Feb. 8, 1949. B. N. BLETSO ET AL 2,461,366

ROTARY SCREENING DRUM FOR NAIL CLEANING APPARATUS

Filed March 28, 1944

2 Sheets-Sheet 1

FIG. 1.

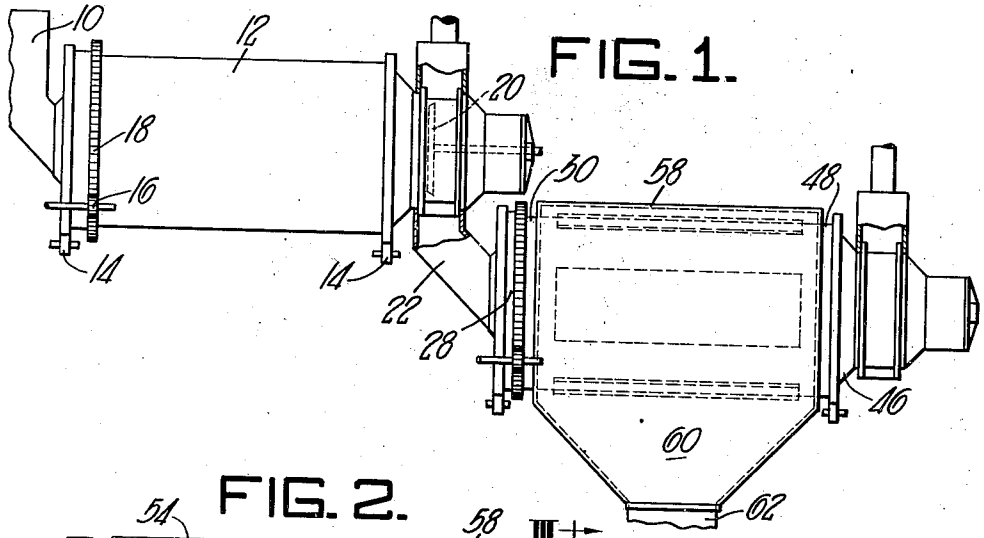

FIG. 2.

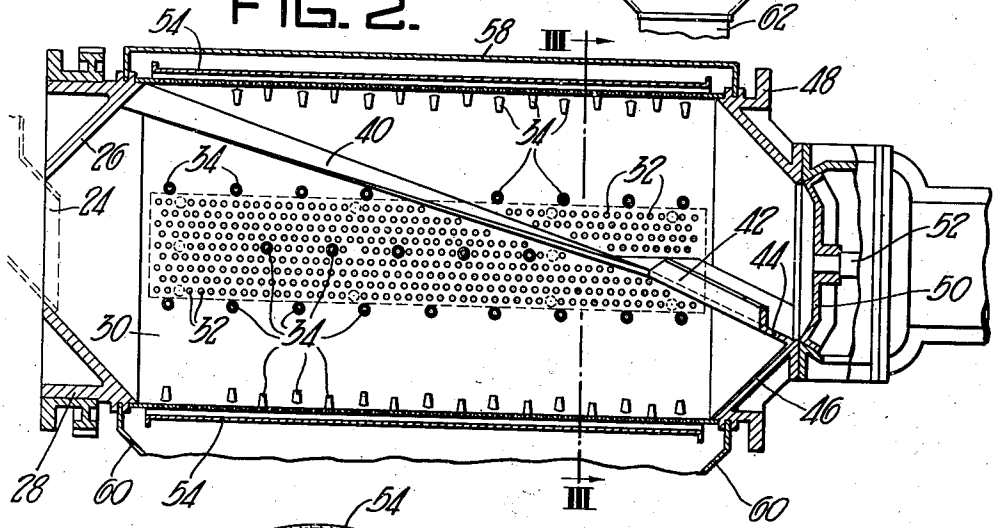

FIG. 3.

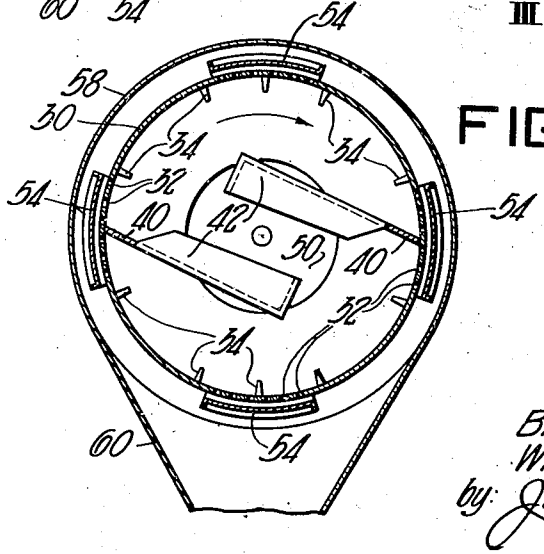

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FIG. 4.

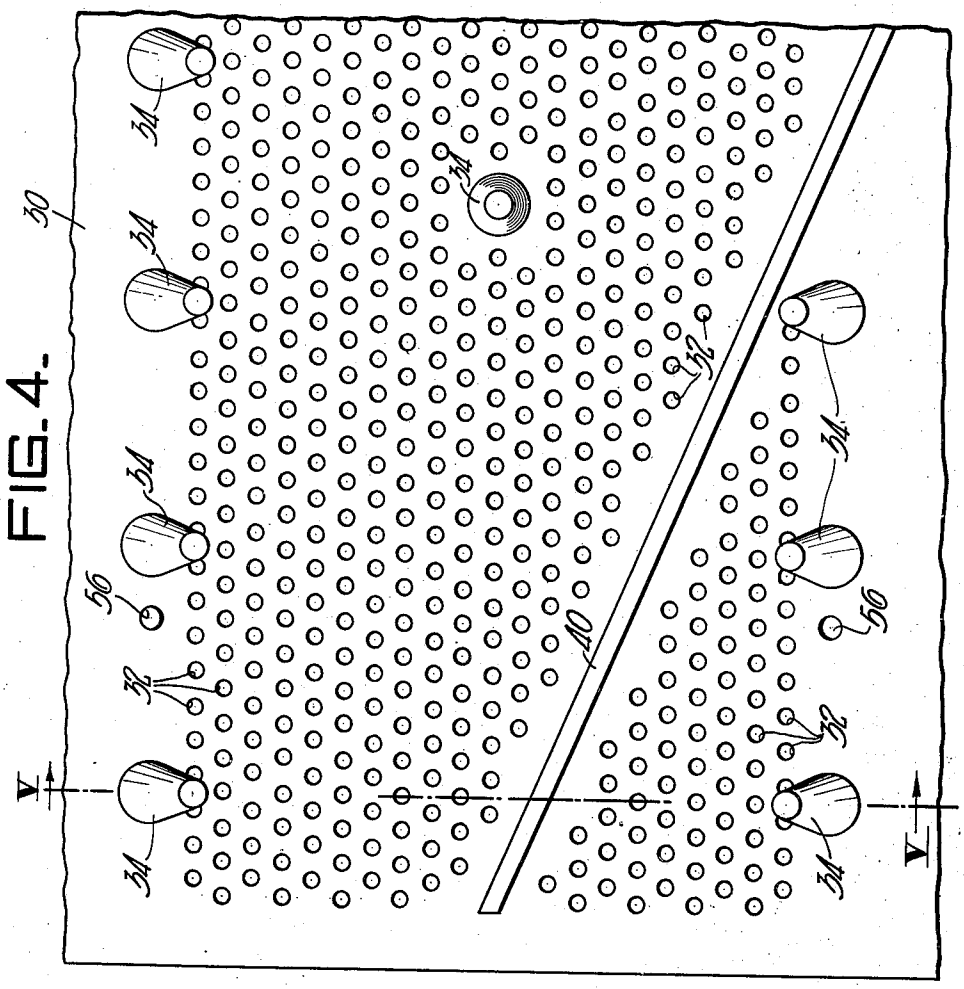
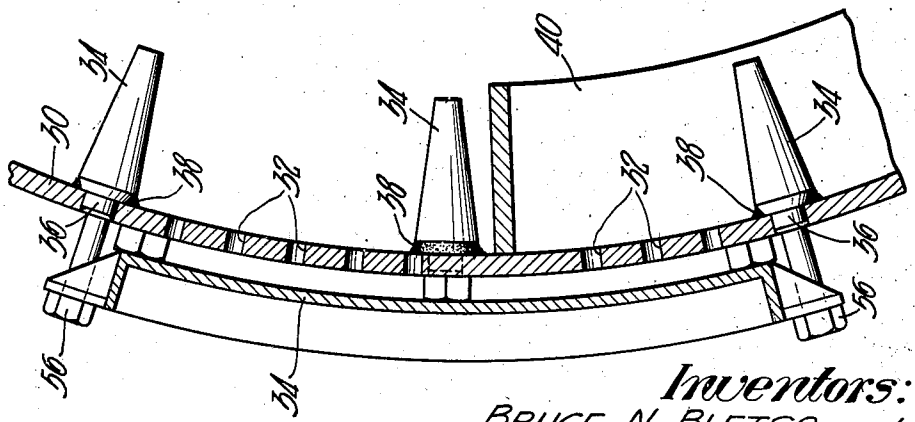


FIG. 5.



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2,461,366

ROTARY SCREENING DRUM FOR NAIL CLEANING APPARATUS

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Application March 28, 1944, Serial No. 528,471

5 Claims. (Cl. 209—297)

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This invention relates to nail cleaning apparatus of the rotary-drum type and, in particular, to a tumbling drum having perforated areas spaced circumferentially thereof and a plurality of inwardly projecting pegs arranged in rows and adapted to engage the mass of nails being tumbled within the drum so as to counteract their tendency to slide across said areas in a mass, and thereby to prevent bending of the nails.

The present invention is based upon our discovery that by equipping a foraminous drum with a plurality of rows of inwardly-projecting tapered pegs, the tendency of the nails to slide across the perforations is reduced. The invention thus eliminates the objectionable bending of the nails, thereby increasing the overall efficiency of the cleaning apparatus by reducing the percentage of defective nails.

A preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Figure 1 is an elevation of a nail cleaning apparatus to which the present invention is peculiarly well suited.

Figure 2 is an enlarged longitudinal sectional view of the screening drum shown in Figure 1.

Figure 3 is a transverse sectional view on line III—III of Figure 2.

Figure 4 is an enlarged detail of a portion of a foraminous drum equipped with pegs in accordance with our invention.

Figure 5 is a section on line V—V of Figure 4.

Referring in detail to the drawings, 10 represents a guide chute adapted to deliver nails to a hollow cleaning or tumbling cylinder 12 which is rotatably mounted on supporting rollers 14 adapted to be driven by a pinion 16 meshing with a ring gear 18.

The nails to be cleaned are dumped in batches through the chute 10 and mixed with a suitable quantity of sawdust. The tumbling action occurring on rotation of the cylinder combined with the cleansing action of the sawdust tends to rid the nails of whiskers and grease or other lubricants which they carry over from the wire drawing operations or nail forming operations.

After being tumbled in the drum 12, the nails are discharged therefrom by opening a closure member 20. This permits the nails to fall to a chute 22 which delivers them to a central opening 24 formed in the frusto-conical wall 26 constituting part of one head 28 of a screening drum 30. This screening drum is in the nature of a cylindrical foraminous plate or shell having a

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multiplicity of small openings 32 therethrough in circumferentially spaced areas thereof so as to provide escape for the sawdust or other cleaning agent. We have found that in treating nails according to prior practice in such a screening drum there is a tendency for some of the nails to pass partly through the openings 32, whereupon other nails sliding around the drum in a matted mass strike them with the result that sufficient force is exerted at times to bend the nails sticking into the openings 32. In accordance with the present invention, to overcome such objectionable bending of the nails being cleaned, we provide a plurality of substantially conical pegs 34 which project inwardly from the foraminous plate 30. These pegs can be secured by various means. As shown in the drawings, each peg 34 is provided with a shank 36 entering one of the perforations, and is firmly secured by a welded joint 38. Practice has demonstrated that it is desirable to provide a plurality of rows of pegs 34, as suggested in Figures 4 and 5, the pegs in adjacent rows being in staggered relation, as shown in Figure 2.

On the interior of the drum 30 there is usually provided a pair of spiral fins 40 which terminate at the lower ends in alignment with walls 42 of scoop-like members 44 formed integral with the outer conical wall 46 of the end head 48. The discharge of nails from the screening drum 30 is under the control of a gate member 50 adapted to be actuated by a suitable power device coacting with a shaft 52 through connections forming no part of the present invention.

Overlying the perforated portions of the wall of drum 30 there are secured longitudinally-extending plates 54 held by suitable bolts or other fastening devices 56. As the drum rotates, the sawdust or other cleaning agent escapes through the many openings 32 into the spaces between the exterior of the drum and the said plates 54, and the rotary motion of the drum causes the sawdust or other cleaning agent to fall into a collector casing 58 having a hopper portion 60 which is connected to a duct 62 leading to a suitable discharge point (not shown).

Having thus described a preferred embodiment of the invention which actual experience has demonstrated to be very effective in reducing the sliding of masses of nails and preventing the bending thereof, what we desire to protect by Letters Patent is defined with particularity, to meet the requirements of the patent statutes, in the following claims.

We claim:

1. Nail cleaning apparatus of the character described, including a screening drum consisting of an annular shell having spaced foraminous areas separated by solid imperforate areas, a spiral fin crossing said solid and foraminous areas and projecting inwardly, a plurality of inwardly extending pegs arranged in separate rows, some of the rows being in the imperforate areas and others being in the foraminous areas, the pegs in the foraminous areas being staggered with relation to those in the imperforate areas, said pegs being adapted to engage masses of nails being handled and thus to limit the sliding thereof.

2. Nail cleaning apparatus of the character described, comprising a screening drum consisting of a substantially cylindrical shell having spaced foraminous areas separated by imperforate areas, arcuate plates secured in spaced relation to the exterior of the shell in the region of the foraminous areas, and a plurality of inwardly projecting pegs arranged in substantially parallel rows, the pegs in one row being arranged in staggered relation to those of an adjacent row, some of said rows being in the imperforate areas of the shell and others being in the foraminous areas thereof.

3. The apparatus of claim 2, in which the pegs have shanks defined by reduced diameter extending through perforations in said shell, the butt ends of the pegs being integrated with the shell by welded joints.

4. Nail cleaning apparatus comprising a generally cylindrical drum having foraminous and imperforate wall portions alternating around the circumference thereof, and a plurality of pegs projecting inwardly of the drum and spaced along abutting edges of said portions, adapted to engage masses of nails on rotation of the drum and limit sliding thereof.

5. The apparatus defined by claim 4 characterized by additional pegs spaced along the perforated wall portion.

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