

Aug. 24, 1926.

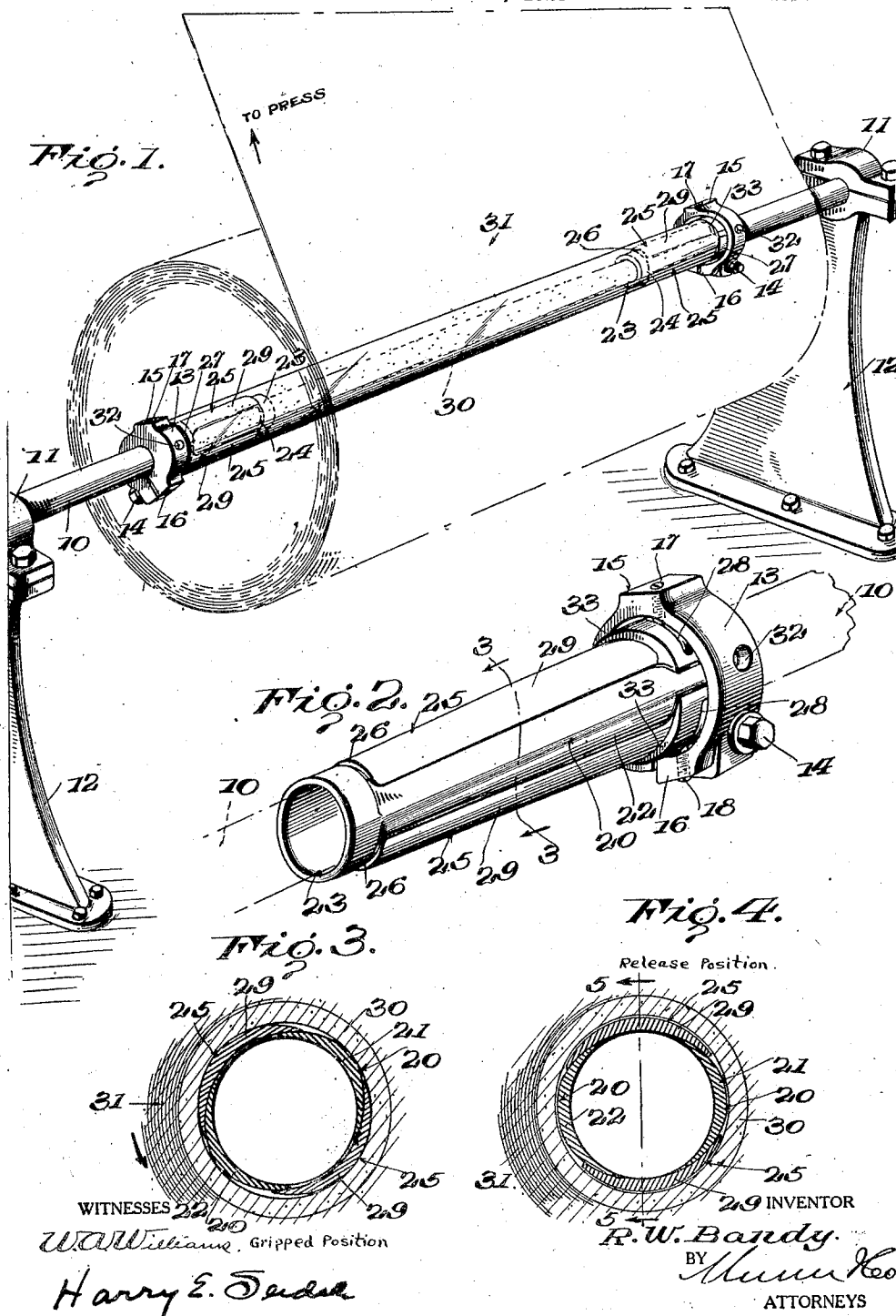
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R. W. BANDY

PRESS PAPER ROLL CHUCK

Filed Oct. 1, 1923

2 Sheets-Sheet 1



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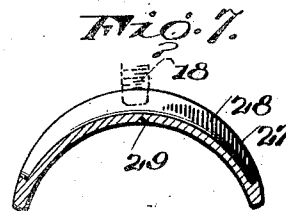
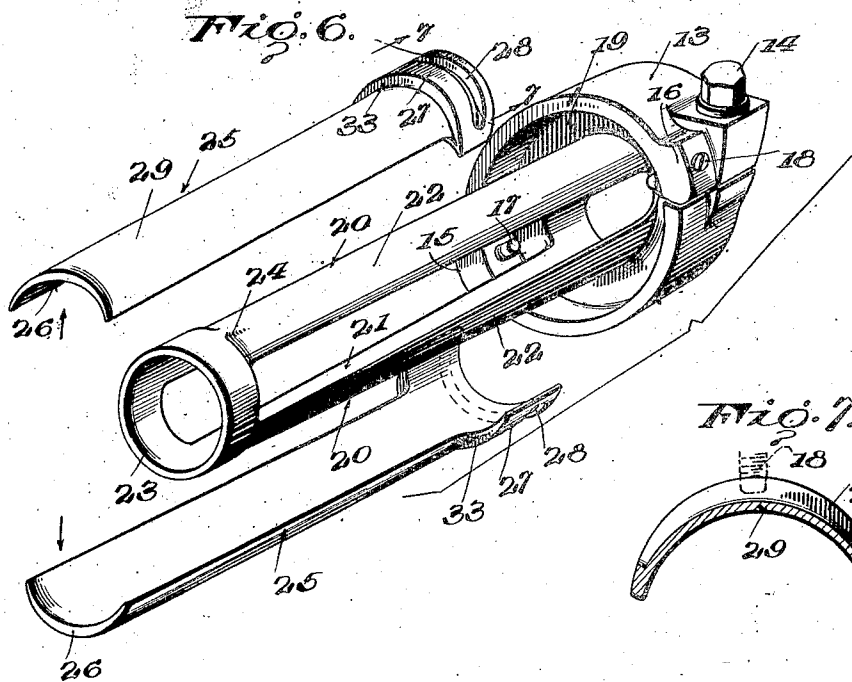
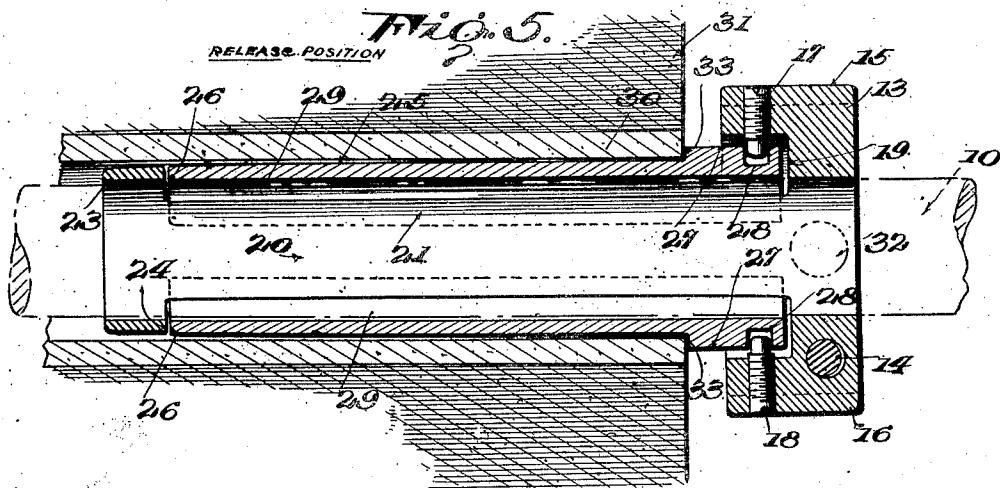
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2 Sheets-Sheet 2



WITNESSES

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## UNITED STATES PATENT OFFICE.

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## PRESS-PAPER-ROLL CHUCK.

Application filed October 1, 1925. Serial No. 59,975.

This invention relates to press paper roll chucks.

Heretofore chucks have been designed of such size to withstand the strain that only a small length of shaft is permitted to protrude from the ends of the roll for engagement by the usual lift hooks. Furthermore no provision is made for locking the rolls against reverse rotation either when the paper has been broken or during slack in the paper so that the paper is unwound during a break or the paper is broken by a sudden tension on the paper by reverse rotation of the roll due to slack. The edges of the paper near the core are frequently injured by the clamping chucks being too closely associated with the ends of the roll.

It is an object of this invention to provide a chuck which will operate efficiently and automatically in holding the roll against rotation in either direction, so that the roll will not unravel or break during slack in the paper.

Another object of the invention is the provision of a chuck which will automatically clamp in either direction of rotation by engaging the inner surface of the core thereby eliminating any extended projection of the chucks from the ends of the core and without clamping against said ends.

A further object of the invention is the provision of a chuck having leaves slidably mounted on a pair of cams which force the leaves into frictional engagement with the inner wall of the core of a roll of paper for locking the roll against rotation in either direction of the supporting shaft, provision being made for manually rotating the leaves to a neutral or clamping position as may be desired.

This invention will be best understood from a consideration of the following detailed description in view of the accompanying drawing forming a part of this specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention, as expressed in the appended claims.

Figure 1 is a view in perspective of the chucks applied in operative relation to a roll of paper,

Figure 2 is a view in perspective of a check applied to one end of a shaft,

Figure 3 is a transverse vertical section of a chuck taken along the line 3—3 of Figure 2, and showing the chuck in clamping position,

Figure 4 is a transverse vertical section of the chuck in neutral or released position,

Figure 5 is a longitudinal vertical section of a chuck,

Figure 6 is a view in perspective of a chuck showing the parts in separated relation, and

Figure 7 is a transverse vertical section of a clamping leaf taken along the line 7—7 of Figure 6.

Referring more particularly to the drawings, 10 designates a shaft which usually supports the press roll. The ends of the shaft are mounted in journals 11 formed at the upper ends of the standards 12. These standards are secured to the floor of the press room in any approved manner.

A pair of chucks constructed according to the principles of my invention are clamped in spaced relation on the shaft 10 by means of split collars 13, a bolt 14 being provided for the purpose. The collar has a pair of bosses 15 and 16 located externally at diametrically opposite points. Passages are provided in the bosses into which are threaded set screws 17 or 18. The inner ends of the set screws project through the collars 13 and into an annular groove 19 in the collars for a purpose to be presently explained.

Longitudinal bars or cams 20 are formed integrally with the collar 13 and project from the interior of said collar. The inner faces 21 of the bars are curved transversely to conform to the curvature of the shaft 10 and therefore neatly fit said shaft. The outer surfaces are eccentrically shaped to provide cam surfaces 22. The ends of the cams 20 are integrally connected to a collar 23. The inner edge of the collar projects above the surface of the cams 20 to provide a shoulder 24. The cams 20 are spaced circumferentially from each other to provide spaces therebetween.

Slidably mounted on the cams 20 are leaves 25. The free ends 26 of said leaves abut the shoulder 24 of the collar 23. The opposite ends of said leaves are provided with arcuately shaped flanges 27 mounted for limited movement in the grooves 19 of the clamping collar 13. Each of the flanges has a groove 28 into which projects the inner end of one of the set screws 17 or 18,

whereby the leaves are held against longitudinal movement relative to the shaft 10, but are permitted a slight circumferential movement on the cams 20. The outer surfaces 29 of the leaves are eccentrically formed so that when they are in frictional engagement with the inner face of the core 30 of the press roll 31, the leaves will be jammed in between the cams and the core and lock the core to the shaft 10.

The clamping collars have perforations 32 adapted to be engaged by the end of a suitable tool so that the chucks may be manually rotated to lock the chucks to the core or to release the core and likewise the roll as may be desired.

The operation of my device is as follows:

The shaft 10 is inserted through the core 30 and the chucks are slipped upon the opposite ends of the shaft and moved into the opposite ends of the core until the shoulders 33 of the flanges 27 are in engagement with the ends of the core. The bolts 14 are then screwed up tight to clamp the chucks rigidly on the shaft 10. Tools are then inserted into the perforations 32 of the collars 13 and the collars and shaft 10 revolved until the leaves 25 have been wedged between the inner face of the core 30 and the cams 20. Lifting hooks are applied to the ends of the shaft 10 and the roll is elevated in the usual manner until the ends of the shaft are seated in the journal on the standards 12. The roll is now in position for use.

When the paper is drawn from the roll, the roll will be revolved only partially when the inner face of the core frictionally engaging the leaves 25 will cause a partial circumferential shifting of said leaves to jam the leaves between the inner face of the core and the cams 20, and thereby lock the core to the shaft 10. If for any reason the roll should tend to revolve in a reverse direction, the leaves would be moved circumferentially in an opposite direction and be jammed again between the inner face of the core and the cams 20, and thereby lock the core and likewise the roll against rotation independently of the shaft 10.

I claim:—

1. An expansion chuck for press rolls, comprising a split collar for clamping the chuck to a shaft, said collar having an internal annular groove, cams projecting laterally from the collar, leaves having flanges seated within the grooves, said flanges having grooves, set screws in the collar and pro-

jecting into the grooves in the flanges, a collar formed integrally with the free ends of the cams and providing a shoulder adapted to be engaged by the free ends of the leaves, said leaves having a limited circumferential movement over the cams.

2. An expansion chuck for press rolls, comprising a collar for clamping the chuck to a shaft, said collar having an internal annular groove, cams projecting laterally from the collar, leaves having flanges seated within the groove, and means on the collars for limiting circumferential movement of the flanges in the groove, a collar formed integrally with the free ends of the cams and providing a shoulder adapted to be engaged by the free ends of the leaves, said leaves having a limited circumferential movement over the cams, a shoulder being provided between each flange and a leaf adapted to engage each end of the press roll for protecting the ends of the press roll from injury.

3. An expansion chuck for press rolls comprising a collar for clamping the chuck to a shaft, said collar having an internal annular groove, cams projecting laterally from the collar, leaves having flanges seated within the grooves, and means on the collars for limiting circumferential movement of the flanges in the groove, said leaves having a limited circumferential movement over the cams, a shoulder being provided between each flange and a leaf, adapted to engage each end of the press roll for protecting the ends of the press roll from injury.

4. An expansion chuck for press rolls, comprising a collar for clamping the chuck to a shaft, said collar having an internal annular groove, cams projecting laterally from the collar, leaves having flanges seated within the groove, said flanges having grooves, set screws in the collar and projecting into the grooves in the flanges.

5. An expansion chuck for press rolls, comprising a collar for clamping the chuck to a shaft, said collar having an internal annular groove, cams projecting laterally from the collar, leaves having flanges seated within the groove, said flanges having grooves, set screws in the collar and projecting into the grooves in the flanges, the flanges being raised above the surface of the leaves and providing shoulders on said leaves for engagement with the ends of the rolls to prevent injury to the rolls.

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