(No Model.) 2 Sheets—Sheet 1.

J. M. RILEY.

MEANS FOR LUBRICATING SAW MANDRELS.

No. 464,943. Patented Dec. 8, 1891.

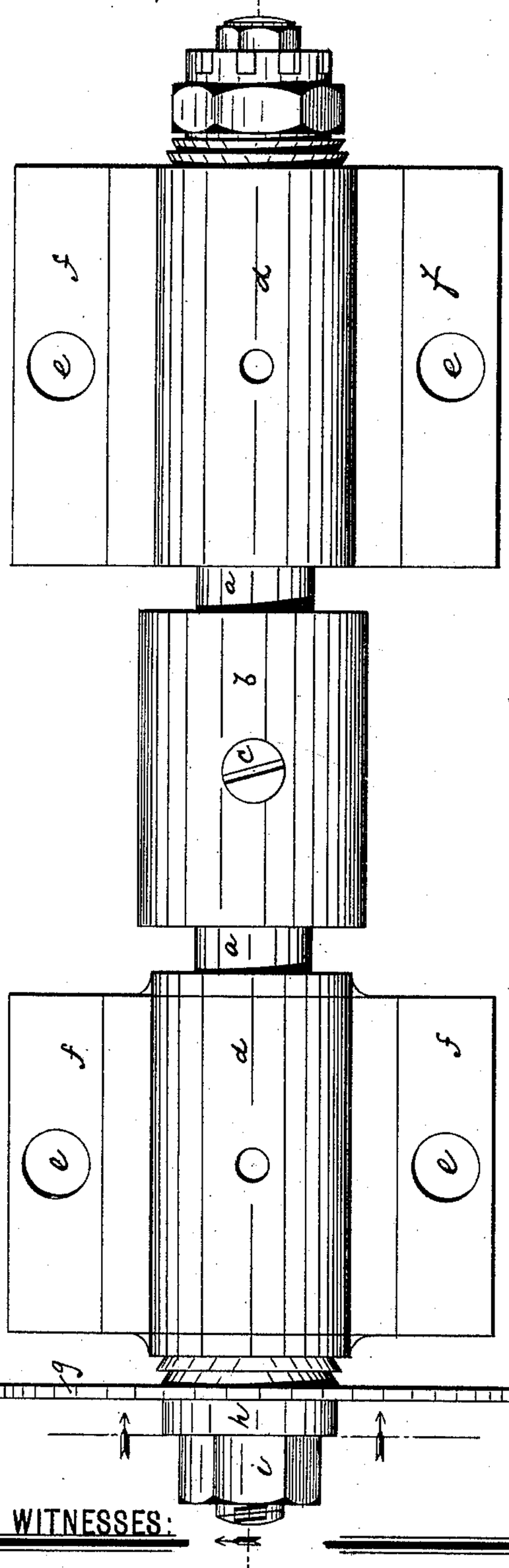

Fig. 1.

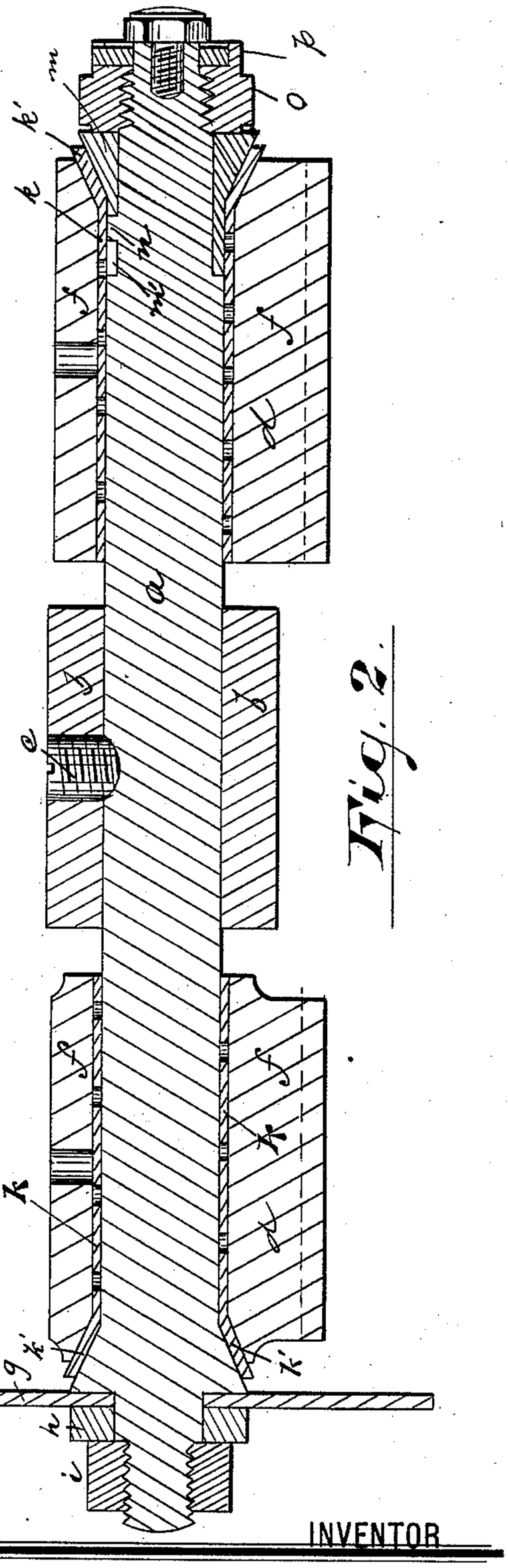

Fig. 2.

WITNESSES:

Oscar A. Michel
E. L. Sherman

INVENTOR

John M. Riley,

BY Drake & Co. ATTY'S.

(No Model.) 2 Sheets—Sheet 2.

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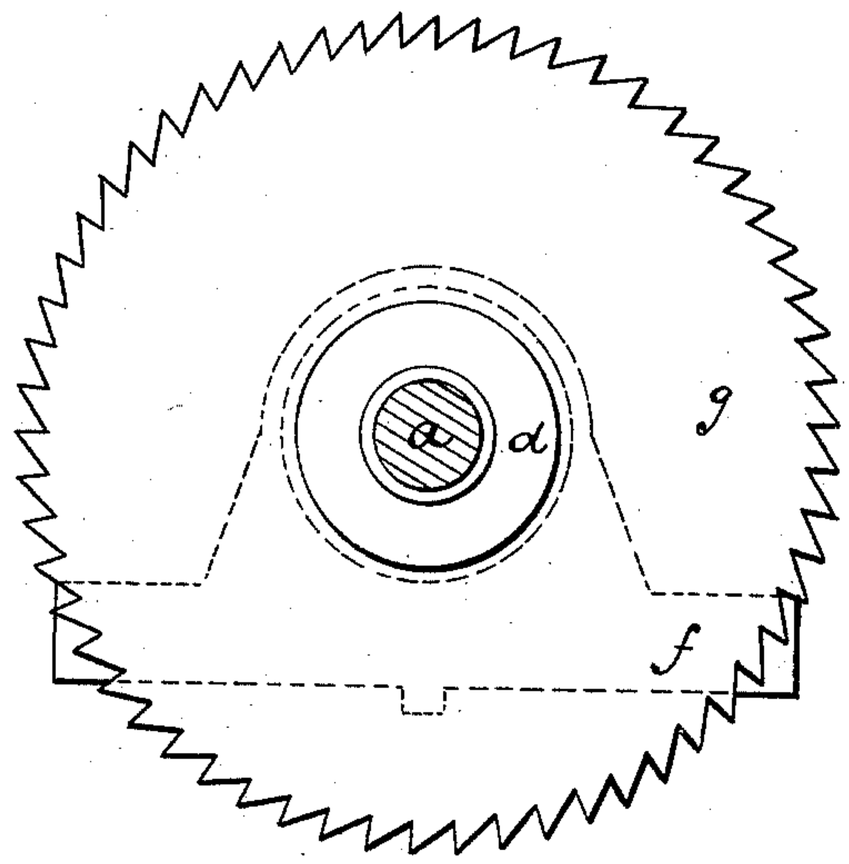

Fig. 3.

Fig. 4.

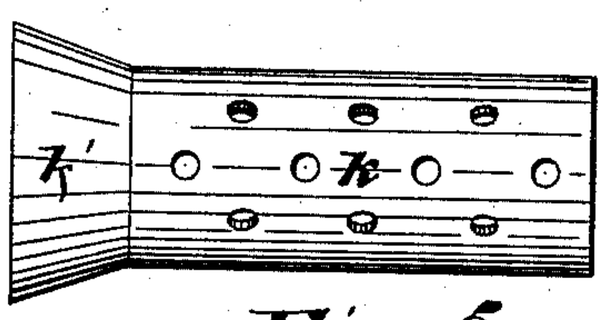

Fig. 5.

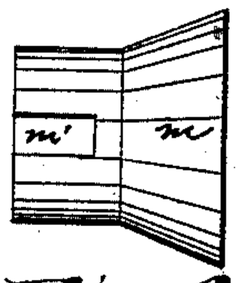

Fig. 6.

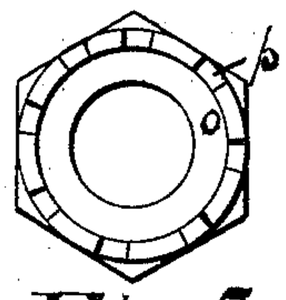

Fig 7

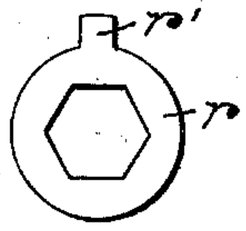

Fig. 9. Fig. 10.

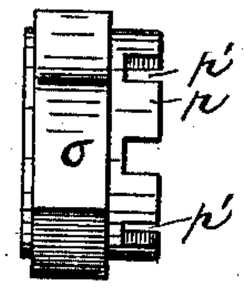

Fig 8.

WITNESSES:

Oscar A. Michel
E. L. Sherman

INVENTOR:

John M. Riley.

BY Drake & Co. ATTY'S.

UNITED STATES PATENT OFFICE.

JOHN M. RILEY, OF HARRISON, NEW JERSEY.

MEANS FOR LUBRICATING SAW-MANDRELS.

SPECIFICATION forming part of Letters Patent No. 464,943, dated December 8, 1891.

Application filed December 17, 1889. Renewed November 4, 1891. Serial No. 410,888. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. RILEY, a citizen of the United States, residing at Harrison, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Means for Lubricating Saw Mandrels or Spindles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to provide smooth and automatic lubricators for saw mandrels or arbors or similar devices running at high speed and ordinarily having great friction.

The invention consists in the improved mandrel and its lubricating attachment and manner of securing the same to the mandrel and the combination and arrangement of the various parts, as will be hereinafter more fully set forth, and finally embodied in the clauses of the claims.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a top plan view of a saw-mandrel with a driving-pulley embodying my improvement. Fig. 2 is a section through line *x*, Fig. 1. Fig. 3 is a section through line *y*, Fig. 1, looking in the direction of the arrows. Fig. 4 is a side plan view of the mandrel-shaft without the pulleys. Fig. 5 is a plan view of the lubricating-sleeve. Fig. 6 is a plan view of a cup-shaped securer or collet adapted to fit into one end of the lubricating-sleeve. Fig. 7 is an end or plan view of a peculiar washer with slotted shoulder. Fig. 8 is a side view of Fig. 7. Fig. 9 is a plan view of an inner washer with projection adapted to rest within the washer Fig. 7, and Fig. 10 is an edge of Fig. 9.

In said drawings, *a* represents a saw mandrel or arbor with driving-pulley *b* secured thereto by set-screw *c*. This mandrel revolves in bearings *d d*, secured to any frame by screws through openings *e e* in flanges *f*. The outer ends of these bearings *d d* are made flaring, as will be more fully explained. A saw *g* is secured on the mandrel by means of a washer *h* and threaded tightening-nut *i* on the end of the mandrel, as shown in Fig. 2. In the outer ends of the bearings *d d* are perforated sleeves *k k*, arranged and adapted to loosely encircle the mandrel and revolve in either direction while the mandrel is in motion, so as to avoid all possible friction, the sleeves being interposed between the bearings and the mandrel, as shown in Fig. 2. This sleeve *k* has an outer flaring opening *k'*. Within this opening is fitted another loose cylindrical collet *m*, provided with a slot *m'*, into which fits a projection *n* on the mandrel *a*. This arrangement of collet *m* was necessary to provide for the arrangement of the loose sleeves *k k* on the mandrel to keep it in position and insure its proper action. As an additional holder and to prevent any lateral or horizontal movement of the mandrel with the sleeves I have arranged a threaded nut *o*, provided with a collar *p*, having slots *p'*, as shown in Figs. 7 and 8. Within the space formed by the collar *p* is placed a loose flange *r*, (shown in Fig. 9,) with a projection or lug *r'* adapted and arranged to enter into the slots *p'* of the nut *o*.

When all the parts, as I have described, are arranged on the mandrel as set forth, the mandrel rests in the bearings on the sleeves and can be revolved at a high rate of speed without any material friction, as the action of the perforated sleeves on the bearings of the mandrel serve to smooth the bearings and prevent their heating.

Having thus described my invention, what I claim as new is—

1. The combination of the shaft having one end flaring and the other end reduced, perforated sleeves fitting the ends of the shaft and mounted in bearings, a flanged collet secured on the reduced end of the shaft, a nut engaging the reduced end of the shaft and having a collar provided with notches, and a flange or disk arranged on the end of the shaft and having a lug for engaging a notch on said collar.

2. The combination of the shaft having one end flaring and the other end reduced, the sleeves secured on the ends of the shaft, the

bearings in which the sleeves rotate, the saw on one end of the shaft, the nuts for securing the saw, the tapering collet fitting on the reduced end of the shaft, the nut having the notched collar fitting on the shaft and securing the collet, and the flange fitting a recess of the notched collar and having a lug for engaging one of the recesses thereof.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of November, 1889.

JOHN M. RILEY.

Witnesses:
CHARLES H. PELL,
E. L. SHERMAN.