May 17, 1938. E. M. BROOKS 2,117,272

MOISTENING DEVICE

Filed Oct. 28, 1935

Fig. 1.

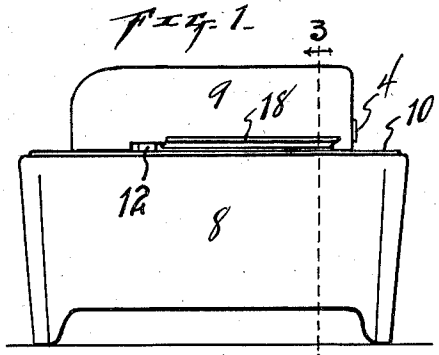


Fig. 2.

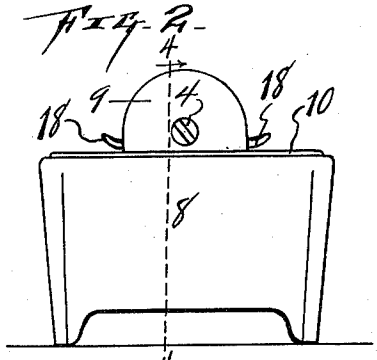


Fig. 3.

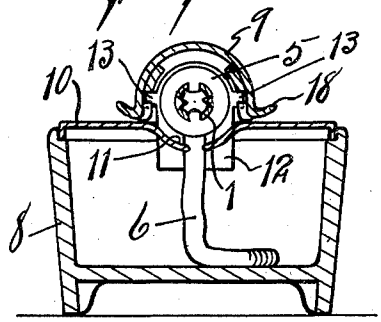


Fig. 4.

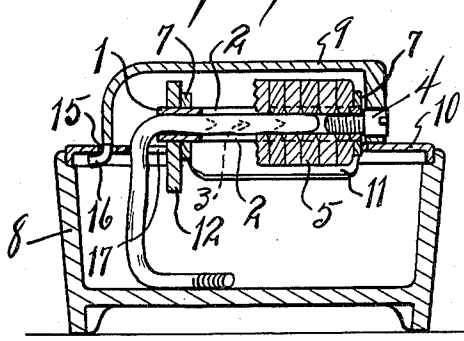


Fig. 5.

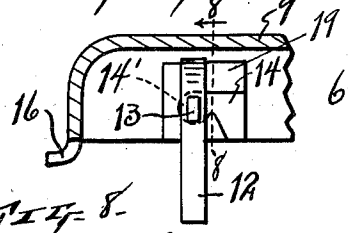


Fig. 6.

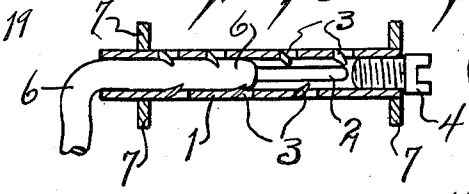


Fig. 7.

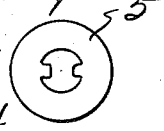


Fig. 8.

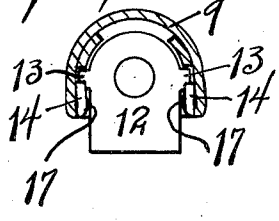
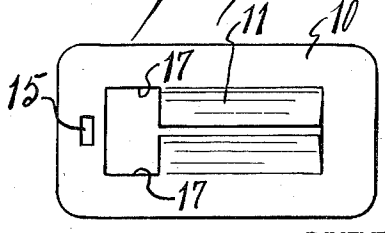


Fig. 9.



Fig. 10.



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Patented May 17, 1938

2,117,272

UNITED STATES PATENT OFFICE

2,117,272

MOISTENING DEVICE

Earl M. Brooks, Fort Worth, Tex.

Substitute for abandoned application Serial No. 47,118, October 28, 1935. This application May 26, 1937, Serial No. 146,324

5 Claims. (Cl. 91—48)

My invention relates to moistening devices for envelopes and the like, and more particularly to a simple and inexpensive moistening machine having a porous moistening drum that is adapted to ride upon the object to be moistened; and

The object is to provide a moistener in which the mechanism is removably mounted on a container cover so that various sizes and shapes of water containers may be used.

Another object is to provide a moistener of the minimum number of parts which are constructed as to require the least amount of effort in the assembly thereof.

Still another object is to provide a moistener so that the moistening roller and its housing will rest upon the object to be moistened, with sufficient weight, to cause the same to be rotated.

An advantage of this device is that the moistening roller is so positioned in a housing as to eliminate a greater amount of evaporation of the water from the roller as well as from the water container. This permits more extensive use of the moistener without the necessity of frequent stops to replenish the water supply.

Another advantage of this invention is that the moistening drum is provided with a wick that projects into the water supply in a manner so as to not interfere with the rotation of the drum, and in a manner so as to uniformly moisten the drum.

Another advantage of this invention is that when, an envelope is stuffed, it may be directly passed into operative relation with the device without the necessity of changing the position of the envelope in the hands of the operator, thus eliminating waste of time in turning and grasping the envelope in some awkward manner as is so often necessary in using the conventional type of moistener.

Other objects and advantages will be more particularly pointed out in the following description and the invention will be fully explained in the claims.

Reference is had to the accompanying drawing which forms a part of this application.

Fig. 1 is a side elevation of the device, showing a simple type of water well that may be used with the same.

Fig. 2 is an end elevation of the same.

Fig. 3 is a vertical section of the device, taken on the line 3—3 of Fig. 1.

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged detail view of a portion of the wheel housing, showing a removable bearing for one end of the moistening drum.

Fig. 6 is an enlarged longitudinal section of the core of the moistening wheel or drum having a portion of the wick inserted therein.

Fig. 7 is a face view of one of the fiber units of the moistening drum or wheel.

Fig. 8 is a view of the removable bearing, taken on the line 8—8 of Fig. 5.

Fig. 9 is a detail view of a portion of the moistening wheel housing showing a variation in the structure of the bearing support.

Fig. 10 is a plan view of the lid of the water container.

Similar characters of reference are used to indicate the same parts throughout the several views.

The device consists of a moistening wheel comprising a tubing which serves as the core of a porous moistening surface. The tubing or core 1 is provided with longitudinal slots 2 and perforations 3. The perforations 3 are formed by pushing in portions of the tubing in a manner so as to form pointed projections in the tubing that point towards one end of the tubing. The porous moistening surface may consist of a plurality of disks 5 which are provided with central openings that will pass over the tubing 1. These openings of the disks 5 are formed irregular so that portions of the disks may project into the slots 2 and through the perforations 3 and into the tubing 1. The end of the core or tubing, in the direction the points of the perforations 3 project, is provided with a bolt that serves as an axle for the tubing. This end of the tubing 1 is threaded to receive the bolt 4. When the disks 5 are placed side by side on the tubing 1, a metallic disk 7 is passed over each end of the tubing and against the disks 5 so as to compress them a sufficient degree to permit them to carry the desired moisture.

The end of a wick 6 is inserted into the other end of the tubing 1 and forced therein until it contacts with the end of the bolt 4. The other end of the wick is permitted to extend through an opening in the lid 10 and into the base of the water container 8 of the device. The prongs, formed in making the perforations 3, serve to engage and hold the wick in the tubing 1 so that it may have direct engagement with each and every one of the porous disks 5 of the moistening wheel. This arrangement of the wick and the disks 5 makes a continuous porous conveyer of the water, from the well 8 to the surface of the water moistening wheel. The wick 6 contacts with the por-

tions of the disks 5 that project into the tubing 1, and the prongs projected into the tubing 1 holds the wick in a manner so as to not compress it and in a manner so that it may have its maximum efficiency. These prongs also insure a safe retainer for the wick 6 when the wheel is rotated.

The moistening wheel, which consists of the core 1, disks 5, and wick 6, is rotatably removably mounted in a housing 9 which is adapted to rest upon the lid 10 of the water well or container 8 of the device. The housing 9 is preferably formed in an elongated cylindrical form of a greater length than the length of the water wheel or moistening wheel and adapted to incase the wheel. The housing 9 is formed similar to a hood, when viewed in cross-section. Its base is cut-away and formed so as to have outwardly curved edge extensions 18, adjacent the lid 10, when the hood is resting on the lid. These edges 18 are curved outwardly and slightly upward so as to serve as a guide for an envelope or other gummed substance to pass under the hood or housing 9 and over the lid 10. The lid 10 is formed with an opening directly under the longitudinal center of the housing 9 and its moistening wheel. This opening is formed by cutting the lid and pushing the edges 11 of the cut inwardly so that they will arc similar to the arc of the adjacent portion or base of the moistening wheel, as shown in Figs. 3 and 10. This portion of the lid 10 cooperates with the hood or housing 9 to form practically a continuous circular housing for the moistening wheel. This opening of the lid 10 serves as a drain for excess moisture that may accumulate on the wheel as well as to guide the envelope so that it will have direct engagement with the wheel in a manner so as to lift the wheel and its housing 9, when the envelope is passed under the curved edges 18 of the housing 9.

The moistening wheel is journaled in the housing by two bearing surfaces. One of the bearing surfaces is removably disposed in the housing 9 and the other bearing is formed by drilling one end of the housing 9 and permitting the round head of the bolt 4 to rest in the drilled opening. The removable bearing 12, which supports the other end of the core 1, is formed of a relatively thick piece of material having vertical edges that terminate in an arc shaped top that corresponds to the arc of the inner walls of the housing 9. The vertical edges of the bearing member 12 are each provided with integral ears or lips 13 that extend outwardly therefrom and are formed in an approximate square. This member 12 is removably positioned in the housing 9 so that it may swing therein in position so that its arc shaped top will clear the inner surface of the housing 9 and so that its face will be longitudinally with the tubing 1. The center of the flat member 12 is drilled and adapted to pass over the tubing 1 so as to serve as a bearing for the same. The member 12 is supported in the housing 9 by means of the ears 13 projecting into slots 14' which are cut out of insertions 19 which are positioned against the inner walls of the housing 9. The member 19 may be formed in one piece that is adapted to be curved and wedged into the housing 9, as shown in Fig. 9; or it may consist of two parts that may be welded or otherwise secured to the inner side walls of the housing 9, as shown in Figs. 5 and 8. In either case the member or members 19 serve to provide the necessary surface to receive and support the ears of the member 12. Each of the slots 14' are formed so that they continue towards the bolt end of the housing forming an opening 14 which immediately widens to a point below the slot 14' and at a point so that the member 12 may be directed into the housing 9, so that the ears 13 will travel into the slots 14'. The portion of the slot 14, adjacent the slot 14' is of less width than the diameter of the relatively round slot 14' and positioned so that the base of the slot 14' is slightly lower than its immediate registration with the slot 14. This permits the lips or ears 13 to rest in the slots 14' without any tendency of sliding into the opening 14. When the member 12 is to be positioned in the housing 9, it is turned so that its drilled opening is at right angles to the tubing 1, and it is held in this position until its ears or lips 13 enter the slots 14', then it may be released and permitted to swing to normal position. This form of support of the bearing permits manual installation and removal of the same when the moistening wheel is to be removed from the housing 9.

The end of the housing 9, adjacent the member 12, is provided with an integral curved projection 16 which is adapted to extend into an opening 15 of the lid 10. This projection 16 serves to pivotally hold the housing 9 on the lid in the desired position. Further anchorage of the housing consists of an opening in the lid 10 which will receive the lower portion of the bearing member 12. The lower portion of the member 12 is adapted to project into the lid 10 and engage the side walls 17 of the lid opening. The projection 16 and the contact of the member 12 with the lid 10 serves to hold the housing 9 and its wheel in the desired relation with the water well 8. Both contacts will permit the housing 9 and its wheel to be raised by the envelope passed between the housing and lid 10. The extent of projection of the member 12 into the lid opening will permit the housing 9 to be raised a considerable height without endangering the longitudinal alignment of the housing and its moistening wheel with the arc shaped opening of the lid.

The method of installing the moistening wheel 5 and its core 1 in the housing 9, permits simple and inexpensive assembly of the device. The wick end of the core 1 is first inserted into the member 12, then the other end of the core or tubing 1 is positioned so that the bolt 4 may be screwed into the end of the tubing 1 and adapted to extend into the opening of the other end of the housing 9. The projection of the core through the bearing member 12 insures protection against the wick becoming entangled with the object to be moistened or the moistening wheel. This particular structure may be varied considerably in the various parts without departing from the spirit of the invention. The form of practically enclosing the water carrying elements makes a more sanitary form of moistener, protects the operator's hands from becoming gummed, eliminates the necessity of frequent replenishing of the water supply caused from excessive evaporation that is possible in the conventional types of moisteners, and protects the working parts from accumulation of foreign elements.

What I claim, is:

1. A moistener consisting of a housing formed to incase a moistening wheel journaled therein, a water container having a lid, said housing being swingingly supported on said lid and adapted to support said wheel over and above an opening in said lid so that the same may be free of

contact therewith, means for conveying water from said container to said wheel, and said housing being disposed relative to said lid so that an envelope passed between said lid and said housing will lift said housing and rotate said wheel during its passage therebetween.

2. A moistener consisting of a housing formed to incase a moistening wheel journaled therein, a water container having a perforated lid therefor, said housing being disposed upon said lid in a manner so that an envelope passed thereunder will raise said housing and rotate said wheel, said wheel consisting of porous absorbing material the center of which is adapted to extend through said lid and into said container, and the bearing of said wheel being extended into said lid so as to govern the movement of said housing relative to said lid.

3. A moistener consisting of a housing adapted to incase a moistening wheel journaled therein, said wheel being disposed in said housing so that the moistening surface thereof is free from contact with other portions of said moistener, a water container, said housing being pivotally disposed in operative relation with said container, said wheel consisting of a hollow axle having an absorbing porous material for the face thereof, a wick projected through said axle longitudinally and in direct contact with said face of said wheel and extended into said container, and one of the bearings of said wheel being formed to serve as a guard for protecting the extended portion of said wick from said wheel.

4. A moistener consisting of a hood adapted to cover a moistening wheel and rotatably support the same, a water container, said hood being in pivotal relation with said container whereby an envelope passed between said hood and said container will support said moistening wheel and one end of said hood, and rotate said wheel, said wheel consisting of a porous substance having a perforated axle, a wick passed from said container through said axle and in engagement with the inner periphery of said porous substance, and the means for journaling said wheel being adapted to protect the portion of said wick passing to the container from said wheel during the rotation thereof and also being adapted to retain said hood in desired relation with said container during the lifting of said hood and wheel by said envelope.

5. A moistener consisting of a housing formed to incase a moistening wheel journaled therein, a water container having a lid provided with a depression which converges into an opening into said container, said housing being provided with a rear hook adapted to project into said lid and swingingly anchor said housing on said lid whereby the same may be raised slightly above said lid and in horizontal alignment therewith, said housing being adapted to support said wheel over and above said indentation and slightly within said container in a manner whereby said wheel is free of peripheral contact with parts of said moistener, said wheel consisting of a plurality of porous washers operatively disposed on a perforated tubing, a wick inserted into said tubing and extended into said container for conveying moisture from said container to said said washers, one end of said tubing being provided with a removable extension adapted to project into a bearing disposed in said housing, the other end of said tubing being adapted to project into a removable swinging bearing disposed in said housing, said swinging bearing being formed so as to control the movement of said housing relative to the said lid and protect the extended portion of said wick from contact with said moistening surface and an envelope disposed in operative relation with said moistener, and said depression being formed to guide an envelope between said housing and said lid whereby said envelope will contact the moistening surface of said wheel and tend to support said wheel and its housing.

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