No. 861,339.

PATENTED JULY 30, 1907.

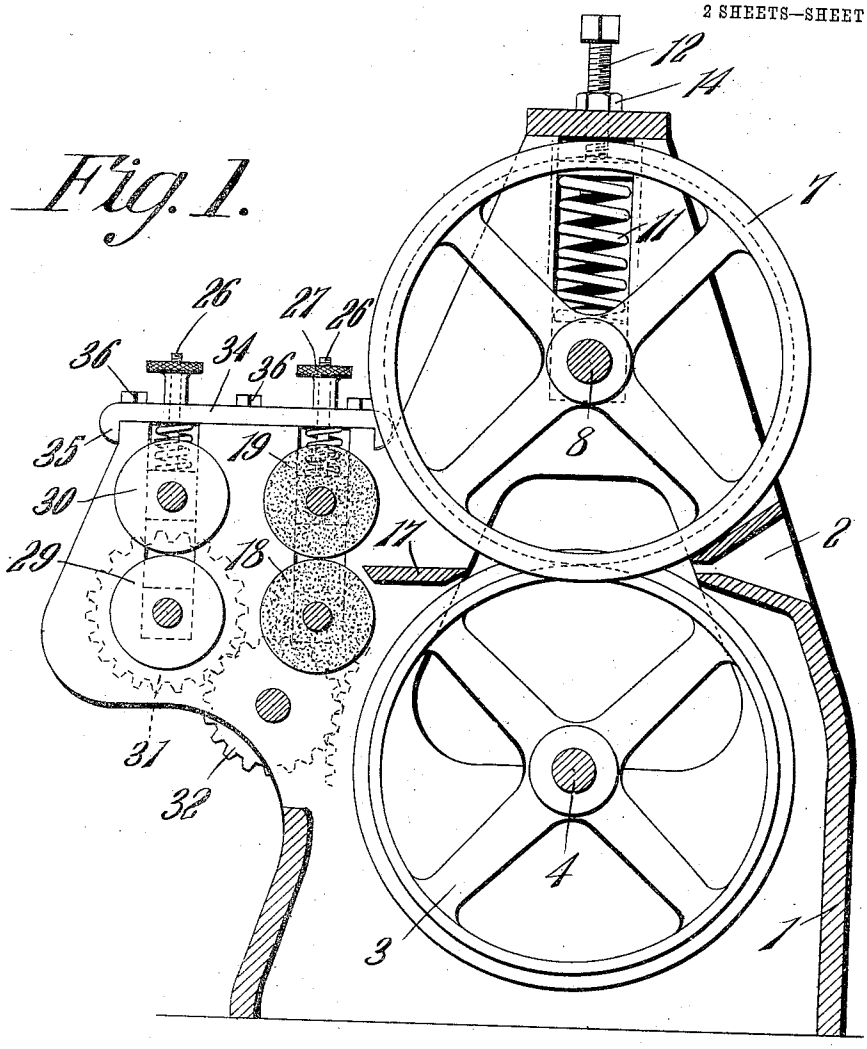
H. L. WILLIAMS & J. T. TICE.

MACHINE FOR STRAIGHTENING AND CLEANING COTTON TIES.

APPLICATION FILED OCT. 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

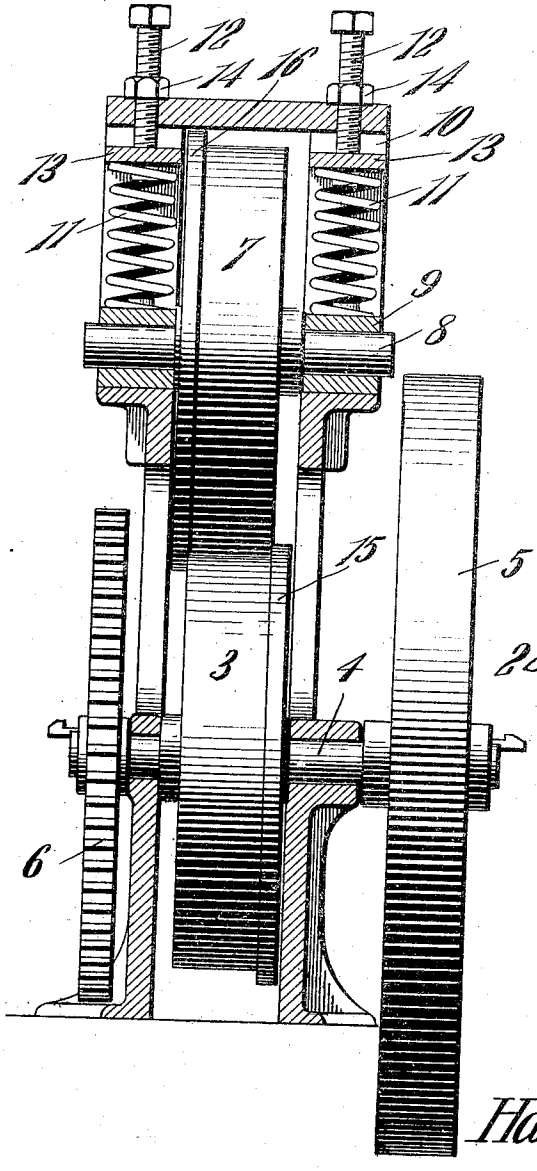
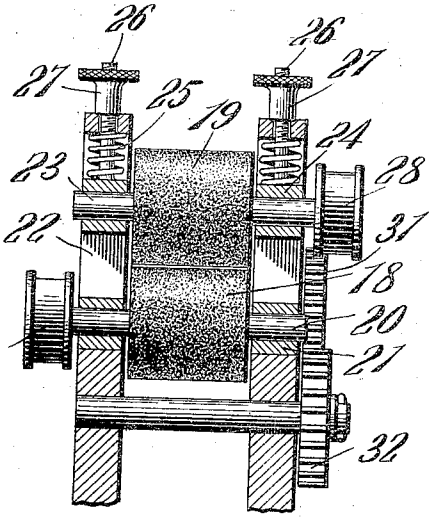


Fig. 3.



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UNITED STATES PATENT OFFICE.

HARRY LAWRENCE WILLIAMS AND JOHN THOS. TICE, OF COLUMBUS, GEORGIA.

MACHINE FOR STRAIGHTENING AND CLEANING COTTON-TIES.

No. 861,339. Specification of Letters Patent. Patented July 30, 1907.

Application filed October 5, 1906. Serial No. 337,612.

To all whom it may concern:

Be it known that we, HARRY LAWRENCE WILLIAMS and JOHN THOMAS TICE, citizens of the United States, residing at Columbus, in the county of Muscogee and State of Georgia, have invented a new and useful Machine for Straightening and Cleaning Cotton-Ties, of which the following is a specification.

This invention relates to machines for straightening and cleaning scrap iron or metal, such, for example, as cotton ties.

The objects of the invention are to improve and simplify the construction of such machines; furthermore, to increase their efficiency in operation and to decrease the expense attending their manufacture.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

In the accompanying drawings forming part of this specification: Figure 1 is a vertical section, partly in elevation, through a machine constructed in accordance with the invention; Fig. 2 is a view similar to Fig. 1, taken at a right angle thereto; and Fig. 3 is a detail vertical section through the machine adjacent the cleaning rolls.

Like reference numerals indicate corresponding parts in the different figures of the drawings.

The improved machine of the present invention is constructed with a frame 1 which may be of any suitable form and construction. At its forward end, the frame 1 is provided with a tapering feed throat 2 into which the bale ties which are to be straightened and cleaned are fed. Suitably journaled in the frame 1, in rear of and below the feed throat 2, is a lower straightening roll 3 having a shaft 4 which is provided at one end with a main belt wheel 5 and at the other end with a large gear wheel 6. Mounted in the machine frame 1, above the lower straightening roll 3, is an upper straightening roll 7. For the purpose of permitting upward yielding movement of the roll 7 with respect to the roll 3, so as to permit the passage of bale tie joints or rivets between the rolls, the shaft 8 of the upper roll 7 is mounted in a pair of journal blocks 9 which are adapted to move vertically upward in slots or guideways 10 formed in the machine frame. The journal blocks 9 are pressed yieldingly downward in the guideways 10 by means such as the coil springs 11. The means for adjusting the tension of the coil springs 11 so as to regulate the pressure of the upper straightening roll 7 against the lower straightening roll 3, consists of adjusting screws 12 which extend downward into the upper ends of the guideways 10 and abut at their lower ends against plates 13 which are slidably mounted in said guideways. The adjusting screws 12 preferably are retained in adjusted position by means of lock nuts 14.

For the purpose of guiding the bale ties in their passage between the straightening rolls 3 and 7, the lower roll 3 is provided at one side thereof with a peripheral guide flange 15 which is adapted to overlap the lower end of the upper roll 7, as shown in Fig. 2, and said upper roll 7 is provided with a similar peripheral guide flange 16 which is adapted to overlap the upper end of the lower roll 3. It will be observed that the guide flanges 15 and 16 serve to prevent any lateral displacement of the bale ties during their passage between the straightening rolls.

After passing between the straightening rolls 3 and 7, the bale tie moves over a guide member 17, which preferably is in the nature of a cross-piece fitted between the two sides of the frame and having beveled lower corners, as shown. From the guide member 17, the bale tie passes between a pair of emery wheels or cleaning rolls 18 and 19. The shaft 20 of the lower cleaning roll 18, as shown in Fig. 3, is journaled in blocks 21 mounted in the lower ends of guideways 22 in the machine frame, the shaft 23 of the upper cleaning roll 19 being journaled in blocks 24 which are slidably mounted in the upper ends of the guideways 22. For the purpose of permitting yielding upward movement of the roll 19 when a bale tie joint passes between the cleaning rolls, coil springs 25 are interposed between the blocks 24 and the upper ends of the guideways 22. In order to limit the downward movement of the upper roll 19 and also to permit said roll to be adjusted away from the lower roll 18 to prevent said rolls from bearing too strongly against the bale tie, threaded rods 26 are connected with the blocks 24, as shown in Fig. 3. The threaded rods 26 extend loosely upward through openings in the ends of the guideways 22 and are provided with knurled nuts 27. It will be obvious that by adjusting the nuts 27, the downward movement of the upper roll 19 can be limited without interfering with the upward yielding movement thereof. In order that the cleaning rolls 18 and 19 may be driven at a uniform speed at all times, each of said rolls is provided with a belt wheel 28, the belt wheel of one roll being located on the side of the machine opposite the belt wheel of the other roll so that the belts of said rolls will not interfere with each other. It will be obvious that the belt wheels 28 constitute independent means for rotating the different cleaning rolls so that the rotation of the upper roll will not be stopped when said roll is raised by the passage of a bale tie joint between the two rolls.

After passing through the cleaning rolls 18 and 19, the bale ties move between a pair of delivery rolls 29 and 30 which are journaled in the machine frame in the

some manner as the cleaning rolls and are adapted to be adjusted by the same means as described with respect to said cleaning rolls, that is to say, the journals of the upper roll 30 are mounted in sliding boxes adapted to be pressed or forced downward by spiral springs, as shown in the drawing.

For the purpose of rotating the delivery rolls 29 and 30 at a greater speed than the straightening rolls 3 and 7, so that said delivery rolls will not only serve to draw the bale ties through the cleaning rolls 18 and 19 but will also exercise a stretching action on said bale ties which will hold them straight and taut after leaving the straightening rolls 3 and 7, the lower delivery roll 29 is provided with a small gear wheel 31 which is in mesh with an idle gear wheel 32, meshing in turn with the large gear wheel 6 on the shaft 4 of the lower straightening roll 3.

The threaded rods 26 of the upper cleaning and delivery rolls 19 and 30 preferably extend loosely through a plate 34 which is provided with depending end flanges 35 and is secured to the machine frame by means such as the bolt 36.

The improved machine of the present invention is strong, simple, durable and inexpensive in construction as well as thoroughly efficient in operation.

What is claimed is:

A machine of the class described having a pair of straightening rolls, a pair of delivery rolls, gearing between said rolls for driving the delivery rolls at a slightly greater speed than the straightening rolls, and a pair of cleaning rolls between said straightening and delivery rolls each of said cleaning rolls being independently rotated.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

HARRY LAWRENCE WILLIAMS.
JOHN THOS. TICE.

Witnesses:
T. C. HUDSON,
G. C. BARFIELD