

Mill Spindle.

Patented March 6, 1860.

Fig:2.

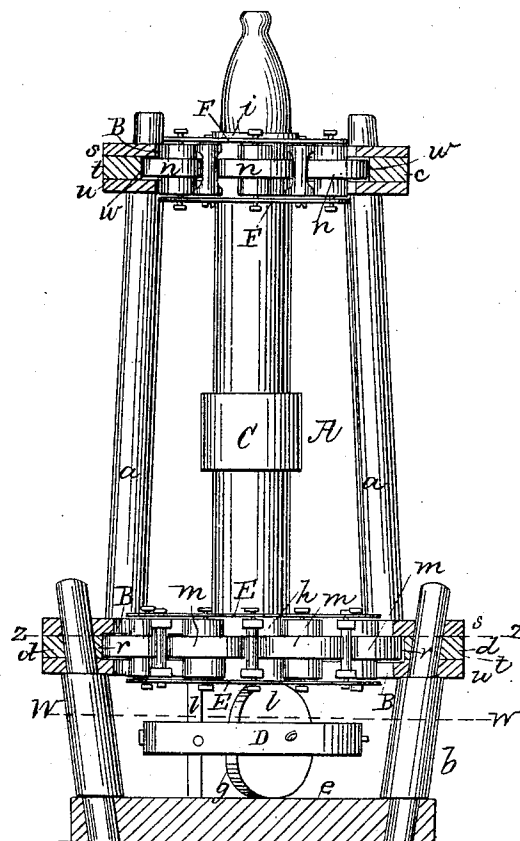
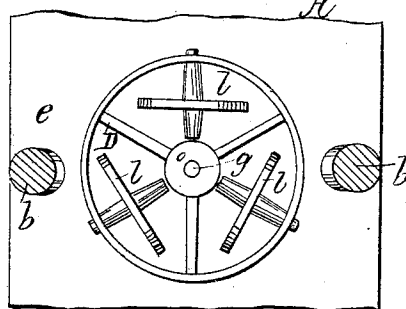


Fig:4.



Inventor

Samuel P. Kuyper

UNITED STATES PATENT OFFICE.

SAMUEL P. RUFF, OF WEAVERS OLD STAND, PENNSYLVANIA.

MILL-SPINDLE.

Specification of Letters Patent No. 27,386, dated March 6, 1860.

To all whom it may concern:

Be it known that I, SAMUEL P. RUFF, of Weavers Old Stand, in the county of Westmoreland and State of Pennsylvania, have
5 invented a new and useful Improvement in Arranging Mill-stone Spindles or Shafts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, is a vertical transverse section of a mill stone spindle arranged after my invention; the section being in the line *y, y*,
15 of Fig. 3. Fig. 2, is a similar section of the same in the line *x, x*, of Fig. 3. Fig. 3, is a horizontal section of the same in the line *z, z*, of Fig. 2. Fig. 4, is a section in the line *W, W*, of Fig. 2.

20 Similar letters of reference, in each of the several figures indicate corresponding parts.

My invention does not consist in the broad idea of employing friction rollers around a
25 millstone shaft, nor at the base of the same, but it consists in the peculiar combination and arrangement of parts as hereinafter described.

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

I employ a frame consisting of a series of long and short pillars *a, b*, and square or round horizontal blocks or plates. In
35 each of the blocks or plates *c, d*, a circular opening *B*, is cut. And from the center of the timber *c*, a vertical axial pin *g*, projects upward.

C, is the mill spindle, it is constructed
40 with enlarged bearing collars *h, i*; the lower collar *h*, having circumferentially, a groove *j*, cut in it and the upper collar *i*, being made plain. To support this spindle centrally in the frame *A*, without having it rest on a stationary step and against stationary boxes,
45 I provide three revolving frames *D, E, F*, containing independently revolving friction rollers *l, m, n*, and arrange the same as follows: The frame *D*, is arranged by means
50 of a hub *o*, on the base block or plate *e*, and fitted to the axial pin *g*, so as to revolve hori-

zontally on the same while its rollers revolve on independent axes in the path of a vertical circle; their periphery coming in contact with the base block or plate *e*, and
55 against the base of the spindle *C*. The frames *E*, and *F*, are arranged in the circular openings *B, B*, so that they encircle the spindle and their friction rollers come between the collars *h, i*, of the spindle and the
60 blocks or plates *c, d*, and are held in this position from vertical play by means of the groove *j*, in the collar *h*, and the grooves *v, w*, in the inner circumference of the blocks or plates *c, d*, said grooves admitting the
65 friction rollers to enter them a short distance, as represented. In order to thus arrange the frames containing friction rollers between the spindle and the blocks or plates it is necessary to have the block or plates
70 made in three parts *s, t, u*, so that they can be moved apart to admit the frames and then be brought together and secured by screws or bolts.

From the foregoing description, it will be
75 evident that the spindle bears laterally against and rests vertically upon rolling surfaces, and consequently is relieved of a very great amount of the friction usually experienced.
80

My arrangement will answer well for water wheels which run with a vertical shaft and indeed it will be found a valuable auxiliary to all vertical shafts which support a
85 heavy weight during their revolution.

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

The arrangement, consisting of the vertical shaft *C, h, i, j*, grooved plates or blocks
85 *c, d, B, w, v*, friction roller frames *D, E, F, o*, friction rollers *l, m, n*, and axial pin *g*; the whole constructed and used together in the manner and for the purpose herein described.

The above specification of my improvement in mill spindles signed by me this 27th day of January 1860.

SAMUEL P. RUFF.

Witnesses:

GOODWIN Y. AT LEE,
R. W. FENWICK.