

M. E. LOBLEY.
HOOP STAPLING MACHINE.
APPLICATION FILED NOV. 1, 1910.

989,528.

Patented Apr. 11, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

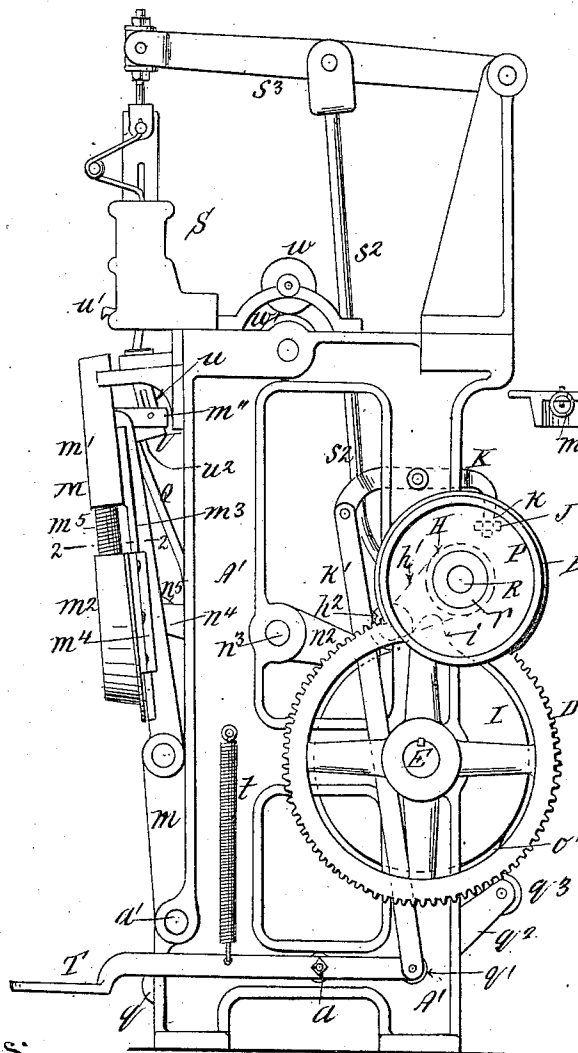
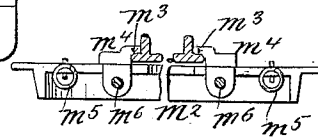


Fig. 2.



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3 SHEETS-SHEET 3.

Fig. 7.

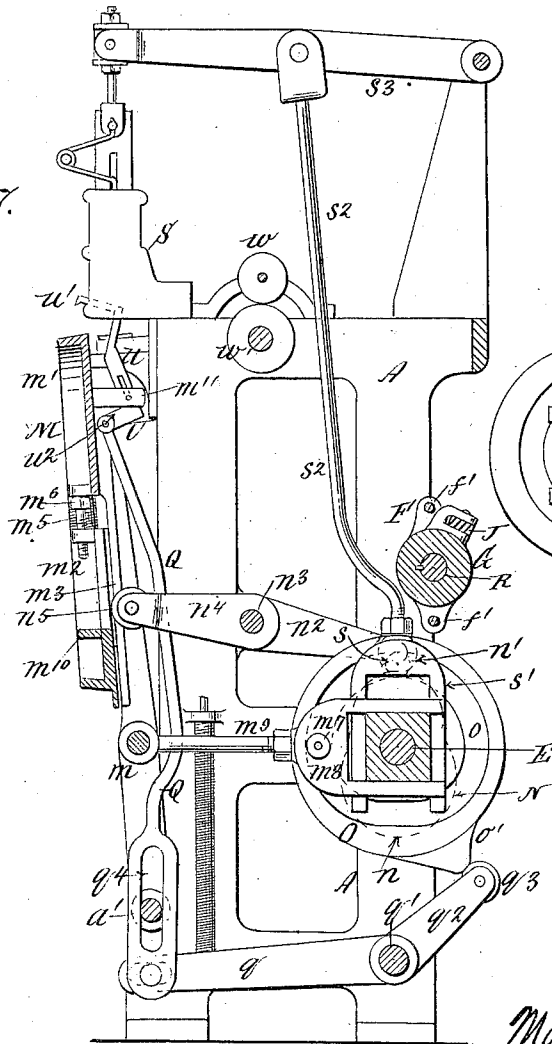
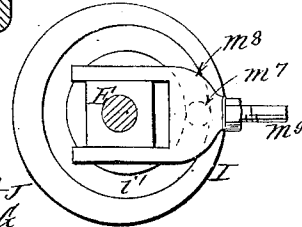


Fig. 8.



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UNITED STATES PATENT OFFICE.

MAX E. LOBLEY, OF NEW YORK, N. Y., ASSIGNOR TO BROOKLYN COOPERAGE COMPANY,
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HOOP-STAPLING MACHINE.

989,528.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed November 1, 1910. Serial No. 590,107.

To all whom it may concern:

Be it known that I, MAX E. LOBLEY, a citizen of the United States, residing in the city of New York, borough of Brooklyn, 5 county of Kings, and State of New York, have invented certain new and useful Improvements in Hoop-Stapling Machines, of which the following is a specification.

The object of my invention is to attain a 10 hoop stapling machine of greater speed and capacity than any heretofore in use, at the same time relieving the operator of the physical exertion heretofore involved in operating such apparatus.

15 The invention consists in the specific construction and arrangement of parts hereinafter described and claimed, distinguishing features being that the device is what may be designated as a single cycle machine; that 20 it is provided with a swinging hoop former, and with means for automatically operating the same and clamping the hoop thereon.

Incidentally the invention also includes 25 automatic means for expanding the hoop upon the former, and in the specific construction of the former itself, all as hereinafter fully set forth.

In the accompanying drawings, Figure 1, 30 is a side elevation of my improved hoop stapling apparatus; Fig. 2 is a sectional detail taken upon plane of line 2—2— Fig. 1, with the central portion broken away; Fig. 3, a 35 front elevation; Fig. 4, a rear elevation; Fig. 5, is a horizontal section taken generally upon plane of line 5—5— Fig. 3, with parts broken away for convenience of illustration; Fig. 6, is a section on plane of line 6—6— Fig. 40 5; Fig. 7, a vertical sectional elevation upon the general line of the center of the machine, the stapling mechanism being shown in outline only; Fig. 8, is a sectional detail view of the cam which rocks the hoop former.

In the drawings A, A', represent the side 45 standards of the apparatus rigidly secured to the floor or other support.

R, is a clutch shaft secured rigidly to both 50 of the side frames A, A', and projecting beyond the frame on the right hand side thereof, near which extremity is mounted loosely the power pulley P, between the collars r, r'. The inner side of the power pulley P, is formed with the concave conical surface p, to receive the conical portion c, of the clutch 55 cone C, which latter is also formed with the inner truncated surface c' for engagement

with the concave conical surface b, of the brake band B, which is rigidly secured to the outer side of the right hand standard A'. The clutch cone carries the driving pinion c², meshing with the gear D, secured to the cam 60 shaft E, mounted in suitable bearings in the standards A, A'. The driving pinion c², is of greater width than the gear D, so as to maintain contact therewith in either position of the clutch cone C. 65

f, f, are yoke pieces fitting over the hub of the driving pinion c², and between it and the collar c³. These yoke pieces f, f, are secured rigidly together and are connected by 70 rods f', f', to the cross head F, splined to the clutch shaft R. A spring f², is interposed between the cross head F, and the left hand standard A', and tends constantly to thrust the clutch cone C into engagement 75 with the driving pulley P.

The clutch cone is held normally out of engagement with the power pulley P, by the following mechanism. G, is a sleeve splined to the rigid shaft R, and formed with an inclined surface g, against which rests the 80 cam surface h, on the rocker cam H, mounted loosely on the shaft R, and provided with the rocker arm h', shown in dotted lines in Fig. 1. This rocker arm h', carries a contact 85 roller h², engaging with the periphery of the releasing cam I, mounted rigidly on the cam shaft E, and formed with the protruding lobe i, by which the cam H, is rocked at the proper time. The weight of the rocker arm h', and roller h², tends constantly to hold the latter in contact with the 90 releasing cam I.

Fulcrumed on the sleeve G, is the latch lever J, formed with the curved nose j, for 95 contact with the bearing shoulder f³, on the cross head F. The long arm of this latch lever J, is slotted longitudinally to receive the end k, of a rock lever K, fulcrumed on the standard A', and pivotally connected at its opposite end with the connecting rod 100 k', which is in turn pivotally connected at its lower end to the inner end of the treadle lever T, fulcrumed at a, to the standard A'.—said treadle lever being also provided with the retractile spring t, attached to it 105 and to the frame A', as shown in Fig. 1, for the purpose of returning the parts to their normal positions after the treadle has been depressed.

The act of depressing the treadle T, causes 110

the connecting rod k' , to rock the lever K, thereby swinging the latch lever J, so that its nose j , is thrown out of contact with the shoulder f^3 , on the cross head F, thus releasing the latter and allowing the spring f^2 , to force the clutch cone C, through the medium of the rods f' , f' , into engagement with pulley P, and hence causing the driving pinion c^2 , to impart motion to the gear D, and cam shaft E. Just prior to the completion of rotation of the cam shaft E, the lobe i , on the releasing cam I, contacts with the roller h^2 , on the rocker arm H, thereby causing the cam h , to force back the sleeve G, and the sleeve G, to force back the cross head F against the resistance of the spring f^2 . As this result is accomplished the nose j , of the latch lever J, is swung back into contact with the shoulder f^3 , on the cross head F, by reason of the action of the end k , of the rock lever K, on the slotted long arm of the latch lever J, as will be understood by reference to Fig. 5,—the retractile spring t , of the treadle T, assisting in the operation, through the medium of the connecting rod k' . Interposed between the cross head F and sleeve G, are buffer springs g' , g' , which ease the motion of the machine and obviate jar.

The hoop former M, is of peculiar form and is fulcrumed at its lower extremity on the cross bar a' , and consists essentially of two upright members, m , m , rigidly secured to the upper semi-circular segment m' , said upper segment and a lower semi-circular segment m^2 , slidable on the upright members m , m . For this purpose the upright members are formed with the flanges m^3 , which form ways for the lower section m^2 ,—the latter being held in place thereon by caps m^4 , and being suspended upon the upper section m' , by springs m^5 , m^5 . Adjustable stops m^6 , m^6 , upon one section or the other limit the upward thrust of the springs m^5 .

The position of the hoop former M, is controlled by a cam groove i' , formed in the left hand face of the releasing cam I, as shown in Fig. 8, in which groove i' , the roller m^7 , on the yoke m^8 rests, said yoke being connected with the hoop former M, by the rod m^9 pivotally connected to the upright members m , m .

N, is a peripheral cam rigidly secured to the shaft E, and having a lobe n , which acts on a roller n' , mounted on an arm n^2 , secured to the rock shaft n^3 , mounted between and upon the standards A, A'. The rock shaft n^3 , carries a bifurcated arm n^4 , between which is mounted a contact roller n^5 . The rear arm n^2 , is made to counterbalance the bifurcated arm n^4 , so that the roller n' , is held in contact with the cam N, by gravity. The cam N, is so timed that at the completion of the stapling of the hoop it rocks

the lever n^2 , causing the roller n^5 , to press down upon the medial bearing m^{10} , formed for contact therewith on the lower section m^2 of the former. This action increases the tension on the stapled hoop and corrects any distortion thereof.

It is to be understood that the hoop is placed by hand around the former M, while the latter is in its normal position inclined outward as shown in Figs. 1 and 7, in which position it will be seen that the upper section m' , is clear of the stapling mechanism, so that the ends of the hoop can be conveniently positioned.

Pivoted to a bracket m'' , on the rear of the upper section m' , of the former M, is a bell crank lever U, the longer arm u , of which is formed into and constitutes a clamping member u' , for holding the ends of the hoop in position on the former during the action of the stapling mechanism S. The shorter arm u^2 , of the rock lever u , is pivotally connected to the upper end of a releasing rod Q, the lower end of which is pivotally connected with an arm q , mounted on the rock shaft q' , having a rear arm q^2 , carrying a roller q^3 , which contacts with a peripheral cam O, on the shaft E. The lower part of the releasing rod Q is formed with the slot q^4 , the sides of which straddle the cross bar a' , so as to control the alignment of the releasing rod Q. Thus the upper end of the releasing rod Q, supports the short arm u^2 , of the rock lever U, in such manner that when the former M, is drawn inward carrying the rock lever u with it, the latter will be rocked downward so as to immediately clamp the ends of the hoop at the very start of the cycle of operations, thereby relieving the hands of the operator. Thus as soon as the hoop is placed, the operator depresses the treadle T, thereby starting the apparatus for one cycle of operations as above set forth. The action of the cam groove i' , on the roller m^7 , on the yoke m^8 , draws the hoop former M into position under the stapling mechanism S, with the ends of the hoop clamped in position, where they are held during the stapling operation.

The stapling mechanism is of any ordinary or well known construction and need not be described specifically herein. It is operated by a groove cam o , in the right hand face of the cam O, by means of a roller s , (shown in dotted lines in Fig. 7) upon a yoke S' , which is connected by the rod s^2 , to the lever s^3 , by which the stapling devices are directly actuated.

w , w' , represent wire feed guide rollers, of wire feed mechanism not otherwise shown, as not relating to the present invention.

At the completion of the cycle of operations, the lobe o' , on the periphery of the cam O, depresses the roller q^3 , and arm q^2 ,

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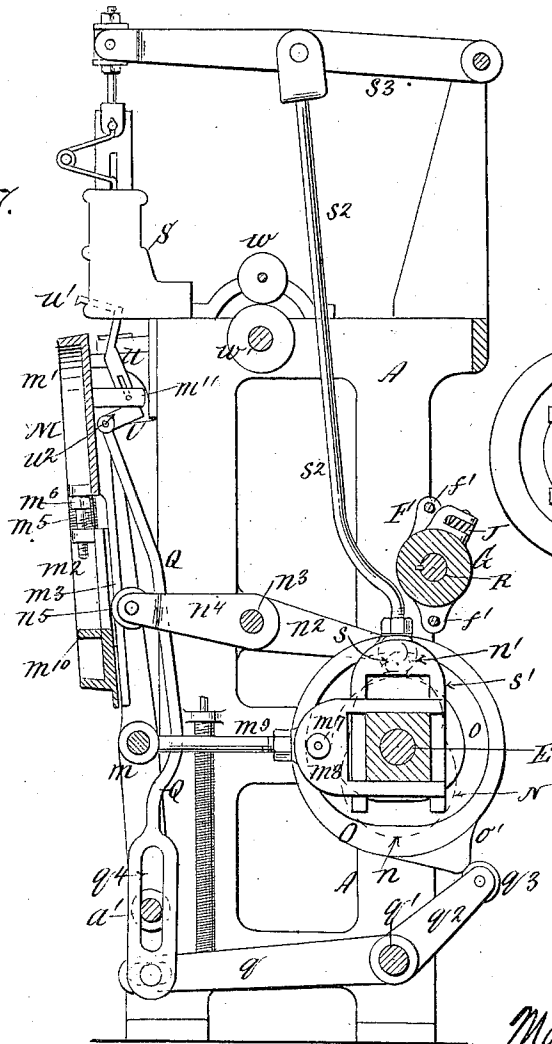
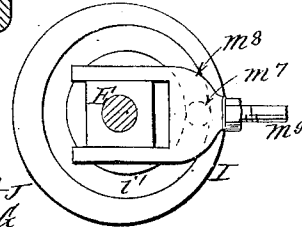


Fig. 8.



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