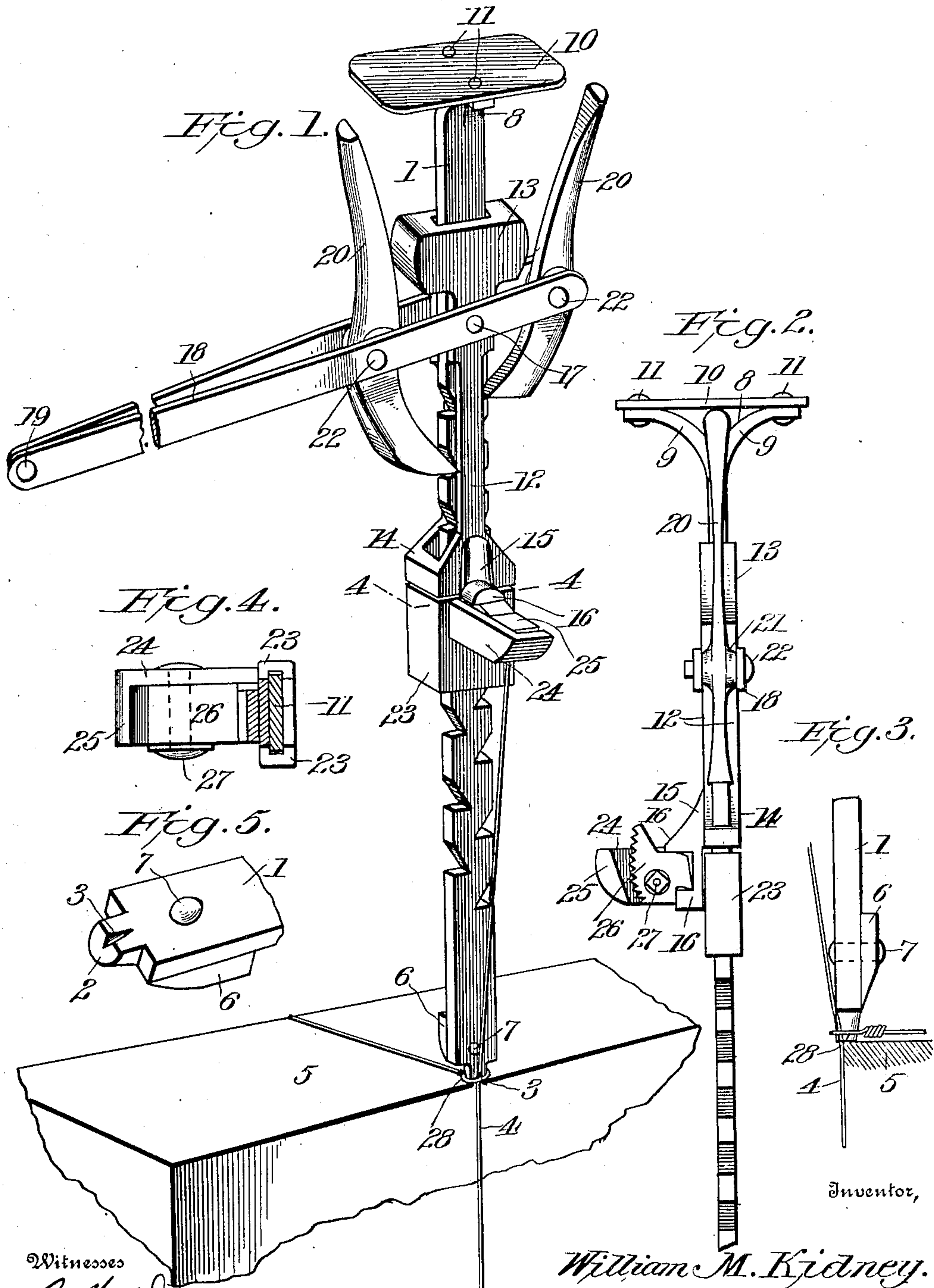


W. M. KIDNEY.
STRAPPING MACHINE.
APPLICATION FILED MAR. 26, 1908.

913,397.

Patented Feb. 23, 1909.



Witnesses
C. H. Walker,
J. M. Cathran.

Inventor,
William M. Kidney.
By E. E. Vrooman,
his Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM MINET KIDNEY, OF SEATTLE, WASHINGTON.

STRAPPING-MACHINE.

No. 913,397.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed March 25, 1908. Serial No. 423,222.

To all whom it may concern:

Be it known that I, WILLIAM M. KIDNEY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Strapping-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in strapping machines, and has for its object the provision of means for facilitating the stretching of a wire or strip of metal, around a package, box, or crate, and the tying or
15 fastening of said member in a stretched condition.

Another object of the invention is the construction of a very simple and efficient machine, for strapping or tying boxes, crates,
20 and receptacles, which comprises a minimum number of parts, and which machine is comparatively inexpensive to manufacture.

With these and other objects in view, the invention consists of certain novel constructions, combinations, and arrangement of
25 parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a perspective view of a machine constructed in accordance
30 with the present invention. Fig. 2 is a fragmentary rear view of the structure depicted in Fig. 1. Fig. 3 is a fragmentary view of the lower or inner end of the machine. Fig. 4 is a horizontal sectional view taken on line
35 4, 4, Fig. 1. Fig. 5 is a fragmentary, perspective view of the lower end of the ratchet-bar.

Referring to the drawings by numerals, 1 designates the ratchet-bar, which is provided,
40 at its lower end, with an extended lip or lug 2, which is grooved or slotted, as at 3. The groove or slot is adapted to receive a wire 4 for facilitating the bending or fastening thereof after the same has been stretched
45 upon a package or box 5. A plate or stop 6 is secured against one side of the ratchet-bar near its lower or inner end by any suitable fastening means, as for instance, a rivet 7. The upper or outer end of the ratchet-bar is,
50 preferably, slit or bifurcated, as at 8, producing two integral portions 9, 9, which are bent or extend outwardly, and have their ends terminating in substantially a horizontal plane, to which ends are secured a horizontal
55 or flat plate 10, by means of rivets or any other suitable fastening means 11.

A primary casing 12 is slidably mounted upon the ratchet-bar between portions 9 and the stop-plate 6, and said primary casing comprises surrounding-portions 13 and 14, 60 each connected to the other by parallel side-portions. The surrounding portions incase the ratchet-bar. The lower or inner surrounding-portion 14 is provided with an extension 15, having a pair of parallel lugs 16. 65 Integral with the side portions of casing 12, are trunnions or short-shafts 17, upon which is pivotally mounted a sectional handle 18. The handle 18 is formed, preferably, from two strips of flat metal that are closed together and secured at their outer ends by,
70 preferably, a rivet 19, whereas they are spread apart at their opposite end and the trunnions 18 extend through apertures in said sections, so that the handle is pivotally
75 mounted upon the primary casing. Positioned between the sections of the handle and upon opposite sides of the ratchet-bar, and in position for having their lower ends engage the ratchet-teeth of said bar 1, are
80 pawls or dogs 20, which have enlarged body portions 21 that are pivotally mounted upon transverse fastening means, as for instance, rivets 22, carried by the handle.

It will be obvious that when the operator
85 swings the handle upon the pivot 17, the pawls or dogs will engage the ratchet-teeth and will draw the primary casing upward or outward towards the bifurcated end of the ratchet-bar carrying the plate 10. The
90 pawls are formed with suitable handles upon their outer or upper ends, so that by the operator grasping said handles, the lower or inner ends of the pawls can be disengaged
95 from the teeth of the ratchet-bar and permit the primary casing to move downward or inward towards the stop-plate 6. The auxiliary casing 23 surrounds the ratchet-bar and is slidably mounted thereon. The auxiliary casing is provided with a right-angled extension or projection 24, which terminates
100 at its outer end in an angularly-disposed, inclined lug 25 that coöperates with a cam or jaw 26, which is pivotally mounted upon a rivet or suitable extension 27 carried by the
105 angularly-disposed portion 24; the dog 26 is provided, upon its outer end, with a toothed or roughened surface, which is adapted to coöperate with the inner surface of the inclined lug 25 for gripping a wire or strip of
110 metal. The inner end of the dog or cam 26 is formed with an extension, which projects

between the parallel lugs 16, so that when the primary casing is slid upon the ratchet-bar, the auxiliary casing will also be adjusted; furthermore, after the wire 4 has been placed between the inclined lug 25 and the cam 26, and a pull is exerted upon the primary casing towards the plate 10, the dog will be automatically closed upon the wire and grip the same, and as the handle 18 is swung upon its pivot, the primary and auxiliary casings will be drawn upward or outward on the ratchet-bar through the medium of the pawls 20, and, consequently, the toothed or roughened cam member will continue to grip the wire and prevent the same from slipping, and at the same time stretching the same upon the box or receptacle around which the wire or strips is wrapped. By pressing down upon the primary casing, after the pawls have been disengaged from the ratchet-teeth, the cam 26 will be automatically pivoted or swung upon its pivot 27 and moved to an open position, whereby the wire or strip can be quickly detached or removed from between the clamping jaws, constituted by the extension 25 and the cam or jaw 26. By forcing the upper or outer ends of the pawls 20 inward towards the ratchet-bar, the primary and auxiliary casings can be pushed or moved downward towards the stop-plate 6, and then the wire inserted, and, as stated above, stretched, for securing the desired tension. The wire 4 is placed in the notch 3 of the lip 2. The wire can be easily twisted or bent over the loop 28, and subsequently, wrapped around a portion of the wire for holding the same in its taut or stretched condition.

It will be obvious, from the foregoing description, that I have produced a very simple device for stretching a wire and holding it in its stretched position by the action of the pawls in lifting the means carrying the clamping jaw or cam, and, furthermore, after the wire has been stretched, and the whole machine turned downward to a substantially horizontal position relative to the top of the box or crate, for bending the wire contiguous to the lower end of the ratchet-bar, so there will be formed a hook engaging the loop 28, by moving the primary casing towards the stop-plate 6, after the pawls have been disengaged, the grip-jaw or cam-member 26 will be swung upon its pivot for releasing the wire or strip of metal, prior to the operator, or some special tool, wrapping or twisting the same around a portion of the wire surrounding the crate or box, which completes the strapping operation.

What I claim is:

1. In a machine of the class described, the combination with a ratchet-bar, of a primary casing carried by said ratchet-bar, said primary casing provided with a plurality of lugs, an auxiliary casing provided with an

extension terminating in an inclined lip, a jaw pivotally mounted upon said extensions contiguous to said lip and having a portion positioned between the lugs of said primary casing, whereby when said primary casing is drawn in one direction upon said bar, said jaw will be closed towards said lug, and means provided with pawls carried by said primary casing adapted to draw the primary casing longitudinally of the bar.

2. In a machine of the class described, the combination with a ratchet-bar, of a primary and an auxiliary casing carried by said ratchet-bar, means for drawing said primary casing towards one end of said bar, said auxiliary casing provided with an inclined lug constituting a fixed jaw, a pivotally-mounted jaw carried by said auxiliary casing and cooperating with said lug or fixed jaw, and means carried by said primary casing for swinging said pivotally-mounted jaw upon its pivot for opening or closing the same when said primary casing is moved longitudinally of said ratchet-bar.

3. In a machine of the class described, the combination with a ratchet-bar, of a casing slidably mounted upon said bar, said casing comprising a pair of end-portions and side-portions integrally connecting said end-portions, said side-portions of less width than said ratchet-bar, a lever pivotally mounted upon said side-portions, pawls pivotally mounted upon said lever and adapted to engage the ratchet-bar and positioned outside of said side-portions, wire-gripping means slidably mounted upon said ratchet-bar and positioned contiguous to said casing, means carried by the casing and cooperating with said wire-gripping means, whereby when said casing is drawn towards one end of said ratchet-bar the wire-gripping means will be actuated for gripping a wire or strand.

4. In a machine of the class described, the combination with a ratchet-bar, of a pair of members slidably mounted upon said ratchet bar, one of said members provided with wire-gripping means, the other member provided with means cooperating with said wire-gripping means for either holding the same in an operative or inoperative position, and means carried by one of said members and cooperating with said ratchet-bar for drawing both of said members longitudinally of said ratchet-bar.

5. In a machine of the class described, the combination with a ratchet-bar, of a primary and an auxiliary casing bolt slidably mounted upon said ratchet-bar, said primary casing comprising end-portions surrounding the ratchet-bar and intermediate portions positioned upon opposite sides of said ratchet-bar and integrally connected at their ends to said end-portions, said intermediate portions provided with trunnions or short shafts, a handle journaled upon said trunnions

nions, pawls pivotally mounted upon said handle and adapted to normally engage the ratchets of said bar, one of said end-portions provided with an extension terminating in parallel lugs, the auxiliary casing provided with a right-angled extension terminating at its outer end in an angularly-disposed, inclined lip constituting a fixed jaw, a jaw provided with a roughened end pivotally mounted upon the extension of said auxiliary jaw and cooperating with the fixed jaw, said pivotally-mounted jaw provided with a portion or extension positioned between the lugs, and said pivotally-mounted jaw adapted to be opened or closed when the primary casing is moved away or towards the auxiliary casing.

6. A strapping machine, comprising a

ratchet-bar, a pair of slidable members carried by said ratchet-bar, one of said members provided with wire or strip-gripping means, the other member provided with means cooperating with said wire-gripping means, whereby when the members are moved towards each other, the wire-gripping means will be thrown out of operation, and when said members are moved apart, the wire-gripping means will be placed in an operative position for gripping the wire.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM MINET KIDNEY.

Witnesses:

JAMES B. DOWD,
P. J. SHIELDS.