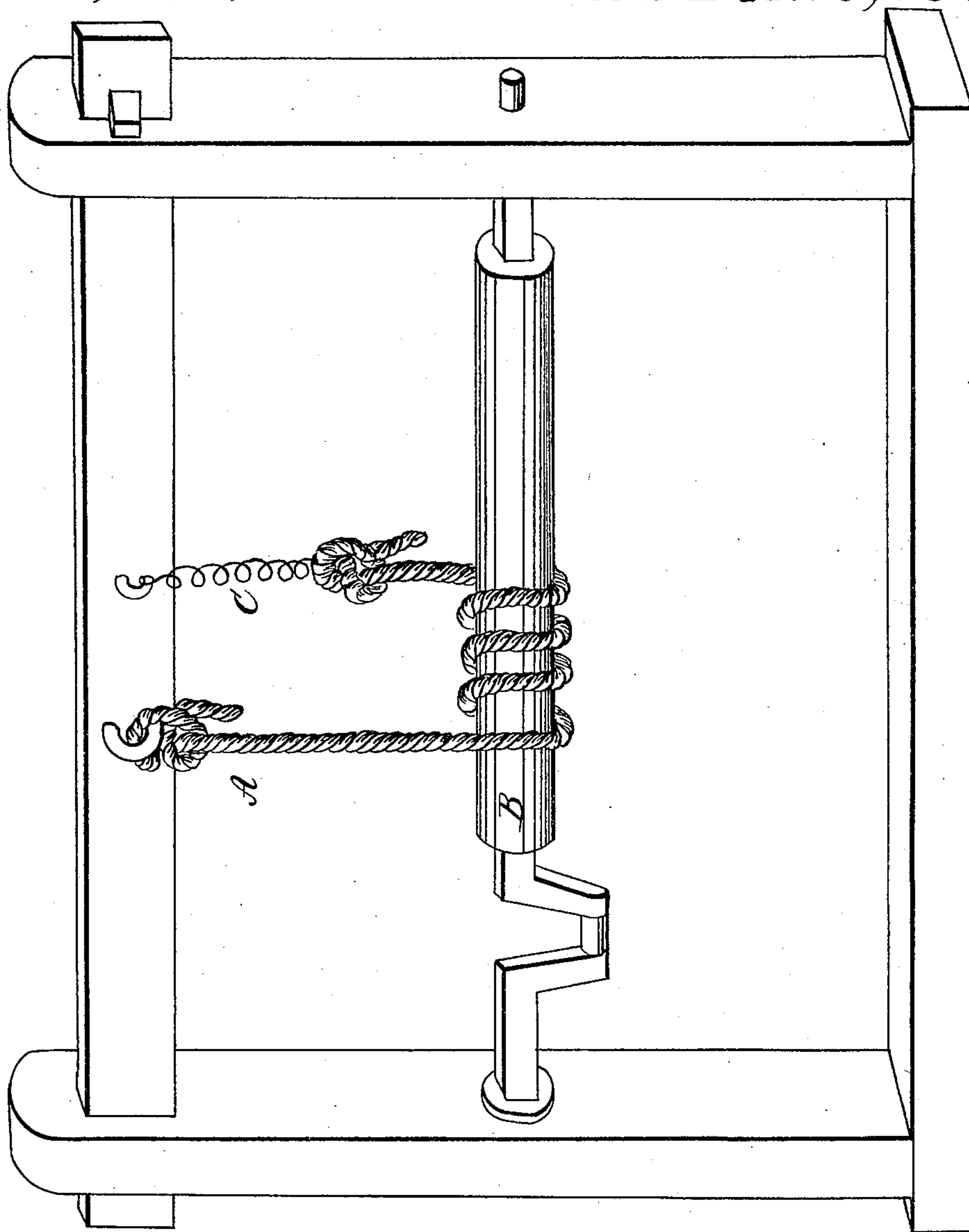


*J. Hanley,*  
*Machine Gearing,*  
*Nº 60,509, Patented Dec. 18, 1866.*



*Witnesses,*  
*George Weston*  
*Alexander Holway*

*Inventor*  
*James Hanley*

# United States Patent Office.

## IMPROVEMENT IN SPIRAL FRICTION CLUTCH FOR MACHINERY.

JAMES HANLEY, OF NEW YORK, N. Y.

*Letters Patent No. 60,509, dated December 18, 1866.*

*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, JAMES HANLEY, of No. 12, Sixth Avenue, in the city and State of New York, have invented and made a new and improved device to control and direct the motion of crank and other axles, which I call a Friction Clutch; the principle of which is a spiral coil surrounding the axle, and one mode of carrying it into operation will be seen and understood by reference to the accompanying drawing, and the letters of reference marked thereon.

Securing one end of a piece of catgut to the framework of the machine, as seen at A, in the drawing, I pass it round the crank-axle, B, spirally several times, and fasten the other end of the catgut to an elastic cord, C, also secured to the framework, and operating as a spring, with only just sufficient tension upon it to keep the coiled part in easy contact with the axle. A little rosin applied to the catgut, surrounding the axle, increases the necessary friction. Thus arranged, the crank will only turn in one direction, that in which the cord, A B C, draws upon the elastic end, C, which yielding immediately, the coil keeps slack, and will not tighten. On trying to reverse the motion, the coil instantly tightens upon the crank-shaft with a grip like the closing of the hand, thus preventing any motion in that direction.

### *Claim.*

I claim the friction cord, as herein described and applied, substantially, to control the movement of machines.

JAMES HANLEY.

### Witnesses:

DANIEL L. JONES,  
WILLIAM H. KIRK.