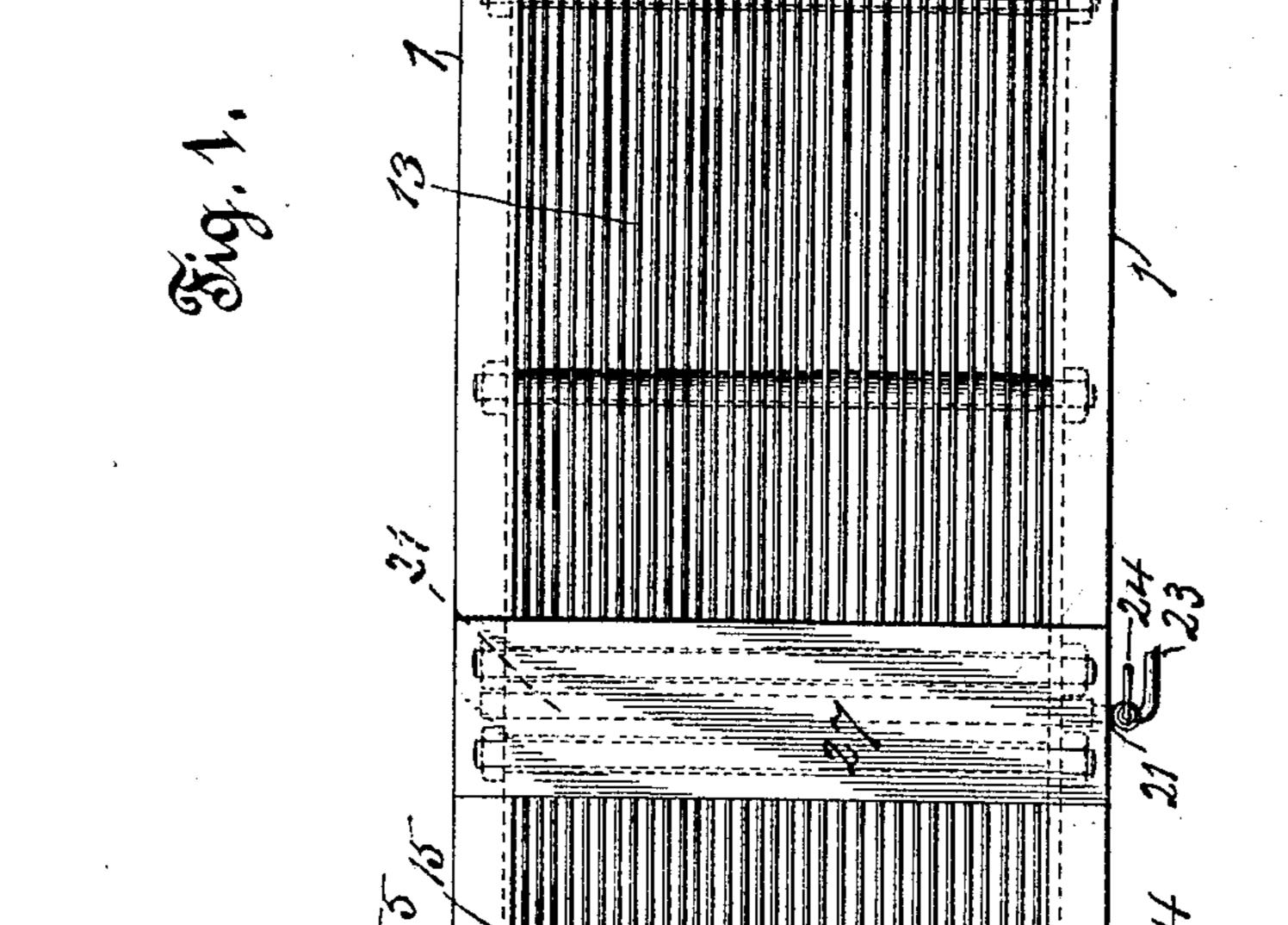
WITNESSES: Effaftery

PATENTED JULY 12, 1904.

C. W. JEFFERSON.

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UNION WITH EACH OTHER OR WITH OTHER ARTICLES. APPLICATION FILED AUG. 8, 1902. RENEWED JAN. 19, 1904. NO MODEL. 3 SHEETS-SHEET 1.



No. 764,811.

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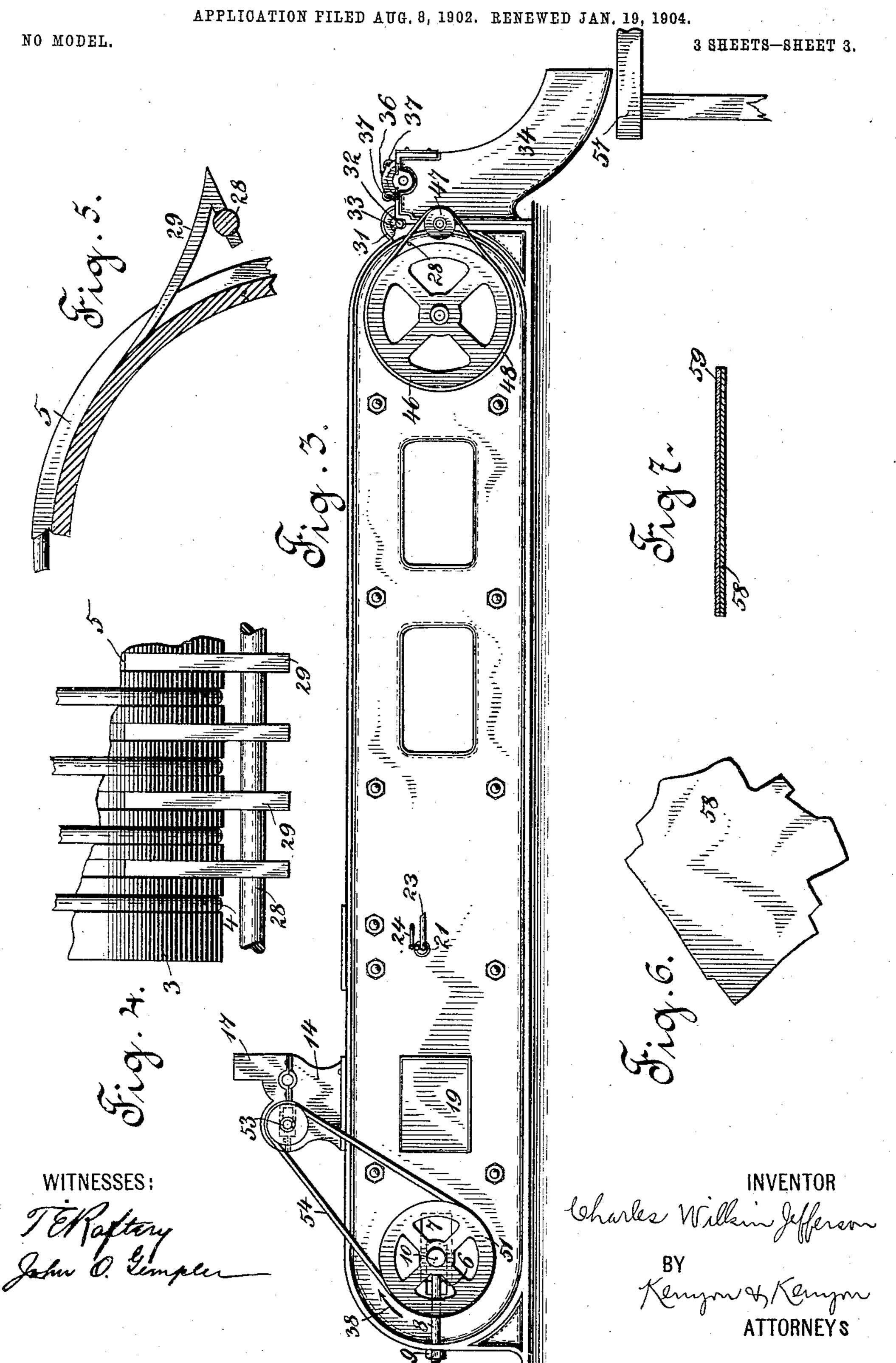
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MEANS FOR TREATING PIECES OF MICA TO PREPARE THEM FOR ADHESIVE UNION WITH EACH OTHER OR WITH OTHER ARTICLES.



United States Patent Office.

CHARLES WILKIN JEFFERSON, OF SCHENECTADY, NEW YORK, ASSIGNOR TO MICA INSULATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

MEANS FOR TREATING PIECES OF MICA TO PREPARE THEM FOR ADHESIVE UNION WITH EACH OTHER OR WITH OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 764,811, dated July 12, 1904.

Application filed August 8, 1902. Renewed January 19, 1904. Serial No. 189,759. (No model.)

To all whom it may concern:

Be it known that I, Charles Wilkin Jef-FERSON, a subject of the King of Great Britain, and a resident of Schenectady, county of 5 Schenectady, and State of New York, have invented new and useful Means for Treating Pieces of Mica or other Material to Prepare Them for Adhesive Union with each other or with other Articles, of which the following is 10 a specification.

My invention relates to means for treating pieces of mica or other material to render them stronger and more durable or to prepare them for adhesive union with each other or

15 with other articles.

My invention is particularly adapted for preparing pieces or scales of mica or other insulating material so that each piece or scale may be separately strengthened and also be 20 in condition for uniting it to another piece or · scale without the addition of any other material or substance.

Electrical insulators have been made from comminuted or pulverized mica or from mica-25 scales and a cement of insulating material. Insulators have also been made by building up layers of mica scales or pieces with interposed layers of cement. In both of said methods, however, and in all methods of making 30 electrical insulators from two or more substances, one of which is an adhesive or cement, the adhesive, so far as I am aware, has been applied to a number of pieces of said substance or substances during the process of 35 uniting them into an integral whole. By my invention each separate piece or scale of mica or other insulating material may be so treated that it can be used not only as a separate insulator of a tough and durable quality and 40 be transported without danger of breaking or other injury or of becoming united together: by adhesion, but that will also be in condition for adhesively uniting it to other pieces or scales without the addition of any other 45 material.

My invention consists of certain features and details herein described and shown.

In the accompanying drawings, Figure 1 is a plan view of a machine, illustrating an embodiment of my invention. Fig. 2 is a longitudi- 50 nal section of the same. Fig. 3 is a side elevation of the same. Figs. 4 and 5 are enlarged details showing a small section of the drum at the rear of the machine and the endless bands and pickers. Fig. 6 is a plan view, on 55 a much larger scale than that of the preceding figures, of a scale of mica or similar substance to be coated by adhesive material, and Fig. 7 is an edge view of such a scale and its coating.

Similar numbers represent like parts in all

60

the figures.

1 1 are two parallel vertical side plates or supports. 2 is a shaft extending across the side plates 1 and journaled near the rear ends 65 of the same. Secured to said shaft 2 between the side plates 1 is a drum 3, provided with two sets of peripheral grooves 4 and 5, one set of grooves alternating with those of the other set and being between them.

6 6 are two blocks supported in oblong slots. or openings 7 in the side plates 1, said slots being parallel longitudinally with said plates

and conforming with each other.

8 8 are rods secured to the front ends of the 75 blocks 6 and extending loosely through openings or holes in the front of the machine, where they are screw-threaded and provided with nuts 9 for engaging with said threaded ends. Said nuts and screw-threaded rods pro-80 vide means for longitudinal adjustment of the blocks 6 in the slots 7.

10 is a shaft journaled near each end in the two blocks 6 and extending across the machine.

11 is a drum similar to the drum 3 except that it has only one set of peripheral grooves 12, which register or are about the same distance apart as the grooves 4 in the drum 3.

13 represents a set of endless bands sur- 90 rounding the two drums 3 and 11 and held in place on said drums by the grooves 4 and 12, in which said bands rest. These bands 13 are preferably made of wire.

14 is a casing supported upon the upper sides or edges of the two side plates 1 and extending across the same and over the bands 13 near the front of the machine. In this 5 casing 14 is a small roller 15 and a rotary brush 16, said roller and brush being adapted to rotate in peripheral contact with each other. This roller 15 and brush 16 also extend over and across the bands 13. The upper portion 10 of the casing 14 is provided with a hopper 17, and the lower portion of the casing 14 below the roller 15 and brush 16 is provided with a chute 18. Below the chute 18 and between the upper and lower course of the bands 13 15 is a removable box 19 and its supports 20. This box 19 extends under the upper course of the bands 13 and directly under the chute 18 for the purpose of collecting anything that may fall from said bands under said chute. 20 Back of the box 19 and between the drums 3 and 11 is a gas-pipe 21, extending transversely across the machine and in a direction across the bands and between the upper and lower courses of said bands. This pipe 21 is pro-25 vided with perforations or burners 22 in the upper portion of its periphery, and the pipe 21 is connected with a gas-supply pipe 23 outside of one of the side plates 1 and also with a regulating-cock 24.

3° 25 is a screen, preferably of sheet metal, surrounding pipe 21 except at its upper periphery. This screen may be supported in any appropriate manner, but, as shown, is supported by two cross-bars 26, extending 35 between the two plates 1 1 and to which the two ends of the screen 25 are secured.

27 is a plate, preferably of fire-clay or metal, secured to the upper edges of the two side plates 1 1 and extending over and across 40 the bands 13 and over the pipe 21. The screen 25 and the plate 27 are deflectors of the heat that is generated by the consumption of gas at the perforations 22, the heat being deflected to the space between the upper portion of the screen 25 and the plate 27, and therefore upon the portion of the bands 13 that passes through this space and upon anything that is resting upon said bands at such place.

5° 28 is a rod extending across the machine and in the rear of the drum 3.

29 represents a series of elbow-arms, the shorter portions of which pass through and are held by the rod 28, the longer portions of said arms 29 being beveled at their free ends on the under side and resting in the grooves 5. (See Fig. 5.)

30 and 31 are feed-rollers situated back of the drum 3 and with their axes parallel with 60 that of said drum. These feed-rollers 30 and 31 are in peripheral contact with each other below the plane of the upper surface of the drum 3 and with the roller 31, resting upon the roller 30. The roller 30 is journaled in 65 bearings in the two side plates 1, and the roller

31 has its journals 32 resting in a U-shaped socket 33 in the support of the machine above the roller 30. The plane or line of contact of the two rollers 30 and 31 is substantially on a plane with the elbows of the arms 29, or 70 said elbows should extend somewhat between the peripheral surfaces of the two rollers 30 and 31. Back of the rollers 30 and 31 is a rearwardly-extending chute 34, the front wall 35 of said chute being somewhat in front of 75 the rear portion of the peripheries of the rollers 30 and 31.

36 is a cylinder journaled at the upper portion of the chute 34 and back of the rollers 30 and 31. This cylinder 36 is provided with 80 longitudinal projections 37, which are shown cylindrical in cross-section, although this is immaterial. The cylinder 36 should be so journaled that the projections 37 during the rotation of the cylinder would come about op- 85. posite or below the plane of contact of the two rollers 30 and 31. The two rollers 30 and 31 are feed-rollers for guiding any material which might be passing along the endless bands 13 into the chute 34, and the pro- 90 jections 37 on the cylinder 36 act as paddles or strikers to force the material passing between the rollers 30 and 31 and into the chute 34 down said chute. The arms 29 act as guides to the feed-rollers 30 and 31 for any 95 material which may be fed back on the bands

In the practical operation of the machine the bands 13 and the drums 3 and 11 revolve in the direction of the arrows 38. The roller 15 and the brush 16 revolve in the direction of the arrows 39 and 40, respectively, brush 105 16 preferably somewhat faster than roller 15. The feed-rollers 30 and 31 revolve in opposite directions, as shown by the arrows 41 and 42, respectively, and the cylinder 36 revolves in the direction of the arrow 43. Any means 110 for giving the above movements to the different mechanisms may be used; but I have shown the following as being a simple and efficient means for the purpose stated.

13 if said material extends over the edges of

said bands, the longer portion of said arms

29 serving as inclined ways for the bands 13

44 is a driving-pulley secured to the shaft 115 2 of the drum 3, (see Fig. 1,) which pulley may receive rotary motion in the direction of the arrows 38, Fig. 2, from a belt. (Not shown.)

and 46 are pulleys secured to the shaft 2 120 and situated, respectively, adjacent to the pulley 44 and on the opposite side of the machine and outside of the plate 1. A pulley 47, secured to the shaft of roller 30, is connected by a belt 48 with the pulley 46. A pulley 49, secured 125 to the shaft of the cylinder 36, is connected by a cross-belt 50 with the pulley 45. The shaft 10 of the drum 11 is provided with two pulleys 51 and 52, secured, respectively, to said shaft at the right and left end of the same. 130

A pulley 53 is secured to the shaft of the brush 16, and this pulley is connected with pulley 51 by a belt 54. Pulley 55 on the roller 15 is connected by cross-belt 56 with pulley 5 52. If the pulley 44 be rotated in the direction of the arrows 38, the two drums 3 and 11 will be rotated in the same direction. Through the shaft 2, the pulleys 45 and 46, belts 48 and 50, and pulleys 47 and 49 the rollers 30 and 10 31 will be made to revolve in the direction of the arrows 41 and 42, and the cylinder 36, with its projections 37, will be made to revolve in the direction of the arrow 43. The rotation of the drum 11 in the direction of the ar-15 row 38 will, through the pulleys 51 and 52, belts 54 and 56, and pulleys 53 and 55, cause the brush 16 and roller 15 to revolve in the direction of the arrows 40 and 39, respectively.

Suppose it be desired to coat or cover the 20 surface of a scale or piece of mica with shellac or similar adhesive material. The gas is turned into the pipe 21 by means of cock 24, and the burners or perforations 22 are then lighted. The heat from the jets will then be 25 deflected, as above stated, by means of the screen 25 and plate 27 to and upon the bands 13 as they pass between said screen and plate. If the shellac or other adhesive material is to be applied in a powdered state to the scales or 30 pieces of mica or other material, this shellac or other adhesive material is dropped in a powdered state into the hopper 17. The machine is made to operate by the turning of the drums and pulleys, as above set forth, and a 35 person standing at the front of the machine or beyond the drum 11 deposits the scales or pieces of mica or other material upon the bands 13. These scales or pieces of mica will rest upon and overlap the bands 13 and will 40 be carried by them under the chute 18. The powdered adhesive material will be guided and directed by the feed-roller 15 and brush 16 down the chute 18, (which brush will have the effect of spraying the powdered adhesive 45 down such chute.) This powdered adhesive will fall upon the scales or pieces of mica or other material as they pass under the chute 18 and what does not alight upon said scales or pieces will pass between the bands 13 and drop 50 into the box 19. The scales or pieces with the powdered adhesive upon them will be carried by the bands 13 over the lighted burners 22 and between the screen 25 and deflectorplate 27. The shellac or other adhesive upon 55 the scales will be heated and melted, and thus give an adhesive coating to the top surface of said scales. They will then be carried by the bands 13 to the drum 3 and be cooled during such passage, so that the adhesive will dry on 60 the scales. In passing over said drum the portion of the scales that projects over the bands 13 will be picked off or lifted by the inner ends of the arms 29, so as to slide down said arms to their elbows with the dried ad-65 hesive side of the scales uppermost, and the

coated scales will be guided by said arms and elbows between the rollers 30 and 31 to the chute 34. The coated scales as they emerge from between the rollers 30 and 31 are forced down the chute 34 by means of the projections 70 37 on the cylinder 36, which strike said coated scales from above. These scales will then drop from the lower end of the chute 34 upon a table or any other support 57, said scales falling upon said table or support with their 75 coated side uppermost and where they can then be picked up and handled separately. The scale 58 is shown in Fig. 6 before it is coated, and in Fig. 7 such scale is shown after having one of its surfaces coated with the adhesive 59. 80

The bands 13, having considerable space between them, serve as an open or skeleton carrier for the scales or pieces of mica or other material, so that said scales or pieces may have the least possible supporting-surface. 85 This construction will permit not only every opportunity for the heat caused by the burners 22 and deflectors 25 and 27 to reach the scales or pieces on which the adhesive has fallen, but also permit the free circulation of 90 air to the coated scales or pieces during their journey to the chute 34, whereby the adhesive on every independent scale or piece will be fully melted and afterward dried. The bands 13 being very narrow there will be very little 95 space upon their upper surfaces for holding the adhesive material as it falls from the chute 18, and if these bands are round in cross-section like a wire there will be no surface whatever upon them on which to hold the adhesive. 100 Whatever adhesive, therefore, that does not fall upon the scales or pieces resting upon the bands 13 will drop through between said bands either upon the floor or upon any receiving device which may be situated under said bands. 105 The endless carrier made of the endless bands 13 will receive and hold very little of the adhesive. If any of the coated scales or pieces should happen to pass around the drum 3 without being carried between the rollers 30 and 110 31 into the chute 34, said scales or pieces would continue along on the bands 13 on the under side of the same and the adhesive would be given an opportunity for a more thorough drying in passing to and over the drum 11, 115 where they could be removed by the operator standing in front of said drum if they had not dropped off of the lower course of the bands 13 between the drums 3 and 11.

If it be desired to apply the adhesive in a 120 liquid form to the pieces or scales of mica or other material, such liquid adhesive when put into the hopper 17 will be caused by the revolving roller 15 and brush 16 to fall in a spray or shower through the chute 18 on the 125 bands 13 and the scales or pieces resting on said bands. If the adhesive is of such a nature as to have its solvent evaporated by heat, such adhesive will become partially or wholly dried in passing between the deflectors 26 130

and 27, and if not entirely dried they will become so by the time the scales or pieces reach the drum 3, when said scales or pieces will have a coating similar to that which was ob-5 tained by the use of the dried powdered adhesive.

From the above it will be seen that by my invention scales or pieces of mica or other material may be readily and very simply coated 10 with a substance that will render said scales or pieces stronger and more durable and also that will prepare them for adhesive union with each other or other articles without the

addition of any other material.

My invention in its broader aspects is not limited to the precise construction shown and described nor to the precise construction by which it may be carried into effect, as many changes other than those suggested may be 20 made without departing from the main principles of my invention or sacrificing its chief advantages.

What I claim as new, and desire to secure

by Letters Patent, is—

1. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, a heating device and means 30 for producing relative movement between said support and heating device to enable said support and the pieces resting on the same to be within the sphere of the heating device but without coming in contact with the same, 35 whereby an adhesive on the surface of said pieces may be caused to adhere to said surface.

2. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other 40 or with other articles, consisting of a movable support for said pieces, means for applying an adhesive substance to said support and pieces, a heating device having its radiating sphere within the course of said support, and 45 said support constructed to carry the pieces through said radiating sphere, but without coming in contact with the heating device, whereby the surface of said pieces may be

covered with adhesive material.

3. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a movable support for said pieces, means for depositing an 55 adhesive substance on said support and pieces, a heating device having its radiating sphere within the course of said support, and said support constructed to carry the pieces under the depositing device and through said radiating 60 sphere, but without coming in contact with the heating device, whereby the surface of said pieces may be covered with adhesive material.

4. The improved machine for treating scales or pieces of mica or similar material to pre-65 pare them for adhesive union with each other

or with other articles, consisting of a movable support for said pieces, means for applying an adhesive substance in a finely-divided state to said support and pieces, a heating device having its radiating sphere within the 7° course of said support, and said support constructed to carry the pieces through said radiating sphere, but without coming in contact with the heating device, whereby the surface of said pieces may be covered with adhesive 75 material.

5. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a movable 80 support for said pieces, means for depositing an adhesive substance on said support and pieces, a heating device having its radiating sphere within the course of said support, and said support constructed to carry the pieces 85 under the depositing device and through said radiating sphere, but without coming in contact with the heating device, whereby the surface of each piece may be independently covered with the adhesive material.

6. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of an openwork support for said pieces, means for ap- 95 plying an adhesive substance to said support and pieces, a heating device having its radiating sphere within the course of said support, and said support constructed to carry the pieces through said radiating sphere, 100 whereby the surface of each piece may be covered with adhesive material.

7. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other 105 or with other articles, consisting of an openwork movable support for said pieces, means for applying an adhesive substance to said support and pieces, a heating device having its radiating sphere within the course of said 110 support, and said support constructed to carry the pieces through the radiating sphere, but without coming in contact with the heating device, whereby the surface of said pieces may be covered with adhesive material.

8. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, a heating device, and means for 120 producing relative movement between said support and heating device to enable said support and the pieces resting on the same to be within the sphere of the heating device, and means for removing said pieces or scales.

9. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, a heating device, and means for 130

producing relative movement between said support and heating device to enable said support and the pieces resting on the same to be within the sphere of the heating device, and means for picking off said pieces or scales.

10. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a 10 support for said pieces, a heating device, and means for producing relative movement between said support and heating device to enable said support and the pieces resting on the same to be within the sphere of the heating 15 device, and means for removing said pieces or scales, and finally depositing them with their coated surfaces uppermost.

11. The improved machine for treating scales or pieces of mica or similar material to 20 prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, a heating device, and means for producing relative movement between said support and heating device to en-25 able said support and the pieces resting on the same to be within the sphere of the heating device but without coming in contact with the same, whereby an adhesive on the surface of said pieces may be caused to adhere to said 3° surface, and means for removing each of said coated pieces or scales separately.

12. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each 35 other or with other articles, consisting of a support for said pieces, means for applying an adhesive substance to said support and pieces, a heating device, and means for moving said support and pieces past the applying 40 device and heating device, whereby the surface of said pieces may be covered with adhesive material, and means for removing each coated piece separately, and means for depositing each of said pieces with its coated surface 45 uppermost.

13. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a 5° movable endless band for supporting said pieces, a heating device having its radiating sphere within the course of said band, and said band arranged to carry the pieces through said radiating sphere, but without coming in 55 contact with the heating device, whereby an adhesive on the surface of said pieces may be caused to adhere to said surface.

14. The improved machine for treating scales or pieces of mica or similar material to bo prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, a casing provided with a delivery-chute over said support and a rotary roller and brush in said casing above said 65 chute and revolving in peripheral contact with

each other, a heating device, and means for moving said support and pieces under the chute and past the heating device, whereby adhesive material in the casing may be caused to drop upon the support and pieces in a finely- 70 divided state and cause said pieces to be covered with such adhesive material.

15. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each 75 other or with other articles, consisting of a plurality of parallel, longitudinally-movable, separated strips for supporting said pieces, means for depositing an adhesive substance on said strips and pieces, and a heating device 80 having its radiating sphere within the course of said strips, and said strips arranged to carry the pieces through said radiating sphere.

16. The improved machine for treating scales or pieces of mica or similar material to 85 prepare them for adhesive union with each other or with other articles, consisting of a plurality of parallel, longitudinally-movable, separated strips for supporting said pieces, means for depositing an adhesive substance 90 on said strips and pieces, and a heating device having its radiating sphere within the course of said strips, and said strips arranged to carry the pieces through said radiating sphere, but without coming in contact with 95 the heating device.

17. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a 100 plurality of parallel, movable, separated endless bands for supporting said pieces, means for depositing an adhesive substance on said endless bands and pieces, and a heating device having its radiating sphere within the 105 course of said bands, and said bands arranged to carry the pieces through said radiating sphere.

18. In a machine for treating scales or pieces of mica or similar material to prepare them 110 for adhesive union with each other or with other articles, the combination of a movable endless band and a drum around which said band passes, an arm having one end within a peripheral groove in said drum, whereby a 115 piece of mica or other material resting on or carried by the band and overlapping the same will be removed from said band as it reaches said arm, and will fall upon said arm, all as and for the purpose set forth.

19. In a machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, the combination of a plurality of parallel endless bands, a drum around which 125 said bands pass, and a plurality of arms each having an end in a peripheral groove in the drum and between said bands, whereby pieces of mica or other material resting on or carried by the bands and overlapping the same will 130

120

be removed from said bands as they reach said arms, and will fall upon said arms, all as

and for the purpose set forth.

20. The improved machine for treating 5 scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, means for applying an adhesive substance to said support and pieces, 10 a heating device, and means for moving said support and pieces past the applying device and heating device, whereby the surface of said pieces may be covered with adhesive material, means for removing the coated pieces from 15 the support, means for guiding said pieces after being removed from said support, and a knocker or paddle situated beyond and above the plane of said guiding means for striking down the covered pieces as they leave the 20 guiding means, whereby they will fall with their adhesive side uppermost.

21. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each 25 other or with other articles, consisting of a support for said pieces, means for applying an adhesive substance to said support and pieces, a heating device, and means for moving said support and pieces past the applying 30 device and heating device, whereby the surface of said pieces may be covered with adhesive material, means for removing the coated pieces from the support, means for guiding said pieces after being removed from said 35 support, and a rotary knocker or paddle situated beyond and above the plane of said guiding means for striking down the covered pieces as they leave the guiding means, whereby they will fall, with their adhesive side up-

4º permost.

22. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a 45 plurality of parallel endless bands, a drum around which said bands pass, and a plurality of arms each having an end in a peripheral groove in the drum and between said bands, means for applying an adhesive substance to 50 said bands and pieces, and a heating device in the course of said bands, whereby the pieces of mica or other material resting on or carried by the bands will be covered with adhesive

material, and those pieces that overlap the bands removed from the same.

23. The improved machine for treating scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a plurality of endless movable bands, a casing 60 provided with a delivery-chute above said bands and a rotary roller and brush in said casing above said chute and revolving in peripheral contact with each other, and a heating device in the course of said bands, where 65 by the pieces of mica or other material resting on or carried by the bands will be covered with adhesive material.

24. The improved machine for treating scales or pieces of mica or similar material to 70 prepare them for adhesive union with each other or with other articles, consisting of a plurality of movable bands, a drum around which said bands pass, and a plurality of arms each having an end in a peripheral groove in 75 the drum and between said bands, a casing provided with a delivery-chute over said bands, means for causing the adhesive material to fall through said chute on said bands in a finely-divided state, whereby the pieces 80 of mica or other material resting on or carried by the bands will be covered with adhesive material, and those pieces that overlap the bands removed from the same.

25. The improved machine for treating 85 scales or pieces of mica or similar material to prepare them for adhesive union with each other or with other articles, consisting of a support for said pieces, means for applying an adhesive substance to said support and 90 pieces, means for removing the coated pieces from the support, means for guiding said pieces after being removed from said support, a chute at the end of said guiding means, and a knocker or paddle situated within said chute 95 and beyond and above the plane of said guiding means for striking down the covered pieces as they enter the chute, whereby they will fall with their adhesive side uppermost.

In testimony whereof I have signed my name 100 to this specification in the presence of two subscribing witnesses.

CHARLES WILKIN JEFFERSON.

Witnesses:

ALLAN H. JACKSON, EDWARD C. WHITMYER.