

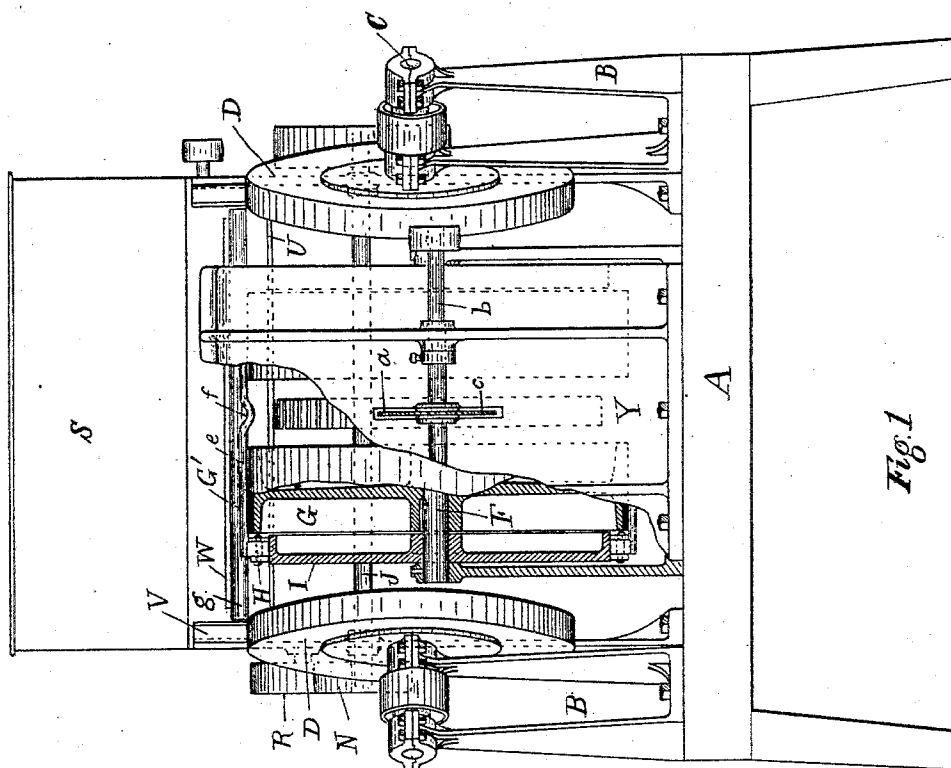
(No Model.)

3 Sheets—Sheet 1.

W. A. GOWEN.
SKEWER MACHINE.

No. 593,067.

Patented Nov. 2, 1897.



Witnesses:

Walter T. Cress

William H. Clifford Jr.

Inventor.

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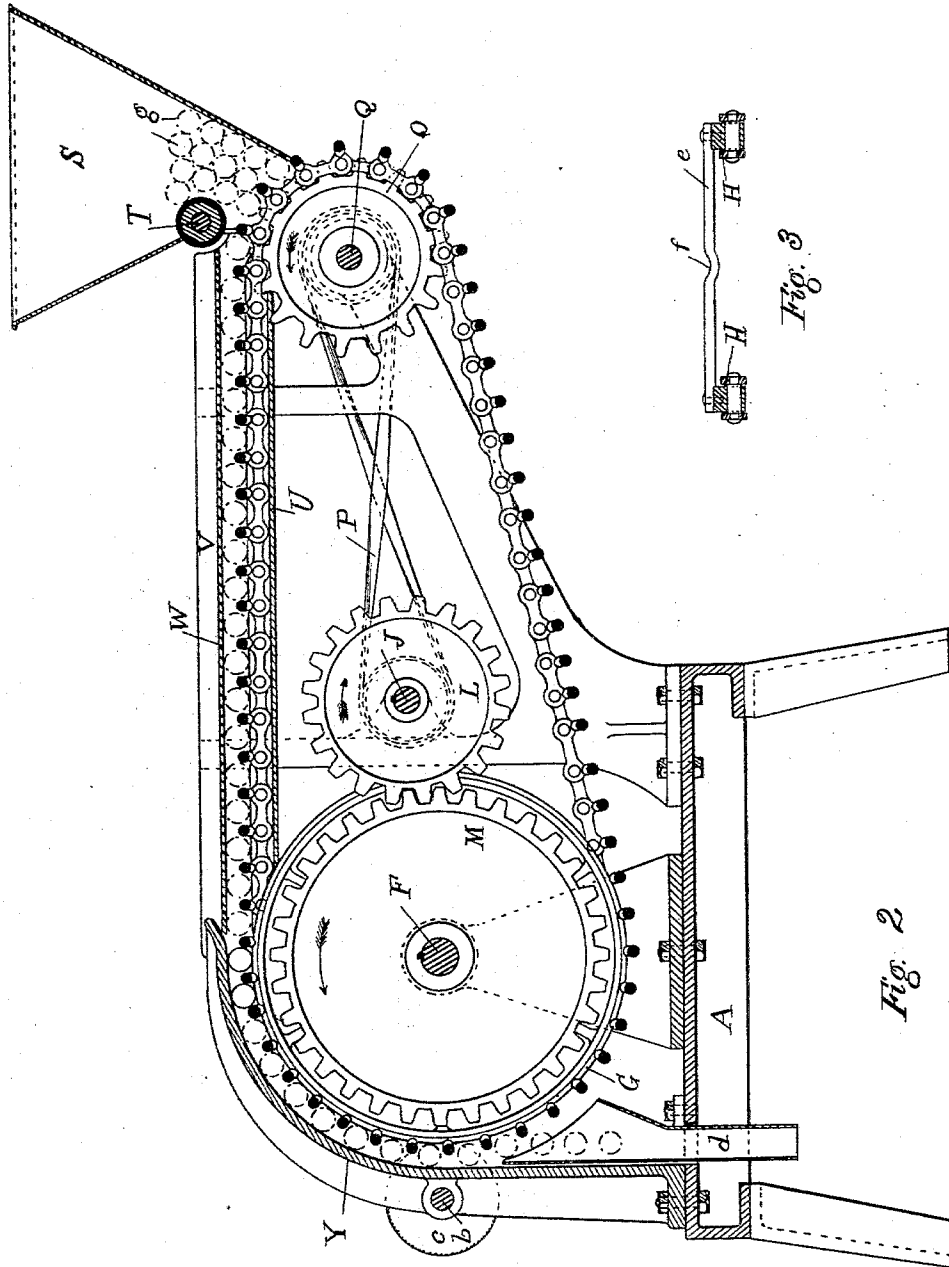
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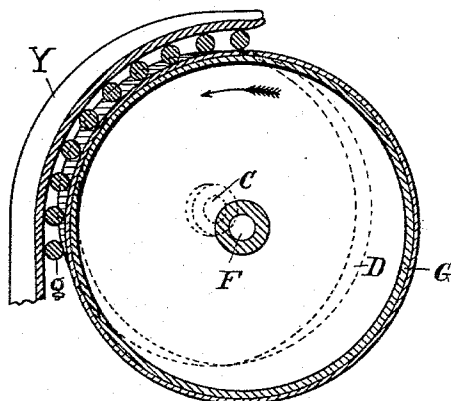


Fig. 4.

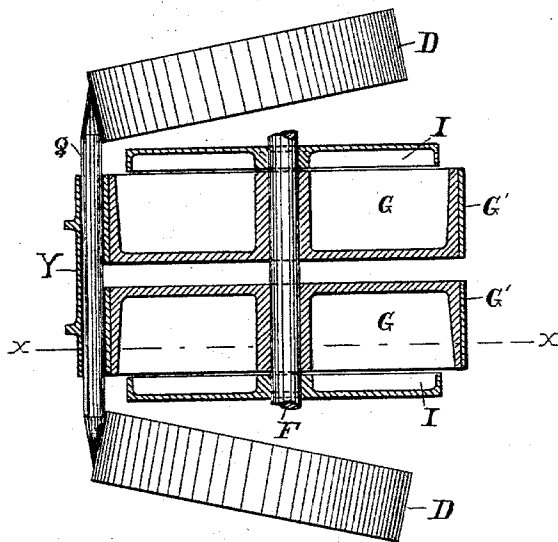


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM A. GOWEN, OF PORTLAND, MAINE, ASSIGNOR OF ONE-HALF TO
ALVIN S. WILCOX, OF DEERING, MAINE.

SKEWER-MACHINE.

SPECIFICATION forming part of Letters Patent No. 593,067, dated November 2, 1897.

Application filed July 23, 1896. Serial No. 600,199. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. GOWEN, a citizen of the United States of America, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Skewer-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in skewer-machines. It is designed to produce skewers having smooth and polished points. Its smooth and polished points are produced by causing blanks from which the skewers are made to travel over a wheel provided with an abrasive periphery, said wheel being set at an angle inclined to the plane of the length of the blank, and also by causing said blank to be rotated on its own axis while being carried over the abrasive wheel.

In the drawings herewith accompanying and forming a part of this application, Figure 1 is an end elevation of my improved skewer-machine, partly in section. Fig. 2 is a vertical longitudinal section. Fig. 3 is a detail sectional view of the conveyer used for carrying skewers over the abrasive wheel. Fig. 4 is a detail, partly in section, showing the relative position of the drums and the abrasive wheel and the manner in which the skewers approach and leave the abrasive wheel. Fig. 5 is a plan view of the abrasive disks and the drums, showing the relative position of the abrasive wheels to the drums.

Same letters refer to like parts.

In said drawings, A represents a suitable frame. Adjustably attached to said frame are shaft-supports B, in which are journaled shafts C. On shafts C are wheels D, having an abrasive periphery, said wheels being set at an angle inclined to the plane of the length of the blank. By means of the adjustable support B these wheels may be set at any required angle, so as to give the skewer either a long and tapering or a short and beveled point, as occasion requires. Mounted on the frame of the machine in any suitable manner is a shaft F, on which are revolving drums G. The periphery of said drums may be cov-

ered with rubber or similar substance, as shown at G'. The object of covering the periphery of said drums, as described, is for the following reason: As the skewer-blank, as hereinafter described, fits into the spaces between the connecting-rods *e* on the conveyer, the portion of the circumference of said blanks consequently extends downwardly and below said rods *e*, and therefore comes in contact with the periphery of the drums G, and as the said drums rotate at about twice the peripheral speed of the conveyer the blanks are thus caused to rotate on their own axes. Loosely attached to said shafts F are idlers I, over which travels the conveyer H, which in its turn carries the skewers over the abrasive or cutting wheels. Said conveyer consists of the side portions made in the form of a sprocket-chain, said side pieces being connected by a connecting-rod. The teeth on the sprocket-wheel engage the spaces in the side pieces of the conveyer, and when the said wheel is revolved causes by this means the conveyer to be carried forward. On shafts F and J are gears M and L, respectively, which mesh with each other and cause the drums D to revolve in a direction opposite to that taken by the abrasive or cutting wheels, the said drums G and gear M being adapted to revolve in the same direction. Attached to shaft J is a pulley N, which causes the said gears M and L to be revolved.

Mounted on shaft Q is a pulley R, which is connected by means of a cross-belt with pulley N. On said shaft Q is a sprocket-wheel O, which, by means of its sprocket-teeth fitting into the links of the conveyer, causes the same to be moved forward. Arranged above said sprocket-wheel and the conveyer is a hopper S, adapted to contain the skewer-blanks. Said hopper S has at or near the bottom a feed-roll T, which serves to assist in delivering the skewer-blanks from the hopper to the conveyer.

In order to hold the blanks firmly and securely upon the conveyer and present them in proper position to the abrasive wheel, I provide a guideway extending from the hopper to the abrasive wheels. Said guideway consists of a bottom U, over which the conveyer travels, sides V, which converge toward

the abrasive or cutting wheels, and a suitable float W, which tends to keep the blanks in position on the conveyer. The object of the converging sides V is to cause the blanks to
 5 be presented to the abrasive wheels in proper position, so as to cause points of equal size and length to be made on both ends of the blanks when required.

Rigidly attached to the frame of the machine, at the rear thereof, is a curved shield Y. Said shield is concentric with and extends partially over the revolving drums D and bears upon the blanks when they are being carried over the abrasive wheels. By
 15 this means the skewer-blanks are caused to be rotated and to continuously present a new surface to the abrasive wheels as said wheels revolve. In the middle of the curved shield is a slot *a* to admit, when required, a dividing-saw *c*. Rigidly attached to the outside of said shield in any suitable manner on a shaft *d* is mounted the said saw *c* to divide the skewer-blanks as they come down from the abrasive or cutting wheel. Also attached
 20 to the rear of the machine is a suitable guide-way and slot *d* for receiving and delivering the finished skewers.

The conveyer may be composed of two similar portions connected by rods *e*, having an offset *f* therein, the object of the offset being
 30 to allow the dividing-saw *c* to cut the skewer-blanks in half. When it is desired to form two skewers from a single blank, it will be evident that a single abrading-wheel may be
 35 used without affecting the principle involved in this invention, in which case the dividing-saw and some of the duplicate parts are omitted.

The operation of my improved skewer-machine is as follows: The hopper S is filled with skewer-blanks *g*. The machine is then put in operation. The skewers are then fed down from the hopper by gravity into the space between the connecting-rods *e* upon the conveyer
 45 H. As the conveyer travels forward the blanks are carried over the sand-wheel, as shown in Fig. 4, in which figure it will be seen that only the extremity of the blank first touches the abrasive wheel. Then as the conveyer travels farther more of the surface of the blank is presented to the abrasive wheel, and as the abrasive wheel is set somewhat ahead of the drums the proper point is thereby
 50 made upon the blank. The drums G are somewhat larger in circumference than idlers I, over which the side portions of the conveyer travel, and as the blanks are thus caused to move between the revolving drums G and the rigid and stationary shield Y a rotary motion
 60 is imparted to them as they travel over the

sand-wheels, thus causing a uniform point to be made. Just before the blanks leave the abrasive wheel they touch slightly upon said wheel, thus lightly polishing them and removing any burr that may be upon their point. 65 It will also be evident that as the abrasive wheels are set at an angle the blanks engage the abrading-wheels first only at their extremities, but as they are carried forward over the said abrasive wheel more of their surfaces 70 are acted upon by the abrasive wheel until the point is made the said skewer-blanks begin to leave the abrasive wheel and fall by gravity from the conveyer into the slot *d*. At the time when the blank leaves the conveyer 75 the point on the blank has been completely made and finished.

When the machine is desired to form points at both ends of the blank or it is desired to have all the skewers of a uniform length, the 80 revolving circular saw, as hereinbefore described, is set in the path of the skewer. Said saw may be operated in any suitable manner independent of the rest of the machine.

Having thus described my invention and its 85 use, I claim—

1. In a skewer-machine, in combination, a rotating disk having an abrasive periphery, said disk being set at an angle inclined to the length of the skewer-blank, drums rotating 90 in a direction opposite to that of said disk, a conveyer adapted to carry blanks over said drums and to engage the abrasive periphery of said disks, said drums being adapted to bear against the blanks in the conveyer and 95 means for causing said drums and conveyer to rotate, substantially as and for the purposes set forth.

2. In a skewer-machine, in combination, a rotating disk having an abrasive periphery, 100 said disk being set at an angle inclined to the length of the blank, drums adapted to rotate in a direction opposite to that of said disk, a hopper, a conveyer adapted to convey blanks from said hopper over said drums to said 105 abrasive disks, a curved shield concentric with and extending over said drums whereby the blank in the conveyer by being forced by said revolving drums against the shield is caused to be rotated on its own axis and means 110 for imparting motion to said drums and conveyer, substantially as and for the purposes set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 18th day of 115 July, A. D. 1896.

WILLIAM A. GOWEN.

Witnesses:

ELGIN C. VERRILL,
 NATHAN CLIFFORD.