V. STARBARD.

SOAP FEEDER FOR FULLING MILLS.

APPLICATION FILED NOV. 25, 1919.

1,373,030. Patented Mar. 29, 1921.

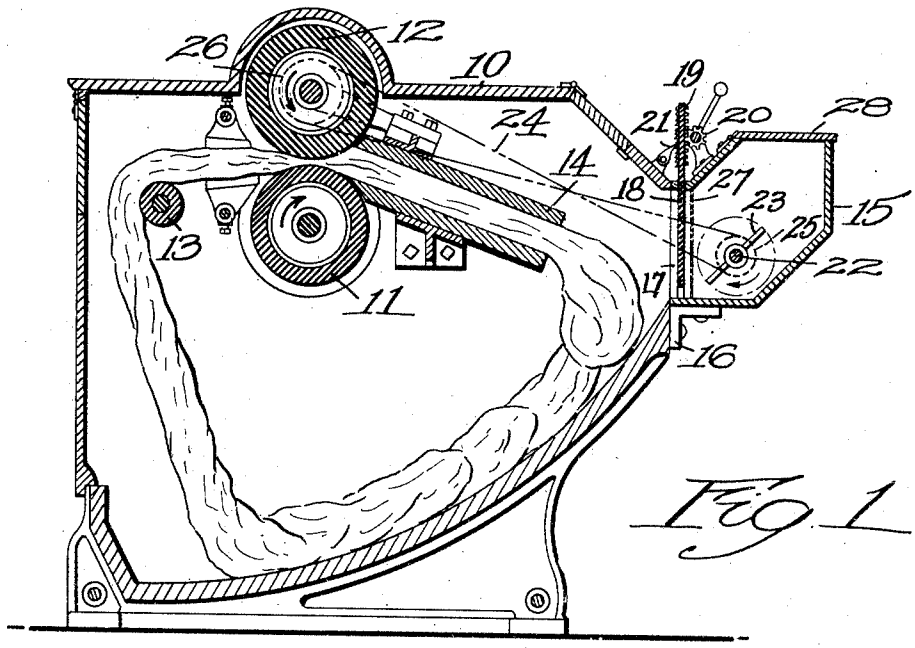

Fig. 1

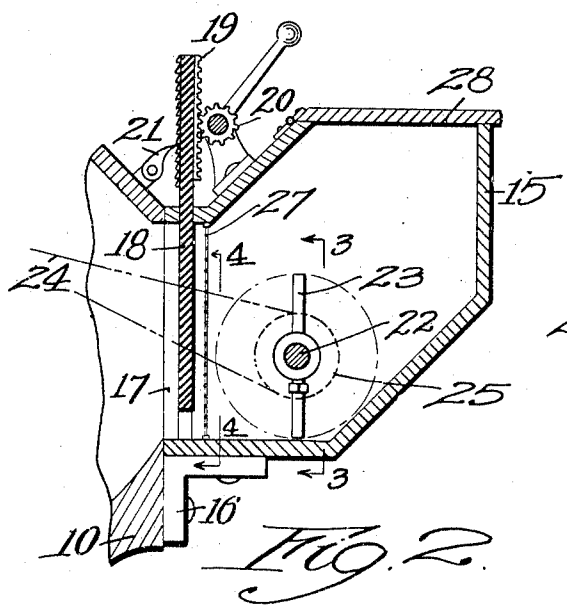

Fig. 2

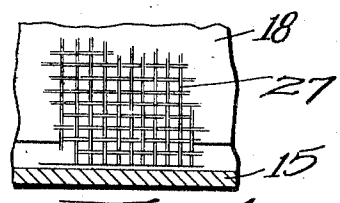

Fig. 4

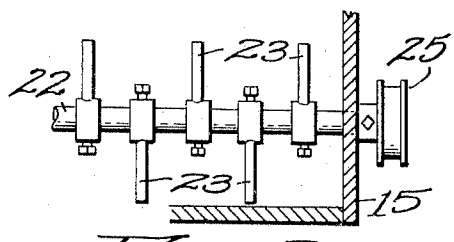

Fig. 3

Inventor
Vertner Starbard
By attorneys
Southgate & Southgate

Witness
C. F. Wesson.

UNITED STATES PATENT OFFICE.

VERTNER STARBARD, OF AUBURN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GERALD M. ROSENBERG, OF WORCESTER, MASSACHUSETTS.

SOAP-FEEDER FOR FULLING-MILLS.

1,373,030. Specification of Letters Patent. Patented Mar. 29, 1921.

Application filed November 25, 1919. Serial No. 340,631.

To all whom it may concern:

Be it known that I, VERTNER STARBARD, a citizen of the United States, residing at Auburn, in the county of Worcester and State of Massachusetts, have invented a new and useful Soap-Feeder for Fulling-Mills, of which the following is a specification.

This invention relates to fulling mills and particularly to an improved device for feeding soap thereto.

In the operation of a fulling mill, it is essential that soap be added gradually and evenly during the fulling operation, and that both the weight and the amount be carefully controlled. It is also essential that the soap be of uniform consistency.

While the soap used is known as "soft soap" it is frequently thick and lumpy in nature and it is not easy to feed it evenly to the mill. Sometimes the soap is thinned by the addition of water to dissolve the lumps, but this is objectionable as it causes an excess of water in the mill.

It is the object of my invention to provide a soap feeder for a fulling mill effective to thoroughly stir and mix the soap, thus giving it a uniform consistency, and also effective to control the feed of the soap to the mill.

Preferably also my invention comprises means to prevent the feed of lumps or large pieces of soap to the mill, should any such resist the action of the stirring and mixing device.

In the preferred form I provide a rotary power driven shaft having blades or paddles thereon to perform the stirring and mixing operation, and I also provide a manually controlled gate in the passage between the soap feeder and the fulling mill. I also preferably provide a screen adjacent said passage through which the soap must pass before entering the mill.

My invention further relates to arrangements and combinations of parts hereinafter described and more particularly pointed out in the appended claims.

A preferred form of my invention is shown in the drawings in which—

Figure 1 is a sectional side elevation of a fulling mill with my soap feeder attached thereto;

Fig. 2 is an enlarged sectional elevation of the soap feeder, and

Figs. 3 and 4 are detail sectional views taken on the lines 3—3 and 4—4 in Fig. 2.

Referring to the drawings, I have shown a soap feeder applied to a fulling mill of the usual type having a casing 10, fulling rolls 11 and 12, a guide-roll 13, and a weighted trap 14, all of the usual construction.

My improved soap feeder comprises a box or container 15, secured to the side of the mill in any convenient manner as by brackets 16. A passage 17 connects the soap container to the casing 10 of the mill, and the passage 17 is controlled by a gate 18 having a rack 19 engaged by a pinion 20 which may be manually rotated to raise and lower the gate. A suitable device, such as a stop-pawl 21 may be provided for holding the gate in raised position.

A shaft 22 is mounted transversely in bearings in the container 15, and is provided with a plurality of blades or paddles 23. The blades are preferably of such length that they just clear the bottom of the container. The shaft 22 may be driven in any convenient manner, as by a belt 24 connecting a pulley 25 on the shaft 22, and a pulley 26 rotating with the fulling roll 12.

A wire screen 27 of a desired fineness of mesh is placed in the passage 17 between the stirring device and the gate 18. It will be obvious that the container 15 should also be provided with a suitable door or cover 28.

Having described the construction of my improved soap feeder I will now describe the operation thereof.

When a new batch of cloth is placed in the fulling mill, the amount of soap required therefor is placed in the container 15 and the mill is started in operation. The gate 18 is raised or lowered in accordance with the rate at which the soap is to be fed into the mill. As the stirring device is continuously rotated by the fulling mill, the soap in the container is thoroughly stirred and mixed and is brought to a uniform consistency. The stirring device, as indicated by the arrow, rotates in such a direction that the soap is urged forward against the screen 27, which permits the passage of soap of correct con-

sistency but prevents the passage of lumps which have not sufficiently yielded to the action of the stirring device.

I thus secure a uniform feed of soap of uniform consistency at any desired rate to the fulling mill, a result which, to the best of my knowledge and belief, has not been previously attained.

Having thus described my invention, it will be evident that changes and modifications can be made therein by those skilled in the art within the scope and spirit of my invention as set forth in the claims, and I do not wish to be otherwise limited to the details herein disclosed, but what I claim is:—

1. In a fulling mill in combination, a casing in which the fulling operation is performed, and means to gradually feed heavy soft soap into said casing, said means comprising a container for soft soap, having a passage connecting said container to said casing, means in said container to stir and mix the soap to substantially uniform consistency, and means to control the feed of soap through said passage to said casing.

2. In a fulling mill in combination, a casing in which the fulling operation is performed, and means to gradually feed heavy soft soap into said casing, said means comprising a container for soft soap, means to stir said soap, a screen between said container and said casing through which the soap must pass, and means to control the rate of feed of the soap to said casing.

3. In a fulling mill in combination, a casing in which the fulling operation is performed, and means to gradually feed heavy soft soap into said casing, said means comprising a container for soft soap, connected by a passage to said casing, a screen in said passage, means to stir the soap and advance the same toward said screen and through said passage, and means to control the flow of soap through said passage to said casing.

4. In a fulling mill in combination, a casing in which the fulling operation is performed, and means to gradually feed heavy soft soap into said casing, said means comprising a container for soft soap, connected by a passage to said casing, a stirring device in said container, means to drive said stirring device, an adjustable gate controlling said passage from said container to said casing, and a screen for said passage through which the soap must flow to said casing.

5. In a fulling mill in combination, a casing in which the fulling operation is performed, and means to gradually feed heavy soft soap into said casing, said means comprising a container for soft soap, connected by a passage to said casing, throughout substantially the whole length of said casing, a shaft extending through said container and having a plurality of blades thereon, means to rotate said shaft, a gate controlling said passage, and manual means to adjust said gate.

In testimony whereof I have hereunto affixed my signature.

VERTNER STARBARD.