July 31, 1934. L. PETERSON 1,968,310

MACHINE FOR FORMING METAL WOOL INTO PADS

Filed Aug. 30, 1930 2 Sheets-Sheet 1

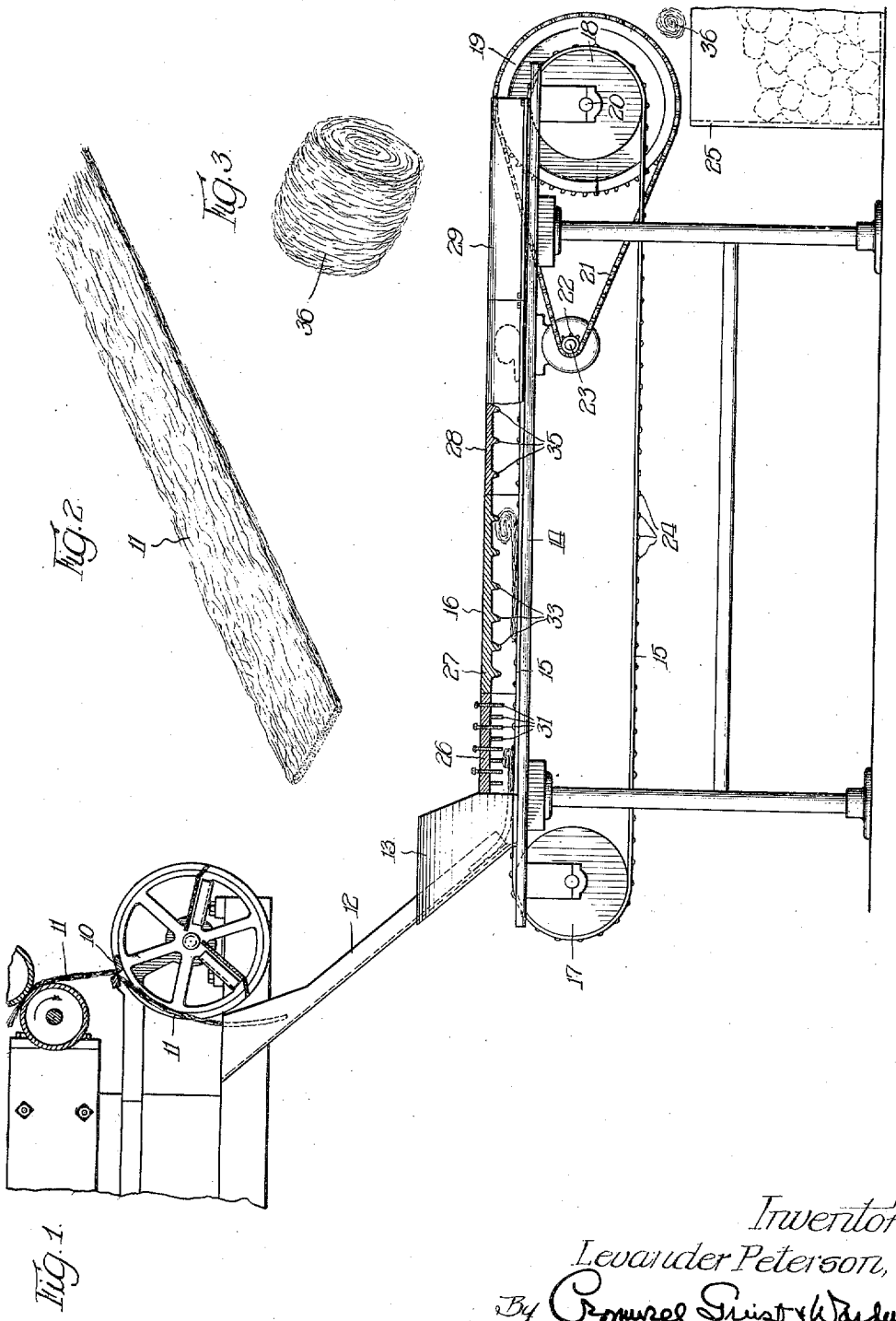


Fig. 1.

Fig. 2.

Fig. 3.

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MACHINE FOR FORMING METAL WOOL INTO PADS

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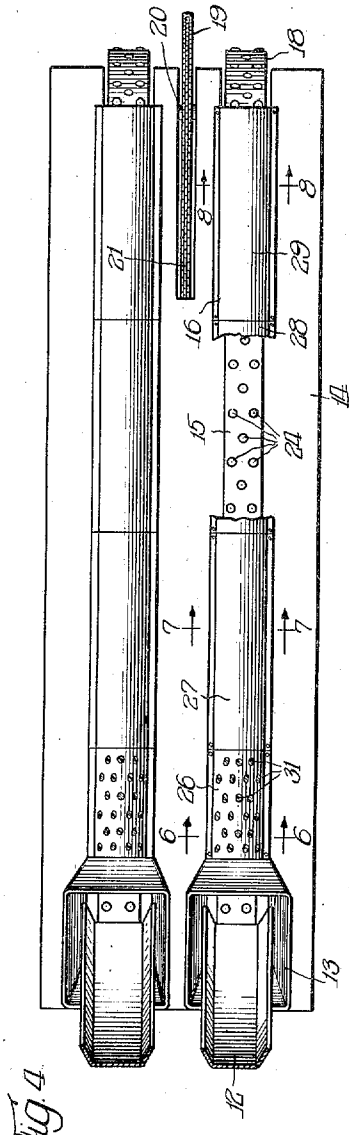


Fig. 4

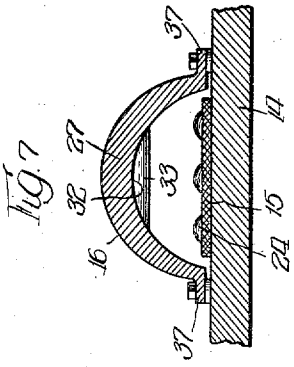


Fig. 7

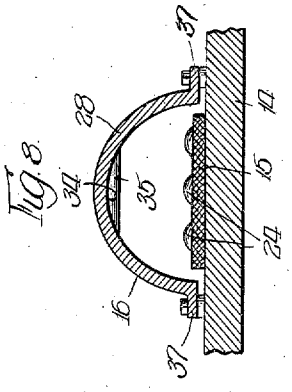


Fig. 8

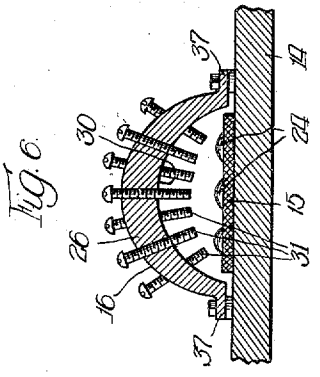


Fig. 6

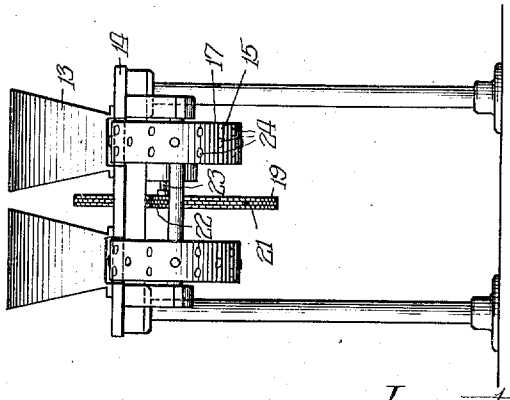


Fig. 5

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Patented July 31, 1934

1,968,310

UNITED STATES PATENT OFFICE

1,968,310

MACHINE FOR FORMING METAL WOOL INTO PADS

Levander Peterson, Chicago, Ill., assignor to James H. Rhodes & Company, Chicago, Ill., a corporation of Illinois

Application August 30, 1930, Serial No. 478,895

8 Claims. (Cl. 29—1)

Large quantities of metal wool are sold in the form of small pads for use in scouring. Heretofore, such pads have been made by hand by rolling short strips of the wool into balls, which balls become flattened out and compacted into the desired form of pad when pressed together in stacked relation within a merchandising carton.

One of the principal objects of the invention is to provide a novel machine which will roll strips of metal wool into balls of uniform size.

The machine of the invention will operate automatically, without attention, at a high rate of speed, is simple in construction, occupies but little floor space, and is inexpensive to manufacture.

Other objects and advantages of the invention will be apparent to those skilled in the art upon a full understanding of the construction, arrangement and operation of the machine.

One form of the invention is presented herein for the purpose of exemplification, but it will of course be appreciated that the invention is susceptible of embodiment in other structurally modified forms coming equally within the scope of the appended claims.

In the accompanying drawings:

Fig. 1 is a side view of a machine constructed in accordance with the invention;

Fig. 2 is a perspective view of a strip of metal wool before being operated upon by the machine;

Fig. 3 is a perspective view of the same metal wool after it has been operated upon by the machine;

Fig. 4 is a plan view of the machine;

Fig. 5 is an end view of the same;

Fig. 6 is a transverse vertical section, taken on the line 6—6 of Fig. 4;

Fig. 7 is a similar section, taken on the line 7—7 of Fig. 4; and

Fig. 8 is a similar section, taken on the line 8—8 of Fig. 4.

The machine is shown in the drawings in association with a take-off mechanism 10 of the type disclosed in my copending application Serial No. 323,284 filed December 3, 1928. The mechanism 10 takes the metal wool in fine strands from a wire-shaving machine, arranges the strands in a flat endless web, cuts the web into strips 11 of predetermined length and weight, and delivers the strips into an inclined trough 12 which extends downwardly into a hopper 13 at the front end of the machine.

The machine includes a long horizontal bed 14, a traveling belt 15 on the bed, and a U-shaped casing 16 on the bed about the belt in vertically spaced relation to the latter. The belt 15 is trained over an idler pulley 17 at the front end of the machine, and is trained over a driven pulley 18 at the rear end of the machine. The pulleys 17 and 18 are arranged beneath the bed 14 in tangential relation to the upper surface of the latter. The pulley 18 is driven by a sprocket 19 which is mounted on the same shaft 20 as the pulley and is rotated by a chain 21 which passes over a small sprocket 22 on a drive shaft 23. The belt 15 is a little wider than the strips 11, and is provided on its upper surface with a large number of small dome-shaped bosses 24 which may be positioned advantageously on the belt in the spaced arrangement shown in Fig. 4.

The casing 16 forms a long straight tunnel through which the strips 11 of metal wool travel under the action of the belt 15. The hopper 13 directs the strips 11 endwise from the chute 12 into the front end of the tunnel, and a receptacle 25 beneath the rear open end of the tunnel catches the rolled up strips as they emerge therefrom. The casing 16 is preferably composed of several separately removable sections 26, 27, 28 and 29. The first section 26 is short and has a low ceiling 30, and is provided in its ceiling with a plurality of downwardly projecting pins 31 which may be positioned advantageously in the spaced arrangement shown in Fig. 4 and may be adjusted vertically from the outside of the section. The pins 31, and particularly the first few, project to within a short distance of the belt 15, whereby to engage with the upper edges of the leading ends of the strips 11 entering the tunnel and commence rolling such ends back upon the strips. The second section 27 of the casing has a slightly inclined ceiling 32 which increases in height toward the rear end of the section and is provided with a plurality of spaced cross ribs 33 which progressively recede from the belt 15. The last two sections 28 and 29 are substantial duplicates of each other and have comparatively high level ceilings 34 and shallow cross ribs 35.

The machine operates as follows:

The strips 11 slide one at a time down the chute 12 onto the front end of the rearwardly traveling belt 15 and are carried by the belt into the front end of the casing 16. As each strip, moving with the belt, reaches a position beneath the foremost pins 31 in the front section 26 of the casing, the pins catch up the leading end of the strip and roll the same back onto the top of the strip. By the time that the strip has left the first section of the casing and entered the second, the leading end of the strip has been wound

into a small roll. As the strip continues through the second section 27 of the casing, the strip continues to roll up under the action of the cross ribs 33. By the time that the strip enters the third section, all but a comparatively short trailing end of the strip has been rolled up, and, before the strip reaches the open end of the last section, it has been completely formed into a ball-like roll 36 under the action of the cross ribs 35. As the strip travels through the casing, the axis of the roll being formed travels at approximately half the speed of the strip and belt.

The lower edges 37 of the sections of the casing may be advantageously spaced a slight distance from the upper surface of the bed 14 to facilitate cleaning of the interior of the casing. Such spacing also permits the fine particles of metal wool which come loose from the strips to work out under the edges of the casing. The spacing further permits the compactness or tightness of the rolls to be increased by allowing for the insertion of one or more thin flat bars, in the nature of shims, under the belt 15 between the latter and the bed 14, at various points.

The particular machine shown in the drawings is a double unit, that is to say, it is two separate mechanisms combined for compactness in one frame. It will of course be appreciated that the machine may be constructed as a single unit or as two or more units, depending upon the production desired.

I claim:

1. A machine for forming strips of metal wool into ball-like rolls, comprising a moving member, a stationary member in spaced relation thereto, and interiorly projecting means on the inside of the stationary member for causing a strip of metal wool placed between said members to be rolled up.

2. A machine for forming strips of metal wool into ball-like rolls, comprising a moving member, a stationary member in spaced relation thereto, and strip-engaging projections on both the stationary member and the moving member for causing a strip of metal wool spaced between said members to be rolled up.

3. A machine for forming strips of metal wool into ball-like rolls, comprising a traveling belt, a casing over the belt, and interiorly projecting means on the inside of the casing for causing a strip of metal wool on the belt to be rolled back on itself during passage through the casing.

4. A machine for forming strips of metal wool into ball-like rolls, comprising a traveling belt, a casing over the belt, and downwardly projecting members on the inside of the casing for causing a strip of metal wool on the belt to be rolled back on itself during passage through the casing.

5. A machine for forming strips of metal wool into ball-like rolls, comprising a traveling belt, a casing over the belt, cross ribs in the top of the casing for causing a strip of metal wool on the belt to be rolled back on itself during passage through the casing, and rounded studs on the belt for frictional engagement with the strip.

6. A machine for forming strips of metal wool into ball-like rolls, comprising a long flat horizontal bed, pulleys mounted beneath the ends of the bed in tangential relation thereto, an endless belt trained over the pulleys with the upper stretch of the belt in sliding engagement with the bed, means for rotating one of the pulleys, a long narrow casing of inverted U-shaped cross section mounted on the bed over the upper stretch of the belt with the top of the casing in vertically spaced relation to the belt, bosses on the belt for frictional engagement with a strip of metal wool placed thereon, and downwardly projecting members within the casing for causing the strip of wool on the belt to be rolled back on itself during movement of the strip through the casing on the belt.

7. A machine for forming strips of metal wool into ball-like rolls, comprising a traveling belt provided with strip-engaging projections, an elongated casing over the belt provided with strip-engaging projections, and means for permitting the passageway through the casing between the latter and the belt to be reduced in cross section, whereby to increase the compactness of the resulting ball-like rolls.

8. A machine for forming strips of metal wool into ball-like rolls comprising means for moving a long thin rectangular strip of metal wool endwise, and means for causing the leading end of the strip to be progressively rolled back upon the trailing end during such movement until the entire strip has assumed a ball-like form which is of considerably greater diameter than the original thickness of the strip, said means including a plurality of downwardly projecting spur-like elements located above the strip for catching the leading end and initiating the rolling action.

LEVANDER PETERSON.

CERTIFICATE OF CORRECTION.

Patent No. 1,968,310. July 31, 1934.

LEVANDER PETERSON.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 44, claim 2, for "spaced" read placed; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of November, A. D. 1934.

Leslie Frazer

(Seal) Acting Commissioner of Patents.

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The particular machine shown in the drawings is a double unit, that is to say, it is two separate mechanisms combined for compactness in one frame. It will of course be appreciated that the machine may be constructed as a single unit or as two or more units, depending upon the production desired.

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