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BUSHING FOR CORE ENDS

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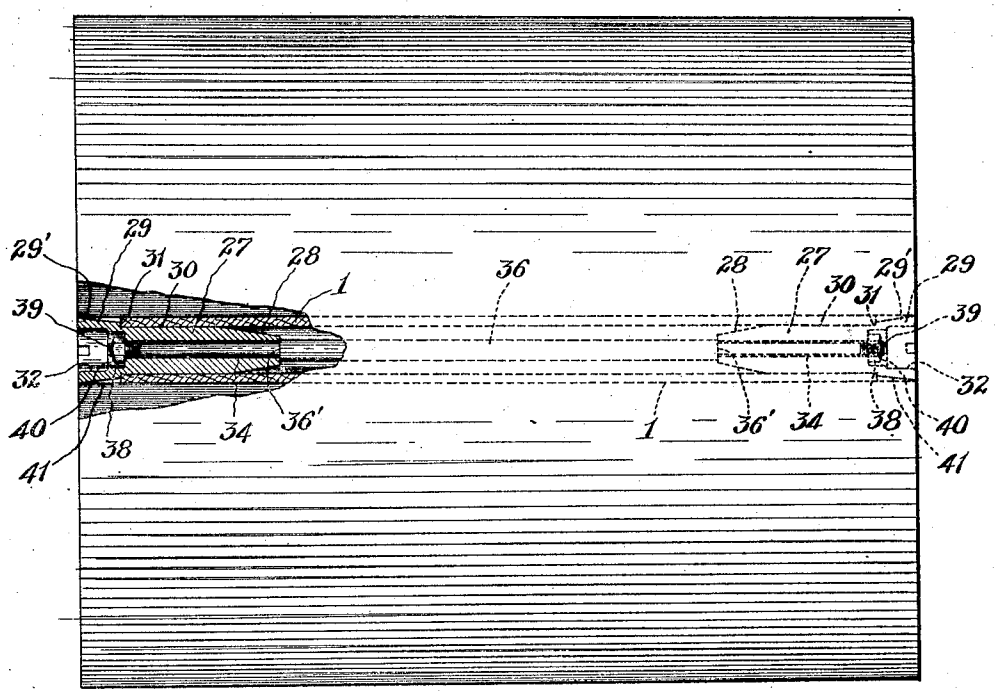

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UNITED STATES PATENT OFFICE.

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BUSHING FOR CORE ENDS.

Application filed January 15, 1926. Serial No. 81,461.

Our invention relates to bushings which are designed to be substituted for the removed ends of the cores which support rolls of paper or the like, and which is shown and described in a collateral application for United States Letters Patent, filed even date herewith.

As described in said application, tubular cores whose ends are adapted to form seats for stub axles and are capable of deformation by accident, are used in the large rolls of news-print paper which are used in printing newspapers, and when so deformed cannot, without repair or replacement, be mounted on the said axles of the printing presses in which the rolls are used.

As also described in said application, we have devised a method and means for making the required repairs to such cores while in place in the rolls, thereby eliminating the necessity of unwinding the paper, providing a new core and then rewinding the paper, thereby effecting the desired change with a considerable saving in expense and material.

The said method involves the cutting off and removal of the damaged or deformed end portion while the said cores are in place in the roll, by means of a special cutter adapted to accomplish the severing, and which is described and claimed in said application, and the substitution therefor of means for forming the required axle seats.

The present invention is directed to the above mentioned means adopted by us to be substituted for the severed or removed core-end portions, and consists of a device hereinafter fully described and particularly set forth in the claims.

The annexed drawing and the following description set forth in detail certain means for carrying out our invention, the disclosed means, however, constituting but one of the various mechanical forms in which the principle of the invention may be employed.

In said annexed drawing, the figure represents a front elevation of a roll of paper, with the device or bushing embodying our present invention, applied thereto, one of the members of said bushing being shown in axial section and the other in dotted lines.

In the drawing the damaged reinforced end portions of the core 1 are shown to have been removed by the cutting operation.

The roll after such removal must now be provided with means whereby it may be supported upon the stub axles of the printing press, as will be understood by those skilled in the art.

To this end, we provide two bushing members, each of which consists of a steel or iron tubular member 27. Each such member is formed at one end portion with a frusto-conical surface 28 and at the other end portion with an enlargement or socket portion 29 formed with an interior seat 32 for the reception of the corresponding stub axle of the press. The exterior surface 29′ of said socket portion is frusto-conical in shape, having its major diameter at the outer end as shown. Such member is also formed with an intermediate cylindrical surface 30 which terminates at one end at the inner end of surface 28 and at the other end at a shoulder 31 which marks the inner termination of the surface 29′.

Each such member 27 is also formed with an axial bore 34.

A tension rod 36 has its two end portions reduced forming two shoulders 36′—36′ removed a distance from the ends of the rod such that the latter may extend out of said bore to receive nuts 38 for engaging threads 39 formed upon such rod end portions. Said nuts are seated respectively in recesses 40 intermediate of the seats 32 and outer ends of the bores 34 as shown.

The rod is made of such length as not to project into the seats and thus interfere with the seating therein of the stub axles.

In applying the above-described device, and assuming the parts to be disassembled, one of the bushing members is first inserted and pushed or driven into the interior of the one core-end portion by hand, the diameter of the surface 30 being such as to make it fit tightly within said core, and to permit such hand-driving to bring the shoulder 31 into a position in which it either engages or nearly engages the corresponding end of the core.

The rod 36 is then inserted into the core from the other end thereof, and the reduced end portion of the rod passed through bore

34 until the shoulder 36′ engages the inner end of the bushing member, in which position the threaded rod end will project into the recess 40. One of the nuts is then screwed into the threads of such projecting end.

The other bushing member is then pushed or driven by hand into the other end of the core until the threads upon the corresponding end portion of said rod, project into the recess 40 of said member, and a nut applied thereto. By now screwing up the nuts, the two bushings are drawn toward each other until the inner ends of the bushing member jam up against the shoulders 36′—36′ and the shoulders 31—31 jam up against the ends of the core.

The major diameter of the socket ends of the member is made such that these ends will fit tightly in the outer roll end recesses 41—41 and expand the paper adjacent thereto, whereby the pressure of such paper will rigidly support the outer end portions of the bushing members. The roll is then ready to be mounted in the press.

It will be noted that the frusto-conical form of the surfaces 28 allows the bushings to be easily inserted in the cores, and the similar form of surfaces 29′ allows the socket portion to readily enter the recesses 41—41.

What we claim is:

1. Means for supporting rolls of paper the end portion of the cores of which have been removed, which consists of a bushing including a portion adapted to enter and snugly fit one end of the core and an outer socket portion formed with a seat adapted to receive and engage a stub axle; a similar bushing for engaging the opposite end of the core; and means connecting the two bushings.

2. The combination of elements described in claim 1, in which the two bushings are adjustable relatively to each other.

3. The combination of elements described in claim 1, in which each bushing is provided with a portion adapted to engage the respective core ends.

4. The combination of elements described in claim 1, in which the two bushings are adjustable relatively to each other and each is provided with a portion adapted to engage the respective core ends.

5. The combination of elements described in claim 1, and in which the outer surface of the socket portions are frusto-conical.

6. The combination set forth in claim 1, in which the socket portions are each provided with an inner recess and the connecting means consists of a rod having threaded ends and nuts respectively engaging same, said nuts being seated in said recesses, and said rods extend through the bushings.

Signed by us this 30th day of December, 1925.

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