E. E. SLAGLE.

AUTOMATIC STRAPPING MACHINE.

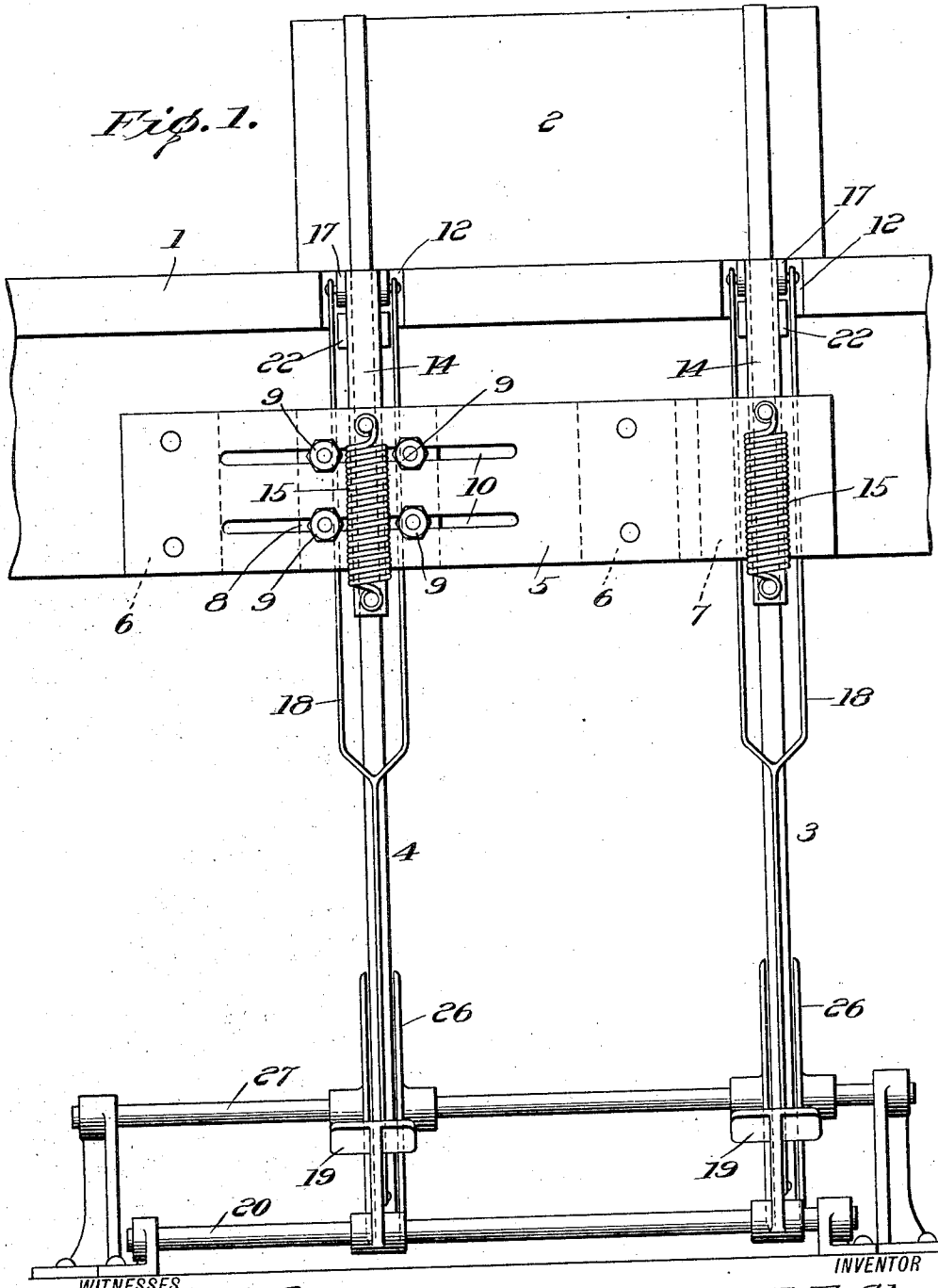
APPLICATION FILED JULY 27, 1911.

1,067,279.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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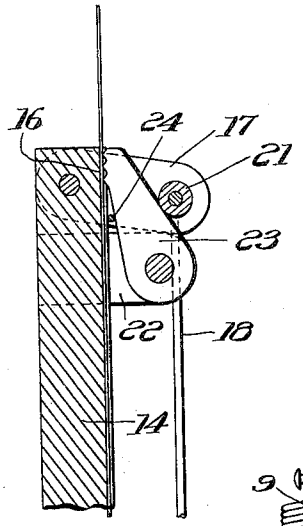


Fig. 4.

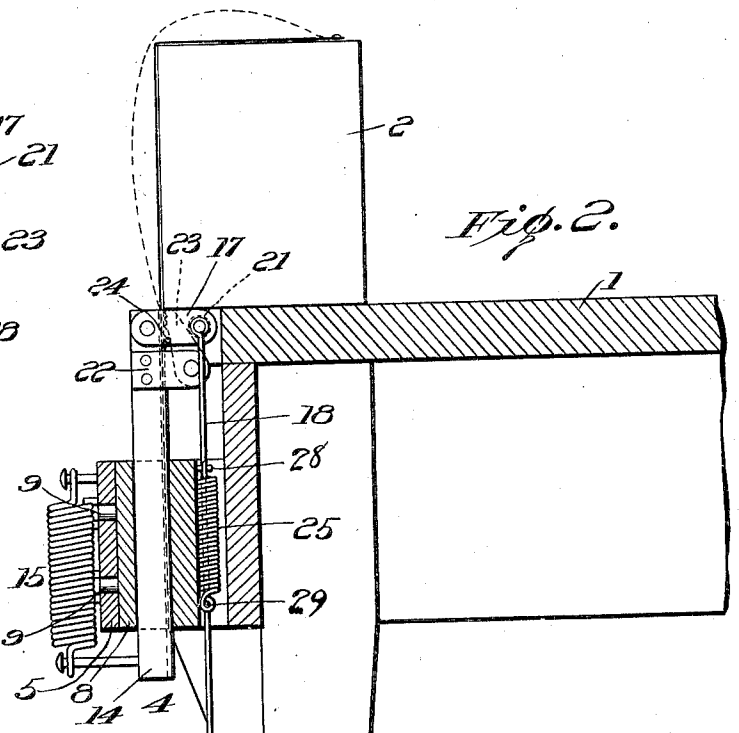
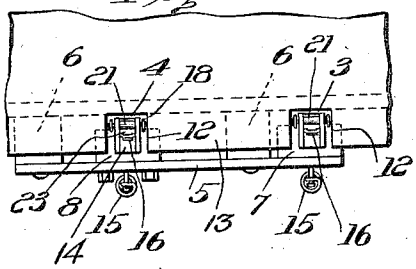
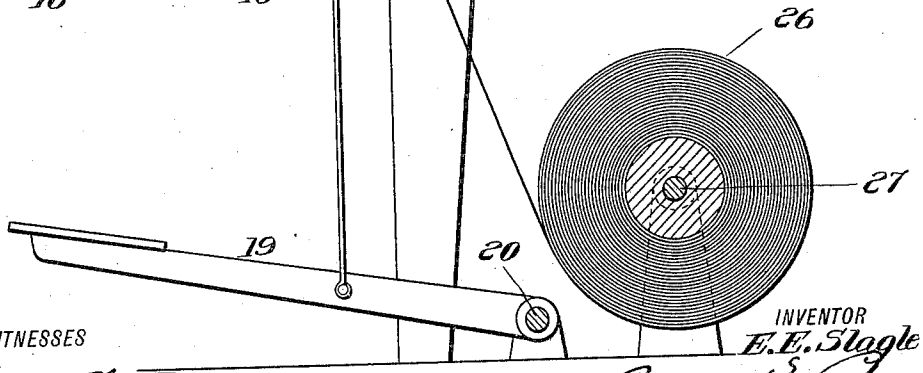


Fig. 2.

Fig. 3.





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UNITED STATES PATENT OFFICE.

ELMER E. SLAGLE, OF NEW YORK, N. Y., ASSIGNOR TO AUTOMATIC STRAPPING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

AUTOMATIC STRAPPING-MACHINE.

1,067,279. Specification of Letters Patent. Patented July 15, 1913.

Application filed July 27, 1911. Serial No. 640,852.

To all whom it may concern:

Be it known that I, ELMER E. SLAGLE, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Strapping-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improved mechanism for automatically strapping cases and the like.

The object of this invention is to provide improved mechanism for rapidly and efficiently applying straps to cases and the like without bending or weakening the portion of the strap engaged by the machine, and for automatically laying the strap on the case as this is moved while on the work table. A straight portion of the strap is forced against a flat engaging surface and moved in a line parallel thereto for tightening the strap upon the case. The side of the case will preferably, during the application of the strap, be in the plane of strap movement.

In the drawings accompanying and forming part of this specification, one practicable embodiment of my invention is illustrated wherein:

Figure 1 is a front elevation. Fig. 2 is a vertical longitudinal sectional view taken through one of the strapping devices. Fig. 3 is a plan view on a reduced scale of the edge of the table; and Fig. 4 is a detail on an enlarged scale of the clamping mechanism.

A work table or bench is designated by the reference character 1, upon which the case, box or package 2 will be placed for the application of the straps. The bench is shown provided with two strapping devices, 3 and 4. The device 3 is shown stationary with relation to the table, and the device 4 adjustable so that the straps may be placed at the desired points or distances apart on boxes of varying sizes. On the front of the bench and below its top or table is shown a board 5 secured by pillows 6 to provide a space between the board and the front of the bench. This space is to receive the strapping devices 3, and 4, which are mounted in blocks 7, 8 respectively. Block 7 is preferably rigid on the board, while block 8 is held by bolts 9 passing through slots 10 in the board to permit of adjustment. The edge 13 of the table is shown overhanging a portion of the mechanism, a suitable space will be provided for the passage of the straps, in the present showing notches 12 are illustrated located in line with certain strapping device positions.

The devices 3 and 4, herein shown are alike in construction, and one of these is illustrated in detail in Figs. 2 and 4.

A slide or carriage 14 is mounted for reciprocation on the bench, its path of movement being perpendicular to the plane of the top of the bench or work table. In the illustration the carriage is vertically movable in block 8 and is held elevated by the tension of a spring 15 secured to the outer face of board 5. The inner face of this carriage is shown grooved or channeled at 16, see Fig. 3 for providing a strap seat. A pair of links 17 are pivotally mounted on the carriage at the respective sides of the strap seat. The free ends of the links being attached to a connecting rod 18. The rod is shown bifurcated forming a pair of connecting bars extending down to a treadle 19 fulcrumed on a shaft 20. At the point of connection of links 17 with rod 18 is shown a roller 21 journaled in the links and in the lateral extremities of rod 18. Below the links 17 carriage 14 carries a pair of rigid brackets 22 on which is fulcrumed a jaw or upwardly extending dog 23 having teeth adapted to enter the channel or strap seat 16. A pin or stud 24 on the links bears against the under face of the jaw and the roller 21 bears against its upper face, according as the links are moving upward or downward. The downward movement of rod 18 is against the tension of a spring 25. The spring 25 is shown located between the extremities of connecting rod 18, the upper end of the spring being attached to a stud 28, and the lower end to bar 29, carried by such extremities.

The drawings show a box in position upon the table and having the extremity of the metallic strapping secured thereto, the strap being fed from a reel 26 mounted upon a shaft 27 and passing up through the channel 16 of carriage 14.

In operation, and with the parts in the positions illustrated, an attendant presses down upon treadle 19. This movement lowers the rod 18 against the tension of

spring 25, and also lowers the links 17 to the position indicated in Fig. 4 thereby causing the rollers 21 to bear upon the jaw 23 and bind the latter against the strap on the strap seat. The further downward movement of rod 18 causes the carriage 14 to lower against the tension of spring 15, carrying the parts 22, 23 and 17 with it, thereby binding the strap upon the box and affording opportunity for nailing it before releasing the treadle and relaxing the grip upon the strap and allowing carriage 14 to rise. The box may then be turned on another side, thus wrapping the strap farther around it, this movement unwinding the strap from the reel. If desired the box may after the strap end is secured to it, be entirely inclosed in the strap before nailing, or two sides, the top and the side toward the operator may be nailed and then the box turned to bring the other two sides into position. As the links 17 assume a horizontal position, upon a release of the treadle, the pin 24 carried thereby bears against the jaw 23 and removes it from contact with the strap.

In the illustrated embodiment the device 4 may be shifted when the bolts 9 are free. The reel and treadle may also be moved along their respective shafts at the same time. This enables the mechanism to be used on boxes of various sizes. In order to do this it is necessary to provide the table with a series of notches 12, but obviously one of these may be sufficiently large to allow for the necessary adjustment.

The mechanism herein shown is illustrative of the invention and it will be evident that changes may be made in the construction within the scope of the claims without departing from the invention.

I claim as my invention:—

1. In a strapping machine, the combination with a table for holding a box, of binding means supported by the table beneath the edge thereof and comprising a slide forming a guide for a continuous strap fed to said box, said slide being vertically movable and normally held elevated by spring tension, a link carried by said slide, a treadle, a rod connecting said link with said treadle, a spring connected to said rod for holding said link elevated, a roller and a stud carried by said link, and a pivoted jaw carried by said slide and having its free end between said roller and said stud.

2. The combination with a carriage having a broad strap seat and a spring for raising the carriage, of arms located on the respective sides of the seat, a broad dog for said seat pivotally carried by the arms, links pivoted to the carriage upon the respective sides of the seat, a roller carried by the links in position to engage the dog and urge it toward its seat, a treadle, a connecting bar having a pair of ends connected respectively to the links for drawing the roller against the dog and lowering the carriage against its spring, and a spring between the end of the connecting bar and attached thereto for raising the same and raising the roller from the dog.

3. In a strapping machine, the combination with a reciprocatory carriage having a strap seat of a dog pivotally mounted on the carriage substantially parallel therewith, a member free to move independently of the dog and into cam engagement therewith for urging the same toward the strap seat, and means for actuating the said member.

4. In a strapping machine, the combination with a reciprocatory carriage having a strap seat, of a dog pivotally mounted on the carriage substantially parallel therewith, a link mounted on the carriage to move independently of the dog and having a cam engagement with the dog for urging the same toward the strap seat, spring means for releasing the link, and an actuator for moving the link and carriage against the action of the respective spring means.

5. In a strapping machine, the combination with a reciprocatory carriage having a strap seat, of spring means for moving the carriage in one direction, a dog pivotally mounted on the carriage substantially parallel therewith, means mounted on the carriage to move independently of the dog and having a lever action and a cam engagement with the dog for urging the same toward the strap seat, spring means for releasing the said means, and an actuator for moving the same and the carriage against the action of the respective spring means.

6. In a strapping machine, the combination with a reciprocatory carriage having a strap seat, of spring means for moving the carriage in one direction, a dog pivotally mounted on the carriage substantially parallel therewith, means mounted on the carriage to move independently of the dog and having a cam engagement with the dog for urging the same toward the strap seat, spring means for releasing the said means, and an actuator for moving the same and the carriage against the action of the respective spring means.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ELMER E. SLAGLE.

Witnesses:
LOUIS T. NOONAN,
MAX J. KOEPPEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."