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QUICK-OPENING STUFFING BOX

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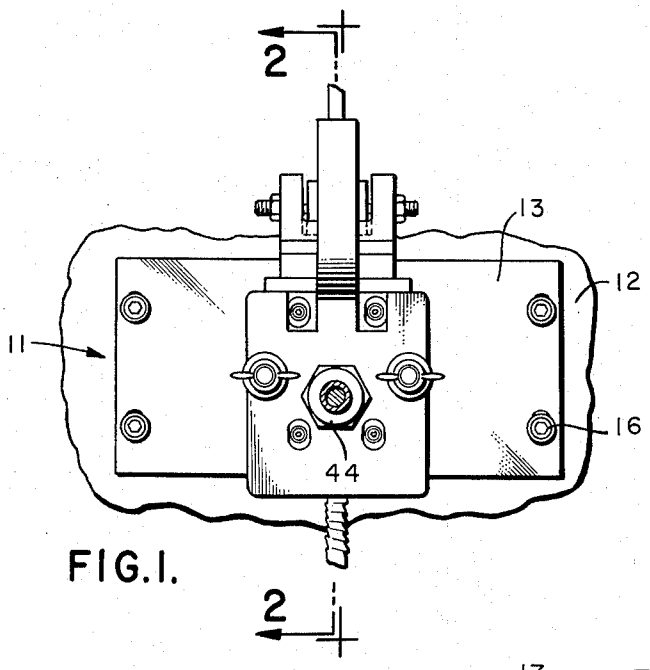


FIG. 1.

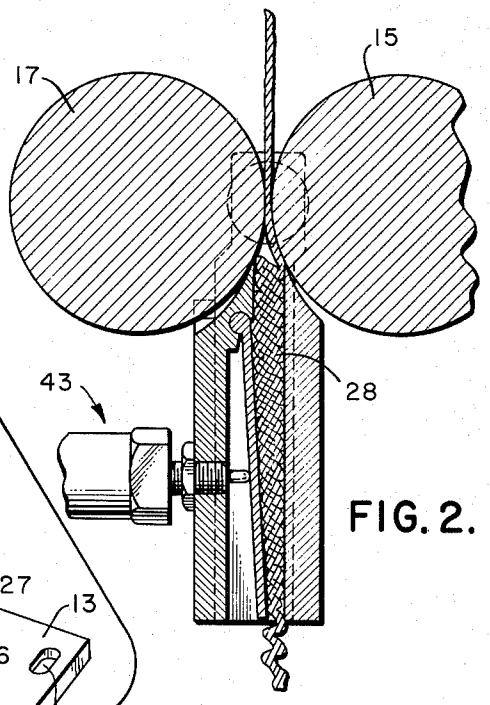


FIG. 2.

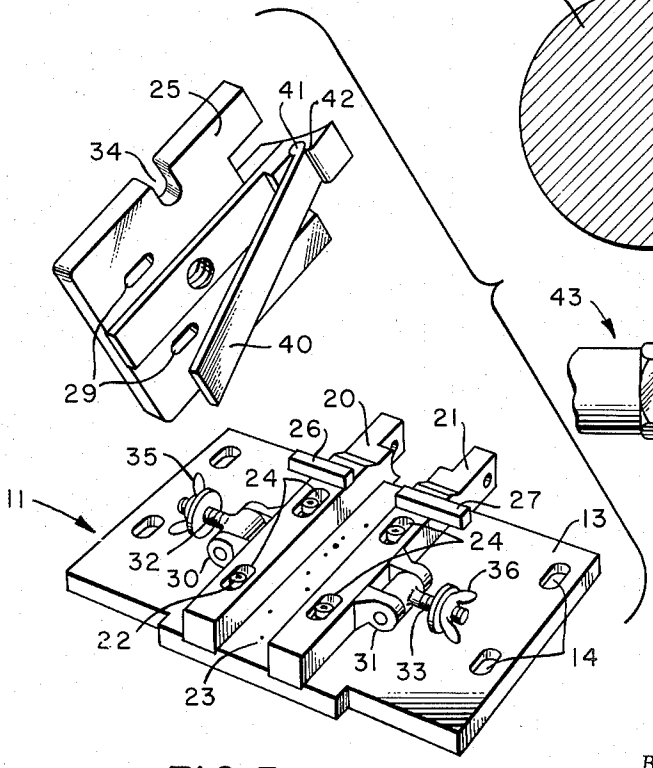


FIG. 3.

INVENTORS
B.T. THOMPSON, JR.
C.C. LETSON

BY Robert L. Broad Jr.
ATTORNEY

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QUICK-OPENING STUFFING BOX

Byrd T. Thompson, Jr., Decatur, and Clifford C. Letson, Courtland, Ala., assignors to Monsanto Company, a corporation of Delaware

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This invention relates to outboard bearing crimpers and more particularly to quick-opening stuffing boxes therefor.

The "outboard bearing crimpers," referred to herein, are the type which have a support bearing mounted at each end of the roll shaft as distinguished from the cantilever type crimper. Accordingly, the stuffer box on the outboard bearing type crimpers is not always located so that the operator has easy access thereto.

In the operation of stuffer box crimpers occasionally there is a need to open the stuffer box and remove particles of loose fiber. Otherwise, these loose particles will damage the tow being fed through the stuffer box. Therefore, it is desirable to provide a stuffer box having a doctor blade and support plate that may be removed quickly by the operator and replaced quickly after the cleaning operation has been completed.

The conventional stuffer boxes of outboard bearing type crimpers have presented a problem in the past when cleaning because the front doctor blade, and support plate, which functions also as a cover plate to the stuffer box is secured by a plurality of socket headed screws, usually four. The removal of this plate, and subsequent replacement thereof, is tedious and time consuming. Moreover, the operation requires the services of a skilled mechanic since the doctor blade must be fitted again to the roll at a given set clearance with the aid of a feeler gauge or the like and is obviously objectionable. Therefore it is an object of this invention to provide a simple, quick-opening stuffing box which can be opened, cleaned out, closed and readjusted by unskilled mechanics in a few minutes.

Another object of the present invention is to provide a simple quick-opening stuffer box having an improved clapper bar socketed therein.

Further objects of the invention will appear from the drawing and the description thereof which follows.

In the drawing, illustrative of the invention.

FIGURE 1 is a front elevation of a quick-opening stuffer box associated with a roll of an outboard bearing type crimper.

FIGURE 2 is a sectional view of the invention taken along lines 2—2 of FIGURE 1.

FIGURE 3 is an elevational view of the invention disassembled, further illustrating the quick-removal aspect thereof.

One embodiment of the invention contemplates a stuffer box of simple construction comprising a back or lower doctor blade and support plate having a pair of side plates spaced apart and attached thereto forming a passageway for the tow. A stop member is affixed to each of the side plates to aid in positioning a front or upper doctor blade a proper distance from the corresponding crimper roll without the use of precision instruments. The removable doctor blade support plate is slotted on each side to accommodate a pair of rotatably mounted studs which may be swung into and out of the slots quickly for the removal and replacement of the front doctor blade, whereupon the stuffer box is made accessible for cleaning. A clapper arm, which is swingably attached to the doctor blade, is removed therewith as a unit.

In accordance with the present invention the stuffer box is initially installed by a skilled mechanic. The doctor blades must be adjusted and fitted to the rolls at a proper set clearance with the aid of a feeler gauge or the like by some one possessing a high degree of skill to insure that the crimper functions properly. Thereafter, the back doctor blade remains stationary while the front doctor blade may be removed to permit cleaning, and replaced against the pre-set stops by the operator. Thus the doctor blade is positioned each time withou a readjustment thereof, as has been required in the past, to insure that the desired set clearance between the blade and roll is maintained.

The apparatus disclosed by the drawing illustrates the novel features of the present invention comprising a back or lower doctor blade **11** mounted onto a base **12** of a conventional outboard bearing type crimper, partially shown. The extended sides or support plate **13** of doctor blade **11** are provided with holes **14**, elongated, to permit adjustment of the doctor blade in relation to roll **15** when socket headed screws **16** are not drawn down tightly. A pair of rectangular shaped side plates **20** and **21** are spaced apart and fastened by socket headed screws **22** to the back blade **11** to form a space **23** therebetween. Each side plate is provided with a pair of countersunk holes **24**, elongated, to allow limited movement thereof for the purpose of making the initial adjustment of a front or upper doctor blade **25** in relation to roll **17**. The doctor blade support plate **25** is provided with a pair of holes **29** to permit access to screws **22**.

Elongated rectangular stop members **26** and **27** are welded to side plates **20** and **21**, respectively, near one end on the edge opposite doctor blade **11** and lying transversely thereto. Stop members **26** and **27** are so arranged that an edge of the front or upper doctor blade support plate **25** abuts against the stops when the doctor blade, which also functions as a cover plate to form a crimping chamber **28**, is positioned against side plates **20** and **21**. A pair of lugs **30** and **31** having threaded wing bolts **32** and **33** rotatably mounted therein are located on the outside edge of each side plate.

The front doctor blade support plate **25** is slotted at **34** on both sides to match up with the swing studs **32** and **33** when the said studs are in an upright position. Wing nuts **35** and **36** hold the doctor blade **25** in position when tightened snugly. A clapper bar **40** having one end enlarged is swingably mounted in doctor blade **25** near the blade edge thereof. The enlarged end **41** is socketed therein and retained by a knurled edge **42**. A pneumatically operated chamber and plunger **43** is mounted to doctor plate **25** at **44** for actuating the clapper bar.

In practicing the present invention the back doctor blade **11** is secured in operating position to support plate **12** by socket headed screws **16** and remains stationary therewith. The front doctor blade, which must be removed occasionally to clean the stuffer box, is held in closed position by wing nuts **35** and **36**. When it becomes necessary to clean the stuffer box, the wing nuts may be loosened quickly and studs **32** and **33** swung out of contact with the doctor blade to allow removal thereof. After the necessary cleaning has been completed the doctor plate may be replaced in a simple and expedious manner by placing the appropriate edge of the doctor blade **25** against adjustment stops **26** and **27**, swinging studs **32** and **33** into slots **34**, and thumb tightening wing nuts **35** and **36**.

The drawing and the description thereof is intended to be illustrative only and various modifications and changes may be made without departing from the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A quick-opening stuffing box comprising a first doctor blade and a second doctor blade, said first doctor blade being stationary, and said second doctor blade being removably attached to said first doctor blade by a

pair of swingably mounted bolts, means for spacing said blades apart, and means associated with said first blade for limiting movement in one direction of said second blade whereby said second blade is quickly mounted in a predetermined position.

2. A quick-opening stuffing box comprising a first doctor blade, a pair of rectangular members mounted on one side of said first doctor blade and apart thereon, stop means associated with said rectangular members, a second doctor blade positioned against said stop means and a pair of bolts swingably mounted on said rectangular members for connecting said second doctor blade to said first doctor blade to form a chamber therebetween.

3. A quick-opening stuffing box for outboard bearing crimpers comprising a pair of doctor blades spaced apart by a pair of rectangular members having stop means thereon for positioning one of said doctor blades in a predetermined position, said one doctor blade being slotted on each side thereof, and a pair of swingably mounted bolts associated therewith for connecting said one blade to said other blade.

4. A quick-opening stuffing box for outboard bearing type crimpers as described in claim 3 wherein the stop means comprises a pair of elongated rectangular shaped members.

5. A quick-opening stuffing box used in combination with outboard bearing type crimpers, comprising a pair of doctor blades associated with a pair of crimper rolls, said blades being separated by a pair of rectangular side plates mounted on one of said blades and spaced apart thereon to form a crimping chamber, a rectangular stop member fixed to each said side plate near one end thereof, said stop members being arranged to position the other blade a predetermined distance from the roll, said other blade being slotted on each side thereof, a pair of wing bolts mounted on said side plates and extending radially therefrom, said bolts being swingable into and out of said slots for quick removal of said slotted blade, and wing nuts mounted thereon for connecting the doctor blades together.

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DONALD W. PARKER, *Primary Examiner.*