March 20, 1928. 1,662,933

J. A. MORIN

CARROTING MACHINE

Filed March 2, 1927 4 Sheets-Sheet 1

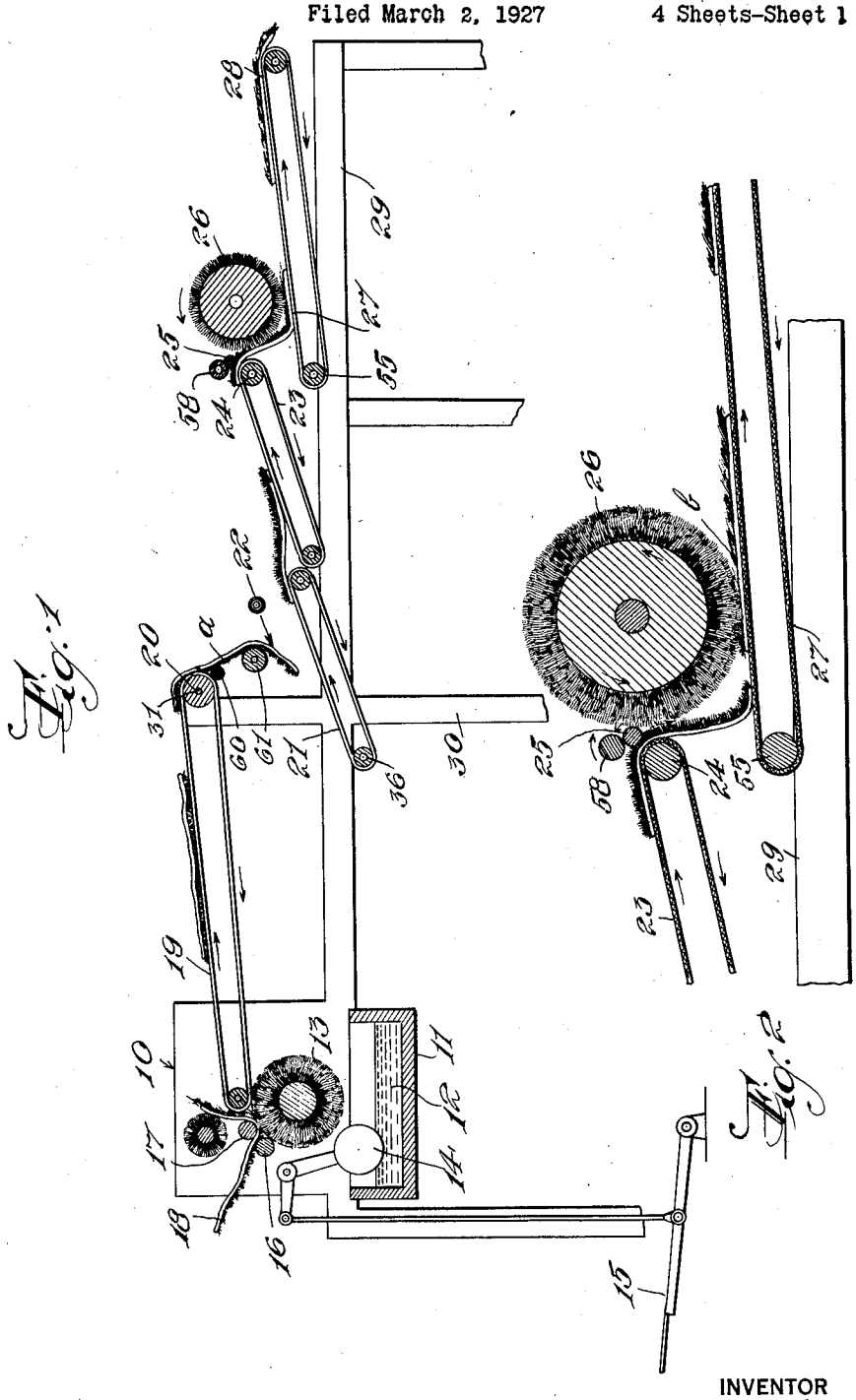

Fig. 1

Fig. 2

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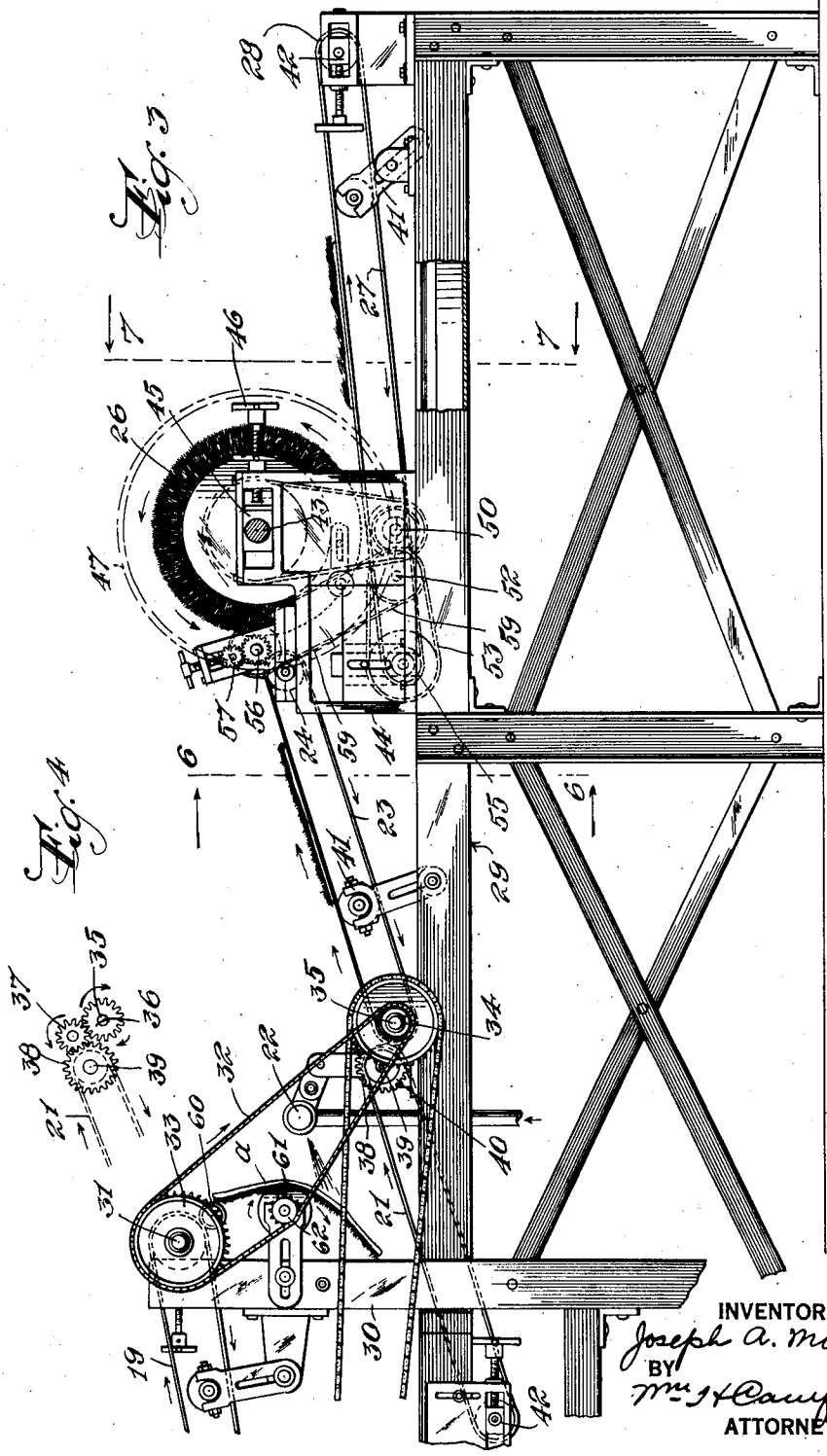

Fig. 3

Fig. 4

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Fig. 5

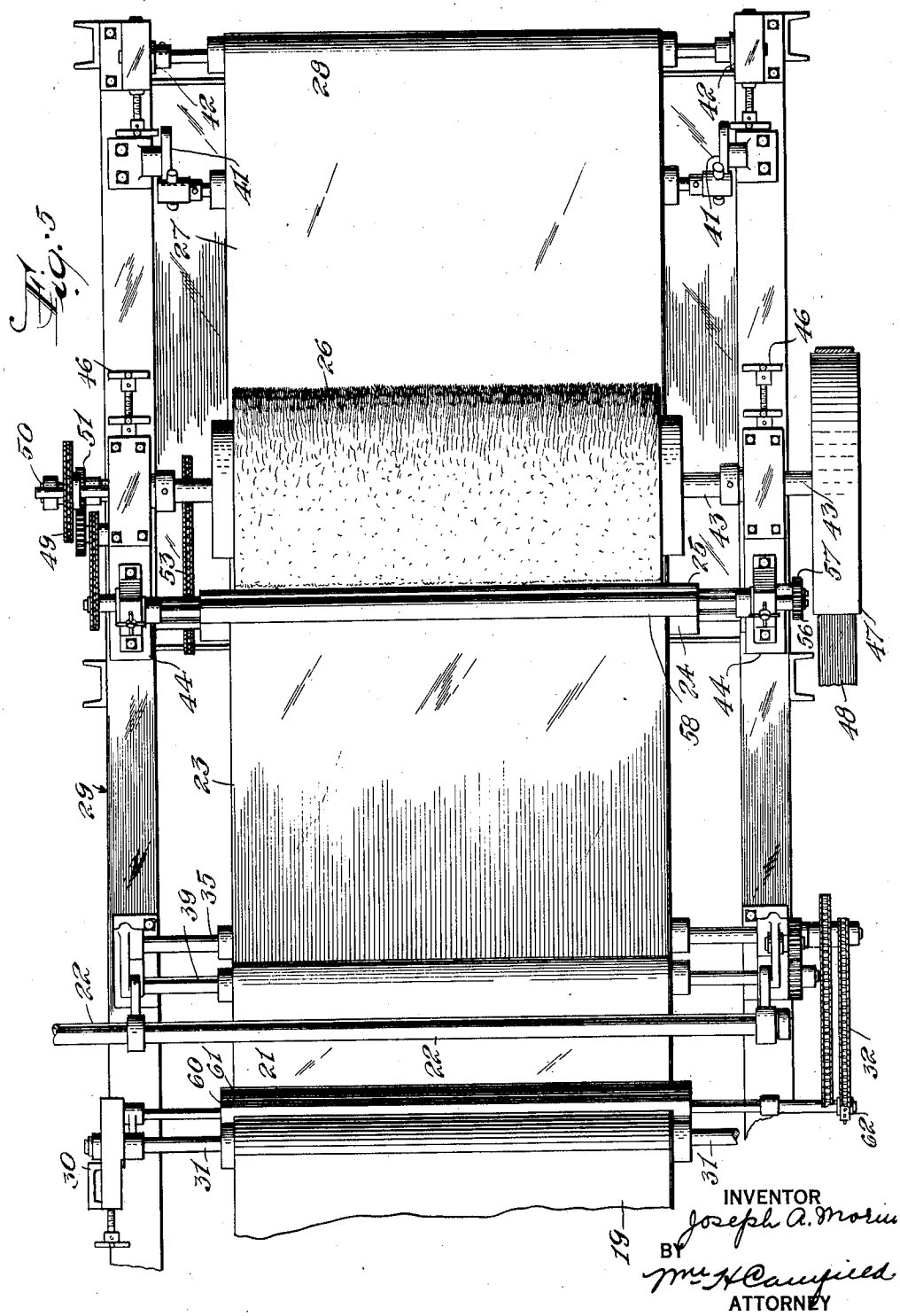

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Fig. 6

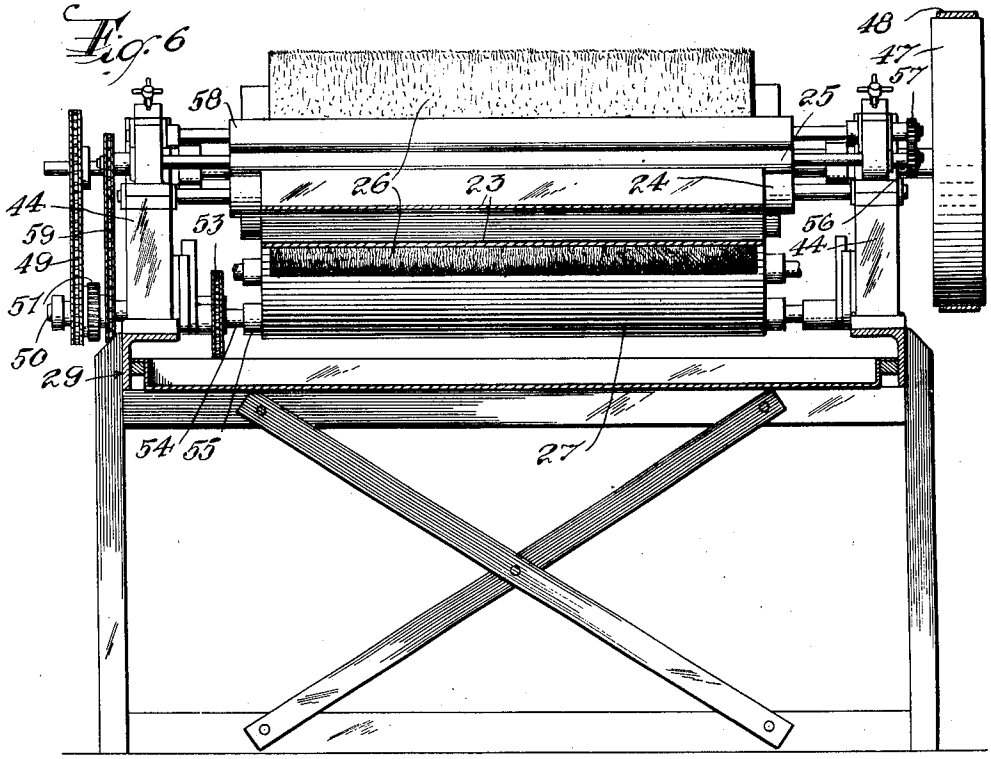
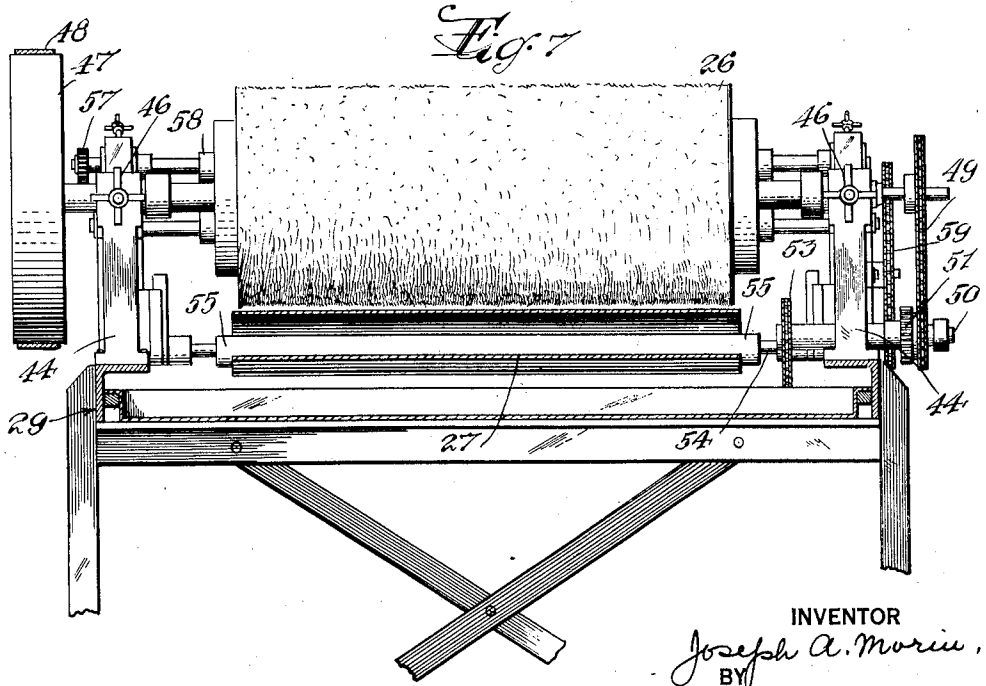


Fig. 7



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Patented Mar. 20, 1928. 1,662,933

UNITED STATES PATENT OFFICE.

JOSEPH A. MORIN, OF NEWARK, NEW JERSEY.

CARROTING MACHINE.

Application filed March 2, 1927. Serial No. 171,981.

This invention relates to an improved carroting machine which is designed to treat the fur on skins so that the fur is treated with a chemical and slicked down for its entire surface and then the skin is carried with the fur side down in which shape it emerges from the first means above referred to and is then turned over and carried with the fur side up and then it is engaged by a brush or the like to smooth down the fur and deliver the skin from the machine so that all that needs be done is to lay the skins out to dry as they come from the machine.

The invention is an improvement on my carroting machine patented June 23, 1925, No. 1,543,182.

The invention is illustrated in the accompanying drawings in which Figure 1 is a diagrammatic view of the machine showing the skins in various positions in transit through the machine and Figure 2 is an enlarged view of that part of the machine that brushes or smooths down the fur as the last step in its treatment. Figure 3 is a side view of the machine omitting the moistening means at the left and Figure 4 is a detail of a transmission concealed in Figure 3, immediately below Figure 4. Figure 5 is a top view of the mechanism shown in Figure 3 and Figure 6 is a section on line 6—6 in Figure 3 and Figure 7 is a section on line 7—7 in Figure 3.

In the drawings, 10 indicates, in general, the moistening means which is embodied in the patent above referred to which consists of the tank 11 which holds a liquid 12, this being usually a chemical such as nitrate of mercury which is periodically supplied to the rotating brush 13 by the roller 14 which is operated, when desired, by the foot lever 15. Any other similar means of supplying the chemical can be used and the skin is passed between the rollers 16 and 17 whereby it is sharply turned after it is engaged by the brush so that the bristles of the brush penetrate into the fur and after the skin 18 emerges from this moistening apparatus it is deposited on the belt 19 which carries it from the moistening rolls and it is transported with the fur down. The belt passes over a suitably pulley 20 and the skin is thus slowly dropped off the end of the belt as shown at *a* in Figures 1 and 3 and is deposited by gravity on a belt 21. While it is passing from the belt 19 to the belt 21, it is passed across a current of air which is ejected through a series of small holes arranged for the length of the pipe 22 which extends transversely across the machine and is connected by piping to a suitable compressor or other source of air under pressure. This blast of air carries the lower end of the skin so that it inclines away from the pipe 22, until the major portion of the skin has left the belt 20 and the skin then falls on the belt 21 and again proceeds but now it lies with the fur side up.

It passes from the belt 21 to a belt 23 by means of which it is carried by the belt over the pulley 24 and under a small roller 25 where it is sharply turned and brushed by the bristles of the brush 26 which is moved at a faster rate than the skin and thus smooths the fur down. In other words, it slicks the fur. Initially this slickening is done as the fur is sharply turned and swept by the brush 26 until the hide rests on a belt 27 which maintains the same steady speed of the other belts which is considerably slower than the speed of the brush 26 and the skin is thus passed under the brush and is carried therefrom by the belt 27 or equivalent means. It passes off the end as at 28 where it is taken by workmen and laid where it will dry.

The above is a general outline of the machine and it is subject to various modifications but I have shown in the drawings a machine comprising framework 29 of the required number of uprights and supporting beams on which are mounted the bearings for the various elements, one of the uprights 30 having a shaft 31 near the top on which the pulley 20 is mounted. A sprocket chain or belt 32 is driven from the sprocket 33 on the shaft 31 and drives a sprocket 34 and the shaft 35 which shaft 35 is secured to the lower roller or pulley 36 from which the belt 23 is driven. The belt 21 is driven from the shaft 35 through the set of gearing shown in Figure 4 comprising the gears 36, 37, and 38, the gear 38 being on the shaft 39 which, as will be seen from Figure 3, rotates the pulley 40 from which the belt 21 is driven.

Suitable belt tighteners, as at 41, can be used to hold the belts securely against their pulley, or adjustable bearings as at 42 can be utilized where convenient for this purpose.

The brush 26 is rotatable on the shaft 43 and on the standard 44 and adjustable by reason of the sliding bearing 45 being con-

trolled by the hand wheel 46. The shaft 45 is operated by a suitable means such as the pulley 47 and the belt 48 and by means of the sprocket chain 49 which rotates the shaft 50 which is connected by gearing 51 to a jack shaft 52 and this is connected and drives in turn the sprocket 53 of the shaft 54 on which the lower pulley 55 is fastened, this pulley 55 being the lower support for the belt 27. The roller 25 is rotated by its shaft 56 connected by gearing 57 with a supplemental upper roller 58, the shaft 56 being driven by the sprocket 59 from the jack shaft 52, the sprocket, of course, passing around the necessary sprocket wheels mounted on these shafts and of course being subject to displacement by equivalent mechanism.

The gearing connections are so proportioned and disposed that the speed of the parts are so synchronized that the brushing by the brush 13 is thoroughly done by reason of the brush rotating at a higher speed than the rate of progress of the skin and the brushing by the brush 26 is effective for the same reason.

It will be noted that the brushing by the brush 26 is a double brushing, first, as the skin turns sharply downward when it passes between the belt 23 and the roller 25, this initial brushing engaging the hairs when they are projected by reason of this bending of the skin and then the final brushing when the skin is flat as shown at *b* in Figure 2, being more easily accomplished and being more thoroughly done by reason of the initial brushing to which the skin was first subjected. In other words, the initial brushing straightens out the hairs in one direction and the second brushing completes the operation and slicks down or smooths out all the hairs across the entire skin.

When the skin is turned over as at *a* in Figure 3, it descends from the end of the belt 19 and has a slight tendency to curl and fold under the belt and to prevent this I install a small roller 60 which acts as a fender and interpose an abutment roller 61 which is positively driven as is shown by the sprocket connection 62 in Figure 3. The skin as it passes over the abutment roller 62 has its bottom portion engaged by the blast of air from the pipe 22 and when the top end of the skin is finally released and it falls it is turned over completely from the position it occupies on top of the belt 19 and is thus fed forward to the brushing operation with the fur side uppermost.

This machine completes the carroting operation entirely brushing the skin, applying the proper chemicals to it by the brushing, then conducting the skin to a point where it is brushing while it is flexed and again brushing while it is flat and is thus completely carroted and all that need be done is to lay it out to dry.

I claim:

1. A carroting machine comprising a device for moistening and brushing the fur on a skin, a means for propelling the skin, both flexed and flat, and a second brushing means located so as to brush the fur when it is flexed and to brush it when it is flat.

2. A carroting machine comprising a device for moistening and brushing the fur on a skin, a means for propelling the skin both flexed and flat, and a second single brushing means located so as to brush the fur when it is flexed and to brush it when it is flat.

3. A carroting machine comprising a device for moistening and brushing the fur on a skin, means for conducting the skin fur side down, means for turning the skin over, means for propelling the skin so turned, and a second brushing means for smoothing the fur on the skin.

4. A carroting machine comprising a device for moistening and brushing the fur on a skin, means for conducting the skin fur side down, means for turning the skin over while it is substantially flat, and means for brushing the upper or fur side of the skin after it is turned.

5. A carroting machine comprising a moistening and brushing means, a belt for conducting the skin fur side down after it is so brushed, a propelling belt below the end of the conducting belt, the skin falling by gravity from the former to the latter, a means for projecting a blast of air against the skin while falling to turn it over, and a brush for smoothing down the fur after the skin is turned.

6. In a machine of the kind described, a pair of substantially horizontal conducting means to feed skins by gravity from one to the other, and means for directing a blast of air to turn the skin over while it is dropping.

7. In a machine of the kind described, a pair of substantially horizontal conducting means to feed skins by gravity from one to the other, and means for directing a blast of air to partly turn the skin over as it leaves the upper means and complete the turn-over while the skin is dropping.

8. In a machine of the kind described, a pair of propelling belts one above the other so that a skin leaving one is flexed and then fed flat on the lower, and a brush to brush down the fur when the skin is flexed passing from the first belt and the while it is flat and resting on the second belt.

In testimony whereof I affix my signature.

JOSEPH A. MORIN.