Oct. 10, 1950 J. LINDGREN 2,525,176

DISCONNECTABLE REGISTER OPERATING DEVICE FOR BILLET SAWING MACHINES

Filed March 2, 1949

FIG. 1.

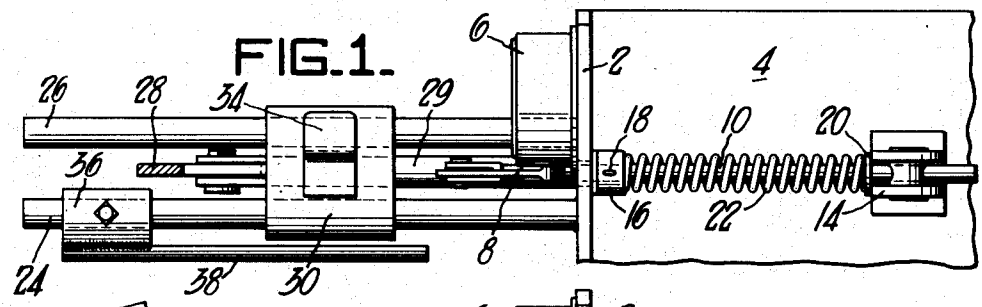


FIG. 2.

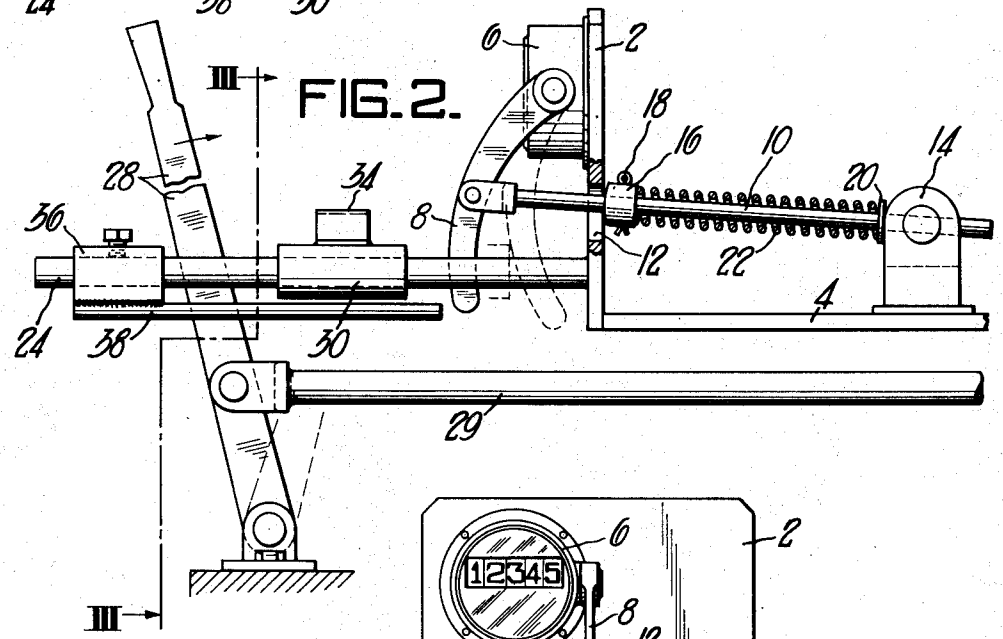


FIG. 3.

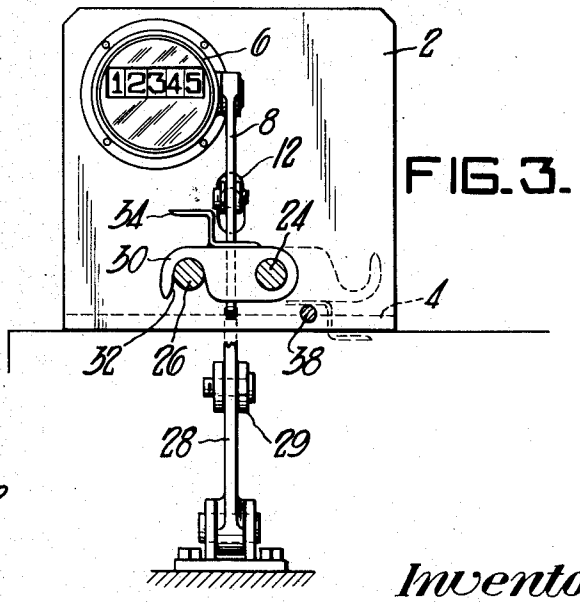
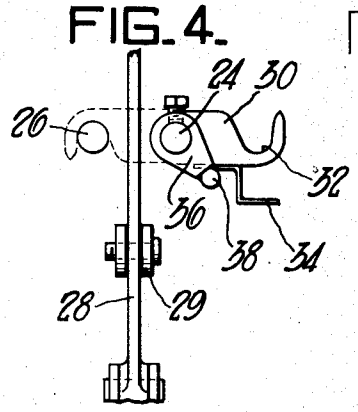


FIG. 4.



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DISCONNECTIBLE REGISTER OPERATING DEVICE FOR BILLET SAWING MACHINES

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3 Claims. (Cl. 235—91)

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This invention relates to a counting device and more particularly to a counting device for counting the pieces cut from a billet by a billet cutting saw in a bar mill.

One of the final operations in the rolling of steel billets in a bar mill consists of cutting the rolled billets into multiple standard lengths suitable for subsequent processing. The first cut made on a billet before it is cut into smaller lengths is made for the purpose of cropping off its scrap end which is discarded. In order to maintain accurate production records it is necessary to keep a record of the number of usable billet lengths cut in a given period. Prior to my invention this was done by the mill saw operator who made a chalk mark or the like on a panel as each billet was cut.

I have proposed the use of an automatic counting device which operates in conjunction with the operating lever of a billet cutting saw to register each cut of the saw and thereby record the number of pieces severed from the original workpiece. Inasmuch as some of the cuts of the saw produce crop ends which must not be included in the count, the counting device of my invention is also provided with means whereby it can be made non-registering when a crop cut is made.

It is accordingly an object of my invention to provide a counting device which is actuated by the movement of a billet saw operating lever.

It is a further object of my invention to provide a counting device to be used in conjunction with a workpiece severing device to count the number of usable multiple lengths severed from a workpiece.

These and other objects will be more apparent after referring to the following specification and attached drawing, in which:

Figure 1 is a plan view;

Figure 2 is a side elevation;

Figure 3 is a view taken on the line III—III of Figure 2; and

Figure 4 is an end view.

Referring more particularly to the drawing, reference numeral 2 indicates a panel mounted on a base 4. A conventional mechanical counter 6 having a curved actuating arm 8 projecting therefrom is mounted on the face of panel 2. A shaft 10 is attached to actuating arm 8 and extends therefrom through an opening 12 in panel 2 to a forked support 14 mounted on base 4 wherein it is slidingly supported. A collar 16 is rigidly mounted around shaft 10 intermediate its ends by means of a cotter pin 18. A washer 20 is

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provided around the lower end of shaft 10 adjacent support 14 to provide a bearing surface for one end of a helical compression spring 22 which surrounds shaft 10. By bearing against collar 16 spring 22 constantly urges actuating arm 8 away from panel 2. A pair of spaced apart parallel rods 24 and 26 project outwardly from panel 2 and are positioned astride the actuating arm 8 at one end and astride the operating lever 28 of a billet saw at the other end. Operating lever 28 is connected with a billet saw (not shown) by means of connecting arm 29. A block 30 having a groove 32 in the undersurface of one edge is slidingly mounted on rod 24 intermediate lever 28 and actuating arm 8. Block 30 spans the space between rods 24 and 26 with its groove 32 resting on rod 26. A finger lug 34 is provided on the top surface of block 30 whereby the block can be rotated around rod 24 to remove it from the path of operating lever 28. A clamp 36 is affixed to the end of rod 24. A stop bar 38 is attached to clamp 36 and extends rearwardly therefrom to provide a stop for block 30 so that its rotative movement is limited to an arc of approximately 120 degrees.

In operation, when a cut is made, the saw operating lever 28 is advanced, sliding block 30 into engagement with counter arm 8, thus registering a cut. When lever 28 is retracted spring 22 moves shaft 10 to return arm 8 and block 30 to their starting positions. For non-registry of a crop cut the operator with a flick of the finger on lug 34 pivots block 30 out of contact with lever 28, the travel of block 30 being arrested by stop bar 38. With an oppositely directed flick, block 30 is again slidably positioned on rods 24 and 26. In its extreme advanced position lever 28 can never depress actuating arm 8 without benefit of block 30.

While one embodiment of my invention has been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. In a device for severing billets from a workpiece, said device having an operating lever, the combination therewith of a counting device, said counting device comprising a panel mounted mechanical counter having an actuating arm projecting therefrom, spring means attached to said arm for urging the arm away from said panel, a pair of spaced apart parallel rods projecting outwardly from the panel, said rods being positioned astride the actuating arm at one end

and astride the operating lever at the other end, a block having a longitudinal groove in the undersurface of one edge thereof slidingly mounted on one of said parallel rods and having its grooved edge resting on the other of said rods intermediate said operating lever and said actuating arm, said block being adapted to cooperate with said lever and depress the actuating arm to trip said mechanical counter, gripping means on said block for rotating it out of the path of said operating lever, and a stop bar attached to the end of said slidingly mounted rod to limit the rotative movement of said block.

2. In a device for severing billets from a workpiece, said device having an operating lever, the combination therewith of a counting device, said counting device comprising a base mounted panel, a mechanical counter having an actuating arm projecting therefrom mounted on said panel, spring means attached to the actuating arm for urging said arm away from the panel, said spring means comprising a forked support mounted on said base rearwardly of said panel, a shaft attached to said actuating arm at one end and slidingly mounted in said forked support at the other end, a collar rigidly attached to said shaft intermediate its length, a washer around said shaft abutting said forked support, and a compression spring mounted around said shaft bearing against said collar on one end and said washer on the other end, a pair of spaced apart parallel rods projecting outwardly from said panel, said rods being positioned astride the actuating arm at one end and astride the operating lever of said severing device at the other end, and a block slidingly mounted on said rods intermediate said actuating arm and said operating lever, said block being adapted to cooperate with said lever and depress said actuating arm to trip said mechanical counter.

3. In a device for severing billets from a workpiece, said device having an operating lever, the combination therewith of a counting device, said

counting device comprising a base mounted panel, a mechanical counter having an actuating arm projecting therefrom mounted on said panel, spring means attached to the actuating arm for urging said arm away from the panel, said spring means comprising a forked support mounted on said base rearwardly of said panel, a shaft attached to said actuating arm at one end and slidingly mounted in said forked support at the other end, a collar rigidly attached to said shaft intermediate its length, a washer around said shaft abutting said forked support, and a compression spring mounted around said shaft bearing against said collar on one end and said washer on the other end, a pair of spaced apart parallel rods projecting outwardly from said panel, said rods being positioned astride the actuating arm at one end and astride the operating lever of said severing device at the other end, a block having a longitudinal groove in the undersurface of one edge thereof slidingly mounted on one of said parallel rods and having its grooved edge resting on the other of said rods intermediate said operating lever and said actuating arm, said block being adapted to cooperate with said lever and depress the actuating arm to trip said mechanical counter, gripping means on said block for rotating it out of the path of said operating lever, and a stop bar attached to the end of said slidingly mounted rod to limit the rotative movement of said block.

JOHN LINDGREN.

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