K. GRAETZ.

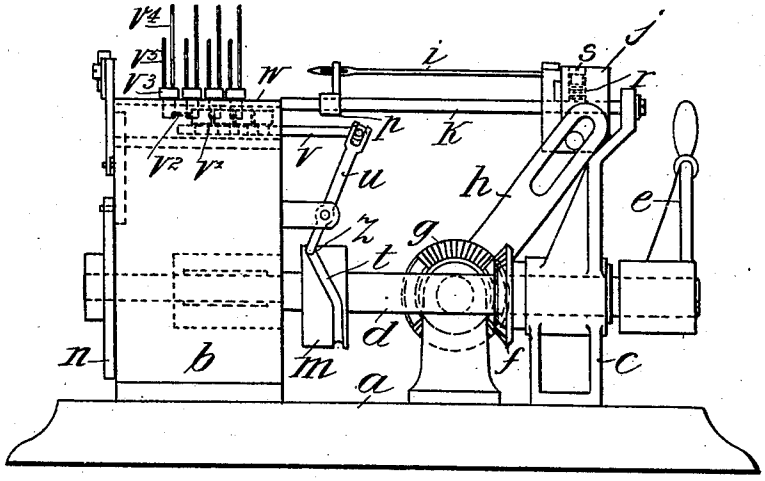
MACHINE FOR SEWING TUBULAR STRUCTURES.

APPLICATION FILED JULY 31, 1908.

908,245. Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.



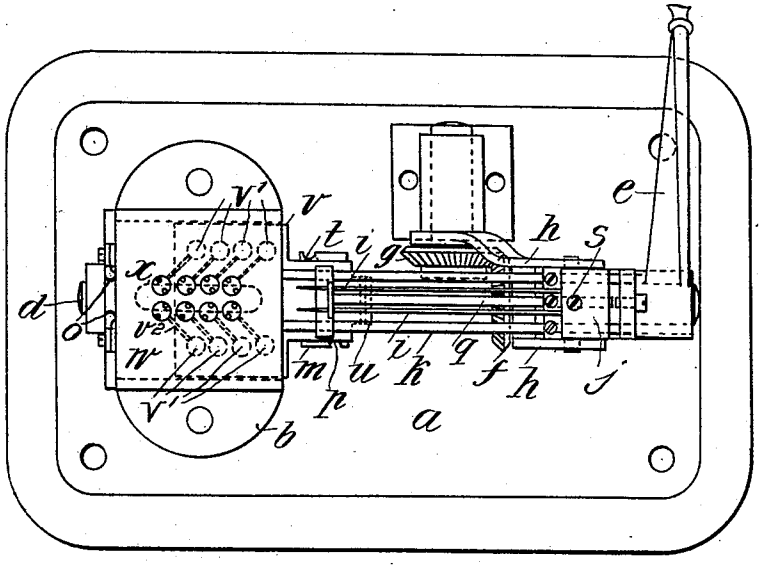


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

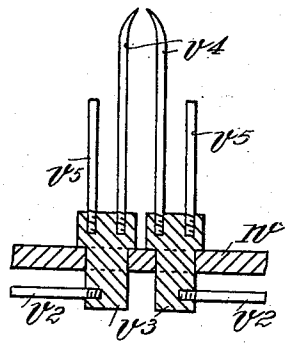


Fig. 4.

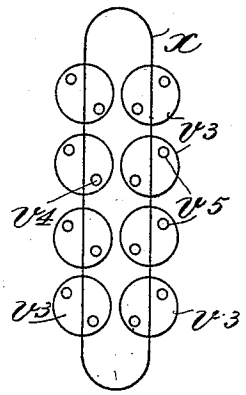


Fig. 6.

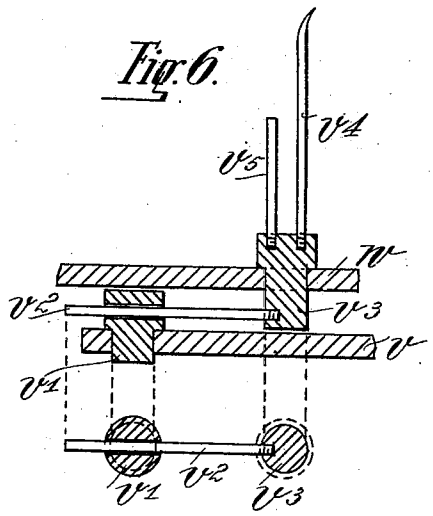
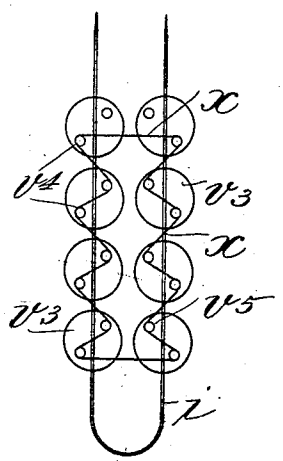


Fig. 5.



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MACHINE FOR SEWING TUBULAR STRUCTURES.

No. 908,245. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed July 31, 1908. Serial No. 446,338.

To all whom it may concern:

Be it known that I, KARL GRAETZ, a subject of the Emperor of Germany, residing at Weissensee, near Berlin, Germany, have invented certain new and useful Improvements in Machines for Sewing Tubular Structures, of which the following is a specification.

This invention relates to improvements in the machine for crimping or folding the ends of tubular textile fabrics, for example, the heads of mantles for gas lighting by incandescence, and for drawing a binding or gathering thread into the crimped or folded part of said fabrics, as described in the specification of former Letters Patent Nos. 678542, 798090 and 887999.

In the accompanying drawings, Figure 1 shows the machine provided with improvements in side elevation. Fig. 2 shows the same in plan. Figs. 3 to 6 are detail views showing the arrangement of and means for driving the forks between which the mantle to be crimped or folded is placed.

In Figs. 1 and 2, *a* is the machine-frame, on which are provided two standards *b* and *c*, in which is mounted the driving shaft *d* that can be turned by means of a lever *e*. On the shaft *d* is mounted a bevel-wheel *f*, the teeth of which are partly cut away and which engages in a similarly shaped gear-wheel *g* mounted at the side of the shaft. The wheel *g* by means of a fork *h* can reciprocate on guide-rods *k* the slide *j* carrying the drawing-in needles *i i*. At their front ends, the needles *i i* are guided in a slide *p*, which can be reciprocated on the rods *k*. On the slide *p* is fixed a central rod, which is guided in the slide *j* and on which pressure is exerted by means of a spiral spring *r* having an adjusting screw *s*, in consequence of which it takes part in the movements of the slide *j*, being held by friction. On the shaft *d* is mounted a wheel *m* having a peripheral cam groove *t*. A lever *n*, provided at one end with a pin *z* which engages the cam groove *t* and having its other end pivotally connected with a slide *v*, serves to reciprocate the slide *v* when the shaft *d* is rotated.

The slide *v* bears two rows of supports *v'*, which are provided with holes through which extend rods v^2 (Fig. 6), that are screwed into the lower ends of supports v^3. The supports v^3 are pivotally mounted in holes in the work-supporting plate *w* arranged above the slide *v*. Each of the supports v^3 bears two prongs, namely a long prong v^4 and a short prong v^5, which together form a fork (Figs. 3 and 6). The mantle *x* or other tubular fabric to be crimped or folded is slipped upon the prongs v^4 between the latter and the prongs v^5 (Fig. 4).

The operation of the improved machine is as follows:—The forks v^4, v^5 are first brought into the normal position (Fig. 4) by turning the lever *e* and the mantle or other tubular fabric *x* is put on. The lever *e* is then turned through such an angle that, by means of the cam disk *m*, the lever *u*, the slide *v*, the supports *v'* and rods v^2, a quarter revolution is imparted to the supports v^3 and thus to the forks v^4, v^5, so that the mantle is laid into uniform crimps or folds (Fig. 5). In the further rotation of the lever *e*, the cam-disk *m* is inoperative, so that the forks v^4, v^5 retain their position, while the bevel-wheels *f* and *g* are rotated to move the needles *i*, *i*, forward between the prongs v^4 and v^5 through the crimps or folds of the mantle (Fig. 5). In the further rotation of the lever *e*, the cam-disk *n* is set in rotation, which moves the hooks *o*, *o* which serve to insert the binding or gathering thread into the drawing-in needles *i*, *i*. When this has taken place, the needles are drawn back and the binding or gathering thread is thus drawn through the crimps or folds of the mantle. In the further rotation of the lever *e*, the forks v^4, v^5 are turned back into their original position (Fig. 4), so that the mantle can be taken off.

What I claim is:—

1. In an apparatus for crimping or folding the ends of tubular textile fabrics, the combination of forks adapted to receive said tubular fabric edgewise, pivotal supports for said forks, the axes of said supports corresponding substantially with the longitudinal axes of said forks, and means for turning said forks about said pivotal supports so as to form crimps or folds in said fabric.

2. In an apparatus for crimping or folding the ends of tubular textile fabrics and for drawing a binding or gathering thread into the crimps or folds, the combination of forks, means for supporting said forks in rows, needles, means for supporting said needles in line with said rows of forks, and means for turning said forks about their longitudinal axes and for moving said needles longitudinally.

3. An apparatus for crimping or folding the ends of tubular textile fabrics and for drawing a binding or gathering thread into the crimps or folds, said apparatus comprising forks, pivotally mounted supports for said forks, a reciprocating slide, supports pivotally mounted on said slide, rods fixed to said fork supports and extending through transverse holes in the supports on said slides, needles, and means for reciprocating said needles and said slide.

4. An apparatus for crimping or folding the ends of tubular textile fabrics and for drawing a binding or gathering thread into the crimps or folds, said apparatus comprising forks, pivotally mounted supports for said forks, a reciprocating slide, rods pivotally mounted at one end on said slide and extending through transverse holes in the supports, of said forks, needles, means for reciprocating said needles and said slide, and means for threading said needles.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

KARL GRAETZ.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.