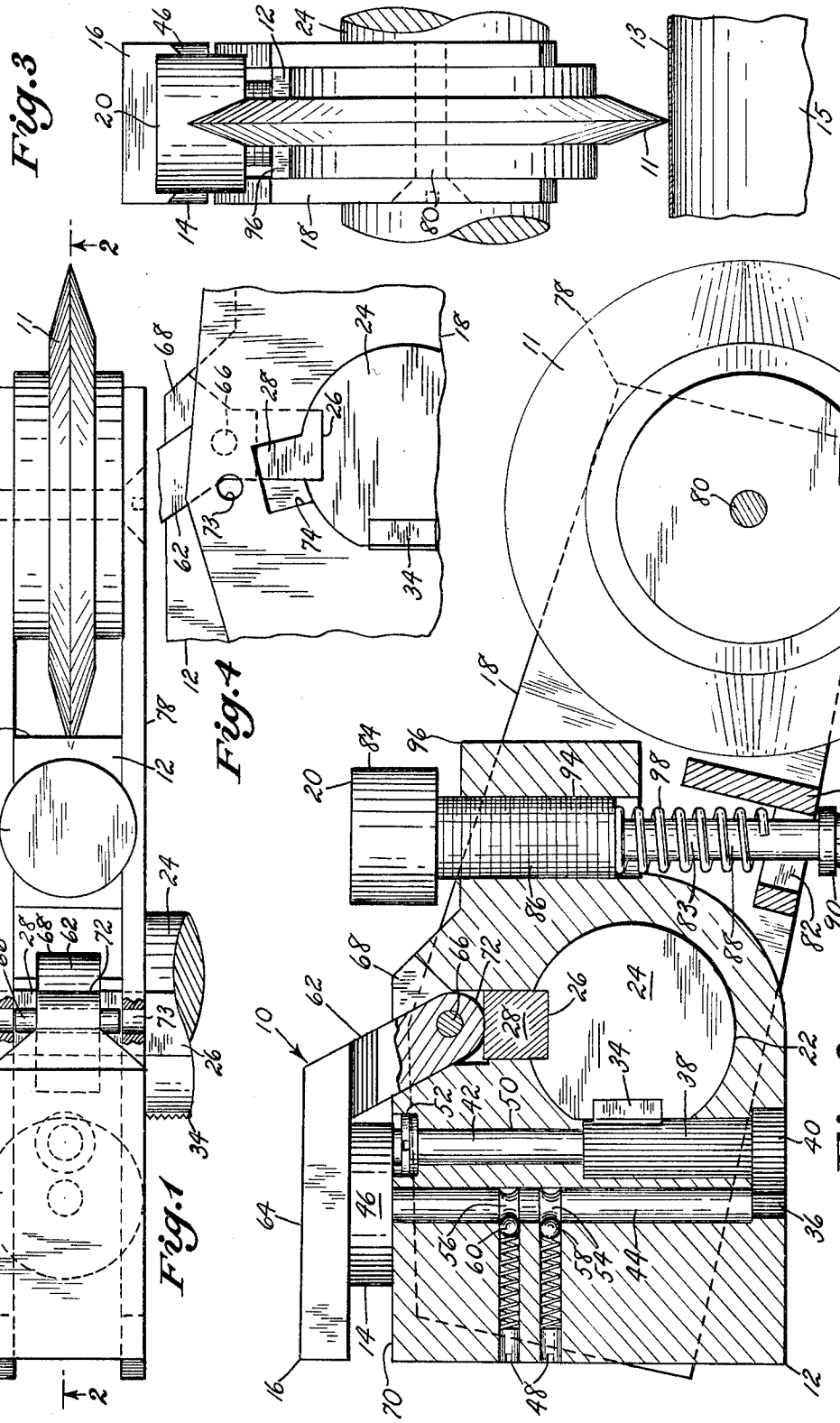
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ADJUSTABLE SLITTER HOLDER

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ADJUSTABLE SLITTER HOLDER

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ABSTRACT OF THE DISCLOSURE

Adjustable slitter holder for use in printing presses paper processing machine, web treating equipment or any sheet-like material which is held by a moving cylinder, such as a sheet fed offset press, or the like in which the slitting element is minutely shiftable in position with relation to the web being treated by quickly, easily and precisely manipulatable adjustments, laterally and vertically of the web and is lockable in position laterally of the web. Slitting includes perforating and scoring.

This invention relates generally to the field of web or moving sheet treatment and more particularly to an adjustable slitter holder.

It is among the objects of the present invention to provide a new and useful slitter holder construction having improved characteristics including:

(1) Simple low cost construction having long trouble free operating life.

(2) Ease of assembly and disassembly affording ease of replacement of slitter element and other parts.

(3) Quick gross or coarse adjustment.

(4) Precise fine adjustment.

(5) Secure locking avoiding any change of adjustment during the run.

(6) Precise control of pressure of slitting element against the web or sheet.

(7) Adjustment of precise slitter element lateral positioning while the equipment continues to run without loss of slitting pressure against the web or sheet being treated.

(8) The ability to increase or decrease the pressure of the slitter element while operating against the material being treated when there is a tendency for the slitting to lose uniformity, or be affected by press speeds.

In the drawings in which similar reference characters designate corresponding parts throughout the several views:

FIGURE 1 is a plan view of a preferred embodiment of the invention, with the slitter carrying element in lowered position.

FIGURE 2 is a sectional view, partly in elevation, as seen from the plane 2—2 on FIGURE 1. In this figure the slitter carrying element is shown in its lowermost position during disassembly.

FIGURE 3 is a front elevational view of the embodiment with the slitter element in active raised position.

FIGURE 4 is a fragmentary elevational view comparable to FIGURE 2 but showing the slitter carrying element in raised, normal operating position, exposing the disassembly notches.

In accordance with the invention the device, generally indicated by reference character **10** comprises broadly a body element **12**, lateral adjustment means **14**, locking means **16**, a slitter carrying element **18**, vertical adjustment means **20**, and a slitter element **11**.

The body element **12** is of irregular shape, as seen in the drawings and has a transverse bore **22** through which is disposed a cross member **24** of a web treating device (not shown). The web treating device may be of any desired kind such as a printing press, scorer, slitter,

or the like. The cross member **24** has a longitudinal keyway **26** within which is slidably disposed, a key **28**. The key **28** coacting with the keyway **26** prevents rotation of body element **12** about cross member **24**.

The lateral adjustment means **14** includes a rack member **34** secured to cross member **24**, a pinion **36**, gears **38** and **40**, shaft **42**, stem **44**, knob **46**, and retaining means **48** to selectively secure the pinion **36** in the engaged and disengaged positions thereof. Gears **38** and **40** are secured to shaft **42** rotatably disposed in a stepped bore **50** in body element **12**. Shaft **42** is held in position by a washer and snap ring **52**. Stem **44** which has pinion **36** at the lower end thereof, has the knob **46** affixed to the upper end thereof, and said stem is provided with a pair of annular grooves **54** and **56** with which the spring pressed balls **58** and **60** coact. The said grooves and balls are part of the retaining means **48** so that vertical elevation of the stem **44** by raising the knob **46** permits disengagement of the pinion **36** from the gear **40** for easy long excursions of the device **10** along the cross member **24** for large changes in position of the slitter element **11**. Because of the gear ratios which are obtained, manual rotation of knob **46** affords very fine adjustments of the position of slitter element **11**.

The locking means **16** includes the key **28** in keyway **26** and a lever **62** with a handle **64**. The lower end of lever **62** is pivotally mounted on body element **12** by a transverse pin **66** and is disposed in a well **68** in the upper wall **70** of element **12**. The lowermost end of lever **62** has a cam surface **72** for which the key **28** acts as a follower to enable the lever **62** in the position shown in FIGURE 2 to securely clamp the device **10** in precise position along the cross member **24** and thereby in precise position with respect to the web **13** as carried by its supporting roller or drum **15** (FIGURE 3). Flipping the handle **64** up provides a quick release, permitting a new positioning of slitter element **11**. An important feature of this invention is that after the handle **64** is raised, the pressure of the slitter element of the web or sheet is constantly maintained so that fine adjustment can be made while the equipmnet continues to run.

The slitter carrying element **18** is a yoke which is pivotally mounted on cross member **24**, the strut **76** joining and spacing the arms **78**. The slitter element **11** is rotatably mounted on a screw axle **80** journalled in arms **78**. The strut **76** is provided with a slot **82** through which the lower end of vertical adjusting element **82** passes, while the lower end of spring **98** is adapted for downward resilient pressure thereon.

The vertical adjustment means **20** includes the vertical adjustment element **83** which is in the form of a screw having a head **84**, a threaded portion **86**, an unthreaded reduced shank **88**, a washer **90** and a snap ring **92** in an annular groove therein. The portion **86** is in threaded engagement with a threaded bore **94** in the forward portion **96** of the body element **12**. Rotation of the head **84** in one direction will press the slitter element **11** down against the web **11** against drum **13** in a resilient manner by compressing the resilient member or spring **98** against strut **76**, while rotation of the head **84** in the opposite direction will raise the slitter element **11** out of contact with the web **13** when washer **90** contacts the lower surface of strut **76**.

Whenever it is desired to replace certain of the parts in the locking assembly it becomes a quick and easy matter. First the screw axle **80** is removed and the slitting element **11** is released. This permits the slitter carrying element **18** to tbe lowered by rotating knob head **84** to lower the vertical adjusting element **83** until the parts take a position approximating that shown in FIGURE 2. This aligns holes **73** and slots **74** so that the pin **66** and

the key **28** can be removed by sliding them endwise (laterally of device **10**) in either direction.

Thus all of these parts can be substituted without affecting the cross member **24** or otherwise disturbing the equipment. Removal of transverse pin **66** releases lever **62** so that it can be replaced.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art to which the present invention pertains.

The term slitter includes a scorer or perforator.

I claim:

1. For use with a web-treating device with a cross member and a web, an adjustable slitter holder comprising:

(a) a body element slidably mounted on said cross member;

(b) lateral adjustment means for shifting said first body element in position along said cross member;

(c) locking means for securing the body element in laterally adjusted position;

(d) a slitter-carrying element movably connected to the body element; and

(e) vertical adjustment means for shifting the slitter-carrying element in position with respect to said body element, and vertically with respect to said web; said locking means including a clamp compressing a key which is in engagement with the cross member.

2. For use with a web treating device with a cross member and a web, an adjustable slitter holder comprising:

(a) a body element slidably mounted on said cross member;

(b) lateral adjustment means for shifting said first body element in position along said cross member;

(c) locking means for securing the body element in laterally adjusted position;

(d) a slitter-carrying element movably connected to the body element; and

(e) vertical adjustment means for shifting the slitter-carrying element in position with respect to said body element and vertically with respect to said web; said pinion being shiftable in and out of engagement with said rack member.

3. Structure as claimed in claim **2** including retaining means to selectively secure the pinion in the engaged and disengaged positions thereof.

4. Structure as claimed in claim **2**, including a gear interposed between said rack member and said pinion.

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