

J. M. Stone.

Drawing Frame Rolls.

No 47,667.

Patented May 9. 1865.

Fig. 1.

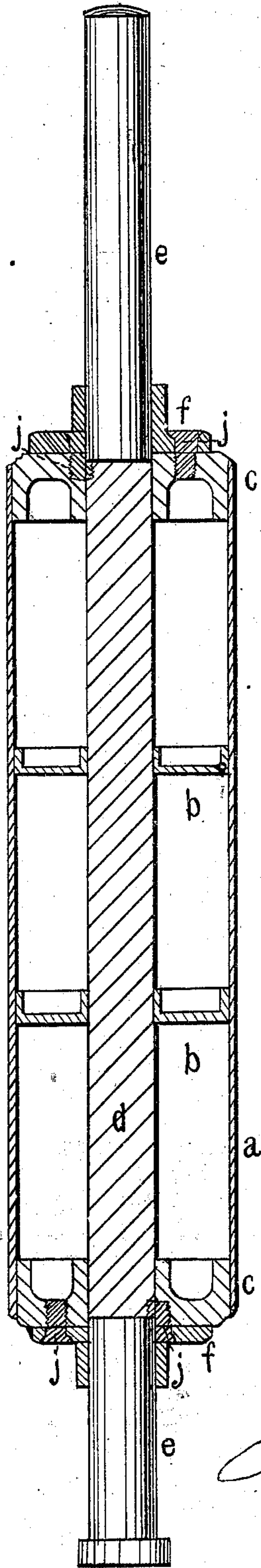
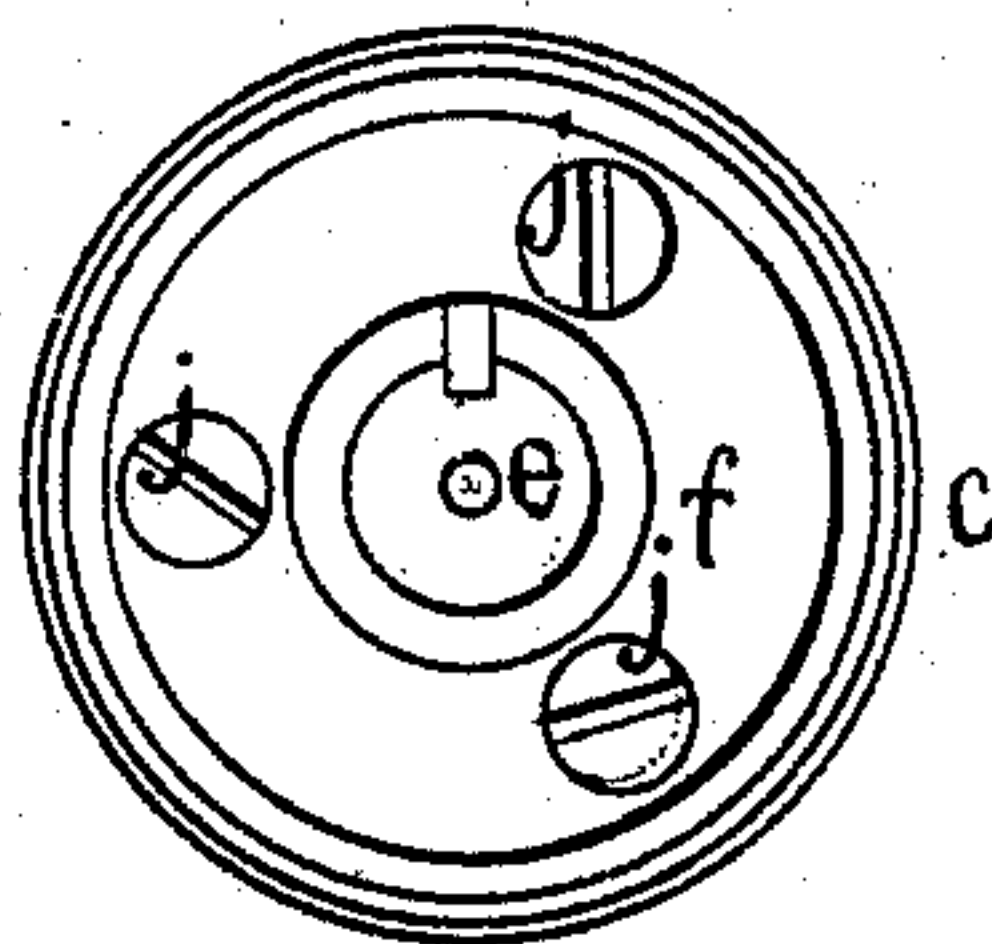


Fig. 2.



Witnesses:  
Francis Gould  
W. B. Gleason

Inventor:

J. M. Stone  
by his Atty.  
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# UNITED STATES PATENT OFFICE.

J. M. STONE, OF NORTH ANDOVER, MASSACHUSETTS.

## IMPROVEMENT IN DRAWING-FRAME ROLLS.

Specification forming part of Letters Patent No. 47,667, dated May 9, 1865.

*To all whom it may concern:*

Be it known that I, J. M. STONE, of North Andover, in the county of Essex and State of Massachusetts, have invented a new and useful improvement in such light rolls as are employed in wool-drawing frames and other machines for textile manufactures; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

On the 29th day of March, 1864, Letters Patent of the United States were granted for the joint invention of Joseph Chase and myself for an improved mode of operating the rolls of a machine for drawing or attenuating the slivers from a carding-engine. It has been found in practice that such portions of the shafts of said rolls as extend outward therefrom wear out quite rapidly while the rolls wear out very little. As such rolls, to secure lightness, are made up of tin plates, it is necessary, in order to make them stiff enough to retain their form, to construct them with internal heads, which are braced or secured to the outer heads by having the shaft, which is within the roll, extend from each outer head at least into the next adjacent inner head. Heretofore the shafts of these and similar rolls have been so secured thereunto that they, or any portion thereof, could not be changed or removed when the bearing parts of the shafts became worn, so that then both roll and shaft had to be renewed at much cost, though the roll itself and so much of the shaft as was contained therein remained practically as good as when new.

To lessen the cost of substituting entirely new rolls and shafts, when parts only of the latter become worn, is the object of my invention, which consists in making the shafts of such rolls in parts, one or more being permanently fixed within each roll and the others arranged one at each end of each roll, so that the parts of the shaft projecting from either end of a roll can be removed at pleasure and replaced with new and unworn pieces at but a fraction of the cost which the renewal of the whole shaft and roll has hitherto involved.

Figure 1 shows a roll in longitudinal central section, exhibiting its shaft as made in three parts, the central part or part within

the roll being seen in section, and the end parts of the shaft being shown in elevation. The roll is made of tin plates *a*, stiffened by interior heads, *b*, and secured to end heads, *c*, of iron, which are bored to receive the center-piece *d* of the shaft, and are faced off square on the outside. The piece *d* of the shaft does not extend out quite to the faced portions of the heads *c*, but is left back from said faces, as seen in Fig. 1. The outer ends, *e*, of the shaft are provided with flanges *f*, which are firmly secured to the pieces *c*, the flanges being faced up square where they abut against the heads of the roll, and the shaft-pieces *e* are left projecting slightly beyond the squared-up faces of *f*, so as to enter the shaft-holes in the heads *c*, and thus secure all parts of the shaft in line. The outer parts of the shaft are united to the roll by screws *j*, which are seen in the end view of the roll and shaft, Fig. 2, these screws passing through the flanges *f* into the heads *c*, which are tapped to receive them.

When either or both of the ends *e* become worn, like new pieces may be substituted. Where the rolls are made very long the shaft, as a matter of economic construction, is not continued entirely through the roll, but is divided, and the inner parts are secured to the end heads, and the inner heads next thereunto.

I am aware that in cast metallic rolls which have no inner shaft and inner bracing and braced heads, such as are shown in the English Patent No. 14,140, there are removable end journal-shafts. Such removable end journal-shafts I do not claim, nor do I claim such a construction of rolls as that shown in said patent, but confine my claim to the construction of rolls made up of light sheet metal, with interior heads braced by the shafting within such rolls, when the projecting parts of the shafting are made to be removable, for the purpose set forth.

I claim—

The improvement in the construction of drawing-frame and other similar rolls, substantially as specified.

In witness whereof I have hereunto set my hand this 7th day of March, A. D. 1865.

J. M. STONE.

Witnesses:

J. B. CROSBY,  
FRANCIS GOULD.