(No Model.)

C. E. POPE.

PAPER SLITTING MACHINE.

No. 516,746. Patented Mar. 20, 1894.

Fig. 3.

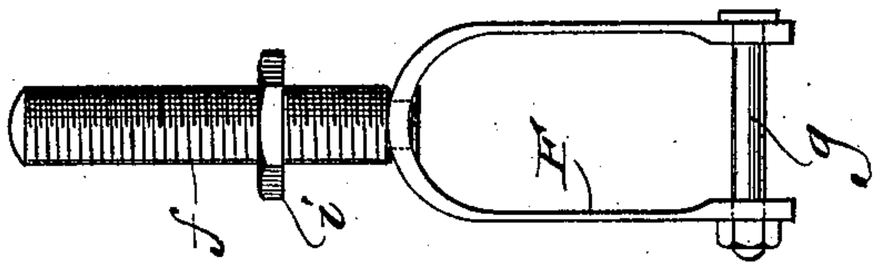
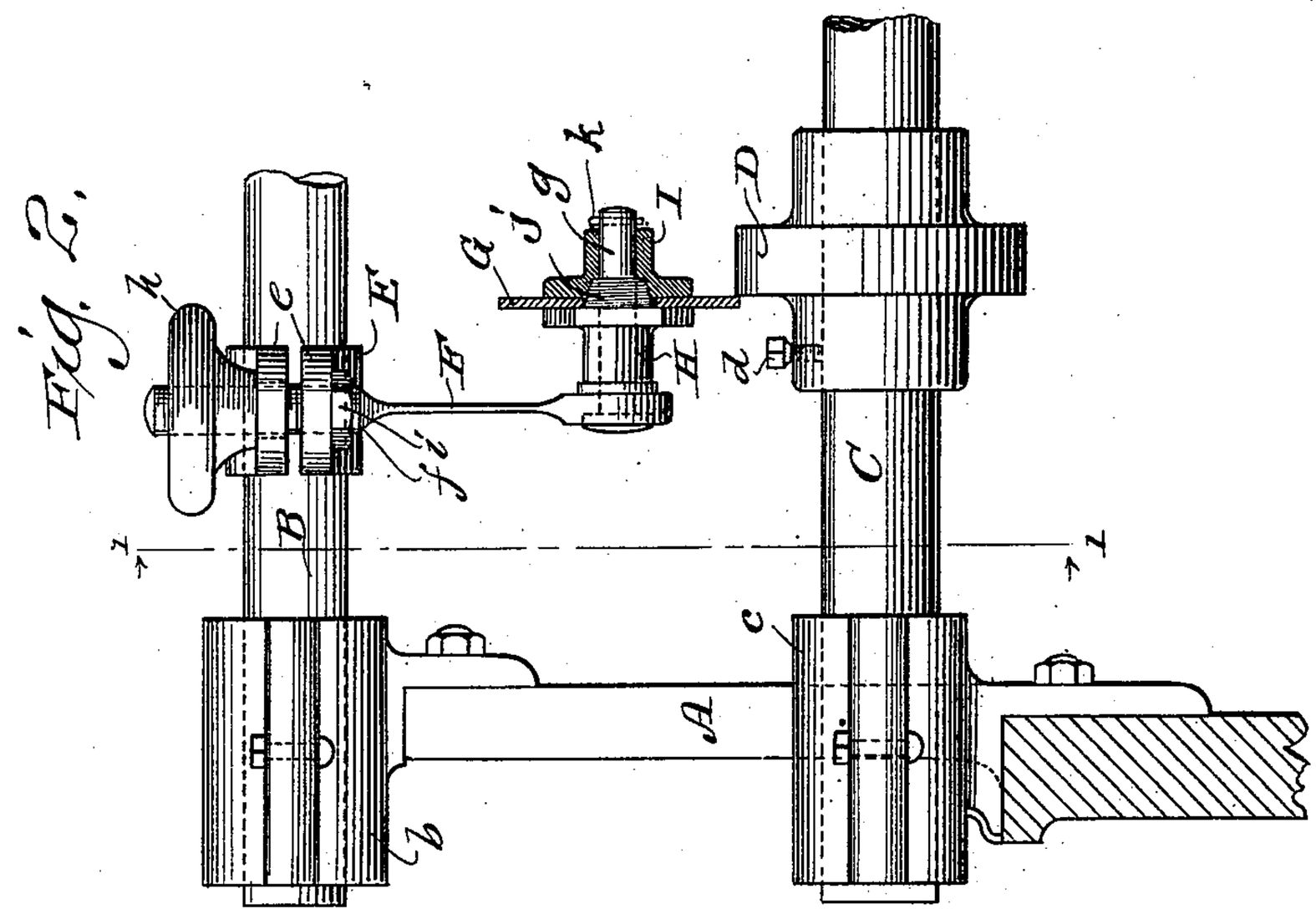


Fig. 2.



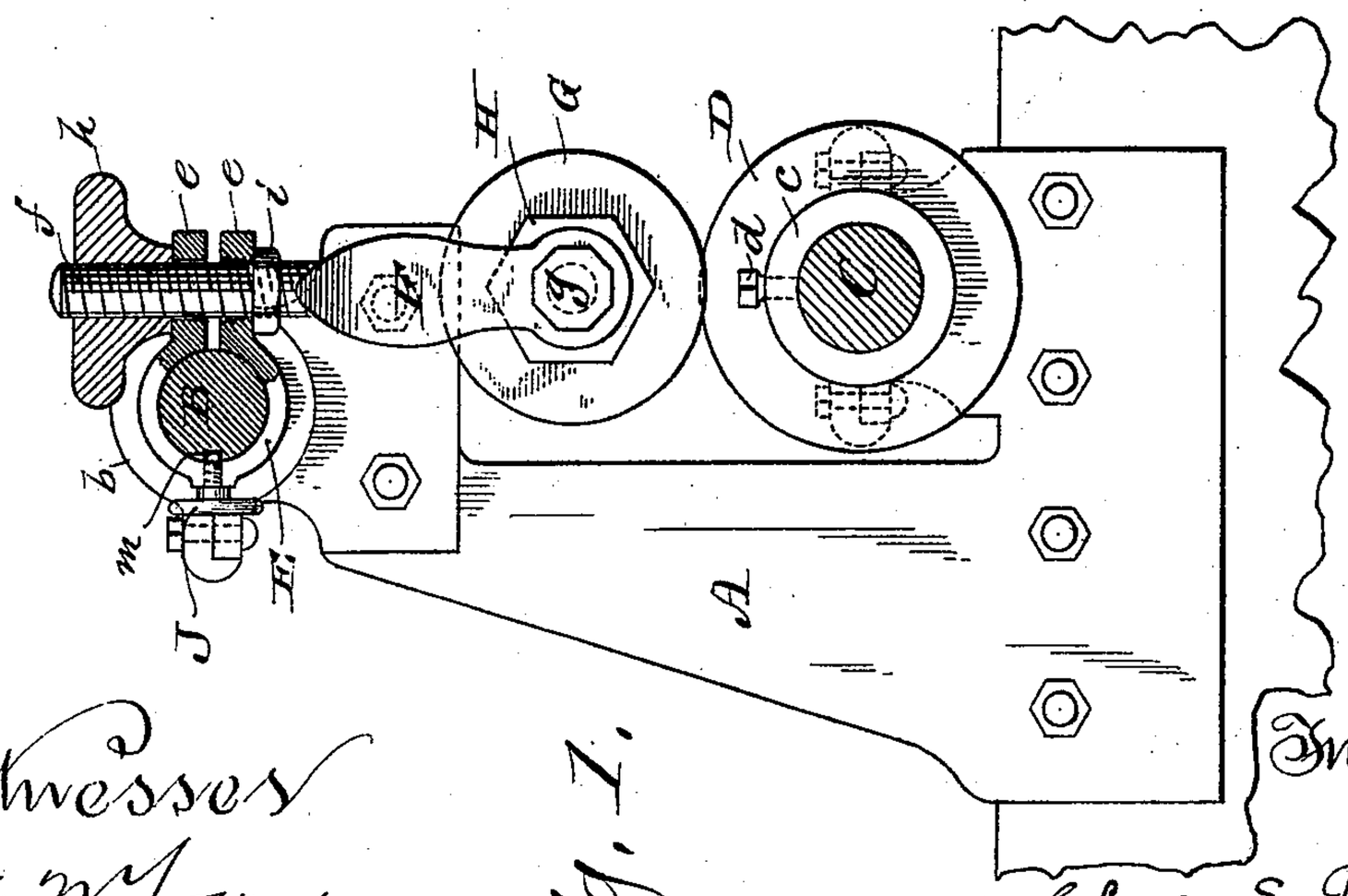


Fig. 1.

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CHARLES E. POPE, OF KAUKAUNA, WISCONSIN.

PAPER-SLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,746, dated March 20, 1894.

Application filed February 1, 1893. Serial No. 460,605. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. POPE, a citizen of the United States, and a resident of Kaukauna, in the county of Outagamie, and in the State of Wisconsin, have invented certain new and useful Improvements in Paper-Slitting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to improve the manufacture, operation and adjustment of slitters that constitute parts of machines in the art to which said invention relates; the improvements consisting in certain peculiarities of construction and combination of parts hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents an end elevation, partly in vertical transverse section on line 1—1 of the succeeding figure, illustrating a portion of a paper slitting-machine embodying my improvements; Fig. 2, a front elevation partly in section of the assembled parts shown in the preceding figure, and Fig. 3, a detail view of a slitter-holder that possesses the same characteristics but differs somewhat in form from the one shown in the former figures.

Referring by letter to the drawings, A represents one of a pair of standards secured to a suitable base and provided vith bearings *b* for a stationary horizontal shaft B, and journaled in other bearings *c* belonging to said standards is another shaft C to which a rotary motion is imparted by any suitable means. Held in variable adjustment on the shaft C, by a set-screw *d* or other suitable means, I show a paper support in the form of a collar D, and the latter may be indefinitely multiplied. The parts thus far described are common in paper-slitting-machines, and in some of the latter a roll having a series of circumferential grooves has been employed to take the place of collars on the rotary shaft.

Fitted on the stationary shaft B, I show a split-ring E having approximately lateral extremities constituting clamp-jaws *e* provided with registering openings the lower one of which is screw-threaded to engage a correspondingly threaded tang *f* of a depending spring-piece F, but this tang loosely engages the other of said openings. The depending spring-piece F constitutes a hanger for the arbor *g* of a slitter, the preferred construction of the latter being hereinafter specified. Suitable nuts *h*, *i*, on the screw-threaded tang *f* of the spring-hanger F bear against the outer faces of the radial jaws *e* belonging to the split-ring E, and not only serve to bind the latter fast in adjusted position on the shaft B, but also serve to maintain said spring-hanger in vertical adjustment.

In Figs. 1 and 2, I show the spring-hanger F in the form of a blade, while in Fig. 3, said spring-hanger has the form of a bow, either form being the same in function and interchangeable for the other. The slitter-arbor *g* connected to each spring-hanger F is rigid with the latter, and the slitter itself preferably comprises a circular cutting blade G clamped between flanges on opposing sleeves H, I, the latter being free to revolve upon said arbor. As shown in Fig. 2, it is also preferable to have the sleeve H provided with a screw-threaded conical stud *j* for engagement with a central opening in the blade G and a corresponding recess in the opposing sleeve, the flanges of these sleeves being polygonal, in order that they may be acted upon by a wrench to effect the screw-threaded engagement just inferred, and a consequent clamping of said blade in position intermediate of said sleeves. When a spring-hanger of the form shown in Fig. 1, is employed, a key *k* may be transversely engaged with the free end of the arbor *g* to serve as a stop to prevent the sleeve I from working loose.

The slitter-blade G may be of the beveled edge variety common in the art to which my invention relates, but as best shown in Fig. 2, I prefer a blade having a square edge whereby I can effect a slitting operation on either side of a groove or roller opposed to said blade, and at the same time such a blade can be trued up with less difficulty than one having a beveled edge.

The spring-hanger F, of either form, keeps the slitter up to its work and obviates the side thrust or canting on the arbor, a common fault with the usual slitters.

To change the position of a slitter, the split-ring E is loosened by a turn of the nut *h* on the tang *f* of the spring-holder F and said ring

moved along on the shaft B, it being preferable to provide the latter with a longitudinal groove *m* for the engagement of a set-screw J that has its bearing in the aforesaid ring. By means of the screw-and groove-engagement just described the clamp or split-ring E is held against turning when an adjustment on the shaft B takes place, and upon withdrawal of the screw from the shaft-groove the slitter may be swung up out of the way when not in use. Because of the screw-threaded engagement between the lower jaw of the split-ring E and the tang *f* of the slitter-hanger F together with the position of the nut *i*, said hanger is held in its predetermined vertical adjustment when the nut *h* is loosened to permit of said split-ring being moved in one direction or the other along the shaft B upon which it is supported, this being one of the important features of my invention. The screw-thread engagement between the lower jaw of the clamp-ring and the tang of the slitter hanger also admits of an axial adjustment of said tang to vary the angle of the slitter with relation to the opposing paper support thereby giving a greater or less shear at the cutting point.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a paper-slitting-machine, a horizontal shaft, a clamp in the form of a split-ring fitted to the shaft and having its extremities in the form of approximately parallel lateral jaws, a hanger having a tang in screw-threaded engagement with one of the ring-jaws and loosely engaged with the other of said jaws, nuts on the tang in opposition to both jaws, and a slitter supported by the hanger, substantially as set forth.

2. In a paper slitting machine, a horizontal shaft having a longitudinal groove, a clamp in the form of a split-ring fitted to the shaft and having its extremities in the form of approximately parallel lateral jaws, a set-screw having engagement with the ring and shaft-groove, a hanger having a tang engaging the ring-jaws, nuts adjustable on the tang in opposition to both jaws, and a slitter supported by the hanger, substantially as set forth.

3. In a paper slitting machine, a horizontal shaft, a clamp in the form of a split-ring fitted to the shaft and having its extremities in the form of approximately lateral jaws, a spring hanger having a tang engaging the ring jaws, nuts adjustable on the tang in opposition to both jaws, and a slitter supported by the hanger, substantially as set forth.

4. In a paper slitting machine a horizontal shaft, a clamp in the form of a split-ring fitted to the shaft and having its extremities in the form of approximately parallel lateral jaws, a spring hanger having a tang in screw-threaded engagement with one of the ring-jaws and loosely engaged with the other of said jaws, nuts on the tang in opposition to both jaws, and a slitter supported by the hanger, substantially as set forth.

5. In a paper slitting machine, a hanger, an arbor fast on the hanger, a pair of sleeves loose on the arbor but in screw-threaded engagement with each other, and a circular cutting blade maintained in position between the sleeves, substantially as set forth.

6. In a paper slitting machine, a hanger, an arbor fast on the hanger, a pair of sleeves loose on the arbor of one of these sleeves being partially of screw-threaded conical form engaging a corresponding socket in the other, and a circular cutting blade maintained in position between the sleeves, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Kaukauna, in the county of Outagamie and State of Wisconsin, in the presence of two witnesses.

CHARLES E. POPE.

Witnesses:
H. FARRELL,
A. A. NUGENT.