

No. 791,686.

PATENTED JUNE 6, 1905.

G. A. FREDENBURGH.
THREAD DRESSING MACHINE.
APPLICATION FILED JULY 26, 1904.

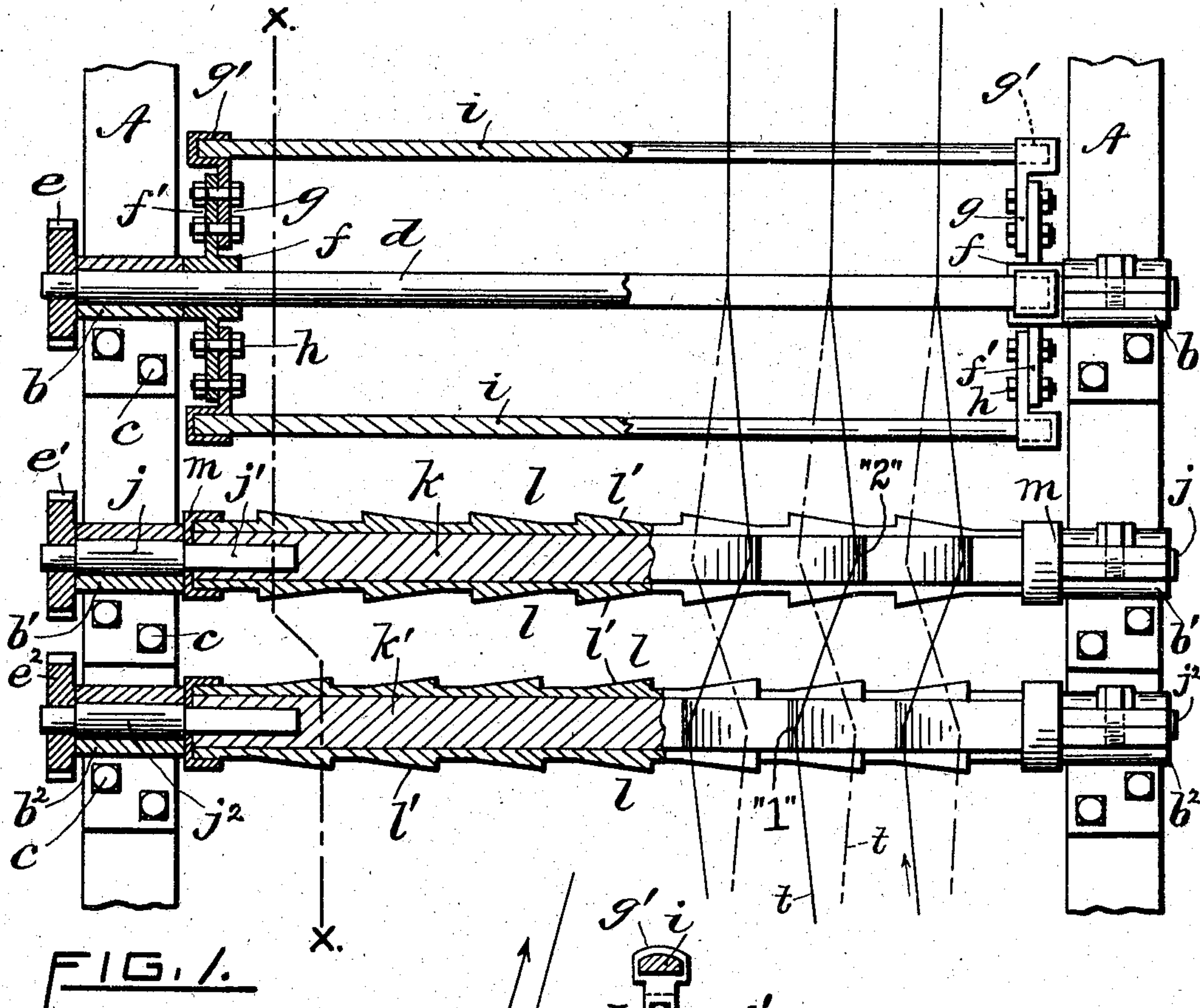
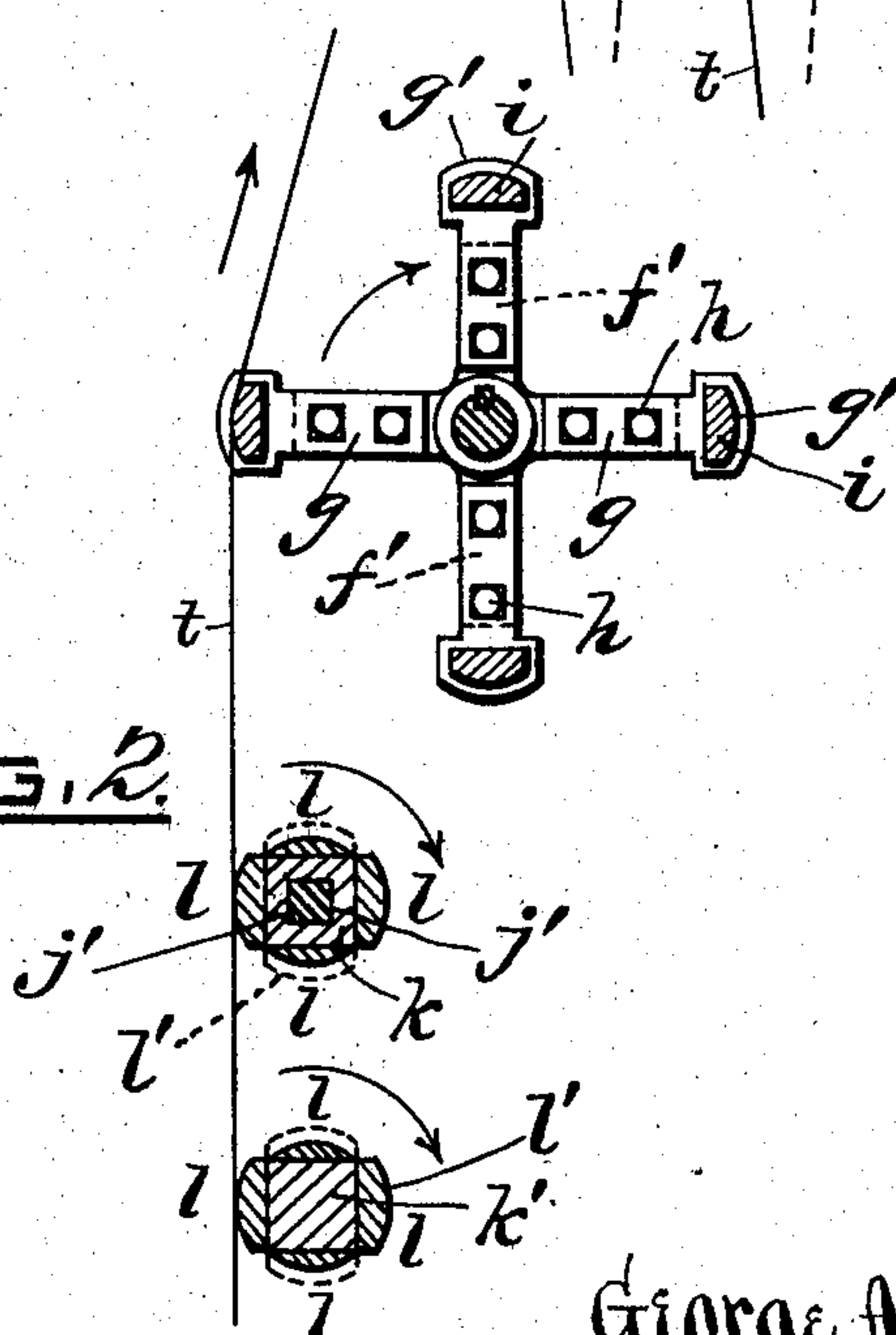


FIG. 1.

FIG. 2.



WITNESSES:

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GEORGE A. FREDENBURGH, OF PAWTUCKET, RHODE ISLAND.

THREAD-DRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,686, dated June 6, 1905.

Application filed July 26, 1904. Serial No. 218,245.

To all whom it may concern:

Be it known that I, GEORGE A. FREDENBURGH, a citizen of the United States, residing in the city of Pawtucket, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Thread-Dressing Machines, of which the following is a specification.

My invention relates to an improved construction of parts forming a means adapted for finishing or polishing the thread during its feeding movement on a thread-dressing machine; and the invention consists in the novel construction and combination of parts, as hereinafter described, and specifically set forth in the claims.

In the accompanying sheet of drawings, Figure 1 is a view, partly in central longitudinal section and partly in front elevation, of my improved means for finishing or polishing the thread on a thread-dressing machine. Fig. 2 is a vertical cross-sectional view taken in line *x x* of Fig. 1.

Like characters indicate like parts.

A A denote the end frames of a thread-dressing machine, and on each of said frames are three cap-box journal-bearing brackets *b*, *b'*, and *b''*, which are secured in place by bolts *c c c*. Each set of brackets of one end frame has its journal-bearings in parallel alinement with the journal-bearings in the set of brackets on the opposite end frame.

A shaft *d* is mounted in the bearings of the two uppermost brackets *b b*, and on one end of said shaft is made fast a gear *e*, which adjoins the outer face of one of said brackets. Hubs *f f*, made fast on the shaft *d*, abut the inner face of each bracket *b b*, and each of said hubs has a series of four arms *f' f'*, divided equidistantly apart from each other. On the arms of the hubs *f f* are secured plates *g g* by bolts *h h*, and each of said plates has a laterally-projecting socket, as at *g' g'*, to receive and hold the ends of wood bars *i i*, which extend parallel with the shaft *d*. Each bar *i* exposes a smooth outer curved surface arranged for the thread to contact upon. In the next two lower or middle brackets *b' b'* are mounted stud-shafts *j j*, and on one of said stud-shafts is made fast a gear *e'*, which adjoins the outer

face of one of said brackets. From the inner face of said brackets *b' b'* each stud-shaft is made square, as at *j'*, to fit in the ends of a wood shaft *k*. This shaft *k* is square-shaped in cross-section, so as to expose four surfaces upon which are mounted wood strips *l l l l*. Each of those strips *l* is held in place upon its shaft by disks *m m*, which are mounted on the stud-shafts *j j* and have annular flanges to close over said strips.

Each strip *l* has a series of contiguous sections disposing curved surfaces, as at points *l' l'*, which surfaces incline in one direction, as shown. Each strip *l* on the shaft *k* is arranged so that its curved surfaces incline oppositely to those of the next adjacent strip.

In the lowermost brackets *b'' b''* are stud-shafts *j'' j''*, a gear *e''*, made fast on one of said stud-shafts, a wood shaft *k'*, mounted on said stud-shafts, and a series of four wood strips *l' l'*, secured on said wood shafts, and these parts are constructed exactly like those already described for the brackets *b' b'*. The curved surfaces of the strips *l' l'* are disposed to receive the thread upon them during the operation of polishing. Each series of strips is mounted in the same position alike on the shafts *k k'*, and each series of strips has its sections arranged to incline in the reverse direction from those of the next adjacent series.

The gears *e*, *e'*, and *e''* receive power from the driving mechanism of the machine, and each of said gears is arranged to rotate its respective shaft at the same speed and in the direction of movement with the thread, as indicated by the arrows in Fig. 2. The surface speed of the members *i* and *l* is greater than the rate of travel of the thread. The thread in its movement upon the strips *l l* comes up from a brush-cylinder (not shown) and passes in contact upon the highest portion of the sections of one strip of each series on the shafts *k k'* and assumes a diagonal course, as indicated by the full-line position between the points 1 and 2 in Fig. 1. Thence the thread passes up to contact upon the bars *i i*, and as the shafts *k k'* rotate the thread next moves down the inclinations of said sections, so that it assumes an opposite diagonal course, as indicated by the

broken-line position in said figure. Thence the next succeeding two strips *l l* engage the thread at the highest portion of their sections, after which the thread moves down the inclinations of said sections in the same manner as above described, and so on successively throughout the circle of the strips. From the bars *i i* the thread passes to the winding-spools next above on the machine. By having the inclinations on each strip *l* oppositely disposed causes the thread to roll round and smooth, and at the same time the friction created by the wood surfaces of the bars *i* and strips *l* upon the thread produces a high gloss or polish upon the thread.

This invention is an improvement upon the thread-dressing machine shown and described in Letters Patent of the United States No. 702,786, issued to me June 17, 1902.

What I claim, and desire to secure by Letters Patent, is—

1. In a thread-dressing machine, the combination with the end frames of said machine, of three brackets secured on each end frame and each of said brackets having a journal-bearing in axial alinement with the journal-bearing in the opposite bracket; a shaft mounted in the uppermost brackets; a power-driven gear made fast on said shaft; four wood bars extending parallel with said shaft and arranged to rotate with the same; four stud-shafts mounted in the lower brackets; a power-driven gear made fast on two of said stud-shafts; two wood shafts having their ends secured to said four stud-shafts, and each of said wood shafts made square in cross-section; a series of four wood strips secured upon each of said wood shafts, each of said strips having a series of sections disposing curved surfaces which incline in one direction, each strip of one series having its sections inclined oppositely to the sections of the next adjacent strip, and each series of strips having its sections inclined in the reverse order of the other, sub-

stantially as shown and for the purpose specified.

2. In a thread-dressing machine, the combination with the end frames of said machine, of a shaft rotatably mounted in proper supports of the end frames; hubs secured upon said shaft, each of said hubs having four integral arms which are divided equidistantly apart from each other; a plate secured upon each arm of said hubs and each of said plates provided with a socket; four wood bars extending parallel with said shaft and having their ends secured in the sockets of said plates, and said bars disposing curved surfaces for a thread to contact upon; two wood shafts situated one over the other and below first-mentioned shaft, each of said wood shafts having a stud secured in each end thereof and mounted in proper supports of the end frames; a gear fast on first-mentioned shaft; a gear fast upon the stud at one end of each wood shaft, and each of said gears arranged to receive power to rotate its respective shaft at the same speed and in the same direction; a series of four wood strips secured upon each of said wood shafts, each strip having a series of sections disposing curved surfaces for the thread to contact upon, each strip having its sections inclined in one direction, each strip arranged so that its sections incline oppositely to the sections of the next adjacent strip, one series of strips having its sections arranged in a reverse order of the next following series of strips and in the same position alike on its respective shaft, whereby the thread coming in contact upon the sections of both series is caused to move in alternately opposite oblique directions, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE A. FREDENBURGH.

Witnesses:

HAROLD VARCOE,

ARTHUR E. BRICKETT.