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CAN FLUXING MACHINE.

APPLICATION FILED JUNE 19, 1908.

935,229. **Patented Sept. 28, 1909.**

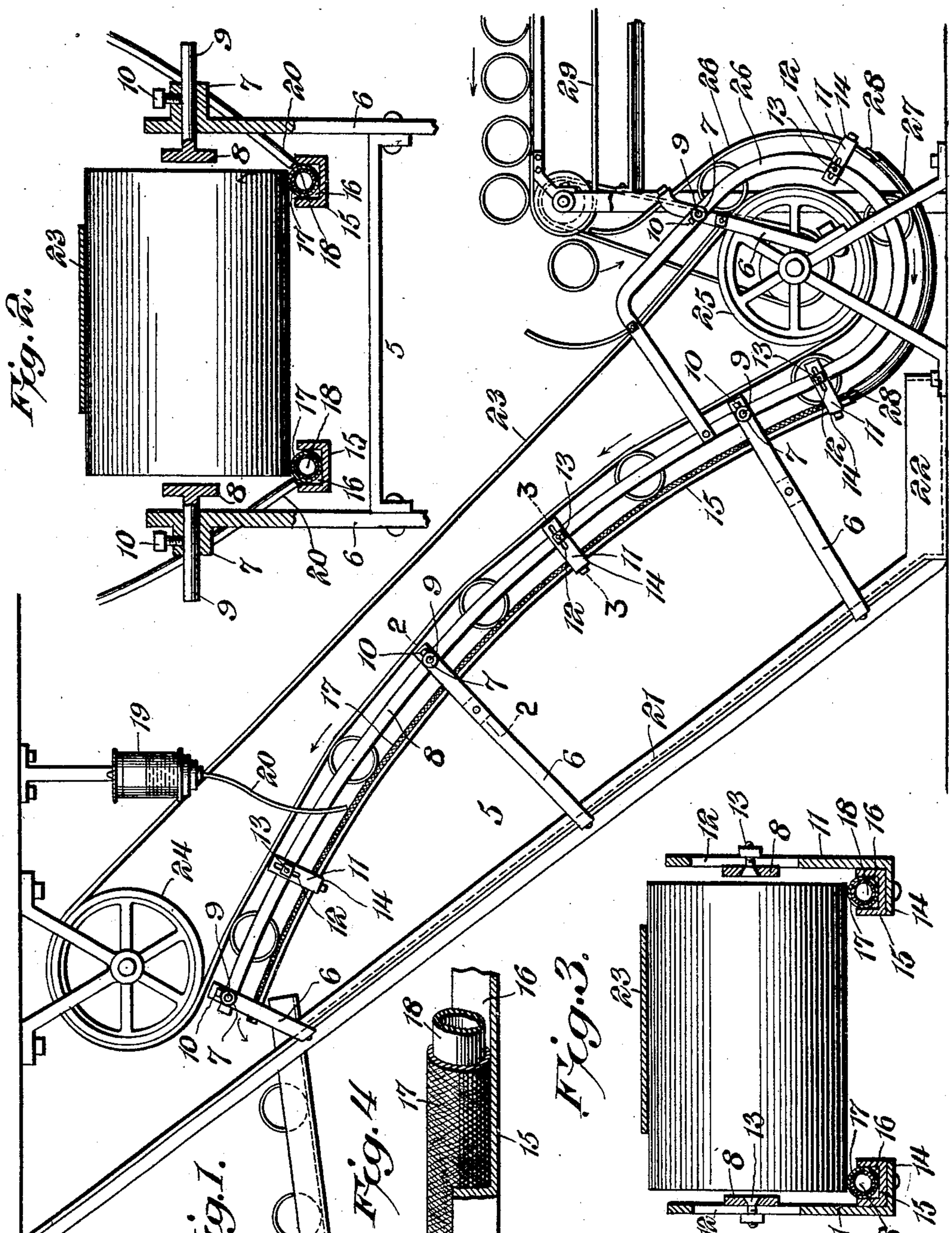

Fig. 2.

Fig. 1.

Fig. 4.

Fig. 3.

Witnesses

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CAN-FLUXING MACHINE.

935,229. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed June 19, 1908. Serial No. 439,353.

To all whom it may concern:

Be it known that I, WALTER J. PHELPS, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented a new and useful Can-Fluxing Machine, of which the following is a specification.

The present invention relates more particularly to means for applying acid or analogous flux to the marginal portions of can bodies in order to obtain the proper holding action of the solder which secures the heads to the bodies.

Among the various expedients employed or proposed have been absorbent wicks saturated with the flux, the cans being rolled over these wicks. Said wicks are usually made of felt or other analogous material and soon become clogged with dirt and hardened by use so that instead of applying a thin film of flux evenly over the entire surface to be treated, the flux will be in drops at separated points, so that a perfectly soldered stem cannot be obtained unless the cans are wiped or otherwise treated before being soldered. Now it is a fact well known to those skilled in the art that the thinner the film of acid or flux applied, the better, but the same must be complete and even.

The primary object of the present invention therefore is to provide means which will apply such a coat and the applying means moreover not become hardened and consequently defective or inoperative from long use as is the case with wicks of the type above mentioned.

A further and important object is to provide means of a novel and simple character that can be readily adjusted to operate on cans of different sizes, and still another feature of the invention relates to novel means of properly directing cans to the fluxing mechanism.

The preferred form of construction is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of the fluxing machine. Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1 and on an enlarged scale. Fig. 3 is also a cross sectional view on an enlarged scale on the line 3—3 of Fig. 1. Fig. 4 is a detail view partially in section of the flux supplying wick.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated, a supporting frame 5 is employed, which includes spaced standards 6 having outstanding thickened portions 7, at their upper ends. Guide rails 8 are located between the standards, and have outstanding stems 9 slidably passing through said thickened portions and normally held against movement by set screws 10. Hangers 11 are adjustably suspended from the guide rails, and to this end, said hangers have longitudinally disposed slots 12, through which are passed clamping bolts 13, said clamping bolts being carried by the guide rails. The lower ends of the hangers have inturned portions 14 arranged beneath supporting rails in the form of channel bars 15, the channels 16 in said bars opening through their upper sides. As a result of this structure, a runway for the cans is employed, and in the preferred form of construction, as shown in Fig. 1, this runway is disposed at an upward inclination, and is upwardly bowed.

Located in the channels 16 of the rails 15 are tubular wicks 17 that project above the rails and extend the length of the same. These wicks are supported by rubber or other yielding tubes 18 located in them, and which serve to hold the wicks distended. The acid or other flux is delivered to the wicks by any suitable means. Thus in the present embodiment, a reservoir 19 is employed for each, and a supply tube 20 leads from the reservoir to the channel or wick arranged below the same. A downwardly inclined catch pan 21 is preferably located below the runway and terminates in a receiving pan 22 at its lower end. The flexibility of the tubes assists the capillary action of the wicks.

For the purpose of rolling the cans through the runway, and consequently along the wicks, an endless belt 23 is employed that operates over upper and lower pulleys 24 and 25. The cans are introduced into the lower end of the runway, and consequently pass beneath the lower pulley 25. To this end, a suitable chute composed of rails 26 is employed, and this chute includes flexible rails 27 preferably in the form of rubber tubes secured at their ends as shown at 28, the flexible tubular rails being yielding so that cans may be passed beneath the pulley without difficulty, and as soon as caught by the belt, will be rolled up into the runway. Any suitable means may be employed for feeding the can bodies to the chute. Thus in the

present embodiment, the end of a conveyer 29 is shown. In like manner, suitable means, as for instance, an inclined way 30 is provided for receiving the cans delivered from the upper end of the runway. With this structure, the cans delivered into the chute 26 gravitate to positions beneath the pulley 25 and being held by means of the yielding track sections 27 in engagement with the portions of the belt passing around said pulley, are rolled along the same until they enter the track or runway. Here their margins are rolled along the wicks 17, which being saturated with the acid flux, will form a thin coating upon said margins. Inasmuch as this wick is tubular in form and is yieldingly supported by the inclosed rubber tube, it will be evident that the same will not lose its elasticity, because of any dirt that accumulates in the wicking. Therefore not only has the wick long life, but it will place a very thin and even film of flux on the margin of the can passed through the runway. It will be evident that the structure can be readily adjusted to cans of different sizes. For instance, the guide rails 8 can be moved toward and from each other, and inasmuch as the supporting rails are carried by said guide rails, they will be correspondingly adjusted. These supporting rails, however, can be raised and lowered as desired. The yielding track sections 27 are also worthy of note, as they constitute simple means for allowing the cans to pass freely beneath the lower pulley, a rigid structure at this point being impossible inasmuch as the pulley cannot give.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention, will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In a can fluxing machine, a flux applying device comprising a longitudinally extended support adapted to permit the passage of a plurality of cans therealong at the same time, said support being of yielding material, variably yielding along its entire extent individually to each of the plurality of cans independent of its yield to any other of the cans passing therealong, and a longitudinally extending wick carried by said support with which the peripheries of the cans contact and over which they roll.

2. In a can fluxing machine, a flux applying device comprising a longitudinally extended support adapted to permit the passage of a plurality of cans therealong at the same time, said support being tubular and formed of yielding material along its entire extent, said material being variably yielding individually to each of the said plurality of cans independent of its yield to any other can of the plurality, and a flux applying wick carried by said tubular support with which the peripheries of the cans contact.

3. In a can fluxing machine, the combination with a channel, of a flux applying device located in and projecting from the channel, said device comprising a tubular yielding wick located longitudinally in the channel and held distended, and means for rolling the cans over said wick.

4. In a can fluxing machine, the combination with a channel bar, of a tubular wick located longitudinally within and projecting from the open side of the channel bar, a yielding tubular support incased by the wick, and means for rolling cans longitudinally along said wick.

5. In a can fluxing machine, the combination with spaced guide rails forming a can runway between them, a supporting rail adjustably connected to and supported by the guide rails, said supporting rails having flux applying means, and mechanism for rolling cans along the supporting rails in contact with the flux applying means and between the guide rails.

6. In a can fluxing machine, the combination with spaced guide rails forming a can runway between them, of means for adjustably securing the guide rails different distances apart, supporting rails located below and suspended from the guide rails, being adjustable therewith, flux applying means carried by the supporting rails, and means for rolling cans along the supporting rails between the guide rails and in contact with the flux applying means.

7. In a can fluxing machine, the combination with supporting standards, of opposed guide rails extending transversely of the supporting standards and having outstanding stems slidably mounted in the standards, means for securing the stems against movement in the standards and in different adjusted positions, hangers adjustably suspended from the guide rails, channel rails secured to the hangers, tubular supporting wicks located in the channel rails, yielding supporting tubes for the wicks located within said wicks, and a belt operating above the rails for rolling cans longitudinally along the wicks and between the guide rails.

8. In a can fluxing machine, the combination with an upwardly inclined runway for cans, of fluxing means extending longitudinally along the said runway, along which the cans roll in contact therewith, a belt located over the runway for moving said cans upward along the same, a fixed pulley at the

lower end of the runway around which the said belt passes, means for guiding the cans to the runway including a flexible elastic rail partially surrounding the pulley but spaced therefrom, and means for delivering cans into the space between the pulley and the flexible rail.

9. In a can fluxing machine, the combination with an upwardly inclined runway for cans, of fluxing means associated with said runway, a lower and an upper pulley, a belt extending around the pulleys and operating over the runways to roll cans along the same, means for directing cans beneath the lower pulley, and yielding tubular rails secured at their ends beneath the lower pulley and constituting means for directing the cans to the runway.

10. In a can fluxing machine, the combination with a tubular yielding wick, means for supporting the same, means for holding the wick distended, means for rolling the cans over the wick, and means for applying flux to the wick.

11. In a can fluxing machine, the combination with spaced channel bars each forming a trough, tubular yielding wicks in each trough, means for holding the wicks distended, means for applying flux to the wicks, and means for rolling cans thereover, the wicks projecting above the bars and contacting with the cans.

12. In a can fluxing machine, the combination with a runway for cans, of a longitudinally extended support of yielding material located along the runway, said material being yieldable to each can individually independent of its yield to any other can contacting therewith at the same time, a flux applying wicking extending longitudinally along said runway and supported on said yielding support over which cans are made to roll, pulleys at opposite ends of the runway, a belt on said pulleys contacting with the cans to roll the same, and means for guiding the cans to the runway.

13. In a can fluxing machine, upwardly inclined guide rails forming a can runway, flux applying wicking supported on the length of said rails, a reservoir located at the upper end of the runway, means for conducting flux from the reservoir to the upper end of the wicking, and means for rolling the cans upward on said runway in contact with the wicking and against the downward movement of the liquid flux.

14. In a can fluxing machine, guide rails forming a can runway, said rails being inclined, flux applying wicking supported on the rails and extending longitudinally along the runway, a belt supported adjacent to the runway and adapted to engage a series of cans and roll them up the runway and over the wicking, a reservoir located at the upper end of the runway and supplying fluid flux to the upper end of the wicking, and a trough located beneath and at the bottom of the runway and adapted to collect the flux after it leaves the wicking.

In testimony, that I claim the foregoing as my own, I have hereto affixed by signature in the presence of two witnesses.

WALTER J. PHELPS.

Witnesses:

FORREST BRAMBLE,

CARY D. HALL, Jr.