straight end part *n* and an inclined part *o*, which connects the end part *n* with the rear portion of said former and which is designed to be engaged by the breast portion of the can. The former *c* is normally lowered and rests on the bottom wall of the opening or slot *b*, as represented in Fig. 1, and is adapted to be elevated by a device herein shown as a slide block or bar *p*, which engages the under surface of the rear portion of the former *c* and is supported upon the front and rear portions of the bottom wall of the slot or opening *b*.

The slide block or bar *p* is provided at its front end with a thickened portion *r*, which coöperates with an inclined surface *s* on the inner side of the hollow standard *a* to turn the former *c* on its pivot and raise its free or can-supporting end from the inclined position (shown in Fig. 1) into the horizontal position. (Shown in Fig. 3.) The slide block *p* may be moved, as herein represented, by a crank or arm 10, located within the hollow standard and fast on a rock-shaft 12, which is extended through one side of the standard and is provided with a second crank or arm 13, which constitutes a handle by means of which said slide block or bar may be operated. The slide block or bar *p* may be provided on its under side with a socket or opening 14, into which the free end of the crank 10 is extended.

The supporting-former *c* has coöperating with it a pressing-former 17, which may and preferably will be power-operated, as will now be described. For this purpose the pressing-former 17 is secured to a cross-head 18, movable in vertical guides 19, attached to the standard or upright *a*. The cross-head 18 is joined by a rod 20 to an eccentric 21 on a shaft 121, having bearings in the standard or upright *a* and provided with a driving-pulley 22, normally loose on said shaft,

but which is adapted to be connected thereto by a clutch mechanism, which may be of any suitable or desired construction and which is under the control of the foot of the operator.

In the present instance the clutch mechanism is shown in Figs. 5 and 6 as a rod or key 26, semicircular in cross-section and which is fitted into a longitudinally-extended semicircular channel or slot 27 in the circumference of the shaft 121 and which is enlarged and made a full circle at its outer end, as at 127, (see Fig. 6,) which enlarged portion revolves in a bearing, one-half of which is formed by tne shaft and the other half in a disk 28, fast on the shaft. The pulley 22 is provided with a hub 29, having a slot or keyway 30, substantially semicircular in cross-section and into which the key 26 is adapted to be turned to couple the pulley to the shaft. The key 26 is designed to be turned so as to couple the pulley to the shaft 121 by a spring 31, interposed between a crank or arm 32 on the said key and a stud or projection 33 on the disk 28. (See Fig. 5.)

The spring 31 is normally compressed by the crank or arm 32, which is held from turning by a latch, shown as an elbow-lever 34, (see Fig. 1,) which is pivoted at 35 to a support 36, attached to the framework or upright *a*, one arm of said lever being normally in the path of movement of the crank 32 and the other arm being joined by a link 40 to a lever 41, mounted on a pivot 42, carried by a lever 43, pivoted to the framework. The lever 41 is connected by a link 44 to a foot-treadle 45.

The latch 34 is normally held in the path of the crank or arm 32 by a spring 46, (see Fig. 1,) and the foot-treadle is elevated by a spring 47. (See Fig. 4.)

In operation the depression of the foot-treadle releases the crank 32, whereupon the spring 33, which is normally under compression, throws the crank forward until it meets the stop pin or projection 50 on the disk 28. This movement of the crank 32 takes place when the keyway or slot 30 in the pulley registers with the keyway or slot 27 in the shaft 121. In this manner the pulley is clutched to the shaft 121 and the latter is given one complete revolution, during which the pressing-former 17 is forced against the cam *m* on the supporting-former, and the dents in that portion of the surface of the can interposed between said formers are removed and the said surface is restored to its original shape without straining or opening the soldered joints of the can.

The shaft 121 is designed to stop after each revolution, and this is accomplished, as herein shown, by the operator removing his foot from the treadle, whereupon the elbow-lever 34 is restored to its normal position, which is in the path of movement of the crank or arm 32, so that when the shaft has nearly completed its revolution the said crank engages the elbow-lever and is held from further rotation with the shaft, which latter continues to rotate until the key 26 is withdrawn from the keyway in the pulley 22, whereupon the rotation of the shaft is arrested by the projection 51 on the disk engaging the crank 32. After each reciprocation of the pressing-former the can is turned on the supporting-former to bring a new portion of its surface into operative position. The supporting-former remains in its elevated position until the can has been pressed back into shape, and when the shaping process is completed the operator moves the lever 13 so as to carry the elevating device or slide-block *p* from the position shown in Fig. 3 back into the position shown in Fig. 2, whereupon the free end of the supporting-former is lowered to permit the pressed can to be removed therefrom and another or dented can to be placed thereon.

It will be noticed that while the machine is in operation the hands of the operator are free to manipulate the can. It is to be observed that a portion of the can for substantially its entire length is subjected to compression at one operation of the pressing-former. It will thus be seen that metal receptacles, such as milk-cans, may have the dents in them removed in a substantially short time and with a minimum expenditure of labor on the part of the operator and without injury to the can.

The upper former 17 is made adjustable longitudinally by means of a set-screw 200 or otherwise for the purpose of enabling the breast and body portion of the said former to coöperate properly with the breast *o* and body portion *n* of the lower or supporting former *c*.

I claim—

1. In a machine of the class described, in combination, a framework, a supporting-former for the can or receptacle to be shaped pivoted to said framework, a slide-block cooperating with said supporting-former and with said framework to elevate said supporting-former, means to move said slide-block, a compressing-former coöperating with said supporting-former, a shaft from which said compressing-former is reciprocated, and a foot-treadle controlling the rotation of said shaft, substantially as described.

2. In a machine of the class described, in combination, a hollow framework provided with a transverse slot or opening, a supporting-former extended into said slot or opening and pivotally secured at its rear end, means within said hollow framework for elevating said supporting-former, a power-operated compressing-former coöperating with a portion of said supporting-former which projects beyond said hollow framework, and

means to control said power-operated former, substantially as described.

3. In a machine of the class described, in combination, a vertically-movable supporting-former over which a milk-can or like receptacle is adapted to be placed, a slide-block coöperating with said former, a lever to actuate said slide-block, a cam-surface coöperating with said slide-block to effect elevation of said former, and a compressing-former cooperating with said supporting-former, substantially as described.

4. In a machine of the class described, in combination, a supporting-former provided with surfaces at an angle to each other adapted to engage the inner side of the body and breast of a can, means to support said former, and a compressing-former provided with surfaces inclined to each other to engage the exterior surfaces of the body and breast portion of the can, one of said formers being movable with relation to the other, and means to effect movement of the movable former, substantially as described.

5. In a machine of the class described, in combination, a supporting-former over which a hollow receptacle or can is adapted to be placed, means to support said former means to elevate said former, a compressing-former coöperating with said supporting-former, and means to adjust said supporting-former with relation to said compressing-former, substantially as described.

6. In a machine of the class described, in combination, a supporting-former provided with surfaces at an angle to each other adapted to engage the inner side of the body and breast of a can, means to support said former, a compressing-former provided with surfaces inclined to each other to engage the exterior surfaces of the body and breast portion of the can, one of said formers being movable with relation to the other, means to adjust the compressing-former longitudinally, and means to effect movement of the movable former, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SIMEON C. KEITH, JR.

Witnesses:
JAS. H. CHURCHILL,
J. MURPHY.