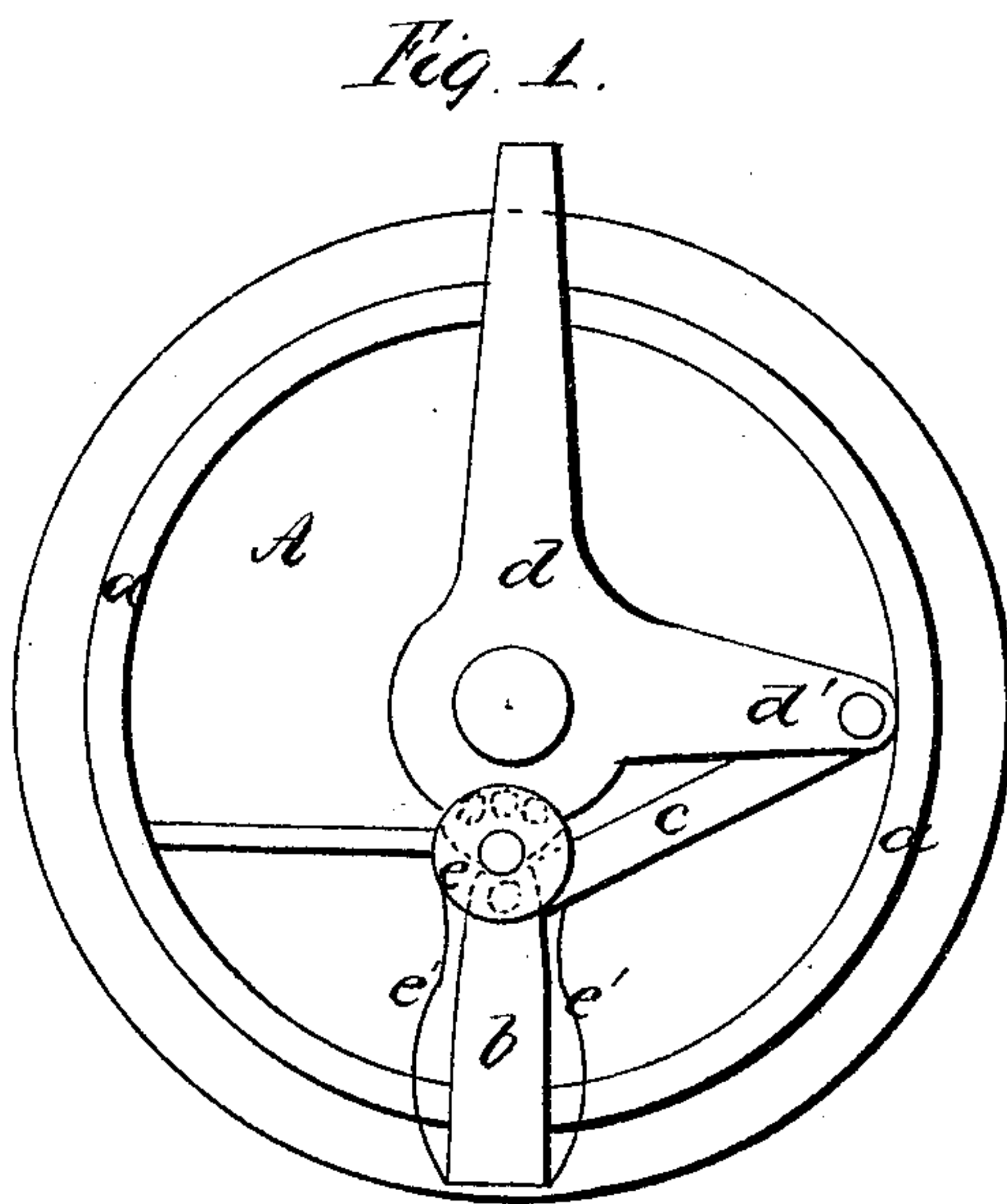
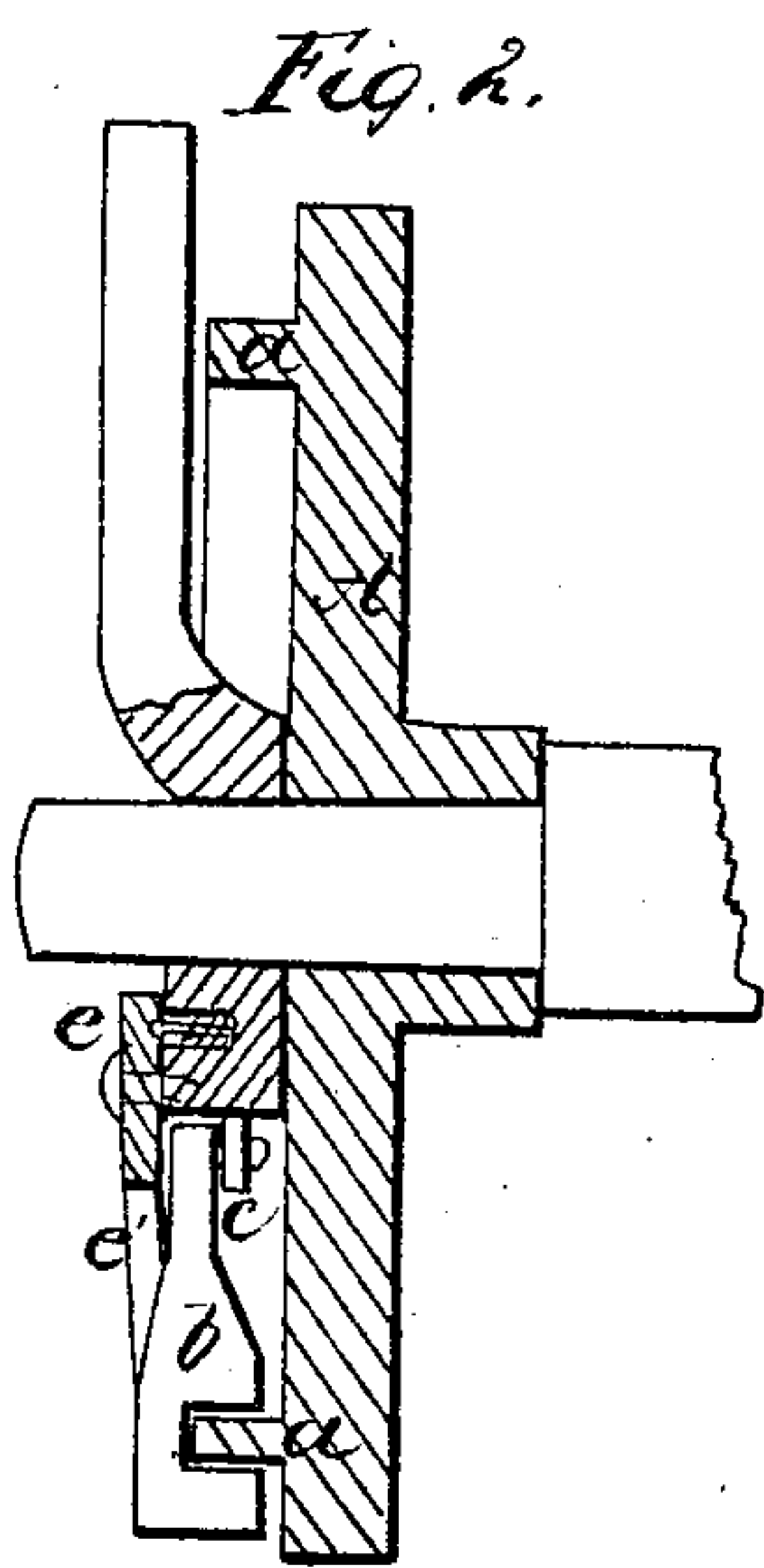


*O. C. Phelps,*  
*Friction Clutch.*  
*N<sup>o</sup> 47,126.      Patented Apr. 4, 1865.*



*Witnesses,*  
*John White*  
*Andon Jones -*

*Inventor,*  
*O. C. Phelps*  
*per J. J. Greunough*

# UNITED STATES PATENT OFFICE.

O. C. PHELPS, OF NEW YORK, N. Y.

## IMPROVEMENT IN FEED-WHEELS AS SUBSTITUTES FOR RATCHETS AND PAWLS.

Specification forming part of Letters Patent No. 47,126, dated April 4, 1865.

*To all whom it may concern:*

Be it known that I, O. C. PHELPS, of the city, county, and State of New York, have invented certain new and useful Improvements in Feed-Wheels as a Substitute for Ratchets and Pawls or other similar Contrivances; and I do hereby declare and ascertain the same, referring to the accompanying drawings in illustration thereof, in which—

Figure 1 is a plan of my device. Fig. 2 is a section thereof.

On the 2d day of August, 1864, I obtained Letters Patent of the United States entitled "Improvement in Feed-Wheels of Sewing-Machines;" but which was of course applicable to other machinery where such feed was required, and where I contemplated its use, as well as in sewing-machines. I have found that in employing this device in certain kinds of machinery it is necessary to throw off the feed at times, and to reverse it, so as to work the feed in opposite directions. I have therefore improved said original feed by the introduction of a movement, automatic or otherwise, by which the feed can be readily reversed or stopped.

The construction is as follows:

A is a feed-wheel that can be connected with any description of machinery where a device for a like purpose is needed, on the face of which there is a projecting flange, *a*, with its outer and inner curved surface smooth. Onto this flange is fitted a clutch, *b*, having a notch or recess in it that loosely fits said flange, as clearly seen in Fig. 2. To the inner end of the radial shank of this clutch one end of a connecting-bar, *c*, is jointed, which bar is jointed at its opposite end to an arm, *d'*, projecting from a lever, *d*, whose fulcrum is the axis of

the feed-wheel, on which it freely turns. At a point on this lever *d*, on a radial line through the inner end of the shank of the clutch *b*, there is a shifting apparatus, *e*, pivoted. This shifter consists of a center piece, from which an arm projects, and springs *e'*, that embrace the clutch *b* and bear its outer end in either direction, as required. This shifter has three positions—one which bears the clutch to the right, one that bears the clutch to the left, and a third between the two others, that holds it straight, so that it will not grip the flange *a*, but freely slide over it. It is held in each position by a spring-catch of any description, the one shown in the drawings being a spring-pin in the lever *d*, which is thrown up into the recess in the shifter *e*.

It is obvious that the form and position of many of the parts may be somewhat varied in their construction to adapt them to the machinery or purpose they are intended for; but these need no specific description, as any competent mechanic can adapt them without invention.

The apparatus is put in motion by vibrating the arm *d* of the lever by means of any convenient moving part of the machine to which it is applied.

Having thus fully described my improvement on my invention of a feed-wheel, what I claim, and desire to secure by Letters Patent, is—

The combination of the shifting apparatus above described with said wheel and clutch, as and for the purposes herein set forth.

O. C. PHELPS.

Witnesses:

J. J. GREENOUGH,  
ANTHON WELLES.