

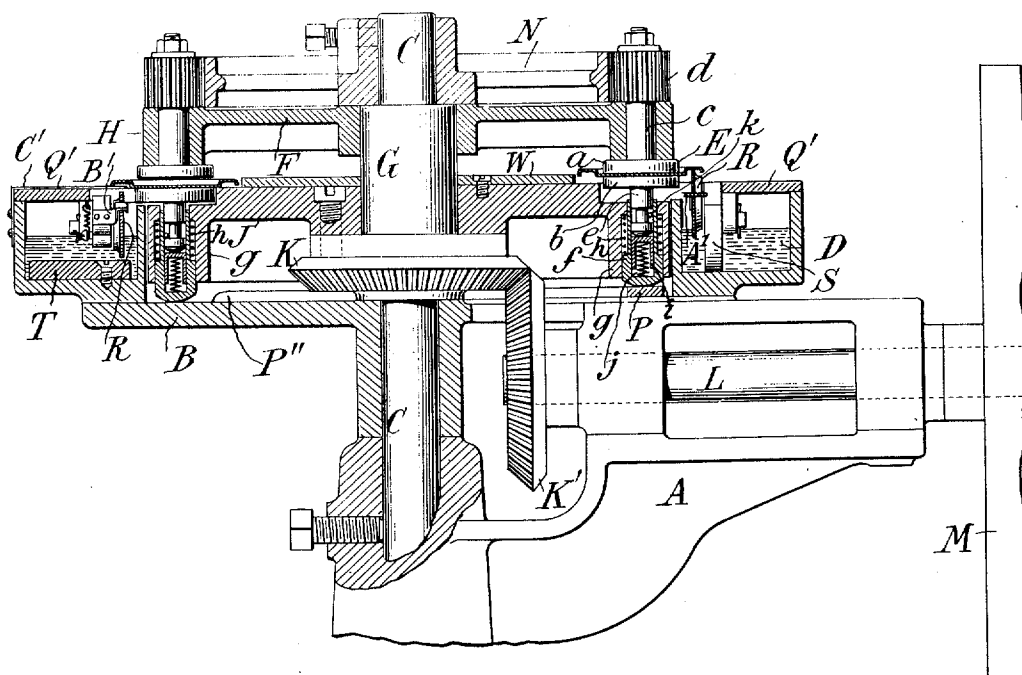
P. KRUSE.
MACHINE FOR APPLYING ADHESIVES TO CAN HEADS.
APPLICATION FILED JULY 7, 1910.

986,470.

Patented Mar. 14, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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INVENTOR :

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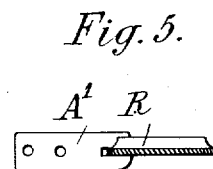
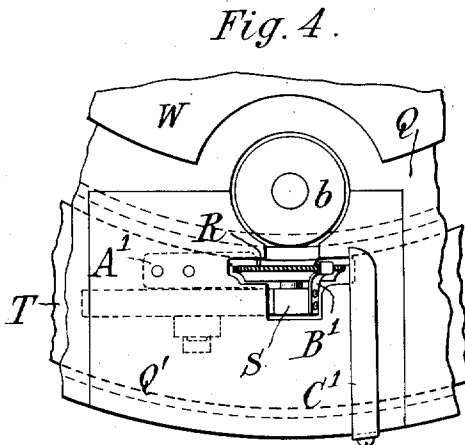
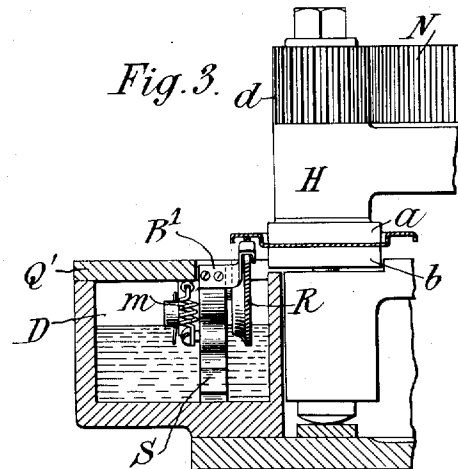
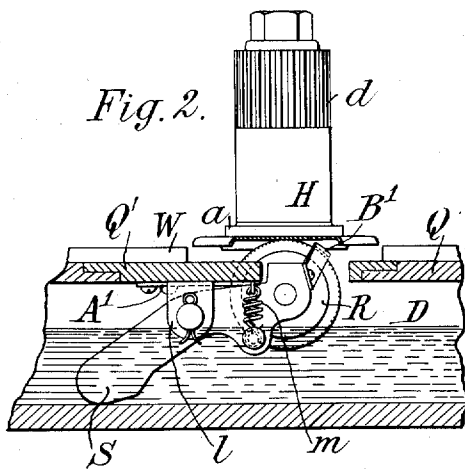
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PETER KRUSE, OF NEW YORK, N. Y.

MACHINE FOR APPLYING ADHESIVES TO CAN-HEADS.

986,470.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed July 7, 1910. Serial No. 570,758.

To all whom it may concern:

Be it known that I, PETER KRUSE, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Machines for Applying Adhesives to Can-Heads, of which the following is a specification.

10 This invention relates to apparatus for applying to can heads, that is to the tops or bottoms of sheet metal cans, a coating of suitable adhesive material such as a rubber cement. Such coating is commonly applied

15 to a can head which is to be united to the can body by seaming and without solder, the coating being sufficiently elastic to form an impervious packing between the folds of the metal forming the seam.

20 The particular invention forming the subject matter of the present application provides means for preventing the smearing of adhesive material, such as rubber cement, over parts of the machine where it is not desired. I have shown the same in connection

25 with a machine such as is embodied in my application Serial No. 519,348, filed September 24, 1909. In the use of the machine described in said application, it has been found that the rubber cement being extremely tenacious, is apt to spread from the cementing

30 roll to the can head, and that it will not separate cleanly from the roll after the same leaves contact with the can head, but stretches from the roll to the can head, forming a long film. Also that undesired quantities of said rubber cement are carried up on the sides of the roll, and that the result of these two conditions is to cause the

40 rubber cement to be smeared around the top of the machine, greatly impeding its operation. Further, that when the can head is removed from the machine, the cement stretches in a long string from the roll to the can head and further smears the machine therewith.

45 My present invention has for its object to overcome the said difficulties, and to cause the cement to be removed from the roll in places where its presence is not desired nor useful. Further, to provide means for cleanly separating the strip of cement from the roll after the roll has deposited its application upon the can head. Further, to

50 provide means for severing the strip of ad-

hesive cement when the can head is discharged from the machine.

I have shown my invention as applied to a machine of the type illustrated in my said former application, although it is not necessarily limited in its application to such particular type of machine, but will be found equally applicable to other types of machines for similar purposes.

In the particular embodiment illustrated in the accompanying drawings,—Figure 1 is a sectional elevation of a type of machine to which my improvements may be applied; Figure 2 is a detail view illustrating in side elevation one of the cement rolls; Figure 3 is a transverse section of the parts illustrated in Fig. 2; Figure 4 is a plan view of the parts illustrated in Fig. 2, the can head and means for holding and revolving the same being removed; Figure 5 is a detail view of the roll and stripping device taken from the under side of Fig. 4.

I will describe for clearness of understanding the general construction of machine in connection with which I have illustrated my improved devices as being employed.

A designates a supporting frame or standard adapted to provide bearings for the moving parts. On top of this standard is a table B through the middle of which projects vertically a fixed shaft or stud C which is suitably secured to hold it non-rotative. On the table B is mounted a trough D serving as a receptacle for the adhesive material or cement which is preferably annular forming a complete circle. Within and above the trough are located a series of chucks E E for grasping, revolving and carrying the can heads. These chucks are composed of upper and lower pads or disks *a* and *b*, which receive the can heads between them, suitable means being provided for closing them together to clasp the head and for separating them to release it. Suitable means also is provided for revolving the chucks and for swinging them around in a circular path or orbit. The means shown consists of a turn-table or carrier F comprising a central hub or sleeve G, an upper spider or disk H carrying the upper heads with its central hub fixed on the sleeve G, and a lower spider or disk J having its central hub also fixed on the sleeve G. The turn-table thus formed

is revolved continuously through the medium of miter gears $K K'$ from a driving shaft L carrying a driving pulley M or other means for transmitting power. For revolving the chucks a stationary gear N is provided fixedly mounted on the stationary stud or post C , as shown in Fig. 1, and the upper spindles $c c$ of the chucks have keyed upon them pinions $d d$ which mesh with the teeth of this stationary gear, the arrangement thus provided constituting sun and planet wheels, whereby as the turn-table revolves and causes the chucks to travel around in a circular path, their pinions are revolved by engagement with the teeth of the fixed sun wheel N .

For opening and closing the chucks, a suitable means is provided which will be described. The upper rotatively driven pad a of each chuck is carried at an invariable height by the mounting of its spindle in one of the arms of the upper spider H . The lower disk or pad b of each chuck is mounted on a spindle e to revolve idly and is movable up and down. Although the specific construction for accomplishing this is immaterial, yet the construction shown in my said application which is well adapted to the purpose, may be employed. Each pad or disk b is mounted on a spindle e which turns freely in a sleeve or bushing f which is held movably within a socket in the hub g of the carrier spider J . The sleeve f is movable up and down, being pressed downwardly by a spring h located in a counter bore surrounding the sleeve. The lower portion of the sleeve forms a head which projects beneath the hub and is engaged by a cam P . The spindle e projects down only part way through the sleeve and rests upon the top of another sleeve i therein which is pressed upwardly by a spring j . The cam P is formed in the arc of a circle, the open space between its ends corresponding to that portion of the travel of the chucks wherein they are open and inactive. The cam P is fastened upon the table B just within the trough D , and underlies the path traversed by the axes of the chucks in their circular travel. At its ends it has inclines only one of which P'' is shown. The incline at the reengaging end receives the lower end or head of each sleeve f and lifts it against the pressure of its spring h , thereby lifting the parts carried by this sleeve, including the pad b . The lifting movement is slightly greater than that which would bring this pad into grip with the pad a , in order to thereby compress the spring j , which latter spring is stiff enough to grasp the can head with the requisite force, and yet is adapted to yield so as to compensate for varying thicknesses of heads and for any accidental irregularities. When a chuck reaches the opposite end P'' of the cam P ,

the sleeve f rides down off the end thereof, which is preferably also inclined, thereby lowering the pad b and opening the chuck. To insure that the expansion of the spring j shall not hold up this pad, or in other words to hold down this pad against the upward stress of the spring j , some stop such as a transverse pin or key k , is provided for limiting the upward movement of the rotative spindle e .

The lower member or spider J of the turn-table is formed with or carries a disk Q of diameter sufficiently large to extend partly over and preferably to entirely cover the adhesive trough D . The plate Q is preferably formed separately from the spider or disk J . It forms the carrier for the means for applying adhesive to the revolving heads. The applying means shown consist each of a cementing roller or roll R , and a lever S carrying this roll on one arm and having its opposite arm or tail projecting downwardly into engagement with a cam T . The lever S is suitably connected to the carrier, preferably by being fulcrumed to a pendant lug l carried thereby, and formed preferably on a removable cover Q' , one of which is provided for each adhesive-applying means. A spring m is provided for pressing up the arm of the lever carrying the roll R and pressing down the tail of the lever into engagement with the cam T . The roll R is located outside of the chuck and in position to be directly beneath the portion of the can head to which the adhesive is to be applied, and when pressed up by the spring moves up through a slot or opening into contact with the can head, as shown in Fig. 2, and on the right in Fig. 1. The cam T is conveniently arranged inside the adhesive trough D , in which case the entire lever S for each of the adhesive applying means is placed within this trough. The cam T is arranged to force the adhesive-applying roll down out of action and consequently corresponds in position with the open portion or space between the ends of the cam P .

The foregoing is a description of those parts of my machine here illustrated which are embodied in my prior application above referred to, and are here shown only by way of illustrating one application of my present invention. In connection with the cement roll R , I provide a stripper A' , which I have illustrated as being applied to the under side of the cover Q' , to which it may be attached by screws, and which is shaped at its operative end so as to engage against both sides of the cement roll R , and also against that portion of the periphery of the wheel which is represented as being guttered. The said stripper however does not come in contact with the knurled periphery of the said roll, as this is the part which carries the load of cement and applies the same

to the can head. It does, however, remove the cement from all other parts of the wheel. After the roll has applied its load of cement to the can head, the same will, owing to its
 5 adhesion to the can head and also to the roll, stretch in a constantly widening film between the can head and the roll, and if this film is not broken it becomes deposited upon the carrier and leads to the same in time being completely smeared over with the rubber cement. To break this film or strip of
 10 cement, I provide a separator B' which consists of a bracket attached preferably to the end of the lever S in which the roll R is supported. This separator B' is shaped somewhat to conform to the outer edge of the roll R, and preferably extends around the same, and it is located as near as convenient to the top of the roll upon the descending side, to prevent the formation of a
 20 film of cement extending between the edge of the roll and the can head as the can head is revolving or to break or separate such film from the roll. I prefer to locate this separator upon the lever S, because
 25 thereby it is removed from the path of the means which I am about to describe for cutting the strip of rubber cement.

The can head is automatically removed
 30 from the machine by means not here illustrated, but illustrated in connection with my former application. This is permitted by the presence of the cam T in the bottom of the annular trough D which raises the
 35 tail of the roll carrying lever and lowers the said roll out of contact with the can head. At the point where the roll R is lowered, I interpose a stationary cutter C' attached to the side of the stationary trough D and
 40 cause the same to project over the disk Q and to pass between the lowered roll R and the can head, thereby completely severing the strip or film of cement which would otherwise stretch from the roll to the can
 45 head and smear all over the machine as the can head is subsequently ejected.

The particular shape and location of stripper, separator and cutter which I have illustrated are well adapted to the particular
 50 machine in connection with which they are shown as being used, but such shape or particular location I do not regard as essential, and this is subject to change for the requirements of a particular machine. I do regard it, however, as very important and as
 55 practically essential to the successful operation of a machine for applying rubber cement or other elastic or adhesive material, that means should be provided for separating the adhesive material from the roll
 60 after application; and for cutting said adhesive material between the roll and the can head after the requisite amount of cement has been applied to the can head, and
 65 I likewise find the means for stripping the

superfluous adhesive cement from the sides of the feed roll to be of great value in connection with this machine.

I claim as my invention:—

1. The combination of a trough adapted 70 to contain adhesive material, a roll adapted to revolve in said material and to apply the same to a surface to be coated located above said roll, and a separator located, with relation to the direction of rotation of said roll, 75 on the descending side and beyond the point of application of said adhesive material and adapted to separate a film of adhesive material from said roll.

2. The combination of a trough adapted 80 to contain adhesive material, a roll adapted to revolve in said material and to apply the same to a surface adjacent said roll to be coated, and a cutter located at the discharge point of said coated surface and adapted to 85 cut a strip of adhesive material extending from the coated surface to the roll.

3. The combination of a stationary trough adapted to contain adhesive material, a revolving carrier, rolls traveling with said 90 carrier and adapted to be revolved in said material and to apply the same to a surface to be coated located above said roll, and a separator located, with relation to the direction of rotation of said roll, on the descending 95 side and beyond the point of application of said adhesive material and adapted to separate a film of adhesive material from the roll.

4. The combination of a stationary trough 100 adapted to contain adhesive material, a revolving carrier, rolls traveling with said carrier and adapted to be revolved in said material and to apply the same to a surface to be coated located above said roll, a stripper 105 located on the ascending side of the roll and before the point of application and adapted to remove adhering material from the sides of said roll, and a separator 110 located with relation to the direction of rotation of said roll, on the descending side and beyond the point of application of said adhesive material and adapted to separate a film of adhesive material from the roll.

5. The combination of a stationary trough 115 adapted to contain adhesive material, a revolving carrier, rolls traveling with said carrier and adapted to be revolved in said material and to apply the same to a surface to be coated located above said roll, means 120 for supporting and lowering said rolls, and a cutter located at the discharge point of said coated surface and adapted to cut a strip of adhesive material extending from the coated surface to said roll. 125

6. The combination of a stationary trough adapted to contain adhesive material, a revolving carrier, rolls traveling with said 130 carrier and adapted to be revolved in said material and to apply the same to a surface

to be coated located above said roll, means
for supporting and lowering said rolls, a
stripper located upon the carrier adjacent
to the rising side of said roll and before the
5 point of application and adapted to remove
adhesive material from the sides thereof,
and a separator located upon the roll sup-
port adjacent to the descending side of the
roll and beyond the point of application
10 and adapted to separate a film of adhesive
material from said roll.

7. The combination of a stationary trough
adapted to contain adhesive material, a re-
volving carrier, means carried thereby for
15 grasping and turning a can head, rolls trav-
eling with said carrier and adapted to be re-
volved in said material, means for support-

ing and lowering said rolls, a stripper
adapted to remove adhesive material from
said rolls, a separator mounted upon said 20
roll support and lowered therewith, and
adapted to separate a strip of adhesive ma-
terial from said roll, and a stationary cutter
adapted to enter between the can head and
the roll when the roll is lowered and cut a 25
strip of adhesive material adhering to said
roll.

In witness whereof, I have hereunto
signed my name in the presence of two sub-
scribing witnesses.

PETER KRUSE.

Witnesses:

FREDK. C. FLADD,
CHARLES EDWIN POLLARD.