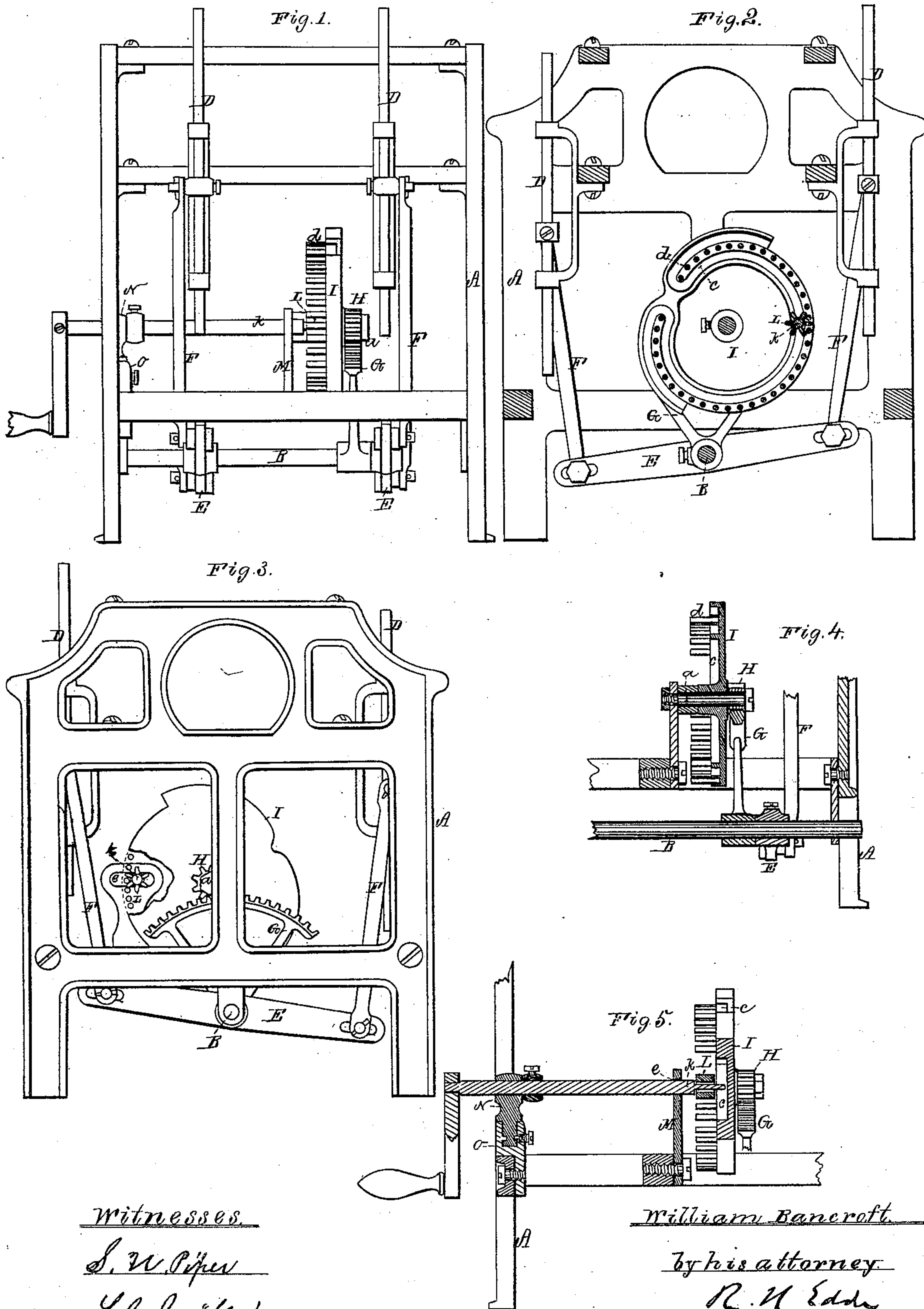


W. BANCROFT.
MECHANISM FOR OPERATING THE ROCK-SHAFT OF
YARN-SPOOLERS.

No. 193,106.

Patented July 17, 1877.



Witnesses

S. W. Piper

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by his attorney

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UNITED STATES PATENT OFFICE.

WILLIAM BANCROFT, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
HOPEDALE MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN MECHANISM FOR OPERATING THE ROCK-SHAFTS OF YARN-SPOOLERS.

Specification forming part of Letters Patent No. **193,106**, dated July 17, 1877; application filed
March 27, 1877.

To all whom it may concern:

Be it known that I, WILLIAM BANCROFT, of Hopedale, in the county of Worcester and State of Massachusetts, have invented a new and useful Mechanism for Operating the Rock-Shaft of a Yarn-Spooling Machine; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a transverse section, and Fig. 3 an end view, of a spooling-machine frame, provided with my invention, applied to the rock-shaft of the thread-guide rails.

So far as I have been able to learn, it has heretofore been the practice to operate the rock-shaft of a spooling-machine by means of a mechanism which acted positively to turn it one way only, a weight or weights being employed to effect the opposite rotary motions of such shaft.

With the weight there is an uncertainty of action, its gravitating power being more or less affected by friction of the operating parts, viz., the supporting-rods of the thread-guide rails in their bearings. This uncertainty of action I avoid by my invention, whereby the rock-shaft is moved in each direction by a positive motion, and this however the friction of the operating parts may vary. Each thread-guide rail is forced upward and drawn downward by mechanism positive or unfailing in its action.

In the drawings, A denotes the frame; B, the rock-shaft, and D D D D the supporting-rods of the opposite thread-guide rails of a yarn-spooling machine, the said shaft being connected with such rods by means of levers or arms E and connecting-rods F, as and arranged in manner as represented.

In carrying out my invention, there is fixed directly to the shaft B a toothed sector, G. A pinion or gear, H, fastened to one side of a grooved mangle-wheel, I, engages with the said sector. The said wheel and the said pinion are supported by an arbor, *a*, projecting

from a standard, such being as represented in Fig. 4, which is a vertical section of the wheel and parts adjacent thereto.

The wheel, grooved as represented at *c* and furnished with a row of pins, *d*, extending from it and arranged with the groove, in manner as shown, has one end of a shaft, *k*, extending into the groove *c*, such shaft being provided with a pinion, L, to engage with the row of pins.

Near the pinion the shaft is supported in a horizontal slot, *e*, of a standard, M, while near its outer end the said shaft is further supported in a bearing, N, which is pivoted in or to a standard, O, all being as denoted in Fig. 5, which is a longitudinal section of the shaft and its appliances.

From the above it will be seen that the shaft *k* not only can revolve, but it is free to vibrate laterally. While the shaft may be in revolution, the pinion will revolve the mangle-wheel—that is, the grooved wheel I and its row of pins *d*—first in one and next in the opposite direction, whereby a reciprocating rotary movement of the rock-shaft will be produced by means of the pinion H and sector G, in consequence of which the supporting-rods D of the opposite thread-guide rails will have imparted to them positively, in the order required, their proper vertical motions.

I claim—

In the spooling-machine, the combination of the mangle-wheel I *d*, provided with a pinion, H, operative gear L, and shaft K, substantially as explained, with the toothed sector G, applied to such pinion H, and directly fixed upon the rock-shaft B, connected as described with the supporting-rods of the opposite thread-guide rails, such combination while in operation effecting positive movements, as explained, of the said rods and their rails.

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Witnesses:

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