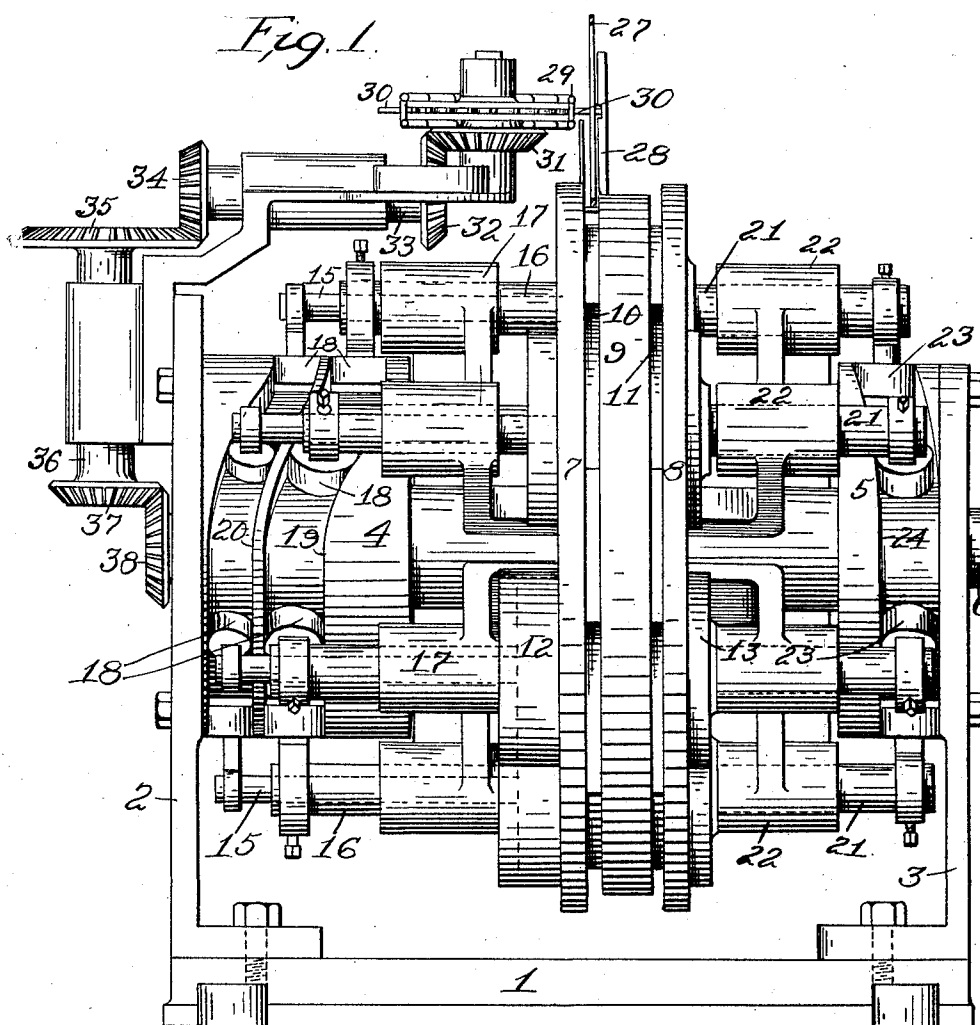


J. A. GRAY.
CAN HEAD LINING MACHINE.
APPLICATION FILED MAR. 22, 1911.

1,043,005.

Patented Oct. 29, 1912.

3 SHEETS-SHEET 1.



Attest.
Bent, W. Stahl,
Edward N. Saiton

Inventor.
James A. Gray.

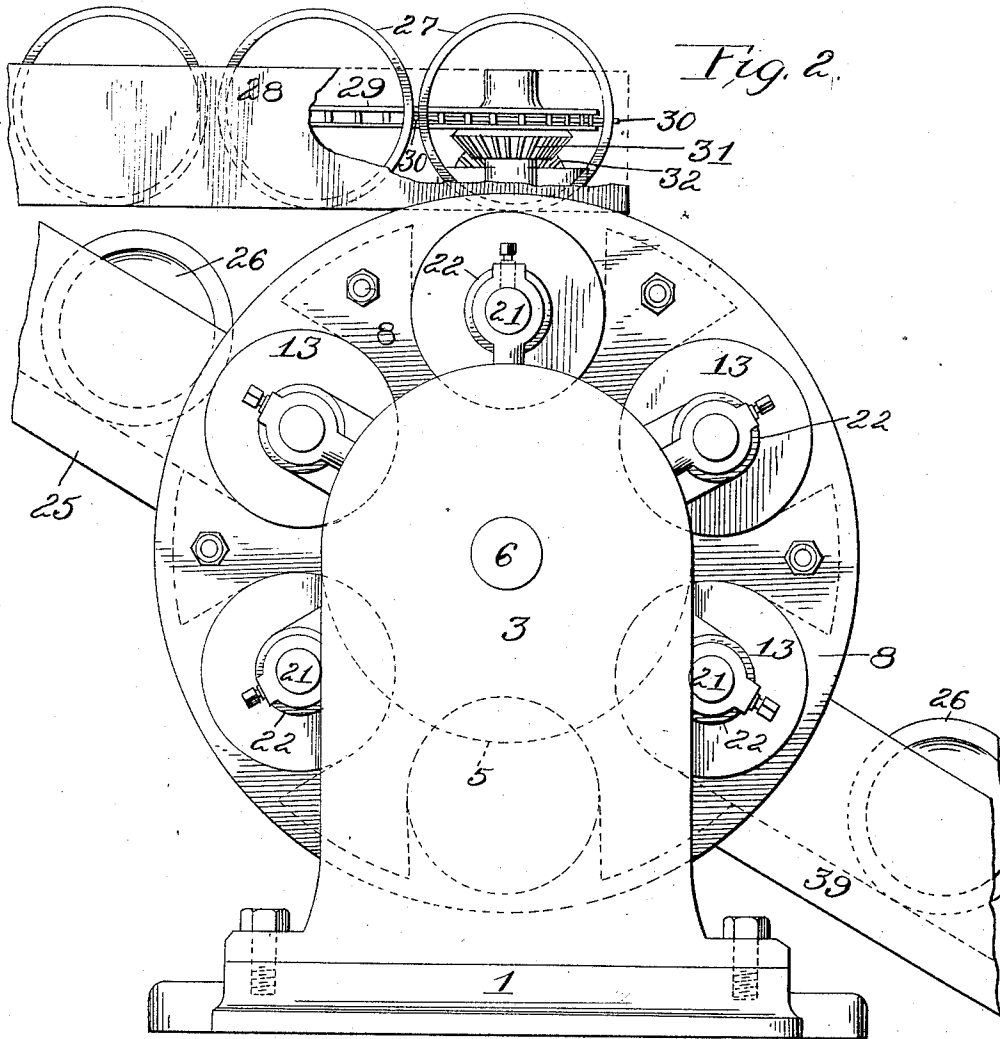
By Spear, Middleton, Danavasson & Spear
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

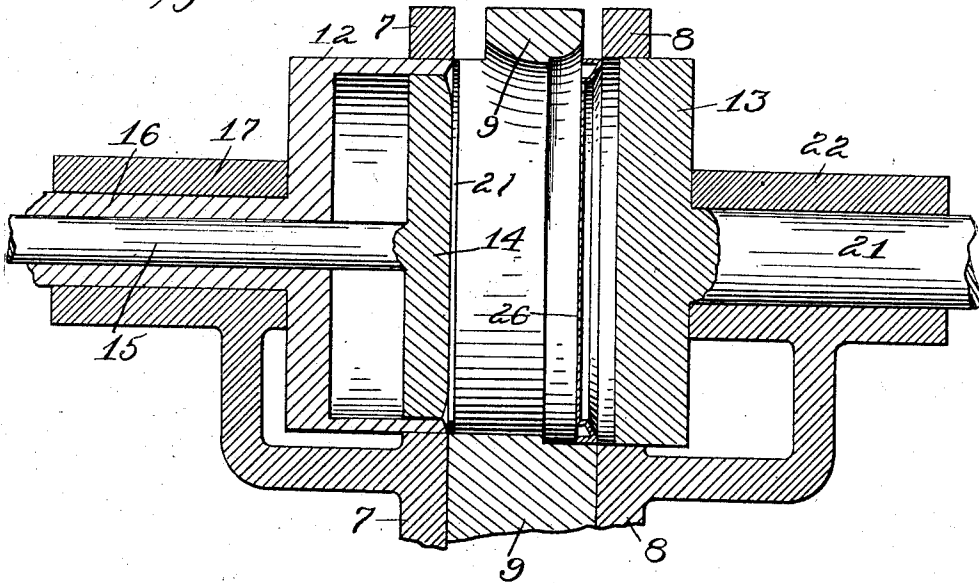
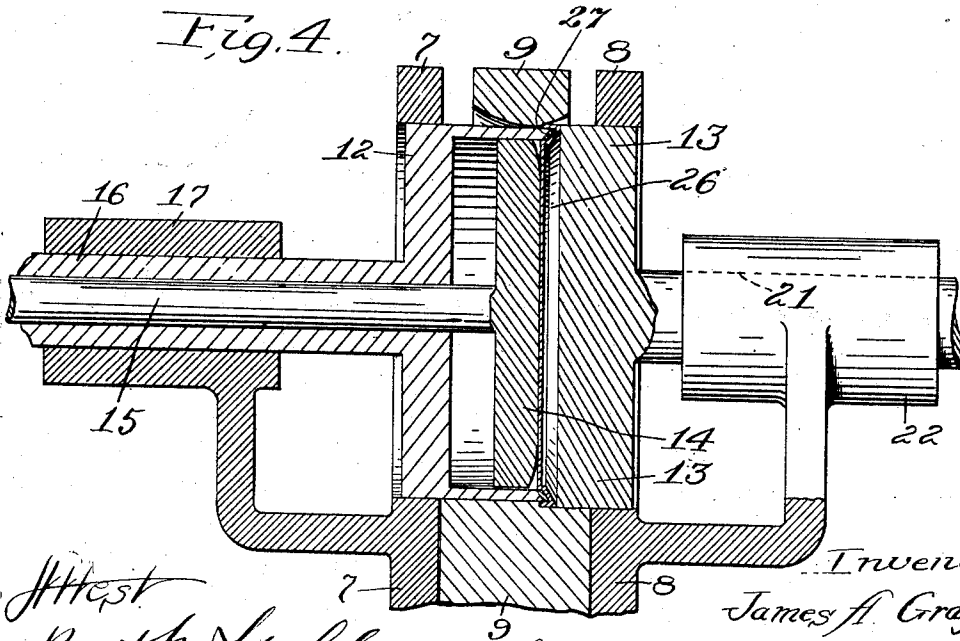


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES ALFRED GRAY, OF SAN FRANCISCO, CALIFORNIA.

CAN-HEAD-LINING MACHINE.

1,043,005.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed March 22, 1911. Serial No. 616,272.

To all whom it may concern:

Be it known that I, JAMES ALFRED GRAY, a citizen of the United States, residing at San Francisco, California, have invented certain new and useful Improvements in Can-Head-Lining Machines, of which the following is a specification.

My invention relates to improvements in machines for lining covers or heads for cans.

Among the objects of the invention are to provide means for performing this work by machinery which shall be simple, economical of manufacture and durable and reliable when in use. At present the work accomplished by this machine is performed by manual labor and by a method which is slow, tedious and expensive.

The invention includes the features of construction and arrangement and combination of parts hereinafter described and particularly set forth in the appended claims.

Reference is made to the accompanying drawings which illustrates a machine constructed in accordance with my invention and which form a part of this specification.

In the said drawings: Figure 1 is a side elevation. Fig. 2 is a front elevation. Fig. 3 is a sectional detail of one set of plungers in the position they assume at the time the paper ring is dropped into the pocket, the can top having already dropped into position. Fig. 4, is a sectional detail of one set of plungers showing the plungers forcing the ring into position in the can head.

Referring more particularly to the drawings the numeral 1 is a base of any suitable shape, having standards or sides 2 and 3. Upon the standard 2 is rigidly secured the double cam 4 and upon the standard 3 is rigidly secured the cam 5. These cams form complete circles and through the center of them is the shaft 6 carrying near its central point the circular plates 7 and 8. Rigidly secured between these plates 7 and 8 is the ring 9 having circular openings which register with similar openings in the plates 7 and 8. Between the plate 7 and the ring 9 and between the plate 8 and the ring 9 are pockets 10 and 11 which register with the circular openings in the said plates and the said ring. The openings in the ring 9 are of two diameters, one side being slightly larger than the other, as particularly shown in Fig. 3. The larger diameter of the opening is at the side or coincides with the pocket in which the can heads are received

and this terminates in a seat in which the can heads are held when they receive the lining. The smaller diameter of the opening is at the side or coincides with the pocket in which the paper rings are received. The diameter of this part of the opening is equal to the diameter of the interior of the can head. Through these circular openings extend the cylindrical plungers 12 and 13. The plunger 12 has a rim or projection on its face at or near its outer edge shaped to conform with the shape of the can head into which it is desired to insert the lining ring. Also this plunger 12 has a cup-shaped face and in this cavity is mounted a disk 14 having a projecting stem 15 slidably mounted in the sleeve 16, said sleeve 16 forming a guide or bearing for the stem 15. The sleeve 16 forms a stem for the plunger 12 and it is slidably movable in the bearing 17 rigidly mounted on the face of the plate 7. The stem 15 and the sleeve 16 are fitted with rollers 18 which engage and are operated by the cam faces 19 and 20, respectively, in the double cam 4. The plunger 13 is disk-shaped and fitted into and movable in the circular openings in the plate 8 and the ring 9 having a stem 21 slidably mounted in the bearing 22 and also provided with rollers 23 which engage and are operated by the cam faces 24 of the cam 5. Between the circular plate 8 and the ring 9 are pockets 11 which are so provided to receive the can heads, and between the circular plate 7 and the ring 9 are companion pockets 10 which are so provided to receive the paper washers or rings. A feed chute 25 automatically drops the can heads 26 into the pockets 11 as the ring 9 and the plates 7 and 8 revolve with the shaft 6, when the machine is in operation, and as the revolution continues a paper ring 27 is deposited at the proper time into the companion pocket 10.

The weight of the can heads in the inclined feed chute 25 will be sufficient to make positive their feed to the machine by the force of gravity, but the paper rings being light of weight I provide a device as shown in the drawings, to make positive their feed to the machine. In the feed chute 28, provided for the paper rings, is a chain belt 29, or other similar and suitable device, provided with pins 30 along its surface and far enough apart for the rings to be held between them. One side of this belt with its

projecting pins, is moved longitudinally within the feed chute, operating toward the discharge end. The speed of this belt is so timed and operated through the medium of the suitably mounted gear and miter pinions and shafts 31, 32, 33, 34, 35, 36, 37 and 38, that the paper ring is carried to the depositing end of the chute at the same instant that the pocket 10 reaches the point just below the discharge opening of the chute. At a point almost diametrically opposite to the feed chute 25 is the discharge chute 39 through which by gravity the can heads, into which the paper rings have been inserted, are carried from the machine. It is possible to continue this chute to another machine where the can heads can be delivered and where the next step in the process of the manufacture of the can is carried on.

In operation power is applied to the machine through the shaft 6. As the circular plates with the pockets revolve, a can head is dropped into the pocket 11 as the pocket reaches a point opposite the can head feed chute. At this point the face of the plunger 13 is flush with the inner surface of the plate 8. With the continuation of the revolution this plunger is pressed forward by the action of the cam 5. This action forces the can head into the circular opening in the ring 9 until it is firmly placed and held in a seat in the opening provided for it. By that time the companion pocket 10 has reached a point opposite the discharge of the feed chute for the paper rings. A ring drops into this pocket. Then the plunger 12, with its disk in its cup-shaped face, which at this point is flush with the inner surface of the plate 7, begins to operate by action of the double cam 4. The cams are so arranged that the plunger and the disk move forward together, but the plunger 12 moves beyond the edge of the disk 14 until the point is reached where the paper ring is pressed into place in the can head, which has during this second process been held firmly in its seat by the plunger 13. When this takes place the plunger 13 recedes and it is followed by

the disk 14, while the plunger 12 remains stationary. This disk 14 forces the can head clear of the plunger 12 and carries it out into the pocket 11, making positive a free discharge of the can head. The action of the cams is such that the plungers and the disk will be in normal positions when the points at the feed chutes will be reached. This operation will be continuous at each of the pockets provided in the machine.

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

1. A can head lining machine comprising a carrier having a plurality of circular openings therein, each of two diameters forming an interior shoulder or seat for the can head, a plunger for seating a can head against the said shoulder, a plunger of annular form for forcing a lining into the can head while seated against the shoulder, and a disk within the annular plunger for forcing the can head with its lining from its seat when the first plunger recedes, substantially as described.

2. A can head lining machine comprising a carrier having a plurality of circular openings therein, each of two diameters forming an interior shoulder or seat for the can head, a plunger for seating the can head against the said shoulder, an opposing plunger of annular form for forcing the lining into the can head while seated against the shoulder, a disk within the annular plunger for forcing the can head with its lining from its seat when the first plunger recedes, pockets in the carrier registering with the circular openings therein and one on each side of each circular opening, and means for feeding the linings and can heads to the said pockets to be forced therefrom into the circular openings, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

JAMES ALFRED GRAY.

Witnesses:

JAS. W. DOHERTY,
L. KEOHANE.