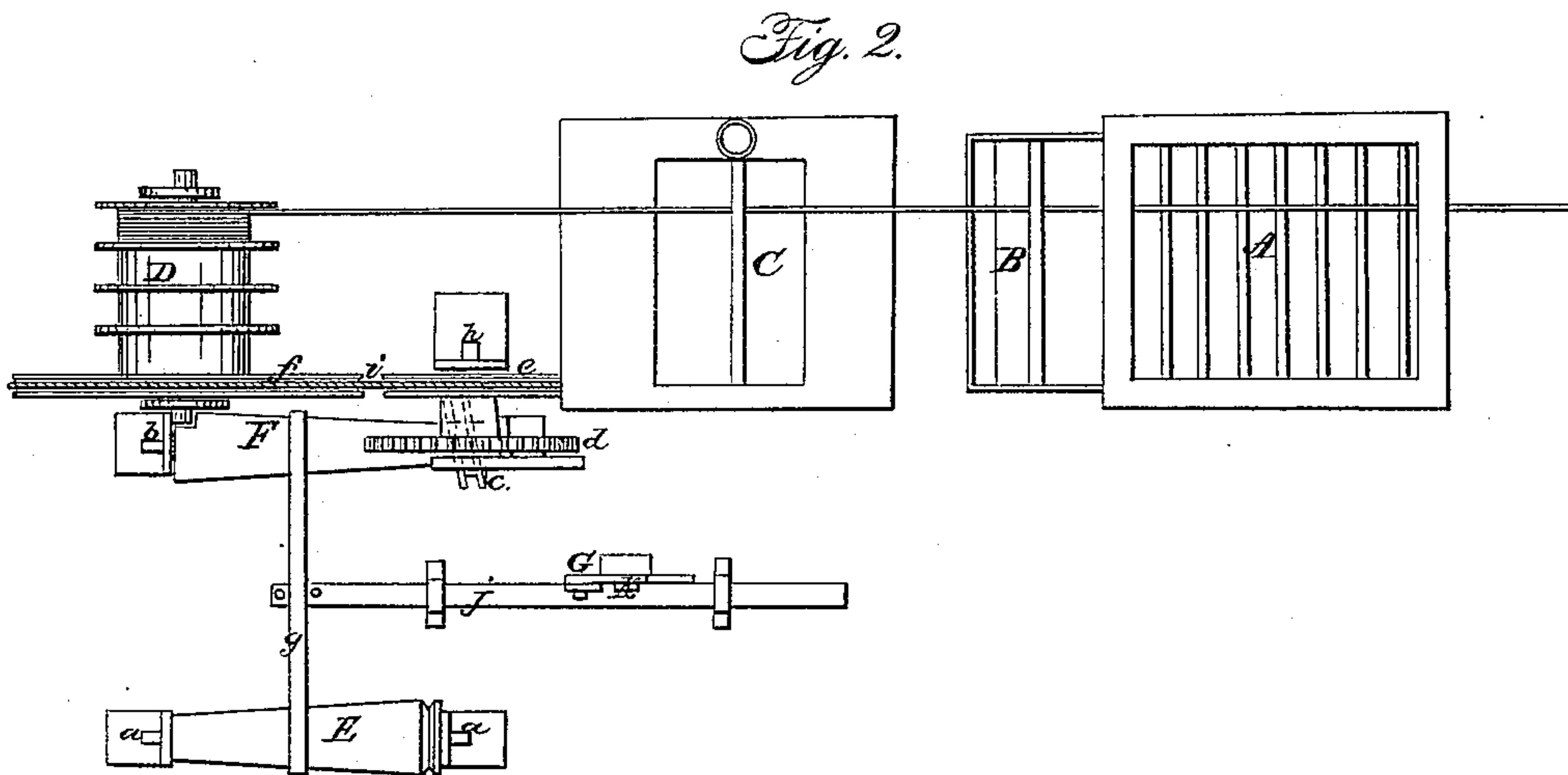
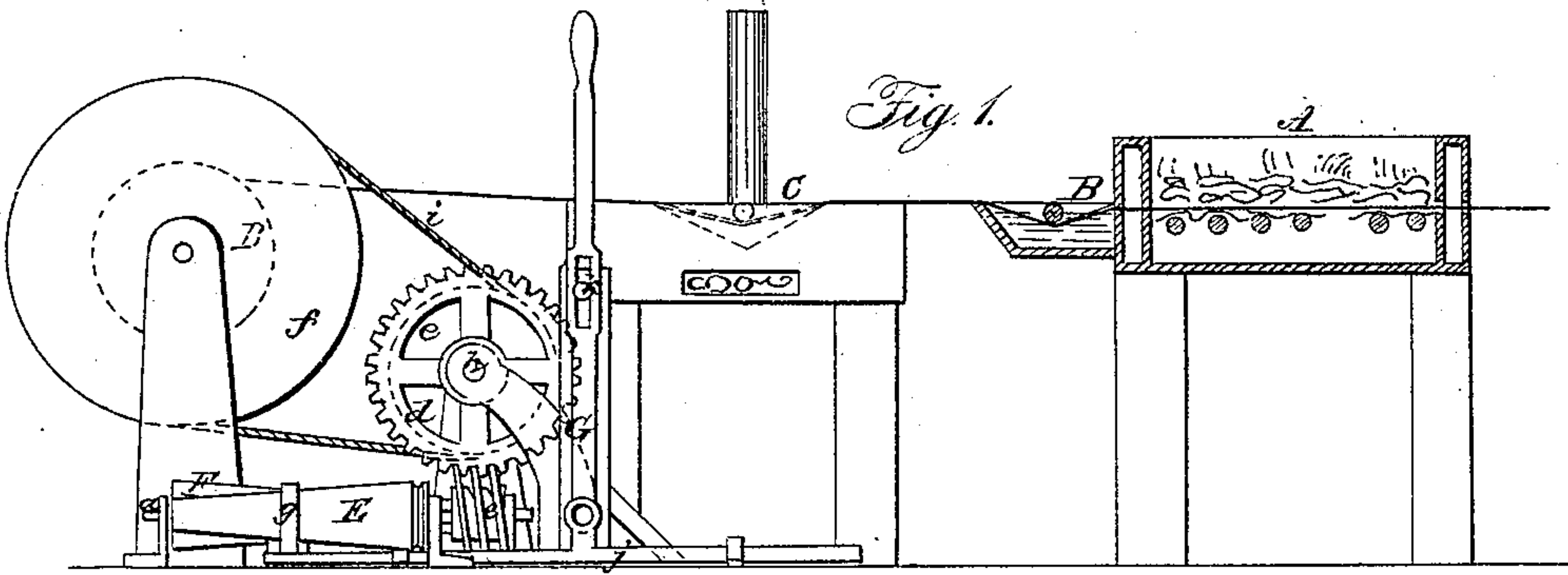


Tempering Metal.

No. 26,143.

Patented Nov. 15, 1859.



Witnesses:

Stephen G Chase
William M Chase

inventor:

William Parker jr

UNITED STATES PATENT OFFICE.

WM. DARKER, JR., OF WEST PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO J. B. THOMPSON, OF PHILADELPHIA, PENNSYLVANIA.

TEMPERING STEEL WIRE.

Specification of Letters Patent No. 26,143, dated November 15, 1859.

To all whom it may concern:

Be it known that I, WILLIAM DARKER, Jr., of West Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Tempering Crinoline Steel or Wire; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, of a tempering furnace and its appertaining apparatus with my improvement. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in both figures.

In the process of tempering crinoline steel, or wire, now in general use, the material passes continuously through a furnace, from thence through a hardening bath of cold water, and from thence to a tempering bath of hot oil and it is desirable that every part of it should enter the bath at a certain heat. Now as the fire varies in intensity from frequent supplies of fresh fuel and other causes, it becomes very desirable if the machinery is driven by steam or other power, to have some convenient and speedy method of varying the rate at which the material passes through the furnace.

My invention consists in combining the drum by which the steel ribbon or wire is drawn through the fire with the driving or counter shaft from which it receives motion by means of a pair of cone pulleys and a belt one or other of which is capable of being shifted to change the speed of the drum at pleasure according to the condition of the fire.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, is the furnace; B, the hardening bath; C, the tempering bath, and D, the rotating drum, on which the material is wound up, and by which it is drawn through the furnace and baths.

E, F, are two cone pulleys, one on the driving or counter shaft *a*, and the other on a shaft *b*, which carries an endless screw *c*, which gears with a worm gear *d*, that is fast on a shaft *h*, which carries a pulley *e*, from which a band *i*, runs to a pulley *f*, fast to the drum D. The cone pulley E, drives the cone pulley F, by means of a belt *g*, and F, drives the drum D, by the screw *c*, gear *d*, shaft *h*, pulleys *e*, *f*, and band *i*. The belt *g*, has applied to it a shifting slide *j*, which is connected with a lever G, suitably arranged on a fixed fulcrum *k*, to be operated by an attendant so situated as to watch the heating of the material. This attendant works the lever to shift the belt *g*, to change the velocity of the drum D, as the heating of the material may require.

Instead of the pair of single cone pulleys E, F, a pair of double cone pulleys may be employed, in which case the change of speed will be effected by shifting the two cones of each pulley instead of the belt.

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

Combining the drum, D, by which the steel ribbon or wire is drawn through the fire and bath, with the main or counter shaft from which it derives motion, by means of a pair of cone pulleys and belt, substantially as and for the purpose herein specified.

WILLIAM DARKER, JR.

Witnesses:

STEPHEN G. CHASE,
WILLIAM M. CHASE.