

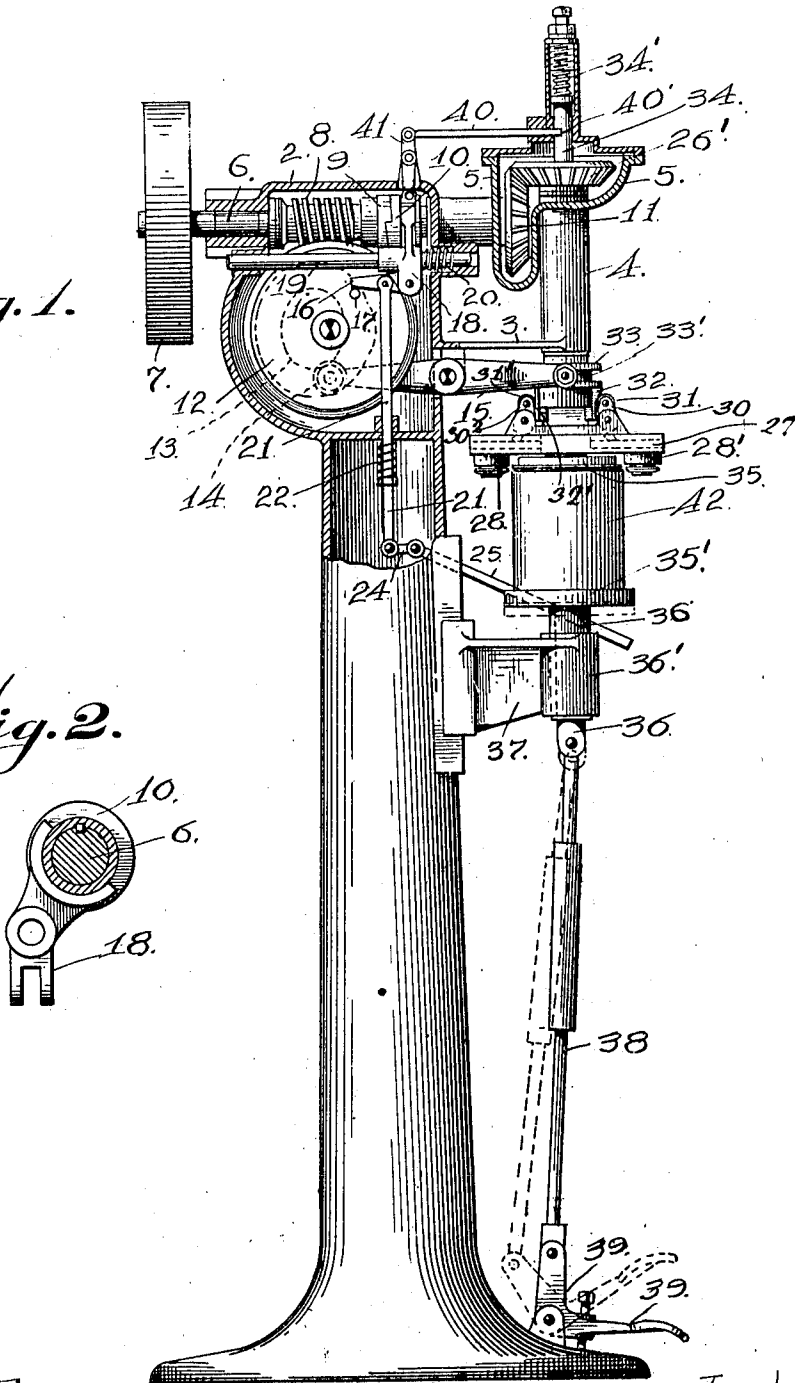
A. JOHNSON.
CAN HEAD SEAMING MECHANISM.
APPLICATION FILED DEC. 5, 1910.

Patented Oct. 8, 1912.
2 SHEETS—SHEET 1.

1,040,952.

Fig. 1.

Fig. 2.



Witnesses:
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S. Constantine.

Inventor.
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by M. A. Licker
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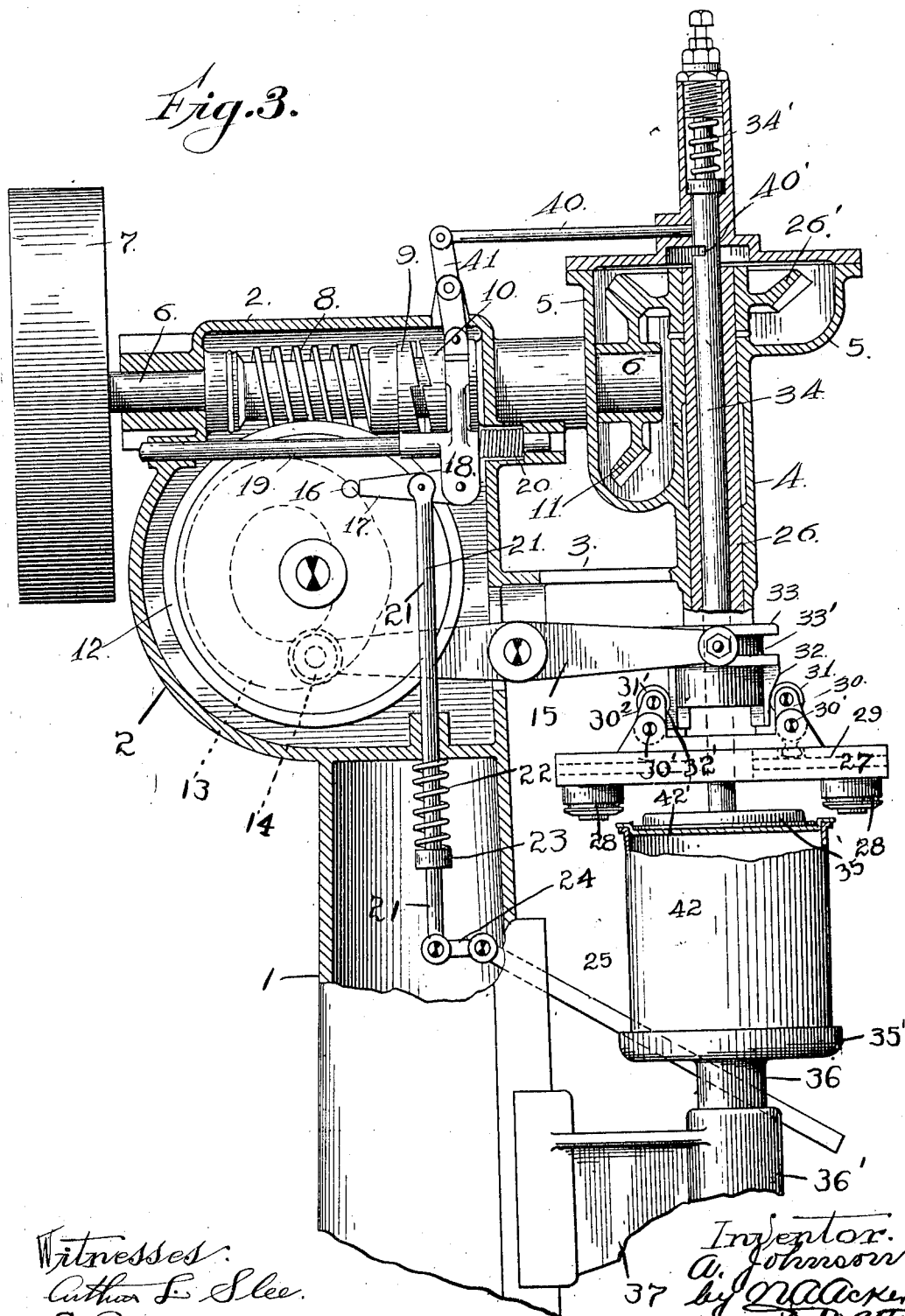
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Fig. 3.



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UNITED STATES PATENT OFFICE.

AXEL JOHNSON, OF OAKLAND, CALIFORNIA, ASSIGNOR TO AMERICAN CAN COMPANY,
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CAN-HEAD-SEAMING MECHANISM.

1,040,952.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed December 5, 1910. Serial No. 595,609.

To all whom it may concern:

Be it known that I, AXEL JOHNSON, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Can-Head-Seaming Mechanism, of which the following is a specification.

The invention relates more particularly to an improved machine for seaming heads or covers to open ended cans containing paint or other liquid preparations, wherein the filled can is required to be held against rotation during the operation of seaming or applying the head or cover to the open end thereof.

The object of the invention is to provide a simple, effective and durable machine for the described purpose, by means of which the filled can to be headed may be properly adjusted and the head or cover positioned relative to the open end thereof by hand and properly clamped prior to the seaming mechanism being thrown into action for automatically seaming the head to the end thereof, the filled can during the seaming operation being held clamped against rotation.

The machine comprises in coöperative combination a pair of vertically movable can holder chucks, means for raising one of said chucks to properly position the filled can and clamp a can head onto the open end thereof, a pair of seaming rollers, and means for automatically placing into operation the said rollers for seaming a can head or cover onto the open end of the clamped filled can.

To comprehend the invention reference should be had to the accompanying sheets of drawings, wherein—

Figure 1 is a view in elevation partly sectioned of the improved machine, illustrating the upper can chuck in raised locked position and the companion can chuck in adjusted position, and the actuating connection for the spinning head carrying the seaming rollers disconnected from the drive mechanism for imparting rotation thereto. Fig. 2 is a detail elevation of the slide lock clutch and the slide lever for actuating the same, the lock clutch and the drive shaft on which it is mounted being in section. Fig. 3 is an enlarged detail broken elevation

of the structure disclosed by Fig. 1 of the drawings, the upper portion of the frame and certain of the operative parts being in section, said view illustrating the upper can chuck as released from its raised locked position.

In the drawings, the numeral 1 is used to designate any suitable form of a supporting frame structure, which in the present case, partakes of the nature of a hollow standard carrying at its upper end an inclosing housing 2 for the drive mechanism, from said housing being extended a bracket 3 which supports a vertically extended shell 4 carrying a housing 5.

Through the housing 2 is extended a horizontally disposed drive shaft 6 driven by a belt pulley 7, and on said shaft is loosely mounted a worm 8 carrying a clutch head 9, which is engaged by the slide clutch 10 feathered to the drive shaft 6. The drive shaft 6 is extended within the housing 5 and on such end is secured a gear 11, which, as hereinafter explained, transmits the motion of the drive shaft 6 to the spinning head carrying the seaming rollers.

The worm 8 meshes with the worm gear 12 mounted within the housing 2. In one face of the said gear is formed a cam groove 13, within which works an anti-friction roller 14 secured to the inner end of a fulcrumed lever 15 extended within the said housing. From the opposite face of the gear 12 projects a pin or short stud 16 which acts against an arm 17 pivoted to lever 18 slidably mounted on a cross rod 19 and normally held inwardly pressed by the action of a coiled spring 20. The upper end of the slide lever 18 is forked to straddle the grooved hub of the slide clutch 10, for forcing or placing the same into locked engagement with the clutch head 9 of the worm 8 in order to transmit thereto for driving the worm gear 12 the motion of the drive shaft 6, when the pivoted arm 17 is moved out of engagement with the locking stud 16.

From the arm 17 depends a connecting rod 21, which is normally held downwardly pressed by the action of the coiled spring 22 surrounding the same and which bears against a collar 23 thereon and the under face of the head of the frame standard 1. To the lower end of the rod 21 is pivoted the end of the angle extension 24 of the ful-

crumed hand operated lever 25, which is pivoted within the frame 1 and extended beyond the same.

Through the vertical shell 4 is extended a rotary sleeve 26, which at its upper end carries a gear 26' in mesh with the driving gear 11 of the drive shaft 6, and to the lower end of said sleeve is secured the seaming head 27, which head is furnished with a set of seaming rollers, consisting of a forming roller 28 and a seam closing roller 28'. The said rollers are journaled directly to the slides 29 working within the seaming head 27, and the seaming roller slides are moved in and out to operate the seaming rollers by means of the seaming roller levers 30 and 30', fulcrumed by pins 30' on the seaming roller head 27 furnished with anti-friction rollers 31 for engagement with the cams 32 or 32' on the cam collar 33 which surrounds and is slidably mounted on the lower end portion of the sleeve 26. The said cam collar is reciprocated as required to successively operate the seaming rollers 28 and 28' by means of the fulcrumed lever 15, having a forked or yoked end which engages the circumferentially grooved portion 33' of the cam collar 33.

Through the seaming head 27 and sleeve 26 is extended the vertically movable plunger rod 34, normally held downwardly pressed by the spring 34'. To the lower end of the said plunger rod is secured the can chuck 35, which coöperates with the opposing or lower can chuck 35' for the clamping of a filled can with a loosely applied head therebetween.

The stem 36 of the chuck 35' extends through a guide 36' of a bracket 37, and the lower end thereof is connected by the rod 38 to a foot treadle 39, the normal position of said rod and treadle being indicated by dotted lines in Fig. 1 of the drawings.

The plunger rod 34 is held locked in its raised position by means of the lock-rod 40, which works through the housing 5 and moves into engagement with the seat 40' in the upper end portion of the rod 34, the said lock rod 40 being pivoted to the upper end of a short fulcrumed lever 41, pivoted at its lower end to the upper end of the slide lever 18.

The filled can 42 is placed on the chuck 35' and the cover or head 42' loosely applied thereto, the operator depressing the foot treadle 39 to slowly raise the chuck 35' and gradually forcing the can with its loosely applied head against the chuck 35, ample time being thus given the operator in which to properly position the can head or cover. As the pressure on the foot treadle is continued the plunger rod 34 is forced upwardly its full distance and so held by the operator, when the handle or lever 25 is

raised to lower the connecting rod 21 and depress the arm 17 from within the sphere of the stud 16, which movement of the arm 17 shifts the position of the slide lever 18 to force the lock rod 40 into engagement with the plunger 34 and to throw the clutch 10 into engagement with the clutch head 9. It will be noticed that the clutch head 10 is not shifted for engagement with the clutch head 9 until the lock-rod 40 has moved into engagement with the seat 40' of the plunger 34. The moment the clutch 10 moves into locked engagement with the clutch head 9, the rotary motion of the drive shaft 6 is imparted to the worm 8 and by the same transmitted to the gear 12. During the first portion of its revolution, the roller 14 of the lever 15 moves into such portion of the cam groove 13 as to throw upwardly the outer end of the lever 15 lifting the cam collar 33, which carrying therewith the cam 32' actuates the roll 31 to throw the lever 30' for forcing inwardly the flanging roller 28 of the spinning or seaming head 27, after which the roller 14 is carried into such portion of the cam groove 13 as to force downwardly the said cam collar 33, causing the roll 31 to ride on the cam surface 32 and through its connection with roller 28' force the same inwardly to seam the flanged can head or cover onto the flanged end of the clamped can.

It will be understood that the lever 25 is released the moment the arm 17 has been thrown, when the pressure of the spring 22 exerts itself and draws downwardly the rod 21 and places the arm 17 within the path of the stud 16, which as the gear 12 completes its revolution bears against the end of said arm and forces it outwardly, the movement of which forces over the slide lever 18 to withdraw the clutch 10 from engagement with the clutch head 9 and at the same time shifting the fulcrumed lever 41 to withdraw the lock rod 40 from engagement with the plunger rod 34. By this time the lever 15 will have been actuated to raise the cam collar 33 for placing the seaming roller 28' out of engagement with the flange of the can head or cover, when foot pressure being released from the treadle 39 the pressure of the retained spring 34' forces downwardly the can chucks 35 and 35', taking the headed can from within the sphere of the seaming rollers.

It will be understood that the drive shaft 6 is a continuously rotating one and that the seaming head 27, through its direct connection therewith, is likewise a continuously rotating one.

Having thus described the invention what is claimed as new and desired to be protected by Letters Patent is—

In a machine for the described purpose, the combination with a seaming head pro-

vided with axially movable forming and
seaming rollers, of a spring actuated can
chuck normally held below the rollers of the
seaming head, a second can chuck spaced a
5 distance below the upper can chuck for sup-
porting a can to have a head seamed thereto,
means for raising the lower chuck to clamp
a can between the chucks, and raise the up-
per spring held chuck, drive means for im-
10 parting continuous rotation to the seam-
ing head, a slidable cam collar acting against
the rollers of the seaming head, actuating
mechanism for raising and lowering said
collar for successively placing the forming
15 roller and the seaming roller into and out
of engagement with the flange of the can
head to be seamed onto the clamped can,
and a lock device for holding the upper can
chuck in raised position during the seaming
operation and the actuating mechanism for 20
the cam collar against movement until the
said can chuck is properly positioned.

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

AXEL JOHNSON.

Witnesses:

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D. B. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."