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MEANS FOR SUPPLYING ARTICLES.

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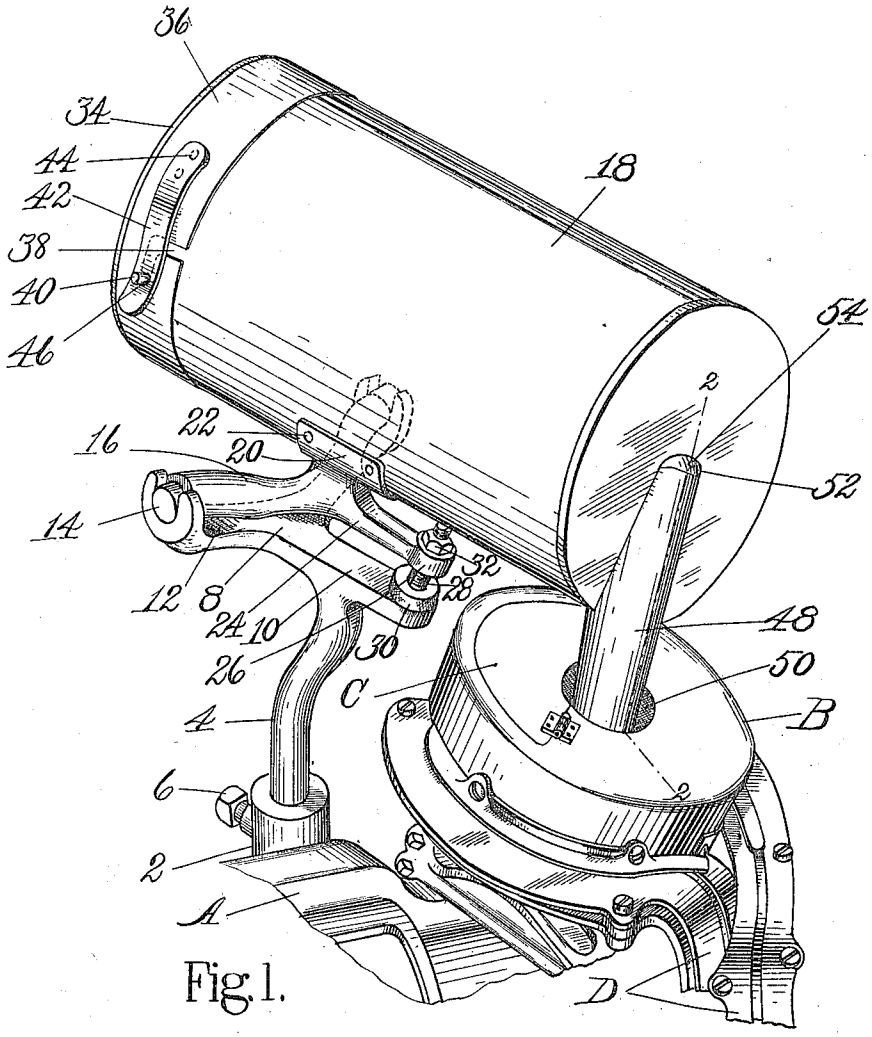


Fig. 1.

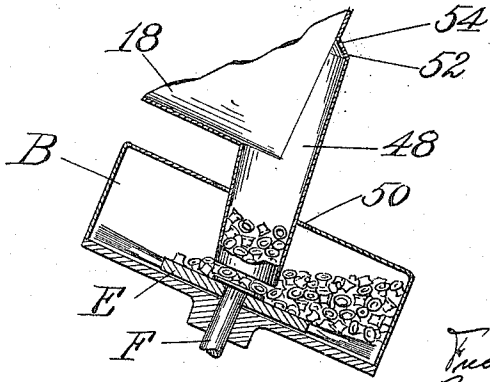


Fig. 2.

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MEANS FOR SUPPLYING ARTICLES.

1,146,024. Specification of Letters Patent. Patented July 13, 1915.

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To all whom it may concern:

Be it known that I, FRED A. RUMNEY, a citizen of the United States, residing at Somerville, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Means for Supplying Articles, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to a device for supplying articles at a given point at a rate which is conditioned by the rate at which the articles already delivered at said point are removed therefrom, thus maintaining approximately constant the number of articles in question at said point; and the invention is shown as embodied, for the sake of illustration, in a device for supplying eyelets to the hopper of an eyeleting machine. It is to be understood, however, that the idea invloved is equally applicable to the feeding of many other articles such as lacing studs, gromets, rivets, buttons, fastenings, washers, nails, etc., as is also the device disclosed, subject to such changes only as would suggest themselves to a skilled mechanic to adapt it to the particular use desired.

In machines of the classes above referred to, as heretofore constructed the articles are held within a receptacle or hopper from which they can pass only when in a certain definite position and as they are needed in the operation of the machine. To bring the articles in question into this position they have as a rule been subjected to a systematic agitation which causes them to continually change their position within the receptacle, that they may approach the outlet thereof in proper position to pass out. This agitation is, however, detrimental to the articles, especially when they are formed either in whole or in part of easily damaged material. For instance in the case of eyelets the celluloid or enamel covering is apt to become scratched or cracked, if this agitating action is long continued, and this result is especially marked when there is a large number of the articles in question in the receptacle, as continued impact between different units and the attrition of one unit on the others is greatly increased due to the large number of units for each single unit to rub against, and also from the fact that the average time required for a single unit to approach the outlet of the receptacle in proper position to pass therethrough, is increased directly as the number of units in the hopper is increased. For this reason and in order that but a comparatively small number of articles may be exposed to this agitation at a time, thus lessening the number of other units against which a single unit can rub, and also the average time necessary for any single unit to reach the outlet of the receptacle in proper position to pass through it, it is usual to make the receptacle comparatively small so that it will hold but a relatively small quantity of the articles in question at a time. Under this construction, however, the receptacle soon becomes empty and a great loss of time is entailed as it is necessary for the operator to stop the machine frequently in order to refill the receptacle.

For the above and other reasons, some means are very desirable by which the hopper can be automatically refilled without detracting from the operator's time and attention in order to stop the machine and fill the hopper by hand. This means it is the object of the present invention to provide, and to that end the device hereinafter described comprises means for keeping the supply of articles in the receptacle substantially constant, whereby loss of the operator's time in refilling the hopper is avoided and at the same time the supply of articles in the hopper at any time is not increased to such an extent that the articles are injured by the agitation thereof or by the long continued attrition of the units on each other.

Another object of the invention is to provide means for supplying articles to a receptacle within which they are to be agitated, in such a manner as to expose them to as little agitation as possible when first introduced into said receptacle. This insures a quieter and more constant delivery as the articles are not removed from the point of entrance immediately on their introduction but are permitted to move away from said point slowly, at first, to make way for those which are about to be introduced.

Other objects of the invention are to provide means for varying the number of articles maintained in the receptacle at any

time, said number remaining constant until changed by the operator and to provide means for adjusting the article supply means to supply articles at a different rate, the rate of delivery, however, still being conditioned by the rate at which articles already delivered to the receptacle are removed therefrom.

The invention also includes means for shutting off entirely the delivery of articles when desired, and other features as will appear hereafter in the description and appended claims.

In the accompanying drawings to which reference is made for the sake of illustration and which represent the preferred embodiment of my invention as applied to an eyeleting machine, Figure 1 represents a perspective view of the device, and Fig. 2 represents a section on the line 2—2, Fig. 1.

A denotes a part of the frame of an eyeleting machine which is provided with an eyelet hopper B, said hopper being provided with a door C hinged to the top thereof and also with a pair of raceways D which receive the eyelets from the hopper and conduct them to the sets (not shown). Within the hopper is mounted the usual brush E, driven from a shaft F in the usual manner, and acting to agitate the eyelets within the hopper in order to bring them into proper position to enter the raceways, and then to sweep them thereinto. All the above may be of any preferred or usual construction.

On the rear of the frame A of the machine is mounted a vertical sleeve 2 within which fits a standard 4 secured in adjusted position by a set screw 6. Said standard 4 at its upper end supports a head 8 which comprises a forwardly extending projection 10 and two side projections 12. These side projections are each turned up at the ends and said upturned ends are bifurcated to provide bearings for journals 14 formed on the ends of a support 16 for the reservoir 18. This support 16 supports the reservoir in any suitable manner as for example by means of a plate 20 shaped to fit the surface of said reservoir 18 and secured thereto by rivets 22, said plate being preferably formed integral with said support 16 or secured firmly thereto. Said support 16 is also provided with a forwardly extending projection 24 provided at its front end with a hub 26 into which is threaded an adjusting screw 28 having a milled head 30 and a jam nut 32. The milled head 30 of this adjusting screw 28 seats upon the projection 10 of standard 4 and by turning said head it is possible to adjust the inclination of reservoir 18 and consequently the rate of feed of the eyelets, as will be explained hereinafter.

The reservoir 18 is provided at its upper end with a cover 34 having a flange 36 to inclose the upper end of reservoir 18, said flange being provided with slots 38 shaped as shown in Fig. 1, with which engage pins 40 firmly mounted in said reservoir 18. Securing means is also provided for said cover, consisting of a leaf spring 42 secured to the flange of said cover by rivets 44 and provided at its opposite end with an opening 46 adapted to fit over one of the pins secured to the reservoir. In the forward end of said reservoir is provided a nozzle 48 which extends through an opening 50 formed in the top of hopper B of the machine and feeds the eyelets thereto. As shown in Fig. 2 this nozzle is offset somewhat from the forward end of the reservoir 18 and is provided in its upper surface 52 with a small opening 54 through which a long thin tool (not shown) may be passed to start the eyelets in case they should become clogged within said nozzle.

In the operation of this device the reservoir 18 is supplied with a quantity of eyelets to be used in the operation of the machine. The eyelets pass therefrom through nozzle 48 to hopper B of the machine within which brush E revolves and from which they are fed by said brush to raceway D which conducts them to the sets, not shown. The feed of eyelets from said nozzle to said hopper is self-regulating to maintain the level in the hopper at approximately the height shown, any increase of eyelets above said level preventing the passage of other eyelets from the nozzle to the reservoir until the level of the eyelets within said reservoir has fallen below said level. The eyelets within the hopper are subjected to a systematic agitation by brush E, comprising a flat hub and radial brushes, in a well known manner for the purpose of bringing them into proper position to pass into the raceways and said nozzle 48 is shown as feeding the eyelets to said hopper at the point where this agitation is the least, namely, at the center of the brush. This insures a quieter and more constant feed. By adjusting the inclination of reservoir 18 by means of adjusting screw 28 the distance between the opening in nozzle 48 and the bottom of hopper B may be varied and consequently the number of eyelets maintained in said hopper at any time may be varied, said number remaining approximately constant for any given adjustment of this distance.

Having thus described the particular embodiment of my invention, I do not desire to limit myself to the particular structure disclosed or to the application of this idea to the feeding eyelets to an eyeleting machine, as the invention is equally applicable to the supply of many other articles and in many other relations.

What I claim as new and desire to secure by Letters Patent of the United States is:—

1. A device of the class described com-

prising a hopper, a raceway arranged to be supplied with articles from the hopper and being disposed in stationary relation thereto, means for delivering fasteners to the hopper at a rate conditions by the rate at which those already delivered thereto pass into the raceway, and means for adjusting said delivering means for varying the number of fasteners in said hopper at any time, the adjusting means being constructed and arranged to shut off entirely the delivery of said articles when so desired.

2. A device of the class described comprising a hopper, a raceway arranged to be supplied with fasteners from the hopper and being disposed in stationary relation thereto, and means for supplying fasteners to the hopper at a rate proportionate to the rate at which those already delivered pass into the raceway, said supplying means having provision for adjustment for varying the total number of fasteners maintained in the hopper.

3. A reservoir having an elongated cylindrical body disposed with its axis inclined and having an outlet in its lowermost end, a hopper arranged to be supplied by the reservoir, and a rotary brush within the hopper for bringing the articles therein into the proper position to pass out, said reservoir outlet being shaped for delivering articles to the hopper at the center of the rotary brush.

4. In a device of the class described, the combination of a receptacle constructed and arranged to permit articles therein to pass therefrom in a predetermined position, means located within said receptacle for agitating articles therein, means for delivering articles within said receptacle at a point where there is a minimum of agitation, together with means for bodily adjusting said delivering means to vary the rate at which articles are supplied to the receptacle.

5. The combination with a hopper of an eyeleting machine, of a brush mounted within said hopper, adjustable means to supply and direct eyelets to the center of said brush, and an eyelet raceway arranged to be supplied from the hopper.

6. The combination with a hopper of an eyeleting machine, of a circular brush mounted within said hopper, adjustable means extending within said hopper to conduct eyelets to the center of said brush, and an eyelet raceway relatively stationary with respect to the hopper and arranged to be supplied thereby.

7. The combination with a hopper of an eyeleting machine, of a circular brush mounted in the bottom of said hopper, and a reservoir mounted on the machine and adapted to supply eyelets thereto, together with means for adjusting the angle of inclination of said reservoir, said means acting also to shut off entirely the supply of eyelets from said reservoir.

8. The combination with a hopper of an eyeleting machine, of a movable reservoir provided with a nozzle extending into proximity with the bottom of said hopper and adapted to supply eyelets thereto, together with means for adjusting said reservoir to vary the distance between the end of the nozzle and the bottom of the hopper whereby the rate of supply is varied, and an eyelet raceway with which the hopper communicates.

9. In an eyeleting machine the combination with a hopper, of a movable reservoir provided with a nozzle downwardly extending into the hopper and adapted to supply eyelets thereto, means to agitate the eyelets within the hopper, means for varying the distance between the end of the nozzle and the agitating means, whereby the rate of supply is varied, and an eyelet raceway leading from the hopper.

10. In an eyeleting machine the combination with a hopper, of a movable reservoir provided with a nozzle downwardly extending into the hopper and adapted to supply eyelets thereto, a rotatable brush within said hopper and means for varying the distance between the end of the nozzle and the brush, whereby the rate of supply is varied.

11. In an eyeleting machine the combination with a hopper, of a movable reservoir provided with a nozzle downwardly extending into the hopper and adapted to supply eyelets thereto, means to agitate the eyelets within the hopper comprising a flat rotatable hub and radial brushes and means to vary the distance between the end of the nozzle and said hub whereby the rate of supply is varied.

12. In an eyeleting machine the combination with a hopper, of a pivotally mounted reservoir provided with a nozzle downwardly extending into proximity with the bottom of the hopper and means for swinging said reservoir to adjust its inclination, said means acting also to shut off entirely the supply of eyelets from said reservoir.

13. In an eyeleting machine the combination with a hopper, of a bodily adjustable reservoir provided with a nozzle downwardly extending into the hopper and adapted to supply eyelets thereto and by the adjustment thereof to vary the rate of supply, and an eyelet raceway arranged to be supplied by the hopper.

14. A machine of the class described having, in combination, a cylindrical hopper constructed and arranged to permit articles to pass therefrom in radial directions, a reservoir, and conducting means extending from said reservoir and into said hopper at substantially the axis thereof to refill the hopper automatically.

15. A machine of the class described having, in combination, a cylindrical hopper constructed and arranged to permit the delivery of articles in a predetermined position, a reservoir, and conducting means for supplying articles in an axial direction to said hopper at a rate equal to that at which the articles already delivered thereto pass therefrom in radial direction.

16. Assorting and delivering mechanism comprising a hopper, a raceway leading from the hopper, and an inclined cylindrical reservoir located above the hopper and having a nozzle leading from one of its flat faces and extending downwardly into said hopper, the upper end of the nozzle being offset from said face and being provided with an opening opposite its discharging end.

17. Assorting and delivering mechanism comprising a hopper, an inclined cylindrical reservoir located above the hopper, and a nozzle leading from the reservoir into the hopper and being offset at its receiving end from the forward circular face of the reservoir.

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

FRED A. RUMNEY.

Witnesses:
HARRY C. KEITH,
ARTHUR L. RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."