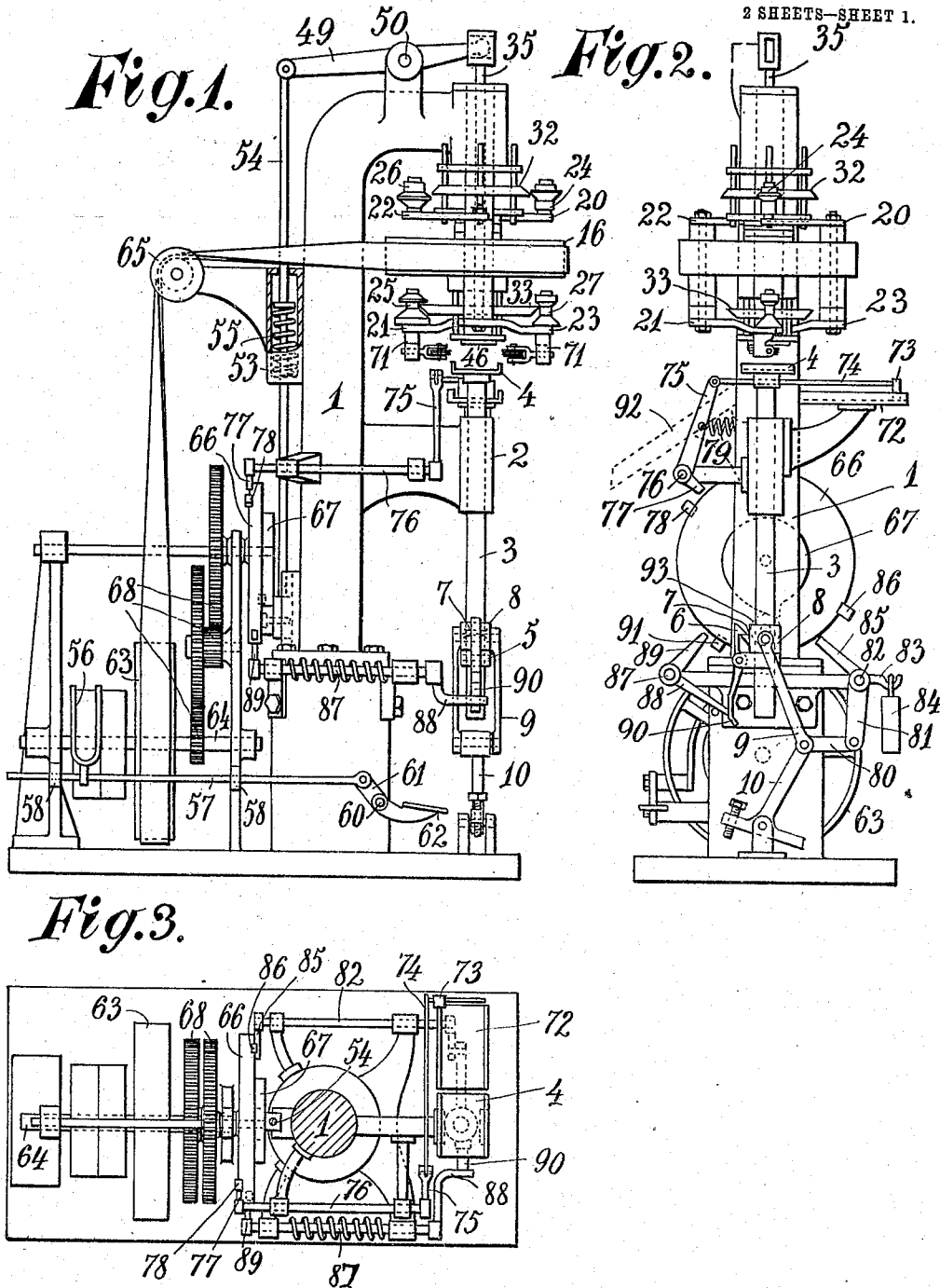


F. W. T. NESSLER.
SEAMING MACHINE.
APPLICATION FILED DEC. 17, 1907.

907,858.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.



Witnesses:
L. W. Staaden.
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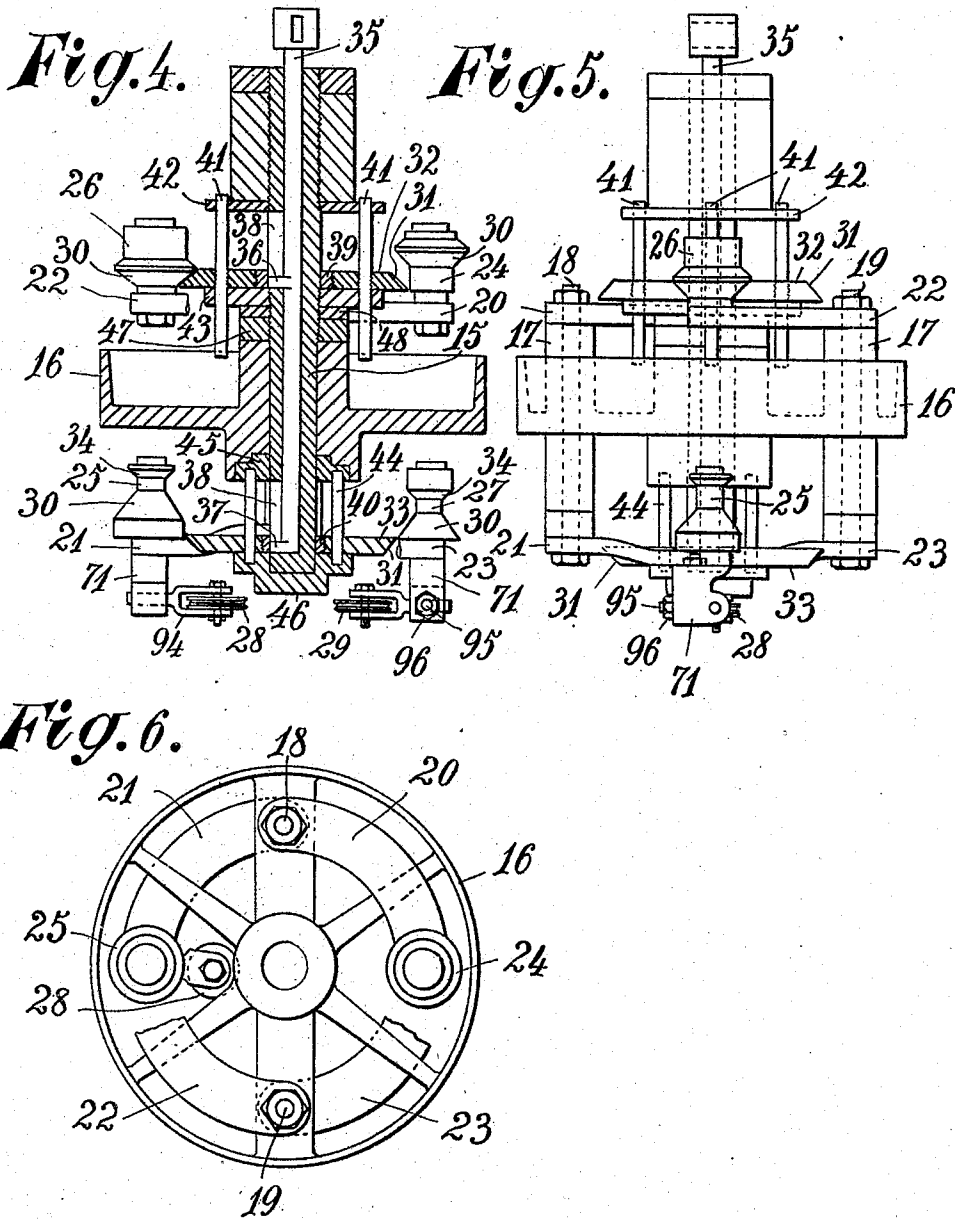
Inventor:
Friedrich Wilhelm Theodor Nessler
by Alfred Hume
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2 SHEETS—SHEET 2.



Witnesses:
L. H. Staaden.
J. W. Miller

Inventor:
Friedrich Wilhelm Theodor Nessler
by Alfred Blum, atty.

UNITED STATES PATENT OFFICE

FRIDRICH WILHELM THEODOR NESSLER, OF STAVANGER, NORWAY, ASSIGNOR TO FREDRIK WATTNE, OF STAVANGER, NORWAY.

SEAMING-MACHINE.

No. 907,858.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed December 17, 1907. Serial No. 406,962.

To all whom it may concern:

Be it known that I, FRIDRICH WILHELM THEODOR NESSLER, a subject of the King of Norway, residing at Stavanger, Norway, have invented certain new and useful Improvements in Seaming-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in seaming machines of the kind in which the seaming tools are controlled by cams, the configuration of which corresponds to that of the can.

My invention partly consists in a device by which the cans to be seamed can be placed in position and firmly clamped in an entirely automatic manner, the ready-seamed cans being also automatically released, and further in various arrangements and combinations of the several parts of the machine, and particularly in the arrangement of the controlling cams and controlling rollers, and also in a special constructional form of the holders of the seaming rollers, for the purpose of rendering the same more easily adjustable.

My invention is illustrated in the attached drawings, Figure 1 being a side elevation, Fig. 2 a front elevation, and Fig. 3 a ground plan of the complete machine. Fig. 4 is a vertical section on a larger scale through its upper portion, showing the arrangement of the controlling parts; Fig. 5 shows the same part of the machine seen from the left in Fig. 4; and Fig. 6 is a detail view.

1 is the frame of the machine. A sleeve 2 is provided on the frame for a rod 3 capable of being reciprocated vertically in said sleeve and having at its upper end a head 4 on which is placed the can which is to be seamed. Secured to said rod 3, near the lower end of the same, is a ring 5 provided with a latch 6 engaging with a projection 7 on a clutch 8 loosely mounted on the rod 3, said clutch having pivotally secured to it a bar 9. The parts being clutched together in the aforesaid manner, the rod 3 will be reciprocated vertically, when the bars 9, 10 which are jointed to form a knee are actuated for the purpose.

The object of my invention is now to provide an arrangement comprising four principal parts, the seaming device, the device for placing the can in position, in the machine the clamping device and the releasing mechanism, which are all actuated from a common driving shaft through suitable intermediary means.

Into the upper portion of the frame a tubular stem 15 (Fig. 4) is screwed, having its axis in a line with that of the rod 3, and serving as shaft for a pulley 16. In this pulley stationary sleeves 17 (Fig. 5) are provided to receive shafts 18 and 19 on the ends of which are keyed curved arms 20, 21 and 22, respectively. The arms 20 and 21 on shaft 18 point in opposite directions, as shown in Fig. 6; this figure also shows separately pulley 16 and the arms pivotally mounted in the sleeves of the pulley. 24, 25 are controlling rollers at the ends of the arms; arms 22 and 23 connected to shaft 19, are disposed in a similar way having controlling rollers 26, 27 respectively; on arms 21 and 23 are also secured seaming rollers 28 and 29. Controlling rollers 24, 25, 26, 27 have each a bevel face 30 engaging corresponding bevel faces 31 of two nonrotating controlling disks 32, 33 mounted to slide on the tubular shaft 15 in the longitudinal direction of the same. Each of the controlling rollers 25, 27 has, moreover, another bevel face 34, inclined in the opposite direction to that of face 30. In the tubular shaft 15 is slidably mounted a rod 35, projecting parts of which 36, 37 extend through slots 38 and are rigidly connected to rings 39 and 40 respectively; on these rings said controlling disks 32, 33 are screwed. In the disk 32 guide bars 41 are mounted slidably, extending through plates 42, 43, which are screwed on shaft 15 above pulley 16. Controlling disk 33 slides up and down on guide bars 44 having their upper ends secured to a collar 45 on shaft 15, and their lower ends to a head 46, also mounted on shaft 15. The pulley 16 is pivotally mounted on shaft 15 between said collar 45 on one side and nut and counternut 47 and 48 on the other.

The controlling disks 32, 33 are raised or lowered by rod 35, disposed within the tubular shaft 15, the rod being connected to the controlling disks by the projecting parts 36, 37 and the rings 39, 40. The rod 35 is, at its upper end hinged to one end of a lever 49 attached to a shaft carried by the frame at

50; the other end of the lever 49 is connected to a rod 54 mounted to slide up and down in a sleeve 53 secured to the frame which rod is normally forced upward by a spring 55.

5 A stem 57 provided with a belt-guide 56 is slidably mounted in brackets 58 at the lower portion of the frame, which stem is connected by a joint to one end of a lever 61 which is pivoted at a fixed point 60 and having at its opposite end a foot-plate 62.

10 From the pulley 63 on the main shaft 64 a driving belt is passed over guide wheels 65 to pulley 16. Cams 66 and 67 are also actuated from the main shaft 64, by means of gears 68, which cams serve as a controlling arrangement for the devices for placing in position, clamping and releasing the can as well as for the rod 54 actuating the controlling disks of the seaming rollers.

20 The seaming rollers are connected to arms 21, 23 by holders 71 in which a fork 94, carrying the rollers, is pivotally and slidably mounted. When this fork has been brought into its proper position in the holder 71, it is tightly secured to the same by any suitable means including a screw and nut 95, 96.

25 The device for placing the can in position to be operated upon consists of a catch 73 arranged to be moved by suitable guiding means, across a stationary support or feed table 72 which catch is moved inward by rod 74, lever 75, shaft 76 and finger 77 the latter being actuated by a projection 78 on the controlling cam 66 journaled in the frame of the machine and being rotated from the main shaft 64 through the gearing 68. The catch 73 is returned to its initial position by a spring 79 acting on the lever 75.

30 The automatic clamping device consists of a link 80 extending from the connecting pin of the joint levers 9 and 10 arranged to move the coupling box 8 along the rod 3, the opposite end of said link 80 being connected to a lever 81 mounted on the shaft 82 which has also two other levers secured to it, one of the latter, 83, carrying a weight 84, while the other, 85, may be actuated by a projection 86 on the cam 66.

35 The releasing mechanism consists of a shaft 87 mounted in the frame and having two levers 88, 89 one of which, 88, actuates the free end 90 of the latch 6 pivotally mounted on the rod 3, which latch is adapted to engage the projection 7 on the coupling box 8, while the other lever, 89, is actuated by a projection 91 on the cam 66.

40 The rod 3 carries at its upper end a head 4 on which the can is placed by the device described above, while the rod 3 occupies its lower position, whereupon said can is raised into position to be operated upon by the seaming rollers. The next can pushes the finished one off the head 4 causing the latter to slide down a chute 92 shown in dotted lines in Fig. 2.

The cam 67 actuates a roller 93 mounted on the rod 54, which is connected with the controlling mechanism for the seaming rollers.

45 The machine operates in the following manner: Assuming the several parts of the machine to occupy the positions as shown in Fig. 1 in which rod 3 is raised and the can is being operated upon by the seaming rollers, the process of operation is as follows: As the cams 66 and 67 are being rotated in 50 clockwise direction, the highest point of the cam 67 actuating the roller 93 will pass the rod 54, and the seaming rollers will be swung out from the ready-seamed can. Now, the projection 91 on the cam 66 runs against the lever 89 thereby rotating the shaft 87 and turning the lever 88 upward; the latter will then force the free end 90 of the latch 6 inward, so as to disengage the latch from the projection 7 on the coupling box 8. The rod 3 with the latch 6 will then fall downward, until the underside of the head 4 engages the sleeve 2, which brings it exactly in alignment with the support or feed table 72. In the mean time the cam 66 has rotated so far as to make the projection 78 bear on the finger 77, thereby rotating the shaft 76, turning the lever 75 outward and thus causing the rod 74 to pull the catch 73 inward, so that the latter will push a can, placed in front of it 55 on the support, on to the head plate 4 pushing by the same action the ready-seamed can off said head plate. Now, the projection 86 on the cam 66 runs against the lever 85 thereby rotating the shaft 82, with the result that the weight 84 is raised and the lever 81 turned outward, the latter thereby through the link 80 actuating the member connecting the levers 9 and 10 so as to cause the coupling box 8 to be pulled down, until 60 its projection 7 engages the latch 6 on the rod 3. When now the lever 85 has again been released from its catch with the projection 86, the shaft 82 will be turned in the opposite direction by the weight depending from the lever 83, and consequently the lever 81 will be swung inward and the joint 9, 10 straightened so much as to cause the rod 3 with the can to be raised up to the seaming tools which are then by the cam 66 successively moved towards the can; thereupon the ready-seamed can is released to be replaced by a fresh unseamed can which has in the meanwhile been placed on the support 72.

65 The above described, automatically operating devices for placing the can in position in the machine, for clamping, and for releasing the same may be employed in old seaming machines as well as in new ones, the structure of the parts having, of course, to be modified to meet the case in question.

Claims.

1. In a can-seaming machine, the combination with rotary seaming tools, of a reciprocatory support, means for raising the sup- 130

port to clamp a can, a device for detachably
connecting the support to the raising means,
a constantly running rotary member, a tap-
pet thereon for operating said device to re-
5 lease said support from the raising means and
permit it to drop after the seaming opera-
tion, a feeding device to feed a fresh can onto
the support after it has been dropped, an-
other tappet on said member to actuate said
10 feeding device, and a third tappet on said
member to lower said raising means into po-
sition to be again connected to said support.

2. In a can-seaming machine, the combi-
nation with rotary seaming tools, of means
15 for clamping and holding a can during the
seaming operation, said means including a
reciprocatory support, means for raising the
support to clamp a can, means for throwing
the seaming tools into operation, a device
20 for detachably connecting the support to the
raising means, feeding means to place a fresh
can onto the support when in its lowest po-
sition, means for causing the connecting de-
vice to release said support from said raising

means, and a single rotary member period- 25
ically and successively operating said can
feeding means, said connecting device and
said raising means.

3. In a can-seaming machine, the combi-
nation with the seaming-tools, the vertically- 30
movable can-support, and a feeding-device
to feed cans onto said support while it is in
its lowest position, of means to raise said sup-
port, means to detachably connect the latter
to said raising means, and a constantly-run- 35
ning cam member which successively actu-
ates said feeding-device, permits said raising
means to act, disconnects said support from
said connecting means, and lowers said rais-
ing means.

In testimony that I claim the foregoing as 40
my invention, I have signed my name in
presence of two subscribing witnesses.

FRIDRICH WILHELM THEODOR NESSLER.

Witnesses:

J. NORŮŇI,

OTTO SENEVAD.