

F. J. Seymour,
Spinning Metals.

N^o 80,836.

Patented Aug. 11, 1868.

Fig. 1.

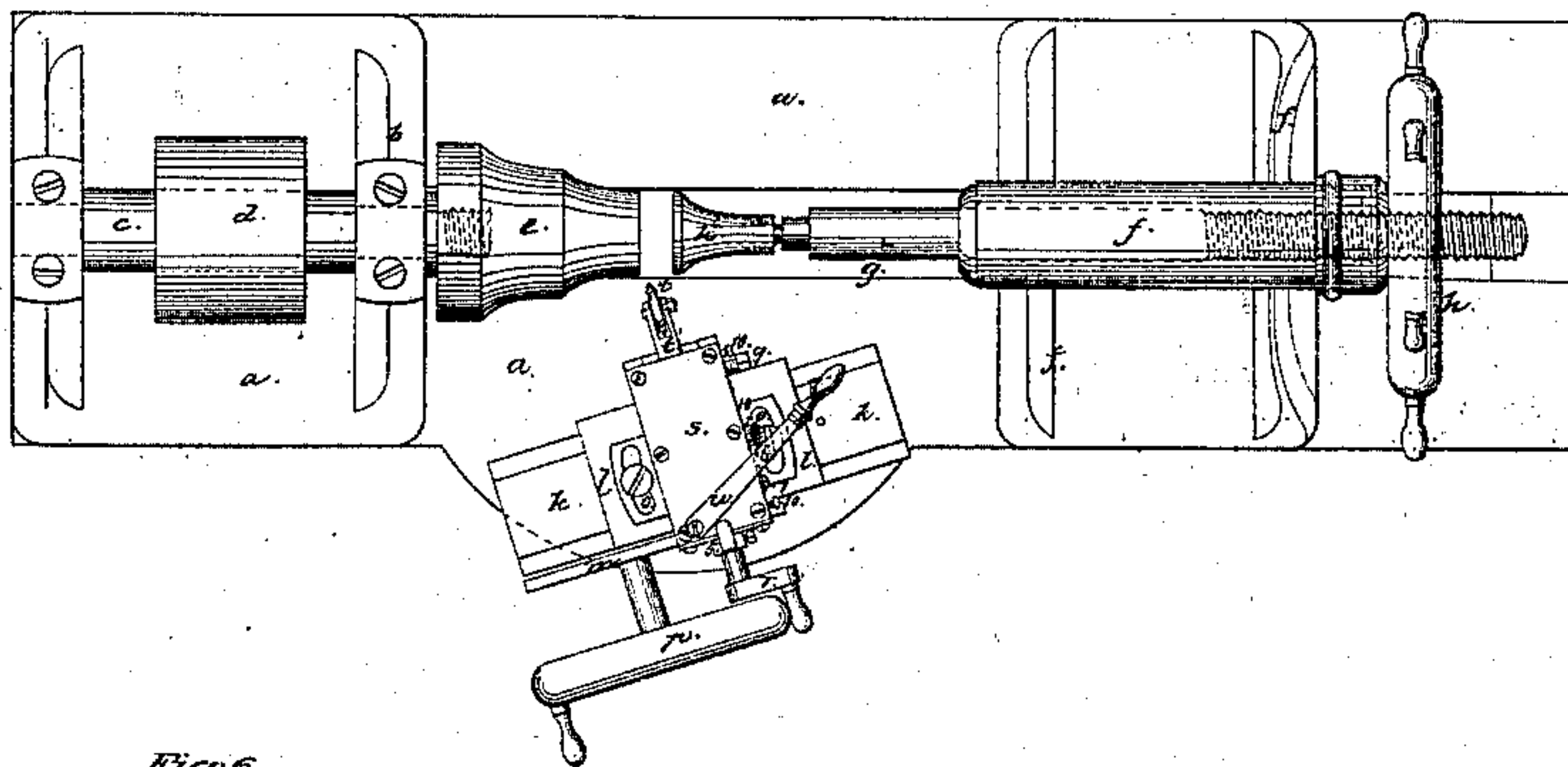


Fig. 2.

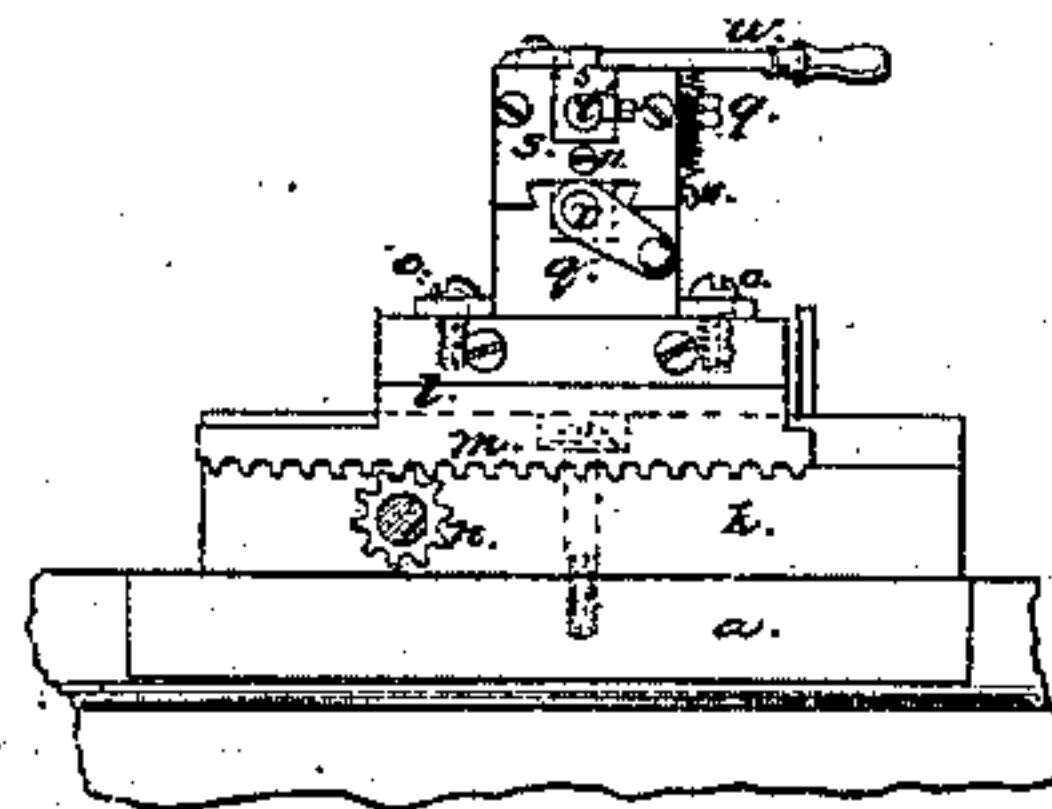


Fig. 6.

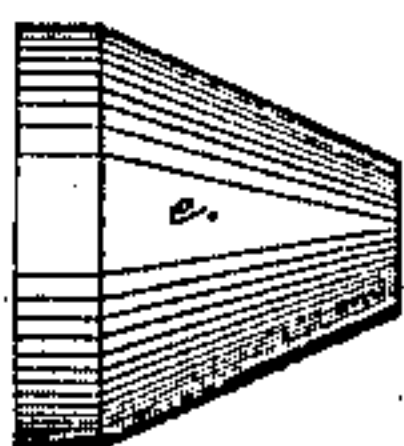


Fig. 4.

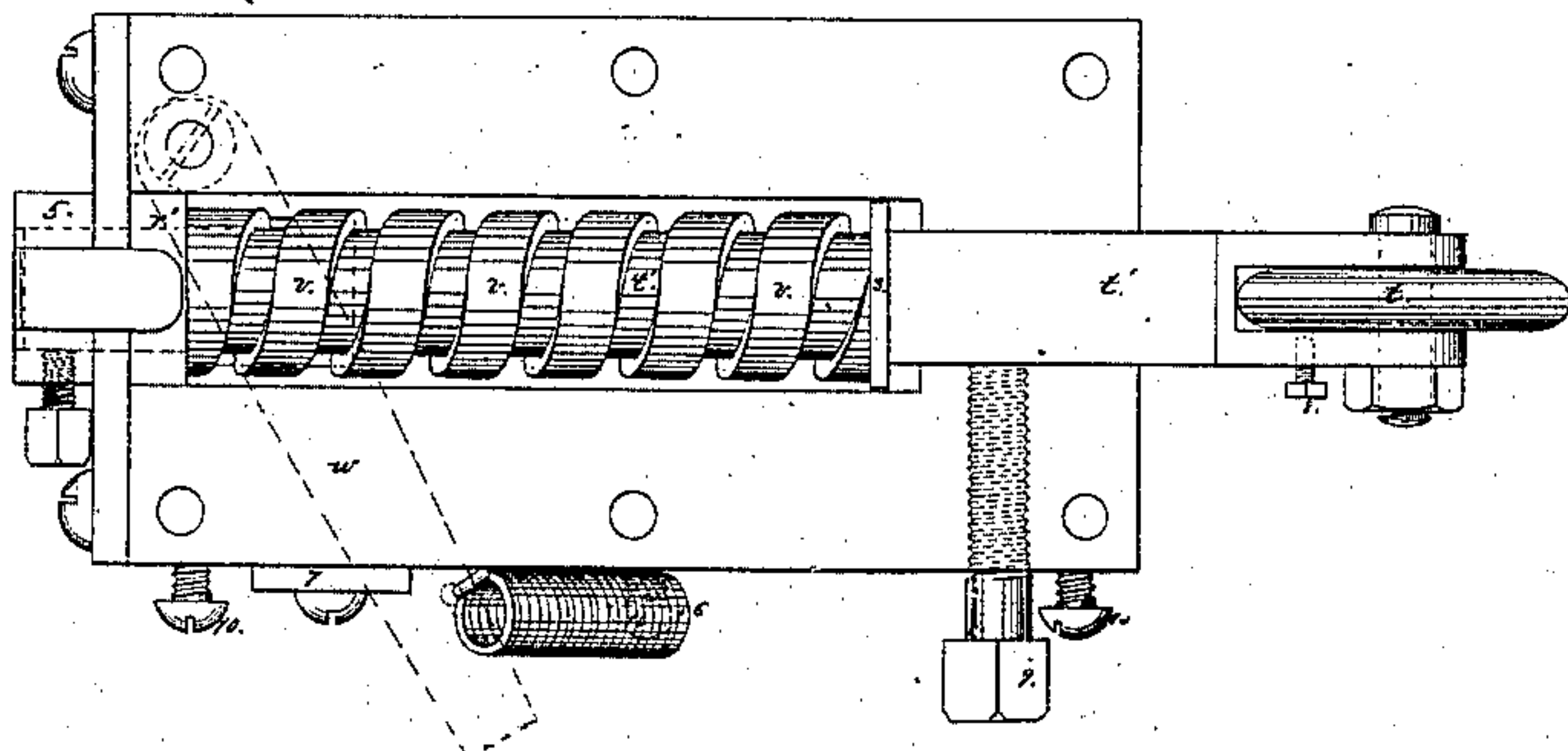


Fig. 3.

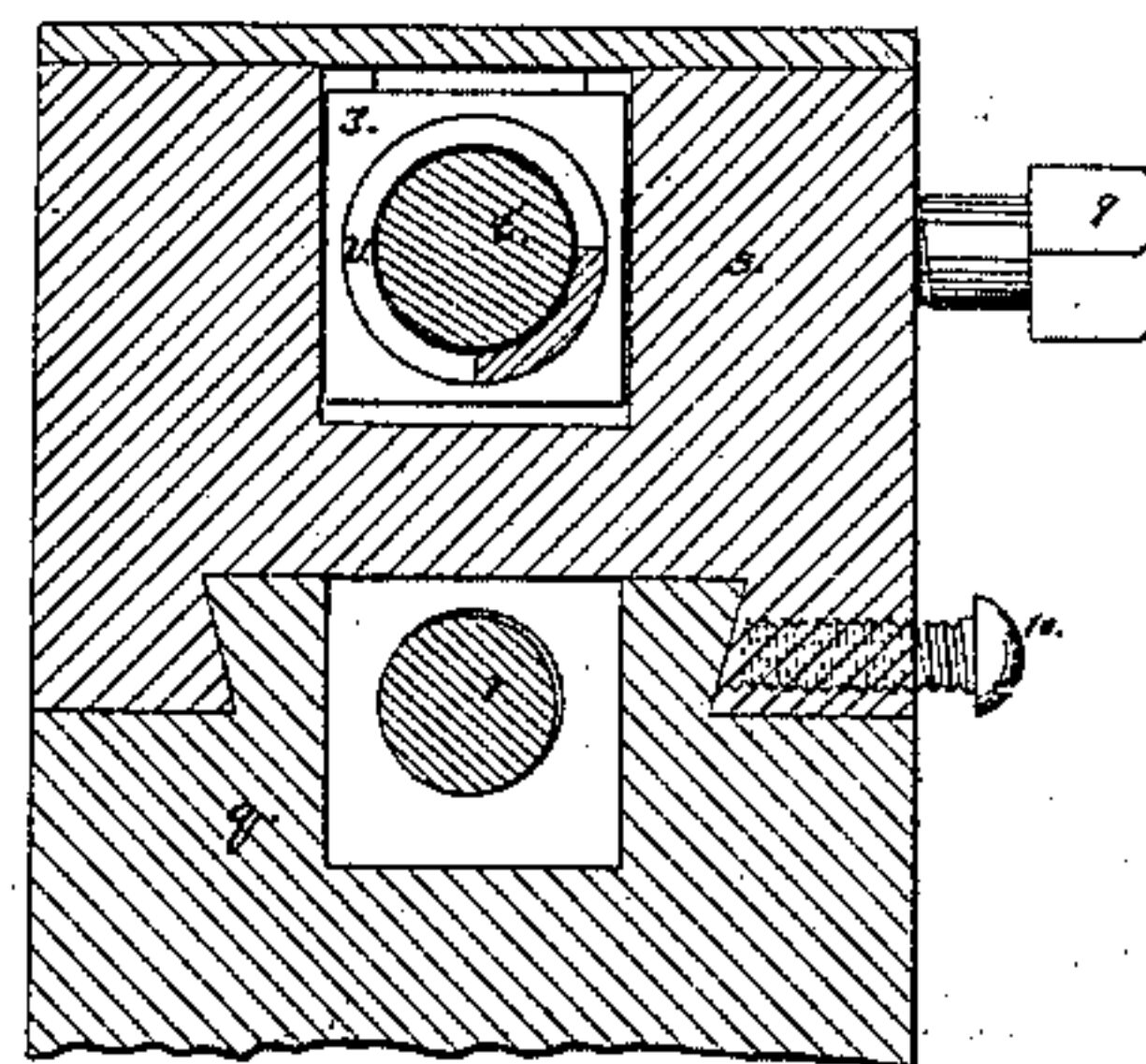
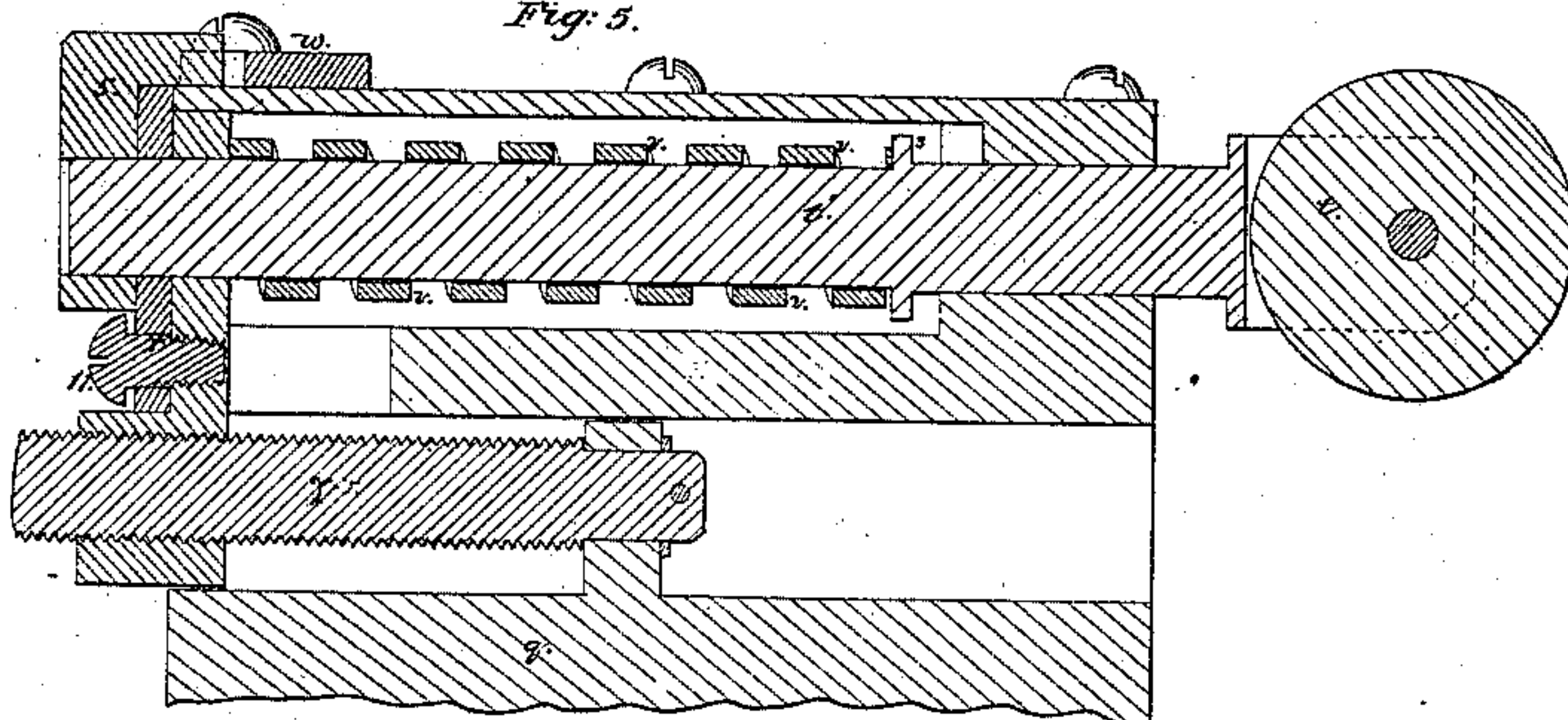


Fig. 5.



Witnesses:
Geo. A. Mearns
Chas. H. Mearns

Inventor:
Frederick J. Seymour
per L. H. Small

United States Patent Office.

FREDERICK J. SEYMOUR, OF WOLCOTTVILLE, ASSIGNOR TO HIMSELF AND
E. MILLER AND COMPANY, OF MERIDEN, CONNECTICUT.

Letters Patent No. 80,836, dated August 11, 1868.

IMPROVEMENT IN MACHINE FOR BURNISHING AND SPINNING METALS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, FREDERICK J. SEYMOUR, of Wolcottville, in the county of Litchfield, and State of Connecticut, have invented, made, and applied to use a certain new and useful Improvement in Machinery for Spinning or Burnishing Articles of Sheet Metal; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of my said machine complete.

Figure 2 is an elevation of the tool-holding slide-rest.

Figure 3 is a section of the tool-stock and slide.

Figure 4 is a plan of the tool-stock and slide with the cap-plate removed.

Figure 5 is a longitudinal section of the tool-stock and parts that operate on the same, and

Figure 6 is an elevation of a conical former, that may be used for giving shape to the article to be made in its first stages.

Similar marks of reference denote the same parts.

Machines have heretofore been made for operating upon disks of sheet metal, to spin them up to the shape of a chuck or former, the said chuck or former and the sheet metal revolving against a roller that is held to said sheet metal by a slide-rest, to which motion is given to cause the roller to move along the surface of the chuck or former, as may be seen in the French patent of Japy Brothers, dated March 1, 1836.

The nature of my said invention consists in mechanism for holding a roll or burnisher with a yielding or elastic power against the revolving sheet metal and former, so that the spinning up of articles of sheet metal can be done with a tool that is held by mechanism that will yield to the curvatures of the former or chuck, and operate similarly to the spinning of sheet-metal articles by hand.

By my mechanism, irregular shapes, such as used for lamps, oil-cans, &c., can be spun up with great speed and precision by a workman with but little experience or bodily strength, while the spinning of large articles of sheet metal has heretofore required a workman with considerable experience and bodily strength to hold the tool.

My improvements are adapted to spinning up of regular conical articles in sheet metal, but are more particularly available in spinning up ornamental articles formed with curved sides or angular bends, forming bands or varying-shaped circular articles, now spun up by hand or pressed up in dies.

In the drawing, *a* is the bed of the machine, carrying the head *b*, that supports the mandrel *c*, upon which is a pulley, *d*, driven by competent power.

e is the chuck or former, of the desired shape, corresponding with the interior of the lamp-reservoir or other article to be produced. This former *e* is screwed upon the end of the mandrel *c*, and can be changed as required for different articles, or for different stages of the same article.

f is the movable head, carrying the sliding mandrel *g*, set up by the hand-wheel *h*, to clamp the disk of metal between the clamping-head or whirl *h'* and the former *e*.

Upon the top of the bed *a* is a bed, *k*, forming a slide for the tool-holding mechanism, and this bed *k* may be turned to any desired angle to the centre line of the machine, so as to be parallel, or nearly so, with the general outline of the article to be formed, as illustrated in fig. 1.

The bed *k* is attached by a bolt near the centre thereof, as shown by dotted lines in fig. 2.

Upon the top of the bed *k* are V-slides, receiving the secondary bed, *l*, with a rack, *m*, on one side, acted upon by the pinion *n*, that is moved by the hand-wheel *p*, so that the tool, and the slide-rests carrying the same, can be moved along over the surface of the sheet metal by turning said wheel *p* and sliding the secondary bed *l* along on the bed *k*.

The slide-rest *q* is attached to the secondary bed *l* by the slots and screws *o*, so that it can be secured at

any desired angle to the said bed *l*, for regulating the direction in which the roller or burnishing-tool and its stock stands to the metal operated upon.

The tool-holding slide *s* is fitted to move endwise upon V-slides, upon the rest *q*, and *r* is the screw and handle that operates upon the nut *r'* to move the slide *s*.

The tool *t* is mounted at the end of the stock *t'*, that is fitted to slide endwise through the slide *s*, and within said slide *s* the spring *v* operates, between the upper end of the nut *r'* and a shoulder, 3, to project the tool *t*, but if the pressure upon the tool becomes too great, the spring *v* yields, and allows the tool and stock to move back, and thus the tool is made to follow up the sheet metal, and keep it into contact with the surface of the chuck or former, whatever the shape of that former may be, the parts being properly set to operate in connection with the particular former.

When the tool is to be moved along again to the right, to commence a second operation, the stock *t'* is to be drawn back by the lever *w*, (see fig. 1 and red lines, fig. 4,) acting against a toe that projects from the collar 5, that is attached to the back end of the stock *t'*, and a spring, 6, draws said lever down to latch it behind the catch 7. The raising of this lever to unlatch it, when the tool is opposite the place of beginning on the disk or article of sheet metal, allows the spring *v* to project the tool for proceeding as before.

In burnishing articles of sheet metal, I find it best to use the roll *t*, kept from turning by a set-screw at 8, as a circular burnisher of this character can be kept in order with great facility.

The stock *t'* can be clamped, so that the tool will be rigid, by the screw 9. This may be employed where a straight-sided conical article is being spun up, especially where it is desired to reduce the thickness of the metal during the spinning operation.

If the parts are adjusted to a given movement, and it is desired to make the spring *v* more powerful in its operation, the screws 10 may be tightened to fasten the tool-slide *s* immovably to the slide-rest *q*, and then, by turning the screw *r*, the nut *r'* will compress the spring *v*.

I prefer to use a screw at 11, to hold the nut *r'* back to its place, under ordinary circumstances. This screw 11 is to be slackened or removed when the spring is rendered more powerful by the movement of the nut *r'*.

By the apparatus constructed as aforesaid, the workman is relieved from the labor of holding the tool while the spinning operation is performed, and he is able to guide and direct his tool with precision, in a manner corresponding generally to that employed in turning metals with a slide-rest; and, in addition to the yielding force applied to the tool, to cause it to conform to the shape of the chuck or former, the screw *r* and hand-wheel *p* place the tool under the direction of the attendant, and if the spring *v* is too powerful for any particular character of work, its force may be lessened by the hand acting to draw back the lever *w*.

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

1. A revolving chuck or former, in combination with a tool fitted to yield and moved automatically, in spinning or burnishing articles of sheet metal upon said chuck or former, substantially as formed.

2. The lever *w*, in combination with the tool *t*, stock *t'*, and spring for withdrawing said tool from the work, as set forth.

3. The roll *t* and set-screw 8, for converting said roll into a burnisher, as and for the purposes set forth.

4. The arrangement of the tool-holding slide *s*, nut *r'*, screw *r*, and slide-rest *q*, and screws 10 10 10, for the purposes and as set forth.

5. The tool-holding slide *s*, tool *t*, spring *v*, lever *w*, slide-rest *q*, secondary bed *l*, bed *k*, and hand-wheel *p*, arranged and applied substantially as specified, for spinning or burnishing articles of sheet metal upon a revolving chuck or former, as set forth.

In witness whereof, I have hereunto set my signature, this fifth day of May, 1868.

FRED'K J. SEYMOUR.

Witnesses:

W. H. PERKINS,

EBENEZER GILBERT.