

PATENTED MAR. 8, 1904.

2 SHEETS—SHEET 1.

NO MODEL.



*Inventor:*

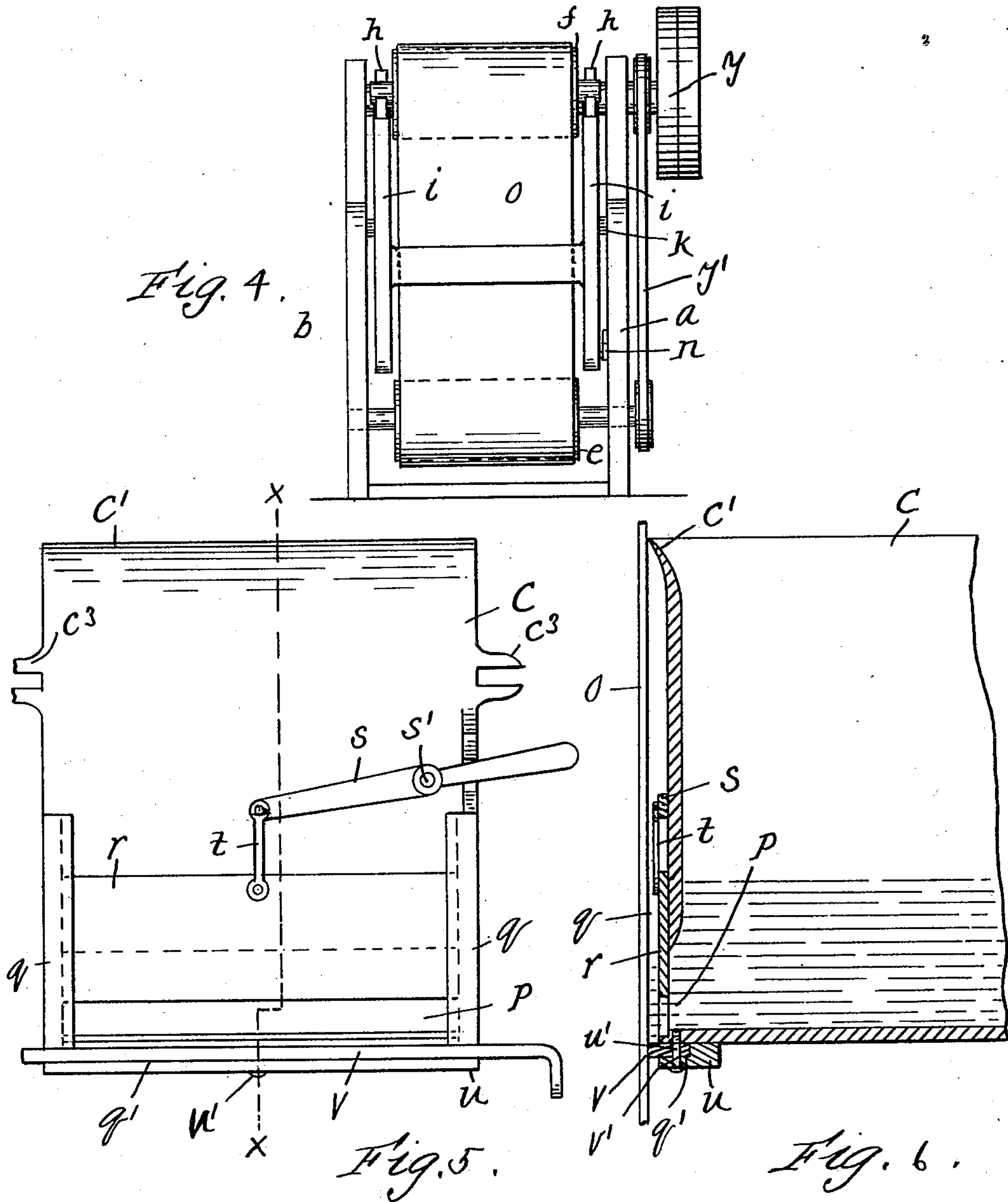
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CEMENTING MACHINE.  
APPLICATION FILED JAN. 8, 1904.

NO MODEL.

2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## CEMENTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,074, dated March 8, 1904.

Application filed January 8, 1904. Serial No. 188,246. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. KNIPE, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in  
5 Cementing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

In the process of manufacture of shoes it  
10 has been customary to secure cloth linings, often known as "doublers," to various portions of the shoes by means of thin rubber cement, which is applied with a brush to the inner side of the leather. With this method  
15 the expense for cement and labor is considerable.

My invention relates to and has for its object to provide a form of cementing-machine which may be conveniently employed to apply a thin coating of a heavy cement, which is  
20 much less expensive than rubber cement, evenly to cloth linings and other articles and which will perform this work much more satisfactorily and economically than is possible  
25 by hand.

I accomplish the above object by means of a form of cementing-machine having an endless belt which is driven over a series of rolls in such a manner as to provide a conveniently-  
30 arranged work-receiving portion, means being provided for automatically applying an even coating of cement to the surface of the belt.

In the drawings, Figure 1 is a side elevation of my machine. Fig. 2 is a plan view thereof. Fig. 3 is an enlarged bottom view of the tank. Fig. 4 is an end elevation of the machine. Fig. 5 is an enlarged front view of the tank, and Fig. 6 is a cross-section on line  
40 *x x* of Fig. 5.

As shown in the drawings, the machine consists of two side frames *a* and *b*, which are rigidly connected together and support a cement-containing tank *c* at the rear ends thereof. Rolls *d* and *e* are journaled in open slots or bearings in the frame, so that their axes are in the same vertical plane. A third roll  
45 *f* is journaled in open slots or bearings formed in the front ends of a pair of arms *h*, which  
50 are adjustably mounted in sockets *l* in the up-

per end of a support *i*, the latter being pivoted at *k* between the frames *a b*. Set-screws *m* are threaded in said support *i* in line with the sockets in which said arms are located and engage the opposite ends of said arms from  
55 the bearing end thereof, so that said arms may be forced forwardly. A latch *n* is pivoted to the frame *a* and is adapted to engage a pin on support *i* below its pivot *k*, so as to prevent the upper end of said support *i* from swing-  
60 ing rearwardly. A smooth-faced endless belt *o*, preferably of rubber, is arranged about said rolls and is adapted to be driven thereby. The bearing ends of arms *h* are so arranged that the center of the roll *f* is practically on a level  
65 with the center of the roll *d* at all times, so that the portion of the belt running from the roll *f* to the roll *d* is substantially horizontal, and an unobstructed work-receiving portion  
70 is provided between said rolls.

When the latch *n* is in engagement with the support, it will hold the roll *f* at a certain distance from the other rolls, which distance may be varied by means of the screws  
75 *m*, so that the belt may be tightened or the roll moved so that the belt will run evenly thereon.

As shown in Figs. 5 and 6, the tank *c* is provided with an opening *p* in its side next the belt *o*, and a pair of bosses *q* are formed  
80 integral with the side of the tank at opposite ends of the opening *p*, said bosses being provided with guide-grooves in their adjacent sides, in which a flat valve plate or gate *r* is adapted to slide, said gate seating in a groove  
85 or rabbet in the front edge of the bottom of the tank and acting to close said opening tightly. A lever *s* is pivoted at *s'* to the side of the tank, and its inner end is connected to the gate *r* by a link *t* or other suitable loose  
90 connection.

A rib *u* is formed on the bottom of the tank and extends across the front thereof, said rib being provided with a groove *q'* in its front side, the bottom of which is slightly inclined with respect to the face of the belt. A  
95 regulating-plate *V* is arranged in said groove *q'*, the front and rear edges being straight and slightly divergent, so that when the rear edge is held against the bottom of said groove its  
100



front edge will be parallel with the belt *o*. A pin *u'* passes through a slot *V'* in said plate *V*, the latter being parallel to the rear edge of said plate, so that as the plate is moved longitudinally its front edge will be moved toward and from the belt and will be constantly held parallel to the face thereof.

The upper front edge of the tank is provided with a lip *c'*, the edge of which is arranged to be pressed against the belt *o* as it leaves the rear upper roll *d*, and a pair of studs *c''* are arranged in ears *c'''* on the tank and are threaded into the frame, acting to draw the lip *c'* and the bosses *q* against the belt *o* and hold the tank in position, said bosses preventing the cement from flowing over the edges of the belt.

Rolls *d* and *e* are preferably both driven from the driving-wheel *y*, a belt *y'* being provided between said rolls, and the belt *o* is driven in the direction of the arrow in Fig. 1, and therefore passes downwardly past the opening *p*. After the machine is started the valve-gate *r* is lifted, so that the cement in the tank may flow against the passing belt. The particular extent to which valve *r* should be opened is not essential, although it is preferable that it be opened no wider than is necessary to enable the proper amount of cement to flow to the belt. The plate *u* is then moved longitudinally, so that its front edge is moved from or toward the belt until the desired amount of cement is applied thereto. (See Fig. 6.) The farther the plate *u* is withdrawn from the belt the greater will be the thickness of the cement which is applied to the surface thereof, and vice versa. A considerable longitudinal movement of the plate will cause only a comparatively slight transverse movement of its front edge, permitting accurate adjustment.

In cementing different classes of goods, as cloth, canvas, or leather it is necessary to apply a cement coating of different thicknesses to the belt, according to conditions. By arranging the front edge of said plate *u* exactly parallel with the surface of the belt the coating of cement which is applied to the belt will be perfectly even, and its thickness may be readily varied at pleasure.

In using the above-described machine the operator places one end of the doubler on the belt *o* above the front roll *f* and presses it thereon. As the roll is driven forward the doubler will be carried onto the horizontal or work-receiving section of the belt between the rolls *f* and *d*. The doubler will be carried by the belt until it reaches the roll *d*, at which point the belt passes downward. At this point the end of the doubler will leave the belt, and the operator may then take hold of it readily and remove it from the belt. The lip *c'* on the edge of the tank will remove approximately all of the cement on the belt not taken up by the piece cemented and return it

to the tank, so that the belt will be more evenly covered.

In applying the cement to cloth having a surface on which there is considerable nap loose threads are often left on the belt, which are carried along and lodge on the end of plate *u*. After the machine is used continuously for a number of hours these threads collect into bunches and are liable to obstruct the free application of the cement to the belt and cause the cement to be applied in streaks. When this occurs, it is simply necessary to close valve *r* and withdraw plate *u*.

As the cement on the belt will dry rapidly when not in use, it is necessary to place it in water whenever the machine is not to be used for several hours. To remove the belt, the valve *r* must first be closed. Latch *n* is then lifted and the upper portion of the support *i* is swung rearwardly, loosening the tension of the belt to such an extent that the roll *f* may be readily slipped out of its bearings, and the rolls *d* and *e* may be in like manner removed from their bearings. In this manner the belt may be removed easily and readily and may be replaced without difficulty.

From the foregoing description it will be apparent that I provide a machine which will rapidly apply a thick gummy cement which could not be applied with a brush to cloth or other material in as limited quantities as may be desired.

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

1. A machine of the class described comprising a front roll and two rear rolls, one of said rear rolls being arranged above the other, and all of said rolls being arranged in parallelism, an endless belt arranged about said rolls, means for driving said rolls so that the belt moves from the front to the upper rear rolls, and provides a work-receiving portion therebetween, and means for supplying liquid cement to the outer surface of the belt between the said rear rolls, substantially as described.

2. A machine of the class described comprising a liquid-containing tank having a discharge-opening, three parallel rotating rolls, an endless belt passing about said rolls, one of said rolls being disposed above the other and so arranged that the outer surface of the belt is driven over and against the outer edges of said opening as it is driven from said uppermost roll to the one below it, the third roll being disposed to conduct the belt to one side to provide a work-receiving portion, substantially as described.

3. A machine of the class described comprising a liquid-containing tank having a side opening, a pair of vertically-extending bosses at opposite ends of said opening, and on the side of the tank, an endless liquid-carrier constantly pressed against said bosses, a gate-



valve for closing said opening and a regulating-plate below said valve and extending across the space between said bosses, the front edge of said plate being parallel to the face  
5 of said carrier, and adjustable toward and from the same, substantially as described.

4. A machine of the class described comprising a frame, a roll removably journaled in the rear thereof, a support connected to  
10 said frame and movable toward said roll, a second roll removably journaled in said support, an endless belt passing about said rolls,

a liquid-containing tank connected to said frame in the rear of said rolls and having a discharge-opening leading to said belt, and a  
15 valve for closing said opening, substantially as described.

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

WILLIAM A. KNIPE.

Witnesses:

L. H. HARRIMAN,  
H. B. DAVIS.