

(No Model.)

2 Sheets—Sheet 1.

J. DAWSON.
ROLLER MILL.

No. 310,127.

Patented Dec. 30, 1884.

Fig. 1

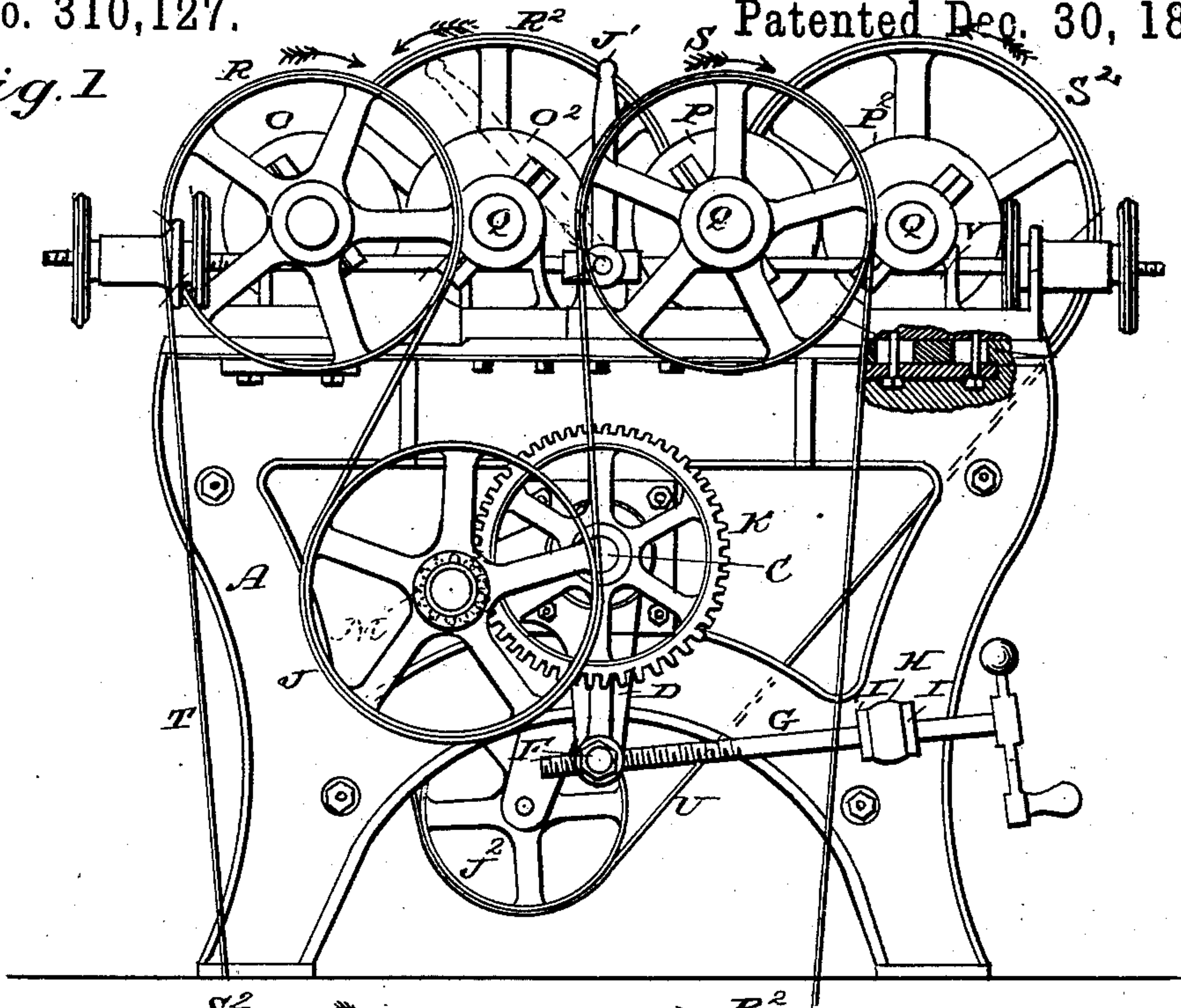
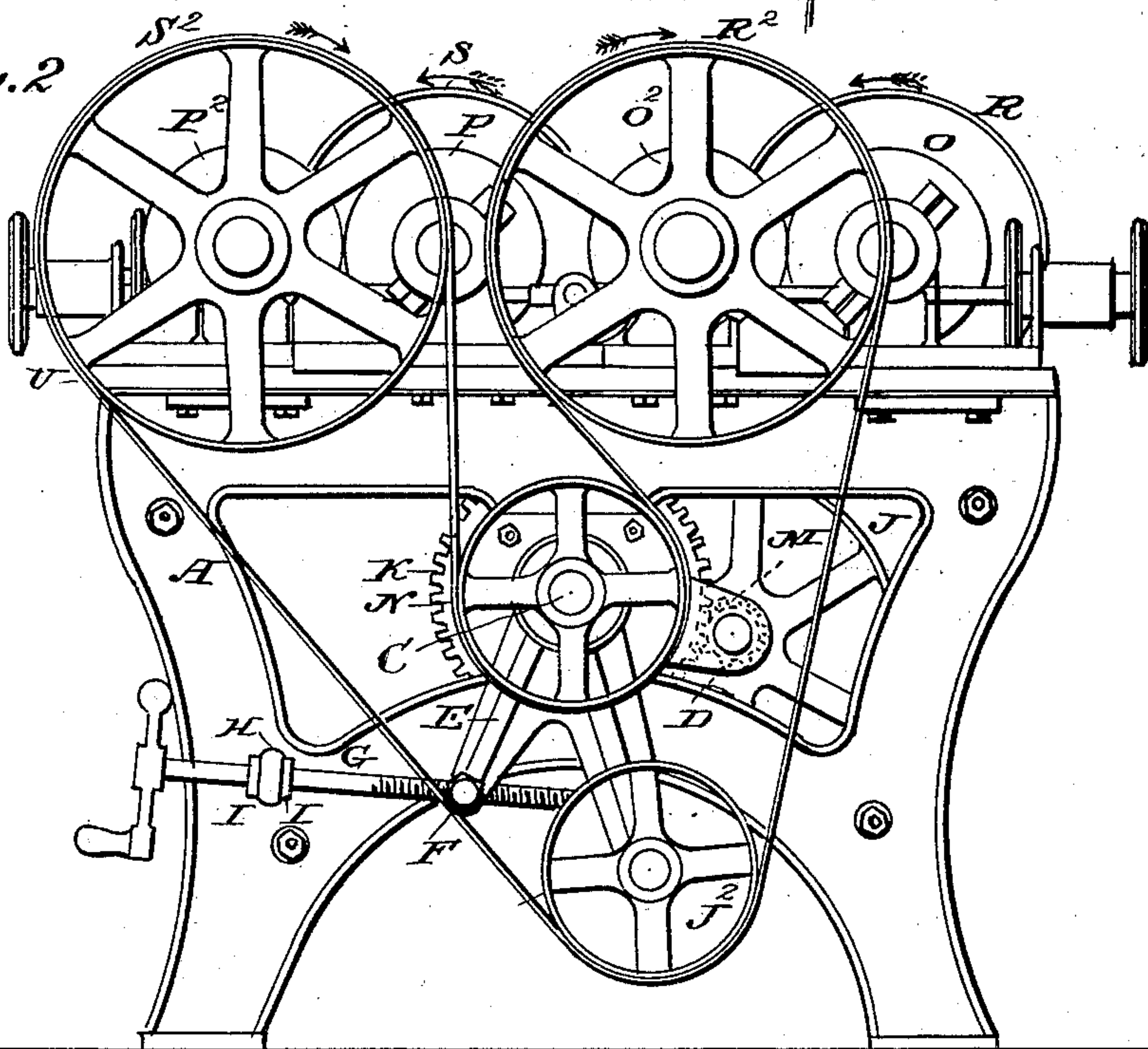


Fig. 2



WITNESSES:

Wm. S. Dieterich
Wm. Bagger

INVENTOR.

James Dawson
by: *Louis Bagger & Co*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

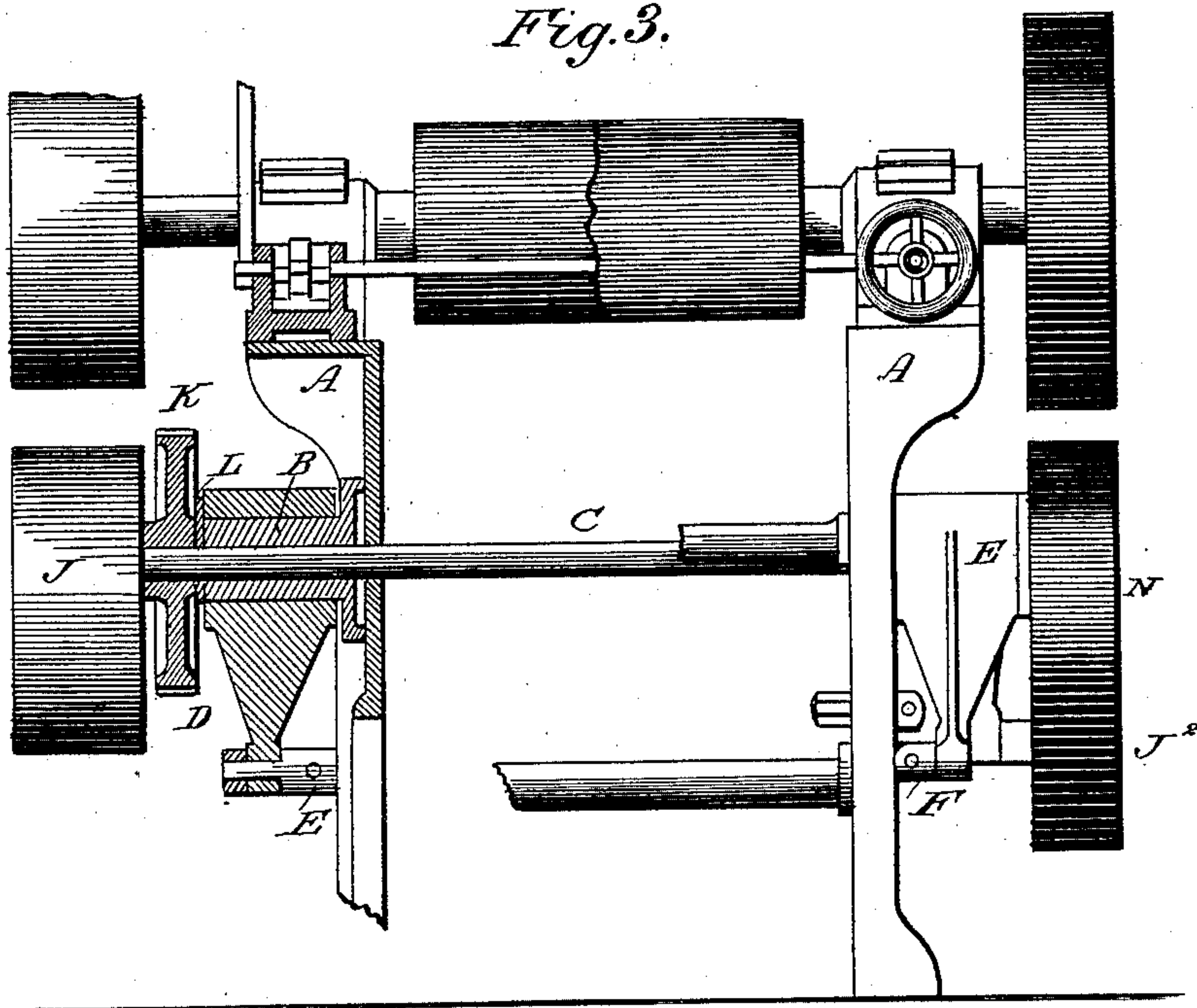
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Fig. 3.



WITNESSES:

Fred. L. Dieterich,
Wm. Lecher

James Dawson.
By

INVENTOR.

Louis Ruggert & Co
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UNITED STATES PATENT OFFICE.

JAMES DAWSON, OF WILMINGTON, DELAWARE.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 310,127, dated December 30, 1884.

Application filed August 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES DAWSON, a citizen of the United States, and a resident of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Roller-Mills; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figures 1 and 2 are side elevations taken from opposite sides of the machine; and Fig. 3 is an end elevation, partly in section, of the same.

The same letters refer to the same parts in all the figures.

My invention has relation to belt-tighteners for roller-mills having two sets of rollers revolving at different rates of speed in each set; and it consists in the improved construction and combination of parts of such a device, by means of which the belt of the two rollers of the two sets which revolve with the same speed may be tightened or loosened without interfering with the belt of the other two rollers, as hereinafter more fully described and claimed.

In the drawings hereto annexed, A designates the frame of the machine, the sides of which are provided with tubular lugs or sleeves B B, forming bearings for a counter-shaft, C. Upon the said sleeves are journaled bell-crank levers D and E, the lower arms of which are provided with swiveled studs F, having screw-threaded perforations, through which pass the ends of the hand-screws G, which are journaled in lugs or studs H, swiveled to the sides of the frame, and retained in the said lugs by means of collars I. By means of the said hand-screws the bell-crank levers are capable of being independently adjusted in the manner and for the purposes to be hereinafter described. The other arms of the levers D and E carry loose band wheels or pulleys J J². One end of the counter-shaft C carries a spur-wheel, K, adjoining the lever D, between which and the said spur-wheel a washer, L, is interposed. The said spur-wheel meshes with a pinion, M, secured or formed upon the inner side of the

band-wheel J, mounted upon the arm of lever D. The opposite end of the counter-shaft C carries a band-wheel, N.

O O² P P² designate two sets of crushing-rolls, the shafts Q of which are mounted in suitable bearings transversely upon the frame. The shafts of the rollers O and P are provided at the side of the frame having the lever D with band-wheels R S, and the shafts of the rolls O² and P² are provided at the opposite ends with band-wheels R² and S².

T is a main driving-belt, which runs from the driving-pulley upon the main shaft (not shown in the drawings) over the band-wheel R, thence down under the tightening-wheel J, thence over the pulley S, and finally down back under the driving-pulley. It will thus be seen that it serves to impart to the rollers O and P a rotary motion in the direction indicated by the arrows. The pinion M on the wheel J meshes with the spur-wheel K, thus rotating the counter-shaft C in a reverse direction.

U is a belt or band running under the band-wheel N upon the opposite end of the counter-shaft, thence up over the band-wheel R², down under the tightening-wheel J², up over the band-wheel S², and finally back down under the wheel N. It will thus be seen that a rotary motion is imparted to the rolls in the direction indicated by the arrows, which is opposite to the direction in which the rolls O and P are revolved, the motion having been reversed by the described arrangement of the spur-wheel K and pinion M. It will also be noticed that the rolls O and P are revolved at a greater rate of speed than the rolls O² and P², the speed being reduced in its transmission to the counter-shaft C through the medium of the spur-wheel K from the pinion M, owing to the relatively small size of the latter. By manipulating the hand-screws G the belts or bands T and U may be tightened independently of each other through the medium of the tightening-wheels J J², journaled upon the ends of the bell-crank levers operated by the said hand-screws.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a roller-mill, the combination of a frame, two sets of rolls, cylindrical sleeves on the sides

of the frame, a counter-shaft journaled in the
said sleeves and having at one end a spur-
wheel and at the other end a band-wheel, bell-
crank levers journaled upon the said sleeves,
5 hand-screws arranged to operate the said bell-
crank levers, a band-wheel and pinion jour-
naled upon the free arm of one of the bell-
crank levers, said pinion meshing with the
spur-wheel upon the counter-shaft, a tighten-
10 ing-wheel journaled upon the free arm of the
other bell-crank lever, band-wheels upon the

ends of the roller-shafts, and suitable driving-
belts, all arranged and operating substantially
as and for the purpose set forth.

In testimony that I claim the foregoing as my 15
own I have hereunto affixed my signature in
presence of two witnesses.

JAMES DAWSON.

Witnesses:

WM. BAGGER,

WM. A. KIMMEY.