(No Model.)

M. H. RITZWOLLER.

HOOP FLARING MACHINE.

No. 542,572. Patented July 9, 1895.

Fig. 1.

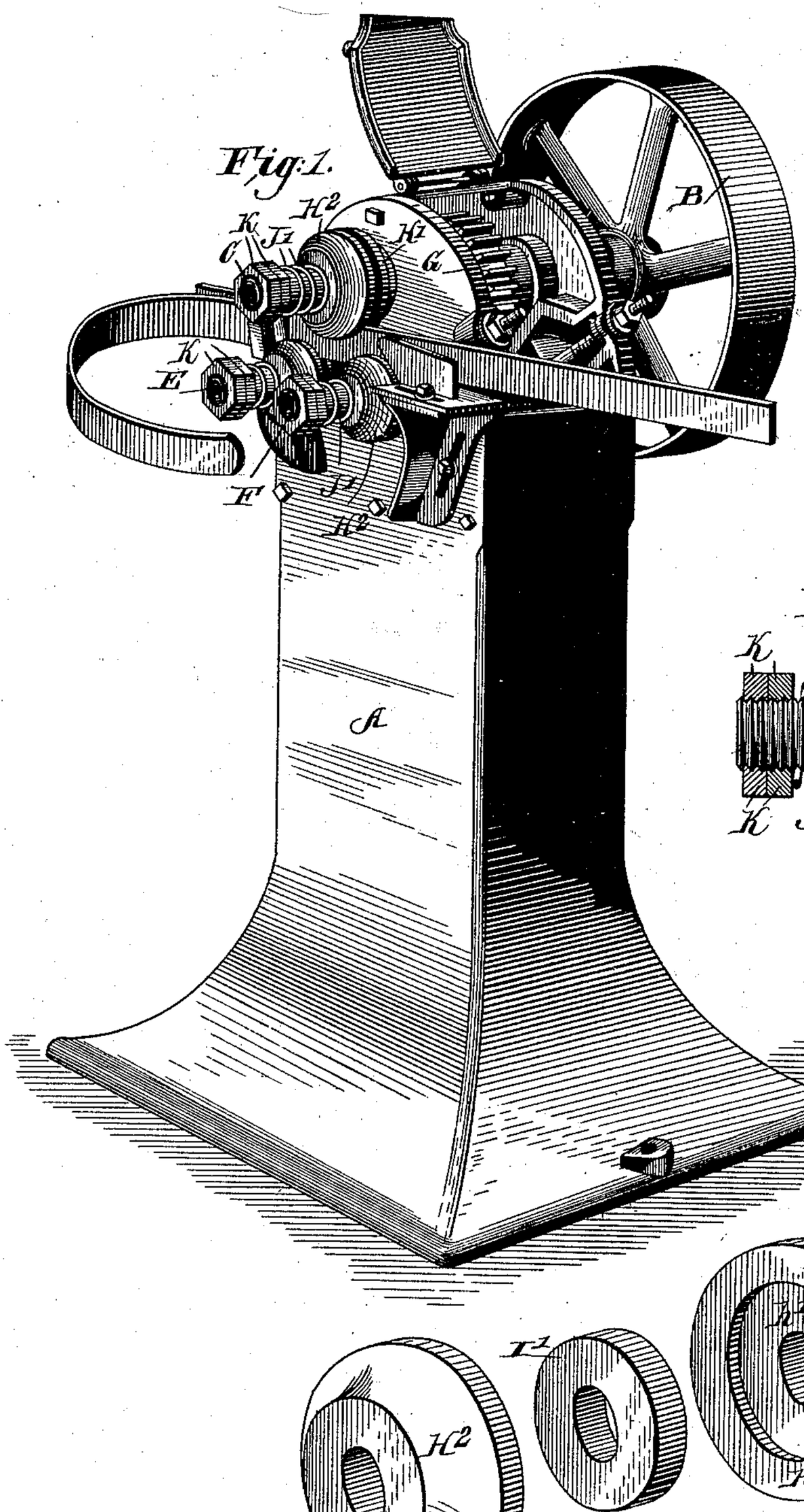

Fig. 2.

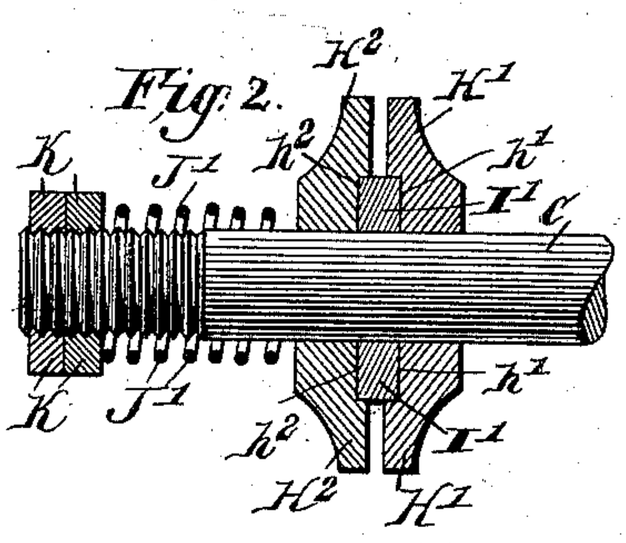

Fig. 3.

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MAX H. RITZWOLLER, OF PEORIA, ILLINOIS.

HOOP-FLARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 542,572, dated July 9, 1895.

Application filed May 1, 1895. Serial No. 547,795. (No model.)

To all whom it may concern:

Be it known that I, MAX H. RITZWOLLER, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Hoop-Flaring Machines, of which the following is a specification.

My invention relates to improvements in machines employed for flaring and bending iron and steel hoops, and it refers more particularly to that kind of machine having three short shafts extended to the exterior of the frame, on each of which are mounted two heads having a perfectly straight face, between which are placed washers about the thickness of a hoop, all of which is held together rigid by one solid nut, such a construction of machine being one now most generally used for bending hoops.

From practical experience with a machine as described it has been found that at times the work accomplished is very faulty—that is, it will unevenly flare the hoop and cause some work to kink and stick in the heads, it also being impossible to flare hoops of different gages.

My invention primarily has for its object to provide such an improved arrangement of parts as will positively overcome the above-noted defects, and also permit the hoops of different gages to be flared uniformly and freely.

My invention also has for its object to provide a simple and inexpensive arrangement of hoop-clamping attachments which can be readily applied to the machine above referred to without materially altering the drive-gear mechanism.

With other minor objects in view, which hereinafter will be referred to, my invention consists in the peculiar combination and novel arrangement of parts, such as will be first described in detail, and then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a hoop-bending machine with my improvements applied. Fig. 2 is a view illustrating one of the shafts equipped with my improved devices; and Fig. 3 is a view in perspective illustrating a portion of one of the shafts, the fixed and movable heads, and the washers detached.

Referring to the accompanying drawings, A indicates the base of body of the machine; B, the band-wheel; C, the main power-shaft; E and F, the supplemental shafts, and G the drive-gearing, all of which, except the shafts, are of the ordinary construction of machines now in general use.

In the construction of such machines the hoop-clamping heads are made with perfectly straight faces, and on the shafts between such faces are disposed thin washers of about the thickness of a hoop, which heads and washers are held in contact by nuts on the shafts in a manner well understood. The principal objection to this construction is that in case the securing-nuts should work loose the hoop-iron will slip down between the washers, or between one washer and face of the clamp-head, thereby kinking the hoop and causing it to stick in its passage through the machine.

In the construction of my improved machine I form the bearing-faces of the clamp-heads with circular sockets, into which is fitted a single washer of a thickness sufficient to keep the heads spaced apart the desired distance to admit the hoop. This construction prevents the hoop from working between the washer and the bearing-faces of the clamp-heads.

By referring particularly to Fig. 2 it will be seen that a clamp-head H′ is fixedly secured to the shaft C, such head having a circular socket h' formed in its bearing-face. A movable clamp-head H^2 is also mounted on the shaft and is provided with a similar socket h^2, into which sockets are adapted to project the opposite faces of a washer I′, such washer being of a thickness considerably greater than that of the ordinary hoop which is to be flared. This movable head H^2 is held up against the washer I′ by a powerful coil-spring J′, held on the shaft, said shaft being of a length sufficient to accommodate the spring J′ and an adjustable collar K, adapted to hold the spring under the proper tension. By this construction it will be noticed that when the hoops to be flared are of different

thicknesses the movable head will be automatically adjusted through the medium of the coil-spring thereby compensating for the varying thicknesses, and insuring an even and perfect flaring of the hoops.

The operation is as follows: The hoop-iron is passed between guide-plates to the rollers formed by the heads H′ H², the edges of the hoop entering the grooves of the several rollers, which are so arranged that the portion of the hoop directly under the upper roller is slightly depressed, thereby stretching the fibers of the lower edge of such portion, which has the effect of giving the hoop the desired flare.

From the foregoing, taken in connection with the drawings, it will be readily apparent that as the heads H′ and H² at all times project over the edges of the washer I′ it will be impossible for the hoop to pass down between the washer and such heads and become kinked. Furthermore, as the outer head is yielding it follows that hoops of different gages can be flared uniformly and freely.

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

1. In a machine as described, the combination with the feed shafts, having each a fixed head member formed with a circular socket in its clamp face, an opposing yielding clamp head having a similar socket and a washer held between the said heads having its opposite faces filling the sockets in the said heads as set forth.

2. As an improvement in hoop bending and flaring machines, a feed shaft having a fixed clamp head provided with a circular socket in its bearing face, a second clamp head loosely fitted on the said shaft, having a corresponding socket, a washer held between the said heads and having its opposite faces adapted to seat in the aforesaid sockets, the spring J and the adjustable collar K all arranged substantially as shown and for the purposes described.

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