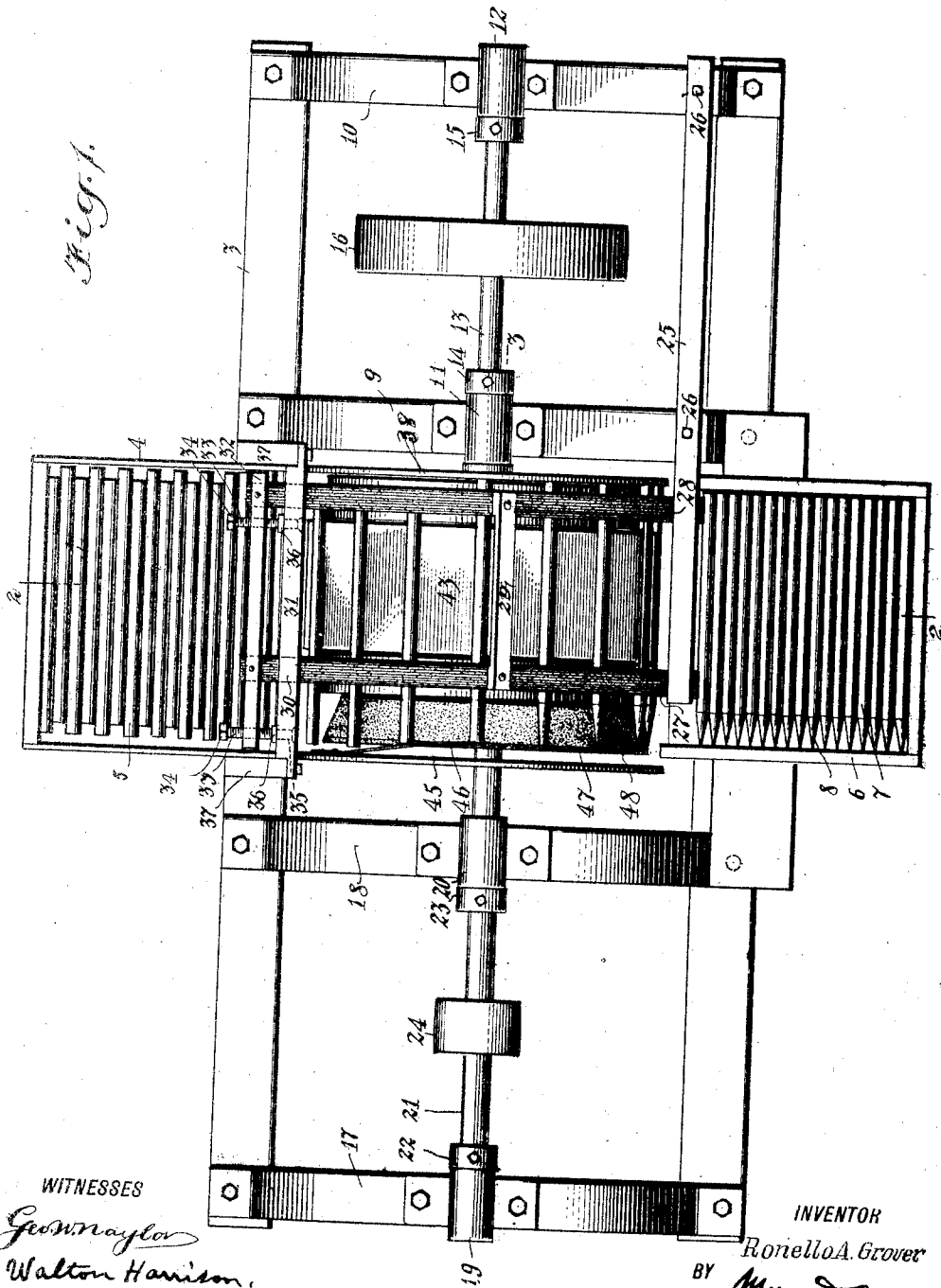


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SKEWER MAKING MACHINE.  
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993,981.

Patented May 30, 1911.

2 SHEETS-SHEET 1.



WITNESSES

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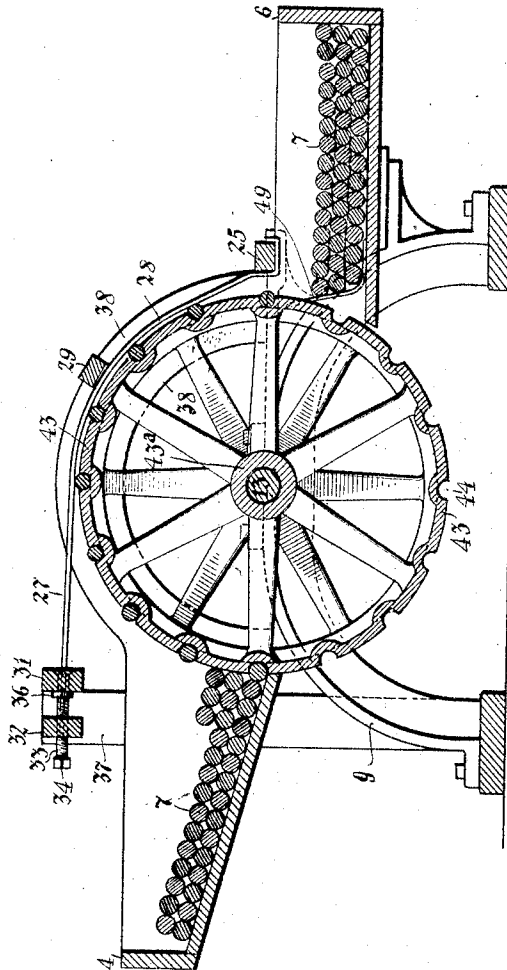
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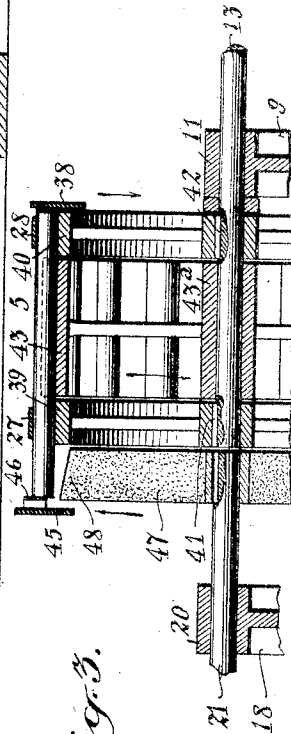
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2 SHEETS—SHEET 2.

*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

RONELLO A. GROVER, OF ANDOVER, MAINE.

## SKEWER-MAKING MACHINE.

993,981.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed December 12, 1910. Serial No. 596,997.

*To all whom it may concern:*

Be it known that I, RONELLO A. GROVER, a citizen of the United States, and a resident of Andover, in the county of Oxford and State of Maine, have invented a new and Improved Skewer-Making Machine, of which the following is a full, clear, and exact description.

My invention relates to skewer making machines—that is, to machines for making skewers used in connection with the handling and sale of meats.

More particularly stated, my invention comprehends a machine for the purpose of dressing the ends of skewer blanks, thereby furnishing the skewers with sharp points.

Generally speaking, my invention comprises a feed wheel provided with pockets for picking up skewers one at a time from a hopper, and a dressing wheel parallel with the feed wheel but slightly eccentric in relation thereto, the purpose of the dressing wheel being to grind off the adjacent ends of the skewer blanks while the latter are carried partially around by the feed wheel.

My invention further comprises mechanism controllable at will for pressing the skewer blanks into proper engagement with the dressing wheel, and also means for guiding skewer blanks relatively to the dressing wheel and to the feed wheel.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my machine complete; and Fig. 2 is a cross section on the line 2—2 of Fig. 1, looking in the direction of the arrow. Fig. 3 is a fragmentary central vertical cross-section through the machine, looking toward the right according to Fig. 2.

The frame of the machine is shown at 3 and supports a feed hopper 4 for holding the skewer blanks which are shown at 5. At 6 is a skewer hopper for holding the skewers 7 as they are finished by the machine—or, in other words, as their ends are pointed, as indicated at 8. At 9, 10 are pedestals each having generally the form of an arch. Mounted upon these pedestals are bearings 11, 12 which support a revoluble shaft 13. This shaft is provided with set collars 14, 15 disposed in immediate prox-

imity to the adjacent ends 11, 12 and thereby prevent undesirable end play of the shaft 13. A pulley 16 is fixed upon this shaft for the purpose of turning the same. At 17, 18 are two other pedestals and supported by the same are bearings 19, 20. A revoluble shaft 21 rests within these bearings and is provided with set collars 22, 23, these set collars being disposed close to the adjacent ends of the bearings 19, 20. A pulley 24 is secured firmly upon the shaft 21 and is used for turning the same. Mounted upon the pedestals 9, 10 is a rail 25 secured thereto by aid of bolts 26. A portion of this rail partially overhangs the skewer hopper 6. Connected with this overhanging portion of the rail 25 are two straps 27, 28, a brace rod 29 being connected with these two straps and extending across from one to the other. The straps 27, 28 also extend through slots 30 in a bar 31 and are secured firmly to another bar 32. The bar 31 is stationary, whereas the bar 32 is adjustable slightly in relation to it for the purpose of tightening or loosening the straps.

Extending through threaded holes in the bar 32 are bolts 33 provided with angular heads 34. These bolts are provided with smooth necks 35 which extend through holes in the bar 31. The bolts are further provided with collars 36 which prevent them from moving endwise relatively to the bar 31. The bolts 33 are thus practically swiveled to the bar 31, and by turning the bolts in one direction the bar 32 is forced away from the bar 31, thus tightening the straps 27, 28, and by turning the bolts 33 in the opposite direction the bar 32 is brought closer to the bar 31, thus relaxing the straps 27, 28. In this manner the operator may at will adjust the tension of the straps.

The bar 31 is supported upon standards 37 which are rigid relatively to the framework. At 38 is a metallic strip having generally an arcuate form and being practically a continuation of a part of the hopper 4. The strip 38 serves as a guide for the skewer blanks, as hereinafter described. At 39, 40 are two guide wheels which, by aid of keys 41, 42 are secured rigidly to the shaft 13. At 43 is a wheel which, because of its function, I designate as a "feed wheel." It is provided with a hub 43\* and is mounted loosely upon the shaft 13 between the guide wheels 39, 40. The feed wheel 43 is pro-

vided with grooves 44 extending directly across its face and parallel with its axis. These grooves I designate as "pockets," for the reason that they are used for receiving the skewer blanks.

At 45 is a guide strip which extends from the hopper 4 parallel with the plane of the guide wheel 39. A spring guide 46 is mounted upon the guide strip 45 and has an arcuate form. This strip bears slightly away from the guide strip 45, as will be understood from Fig. 1. At 47 is a dressing wheel made of emery or other abrasive material and provided with a beveled face 48 for the purpose of dressing the adjacent ends of skewer blanks. The dressing wheel 47 is keyed upon the shaft 21 and is concentric to the latter, but this shaft is placed a little out of alinement with the shaft 13, as will be understood from Fig. 1. The dressing wheel 47 has about the same diameter as the guide wheels 39, 40 and the diameter of these guide wheels is less than that of the feed wheel 43 by a distance sufficient to enable the skewer blanks 5, when carried by the pockets 44, to rest upon the guide wheels and to be pressed slightly thereagainst by aid of the straps 27, 28.

My purpose in setting the shaft 21 out of alinement with the shaft 13 (see Fig. 3) is to enable the skewer blanks 5 to be carried up some distance toward the top of the feed wheel 43 before coming into engagement with the beveled edge 48 thereof, and also to force the skewer blanks against the dressing wheel so as to enable the latter to form points upon the skewer blanks, the dressing or cutting action incidental to this purpose being gradual and progressive. In doing this the skewer blanks originally cylindrical are each rendered conical upon one of its ends. At 49 is a blade of thin metal mounted within the skewer hopper 6 and extending upward to a point adjacent to the edge of the wheel 43. This blade assists in dislodging the skewers from the pockets should any assistance be necessary. As a rule, however, the skewers will automatically leave the feed wheel as soon as released from engagement with the straps 28.

The operation of my device is as follows: The parts being made and assembled as stated, the tension of the straps 27, 28 is adjusted as above described, which is done by turning the bolts 33. The skewer blanks 5 being now filled into the hopper 4, power is applied to the pulleys 16, 24 so as to drive the same in opposite directions, the speed of the pulley 24 being considerably greater than that of the pulley 16. The guide wheels 39, 40 are turned in one direction with the shaft 13, and the feed wheel 43, though loose upon the shaft is also turned, although its rotation is idle. Each pocket 44 picks up a skewer blank 5 and car-

ries it upward, and each skewer blank upon reaching its uppermost limit is brought into engagement with the two straps 27, 28 which press gently and yieldingly down upon it. The rotation of the guide wheels 39, 40 being positive, each skewer blank 5 is rolled along by them on the under side of the straps 27, 28. That is to say, the straps 27, 28 tend slightly to retard the bodily movement of the skewer blank, and as the guide wheels 39, 40 propel the skewer blank along, it follows that the skewer blank must turn upon its own axis—that is rotate within the pocket 44 carrying it. The skewer blank does not touch the dressing wheel 47 until after being lifted to its approximately highest point. This result follows from the fact that owing to the shafts 21 and 13 being slightly out of alinement, the dressing wheel 47 is slightly eccentric in relation to the guide wheels 39, 40 and the feed wheel 43. When, however, a skewer blank is at the top of the feed wheel 43 and is rotated within its pocket as just described, one end of the skewer blank is brought into engagement with the adjacent beveled edge 48 of the dressing wheel and as this wheel is also turning rapidly in a direction opposite to that of the guide wheels and feed wheel, the adjacent end of the skewer blank is provided with a point 8 as will be understood from Fig. 1. As the skewer blanks pass downwardly from their uppermost positions, they are released one at a time from the pressure of the straps 27, 28 and drop as finished skewers 7 into the hopper 6. The blade 49 facilitates their dislodgment from the feed wheel if they do not otherwise drop out easily.

While at the beginning of the operation and before a skewer blank passes into any one of the pockets 44, the rotation of the feed wheel 43 is not positive, such rotation becomes positive as soon as a skewer blank lodges in one of the pockets 44 and is thereafter, by rotation of the feed wheel brought into engagement with the straps 27, 28. That is to say, the pressure of these straps forces different portions of the blank into engagement with the guide wheels 39, 40, and as these wheels are turned positively by rotation of the shaft 13, the bodily movement of the skewer blank becomes positive, and, of course, this renders positive for the moment the rotation of the feed wheel 43. Since, during the action of the machine, there will practically always be at least one or two skewer blanks in engagement with the straps 27, 28, the action of the machine as a whole is rendered very nearly positive. As the skewer blanks pass upwardly under control of the feed wheel 43, they are brought into engagement with the spring guide 46 which moves them slightly endwise until their ends opposite the spring guide 46 are brought

into engagement with the guide strip 38. The blanks are thus guided each at both of its ends and kept true in relation to the dressing wheel 47. This insures uniformity in dressing the ends and in so doing insures uniformity in the length of the completed skewer.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A device of the character described, comprising a feed wheel provided with pockets for carrying blanks, means for cutting the ends of said blanks, a guiding strip for engaging one end of each blank, a spring guiding member for engaging the opposite end of each blank in order to adjust said blank in the general direction of its length, and means for cutting one end of said blank when thus adjusted.

2. A device of the character described, comprising a revoluble shaft, a plurality of guide wheels mounted rigidly thereupon and revoluble therewith, one of said guide wheels being flush with one end of said shaft, a feed wheel mounted loosely upon said shaft and disposed between said guide wheels, means co-acting with said feed wheel for holding skewer blanks upon said guide wheels, a second shaft disposed end to end relatively to said first mentioned shaft, the axis of said shafts being slightly out of alinement so as to render one of said shafts eccentric relatively to the other, and a dressing wheel carried by said second-mentioned shaft and substantially flush with the end

thereof adjacent to said first mentioned shaft.

3. A device of the character specified, comprising a pair of guide wheels mounted rigidly upon a shaft, a single feed wheel mounted idly upon said shaft and disposed between said guide wheels, said feed wheel being provided with pockets extending entirely across it for receiving skewer blanks, a pair of straps disposed adjacent to the path of travel of said skewer blanks for the purpose of dragging upon said skewer blanks and causing them to rotate as they are carried in said pockets, and a dressing wheel disposed adjacent to one of said guide wheels and mounted slightly eccentric in relation to the latter for the purpose of dressing the ends of the skewer blanks.

4. A device of the character described, comprising a feed wheel provided with pockets for carrying blanks, a pair of guiding strips disposed one on each side of said feed wheel, and a guiding strip of spring metal mounted upon one of said guiding strips and inclined toward the adjacent edge of said feed wheel for the purpose of adjusting said skewer blanks carried thereby, and mechanism for dressing the ends of said skewer blanks while thus adjusted.

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

RONELLO A. GROVER.

Witnesses:

ROBERT HERVEY,  
C. A. MERRILL.