

(No Model.)

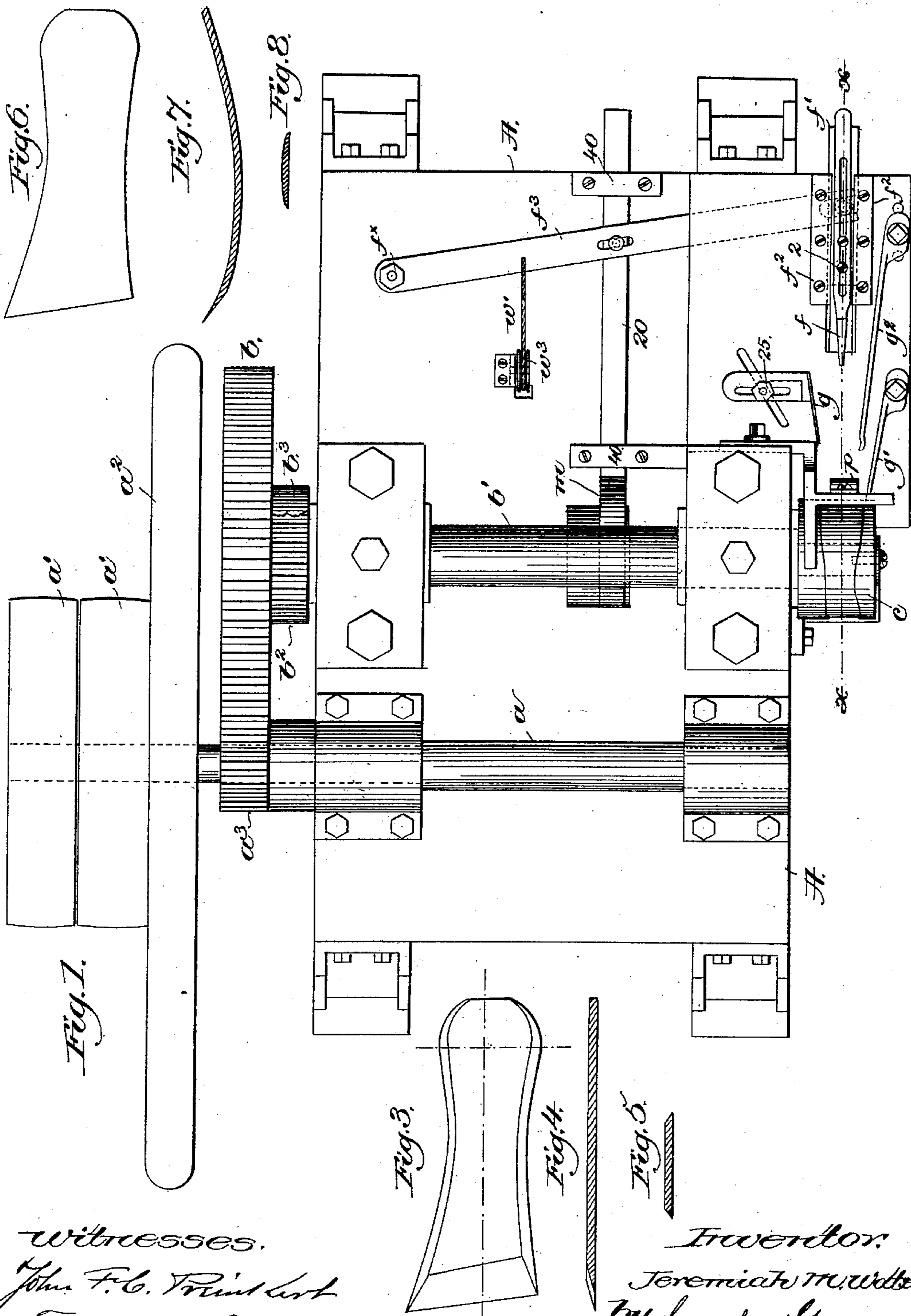
2 Sheets—Sheet 1.

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METHOD OF AND APPARATUS FOR COMPRESSING SHANK STIFFENERS.

No. 367,484.

Patented Aug. 2, 1887.



Witnesses.  
John F. C. Printz  
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Inventor:  
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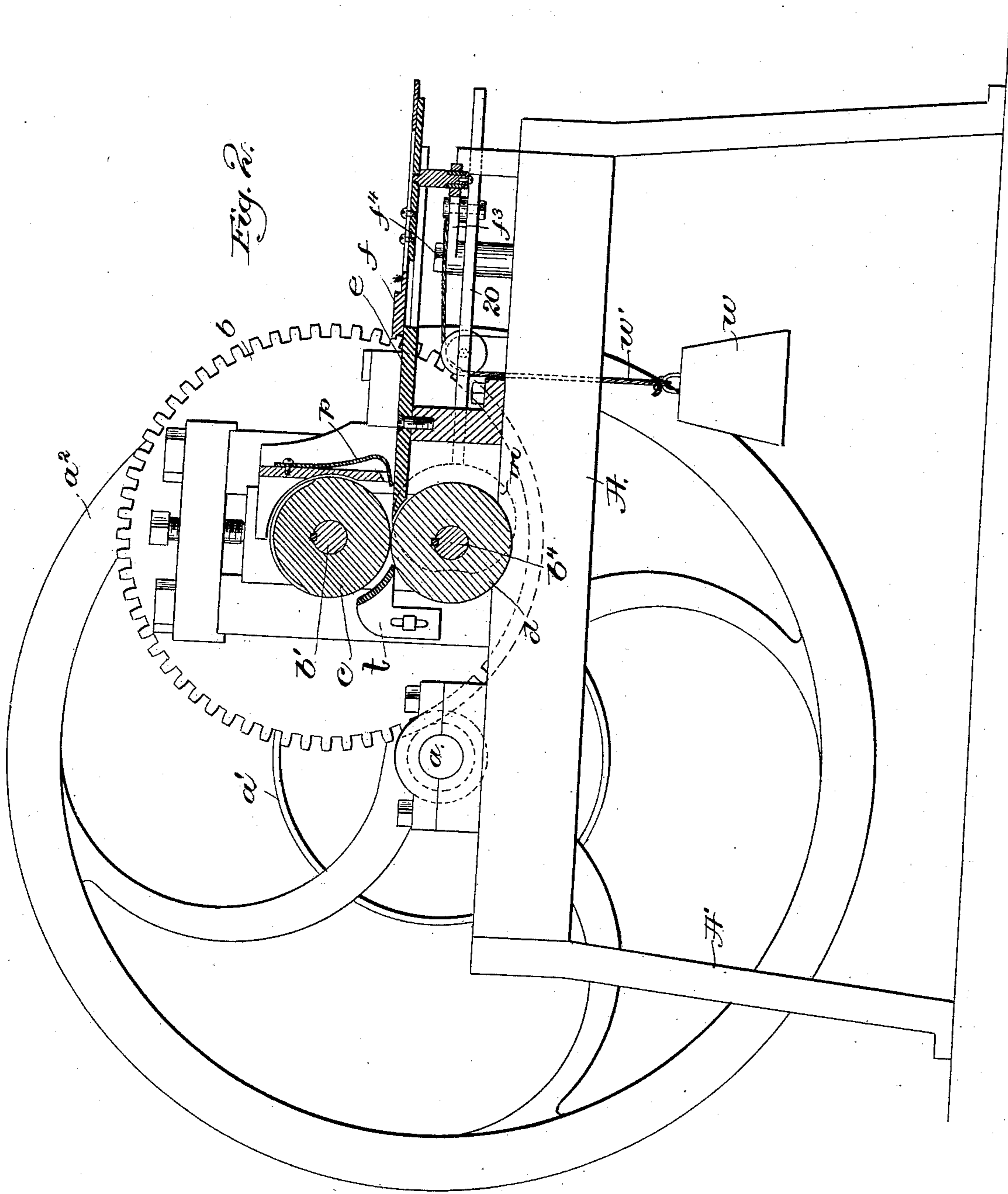
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# UNITED STATES PATENT OFFICE.

JEREMIAH M. WATSON, OF SHARON, MASSACHUSETTS.

METHOD OF AND APPARATUS FOR COMPRESSING SHANK-STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 367,484, dated August 2, 1887.

Application filed March 10, 1887. Serial No. 230,358. (No model.)

*To all whom it may concern:*

Be it known that I, JEREMIAH M. WATSON, of Sharon, county of Norfolk, and State of Massachusetts, have invented an Improvement in Method of and Apparatus for Compressing Shank-Stiffeners, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Shank-stiffeners as now commonly made are cut from leather or leather-board or equivalent material, so as to leave beveled edges; but previous to applying the same to a boot or shoe it is customary to somewhat shave off or curve the beveled edges at each side of the stiffener, and also to impart a longitudinal curve to the stiffener.

This invention has for its object to devise a method of and apparatus for rounding off or curving the beveled edges of the shank-stiffeners, and also to give to the same a longitudinal curve before applying the same to a last or shoe.

In carrying out this invention a shank-stiffener of suitable shape cut from a sheet of leather-board or other material, so as to leave its sides and one end to present beveled edges, the bevel of the edges occupying such relation to the plain surface of the material as to form obtuse-angled corners, and thereafter the blank so formed is subjected to the action of compressing or die rollers, one of which is cut away or recessed to conform in cross-section to the shape it is desired to give to the stiffener; the second roll acting to force the stiffener into the said recessed or cut-away part of the other roller, so as to cause the said beveled edges and obtuse-angled corners to be broken down into a round or curve, as will be described.

The machine herein shown has two rotating die or compressing rollers, combined with feeding devices for feeding the shank-stiffeners to the die or compressing rollers.

The parts are all preferably made adjustable, and if desired for different-sized shank-stiffeners the recessed roller may be removed and another substituted for it having a recess of a different size or shape.

Figure 1 in top view shows a machine espe-

cially designed for rounding off or curving the beveled edges of shank-stiffeners in carrying out this invention; Fig. 2, a side elevation and partial section on the dotted line *x x*; Figs. 3, 4, and 5, top and sectional views of a shank-stiffener previous to having its beveled edges compressed; Figs. 6, 7, and 8, similar top and sectional views after the beveled edges have been rounded off or curved.

The main frame-work or bed A of the machine is supported by suitable legs or supports, A'. The main drive-shaft *a* is provided with suitable drive-pulleys, *a'* *a'*, a balance-wheel, *a''*, and a toothed wheel, *a'''*, the latter meshing with a toothed wheel, *b*, fast to a shaft, *b'*.

The shafts *a* and *b'* each have their bearing in suitable boxes bolted to the main frame of the machine. A toothed wheel, *b''*, fixed to the shaft *b*, meshes with the toothed wheel *b'''* (see Fig. 1) directly beneath it, and fixed to a shaft, *b'''*, extending parallel with the shaft *b'*. A die or compressing roller, *c*, is secured to the shaft *b'''*, as by a spline, said die-roller having its periphery or acting face cut away or recessed to conform to the shape in cross-section which it is desired to give to the complete shank-stiffener. The die-roller secured to the shaft *b'''*, and having a plain face, acts against one side of the stiffener and forces it into the recessed portion of the die-roller *c* as the stiffener is passed between the said rollers.

A support or table, *e*, fastened to the upper side of the frame or bed *a*, serves as a feeding-support, over which the shank-stiffeners are fed to enter between the rollers.

The feeding device consists of a feeding-finger adjustably secured to a slide-bar, *f'*, by screw-studs 2, the slide-bar moving between the guide-blocks *f''*. The slide-bar *f'* is moved to and fro by a lever, *f'''*, pivoted to a stud, *f''''*, said lever *f'''* being moved in one direction by a slide-bar, 20, held in guides 40, the bar being acted upon by a cam, *m*, fast on shaft *b'''*, (see dotted lines Fig. 2,) the face of which strikes against one end of the said slide-bar, the slide-bar being moved in the opposite direction by a weight, *w*, connected with the lever *f'''* by a cord, *w'*, which passes over a roller or pulley, *w''*. A spring might be used to retain the bar 20.

The feeding-finger *f* is cut away at its under side, so that its forward end overlies the stiffener which it is desired to feed forward.

The guide *g*, herein shown as composed of a single plate of metal, is adjustably secured to the edge of the table *e* by a bolt, 25, said guide acting against one edge of the stiffener, two yielding guides, *g'* *g''*, secured to the edge of the table bearing against the other edge of the stiffener, to thereby accurately guide the stiffener to the die or compressing rollers. A spring-presser, *p*, is located at the entrance of the die-rollers to hold the stiffener down upon the table when moved forward by the feeding device.

The lifting plate or device *t*, located at the rear side of the die-rollers, aids in delivering the shank-stiffener from the rolls in such manner to retain the curve given to it by its passage between the rollers.

In operation, the shank-stiffener is cut to the desired shape, and with its side edges and one end properly skived or beveled, as shown in Figs. 3, 4, 5, to leave beveled sides and obtuse-angled corners between the beveled portions and the plain surface of the material, is fed between the die or compressing-rollers *c* *d*, and, as the stiffener passes between the rollers and is forced into the recessed portion of the roller *c*, the beveled side edges are rounded off or curved in cross-section, as shown in Fig. 8, and the stiffener is also gradually curved longitudinally, as shown in Fig. 7, to thereby form an article ready for use without necessitating further manipulation.

The shank-stiffener compressed as described is very stiff, as the material which is ordinarily shaved off and thrown away is pressed into the main part of the shank-stiffener.

I claim—

1. In a machine for compressing shank-stiffeners, two rotating die or compressing rollers, the meeting faces of which are formed to present a recess having one straight and one curved face or side, to thereby curve transversely one face of the stiffener, combined with means for rotating the said die-rollers, and a lifting-plate to assist in curving the said shank longitudinally, substantially as described.

2. In a machine for compressing shank-stiffeners, two die or compressing rollers, one of which is provided with a recess having a curved edge or margin, and the other with a plain surface, and means for rotating the said die or compressing rollers, combined with feeding devices and with means for automatically actuating the same to feed the shank-stiffeners between the said die-rollers, substantially as described.

3. In a machine for compressing shank-stiffeners, two rotating die-rollers, the face of one of which is provided with a recess having a curved edge or margin, and the face of the other of which is plain, combined with a slide-bar, *f*, an adjustable finger or device thereon to act upon and feed the shank, and with means, substantially as described, to operate the said slide-bar, as set forth.

4. In a machine for compressing shank-stiffeners, two rotating die-rollers, one of which is provided with a recess having a curved edge or margin and the other a plain surface, and a feeding device, combined with adjustable guides for accurately guiding the shank-stiffeners forward to enter between said rollers, substantially as described.

5. In a machine for compressing shank-stiffeners, the die-rollers and means for rotating them, and the adjustable feeding devices, combined with the adjustable guide, substantially as described.

6. The herein-described method of finishing the edges of shank-stiffeners, which consists in cutting out a blank from a sheet of material, leaving the same with beveled edges and obtuse angled corners, and thereafter passing the same between rollers having dies with rounded edges or margins in order to round the obtuse angles and beveled portions as cut, substantially as described.

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

JEREMIAH M. WATSON.

Witnesses:

BERNICE J. NOYES,  
F. L. EMERY.