Jan. 29, 1924. 1,482,247

B. NOWLAND

COMBINATION STRETCHING AND SEALING MACHINE

Filed Dec. 1, 1921 3 Sheets-Sheet 1

Fig. 1.

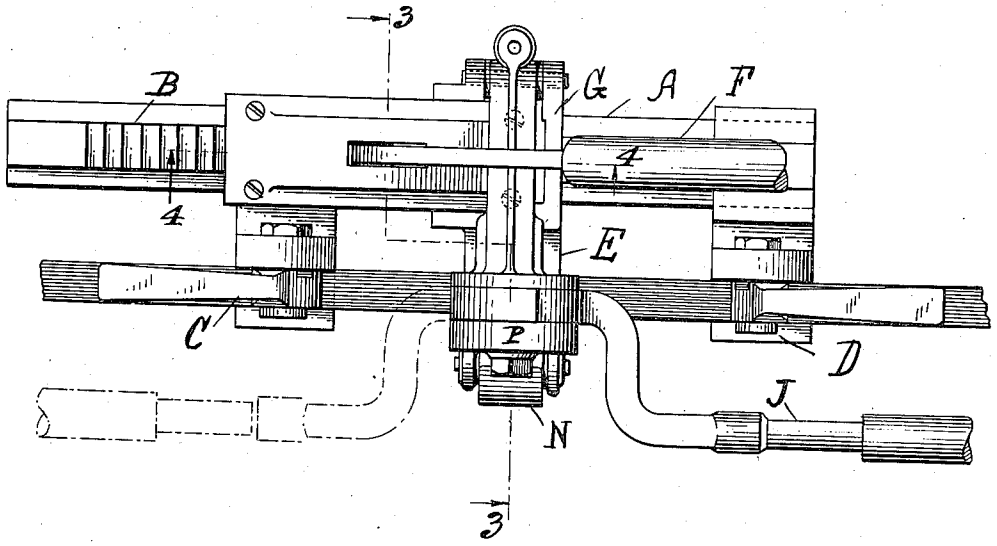
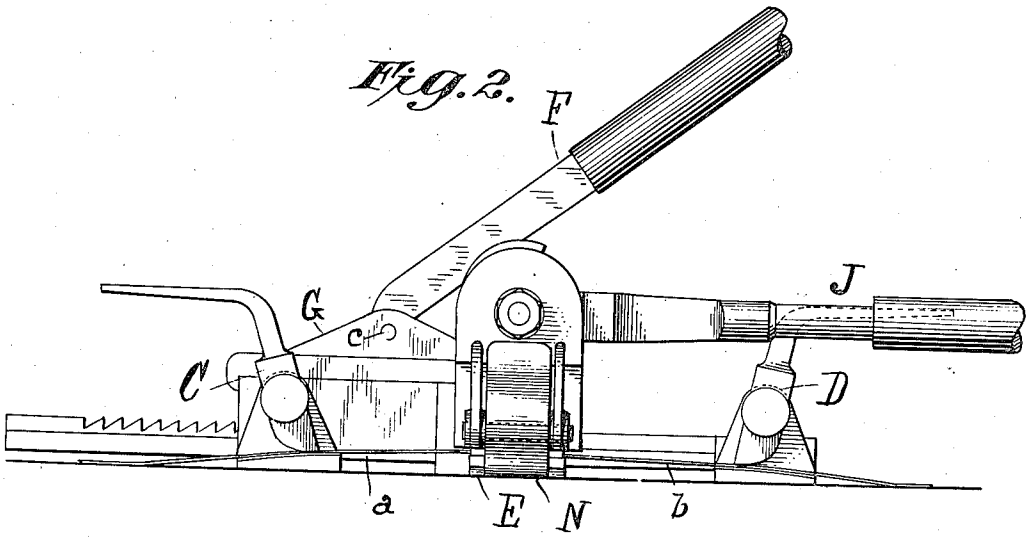


Fig. 2.



Benoni Nowland INVENTOR

BY W. P. Preble

ATTORNEY

Jan. 29, 1924. 1,482,247

B. NOWLAND

COMBINATION STRETCHING AND SEALING MACHINE

Filed Dec. 1, 1921 3 Sheets-Sheet 2

Fig. 3.

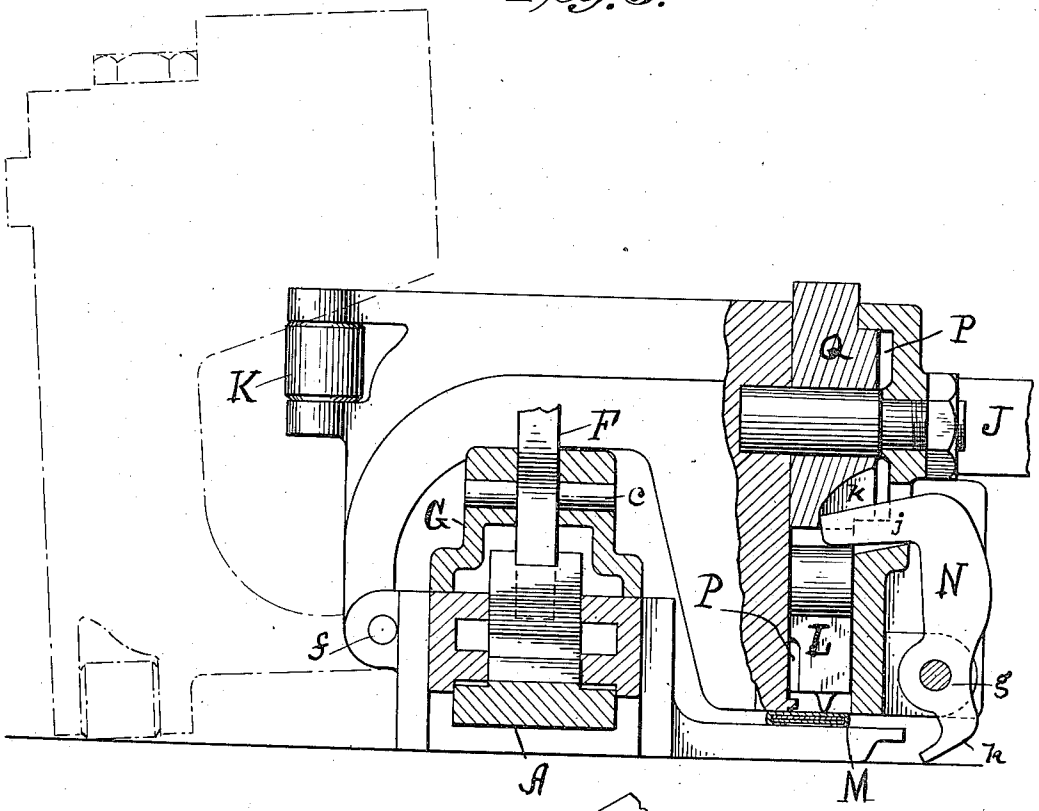
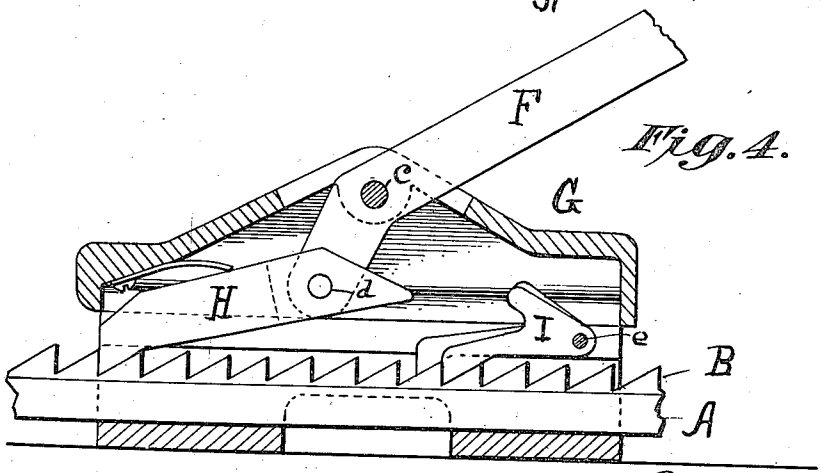


Fig. 4.



INVENTOR

Benoni Nowland

BY

W. P. Preble

ATTORNEY

Jan. 29, 1924. 1,482,247

B. NOWLAND

COMBINATION STRETCHING AND SEALING MACHINE

Filed Dec. 1, 1921 3 Sheets-Sheet 3

Fig. 5.

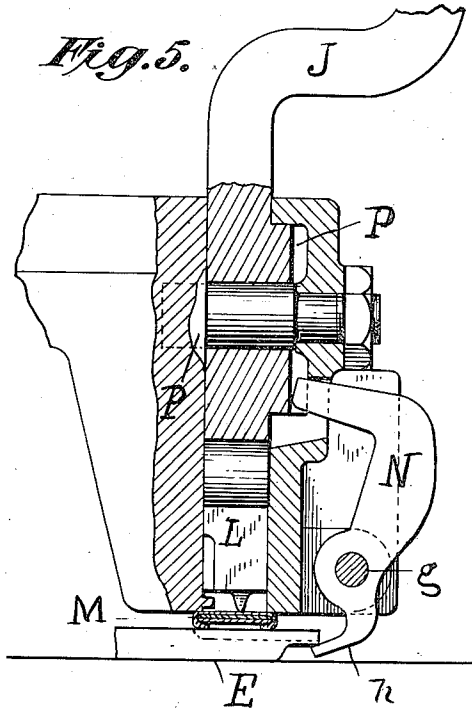


Fig. 8.

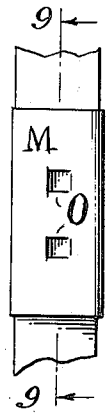


Fig. 6.

Fig. 9.

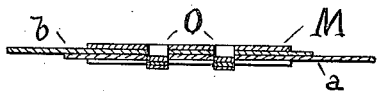
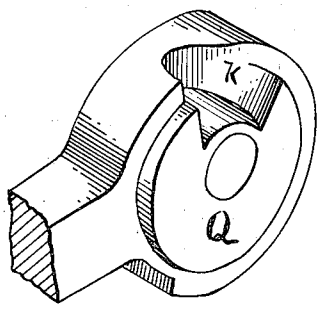
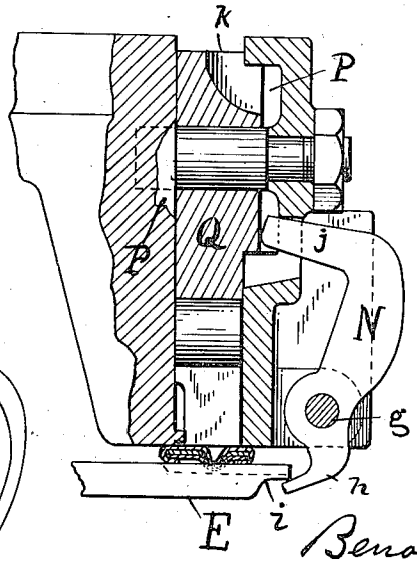


Fig. 7.





Benoni Nowland INVENTOR

BY

W. P. Preble

ATTORNEY

Patented Jan. 29, 1924. 1,482,247

UNITED STATES PATENT OFFICE.

BENONI NOWLAND, OF ENGLEWOOD, NEW JERSEY, ASSIGNOR TO TWISTED WIRE AND STEEL COMPANY, OF NEW YORK, N. Y.

COMBINATION STRETCHING AND SEALING MACHINE.

Application filed December 1, 1921. Serial No. 519,272.

To all whom it may concern:

Be it known that I, BENONI NOWLAND, a citizen of the United States, and a resident of Englewood, Bergen County, New Jersey, (whose post-office address is Box 166, Hudson Avenue Station, Englewood, N. J.), have invented a new and useful Combination Stretching and Sealing Machine, of which the following is a specification.

The object of my invention is to provide a unitary machine for box strapping purposes, in which not only is the strap stretched up to the desired tension but the retaining seal is applied and secured. So that all delays caused heretofore by the necessity of performing part of the operation by one machine and another part by another tool are avoided, as also the annoyance and losses attendant upon the misplacement and loss of one of the tools needed to complete the operation of wrapping and sealing the box or other package for transportation.

To this end, my invention consists broadly of a combined stretching and sealing machine which comprises a stretching and tensioning device and a sealing tool permanently but movably attached thereto with means whereby said sealing tool is thrown into or out of operative position as occasion requires.

One form of my invention is shown in the accompanying drawings, in which—

Figure 1, is a top plan.

Figure 2, is a side elevation.

Figure 3, is a section on line 3—3, of Fig. 1.

Figure 4, is a section on line 4—4, of Fig. 1.

Figures 5 and 6 are sectional views of the sealing tool; Fig. 5 showing the sealing tool getting in action, and Fig. 6 showing the same tool punching the seal.

Figure 7, is a detail of the cam which operates the sealing die.

Figure 8, is a top view of the complete seal.

Figure 9, is a section 9—9 of Fig. 8.

Same letters indicate similar parts in the different figures.

A, is the usual base plate on which is mounted the toothed rack B, and provided with a standard gripping device C D. It will be understood, that, as usual, the free end, *a*, of the box strapping Fig. 2, is inserted under the gripping device C, so that it overlaps the sealing plate E, Figs. 5 and 6, and the strap is then thrown around the box so that the uncut end, *b*, is placed under and is held by the gripping device D. This latter end is then drawn toward the sealing plate E so as to lie upon the free end, *a*. This is accomplished by the stretching mechanism which is operated by the handle F. This handle is pivoted, *c*, and the feeding or stretching means operated by this handle, are best shown in Figure 4. The pivot *c* is set in the frame or housing, G, through which the base plate A, and the rack, B slide as fed by the feeding pawl H, and the holding pawl I, both pivoted on the housing as at *d*, *e*. This construction is sufficiently similar to other stretching tools to be readily understood I think, without further description.

When by the operation of the handle F and pawls H, I, the uncut end of the strapping *a*, *b*, has been stretched to the desired tension and is lying overlapping the sealing plate E, the hitherto uncut end of the strapping is cut in any desired manner and overlapped strap ends are ready for the application of the seal shield or sleeve. Up to this point the sealing tool, which is best shown in Figures 3, 5, and 6, and which is operated by the handle J, has remained idle in the position shown in dotted line in Figure 3, resting upon the top of the box, by the roller K. The sealing tool is now, by means of the handle J, turned on the pivot *f*, into the position shown in Figures 1, 2, and 3, which brings the punching die, L, into position to act upon the sealing sleeve, M, which has been folded around the overlapping ends of the box strap.

Before operating this seal punch by the handle, J, the steadying or counter-pressure clutch, N, pivoted at *g*, upon the frame work of the punching die is turned from its inoperative position shown in Figure 3, to its operative position, shown in Figures 5 and 6 bringing the gripping finger, *h*, under the under cut flange, *i*, of the sealing plate, E. It will be understood that the object of this clutch member, N, is to hold and draw the sealing plate towards the sealing or punching die, partly to make a more effective and cleaner sealing operation, and partly to prevent the sealing die being forced into and

otherwise scarring the top of the box on which the apparatus rests. The pressure exerted by the sealing punch, in forcing its point down through the material of the shield and the two overlapping pieces of the strap, is naturally heavy, and unless the sealing plate is held toward the sealing die during the operation, either the seal will be apt to be imperfect, or the lower side of the sealing plate will be driven into the material of the box, until it meets sufficient resistance to steady the operation of the seal.

As shown in Figures 8 and 9, I prefer a double punching seal, O, as more substantial than a single punch. I therefore provide two punches side by side, free to move vertically in the chamber, P, in the frame or casing of the sealing tool, being depressed simultaneously or successively as preferred by the cam, Q, one form of which is shown particularly in Figure 7, and which may be integral with the handle, J, or otherwise operated thereby. It will be understood that when the handle, J, is turned into the proper position the eccentric surface of the cam, Q, will act to compress the sealing punches downward, and when the handle is turned in the other direction, the sealing punches are free to slide back into the chamber, P.

Another function of the cam, Q, is to operate the clutch member, N, the upper finger of which, *j*, plays in the recess, *k* of the cam, and according to the position of the cam, Q, this finger will be moved so as to make the clutch member assume the inoperative position shown in Figure 3, or the operative position shown in Figures 5, 6.

After the sealing has been completed the entire sealing tool is once more revolved around the pivot, *f*, in the position shown in dotted line in Figure 3, and the combination tool is now ready to receive a new length of box strapping to repeat the stretching and sealing operation.

I claim:

A combination stretching and sealing machine which comprises a base plate having a toothed rack mounted thereon, and provided with suitable gripping devices;—means whereby said rack is operated to alter the distance between said gripping devices as desired,—and a sealing tool remaining normally out of action but adapted to be revolubly swung into position to perform the desired sealing operation.

BENONI NOWLAND.

Witnesses:
MEYER L. OLF,
HERBERT U. CLUPP.