

H. G. MEAD.
BOX BLANK MACHINE.
APPLICATION FILED FEB. 13, 1911.

1,009,917.

Patented Nov. 28, 1911.

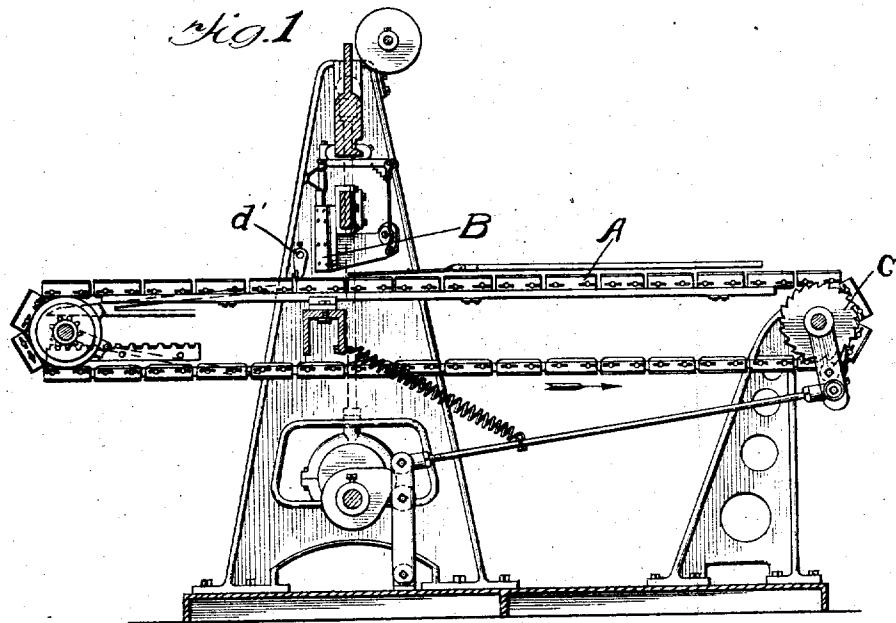


Fig. 3.

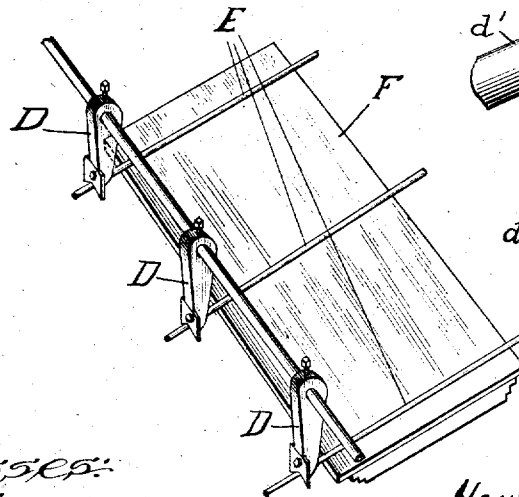
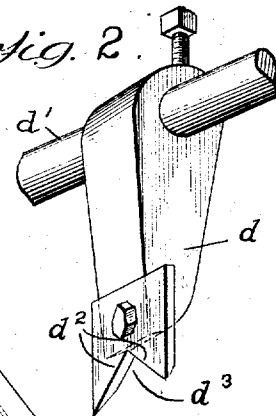


Fig. 2.



Witnesses:
L. B. Graham
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Inventor:
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UNITED STATES PATENT OFFICE.

HOWARD G. MEAD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAM P. HEALEY, OF CHICAGO, ILLINOIS.

BOX-BLANK MACHINE.

1,009,917.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed February 13, 1911. Serial No. 608,471.

To all whom it may concern:

Be it known that I, HOWARD G. MEAD, a citizen of the United States of America, and resident of the city of St. Louis, Missouri, have invented a certain new and useful Improvement in Box-Blank Machines, of which the following is a specification.

My invention relates to machines for making the blanks from which wire bound boxes are made.

It relates more particularly to machines of this kind in which an endless traveling work-holder is employed, such, for example, as the machine shown in United States Letters Patent Number 864,955 granted to E. Craig, William P. Healey, assignee, September 3, 1907, for improvement in box blank machines. In a machine of this kind, as described in said patent, provision is made for making blanks of different lengths. This is done, it will be understood, by varying the distance between the spacing blocks on the endless traveling work-holder. When this is done, it frequently happens that the measuring off of the distance clear around the work-holder does not come out even. In other words, there will be a space left which is too short for the length of blank being made. In such case, and prior to my invention, a waste of wire will occur when the wires are made to jump the said space, if the machine be operated continuously. In time this waste of wire will be considerable, and would increase the cost of production of the boxes. Such waste of wire can, of course, be overcome by taking out a few links of the chain, as this will eliminate the old space. This, however, takes some time, and it has been found that the users of this kind of machinery prefer to keep the chain or link belt work-holder the same in length for different lengths of blank. In other words, they prefer to lose by wasting the wire in jumping the odd space, than to consume the time necessary to take out some of the links of the traveling work-holder. At least, this is the method followed by some users of this machine.

The object of my invention is, therefore, to provide an arrangement whereby blanks of different lengths can be made on a machine of this kind, without the necessity of taking out and putting back any of the links of the endless traveling work-holder,

and without wasting the wire in the manner previously stated.

To this and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings—Figure 1 is a longitudinal section of a machine for making box blanks, which machine is of the kind shown in the previously mentioned Letters Patent, showing my improvement applied thereto. Fig. 2 is a perspective of one of the devices constituting my improvement, which devices are arranged immediately back of the staplers of the said machine, and immediately over the binding wires at the point where the blanks and wires pass out from under the staplers, whereby each blank must pass under these devices before being delivered from the machine. Fig. 3 is a perspective illustrating the manner in which the said devices of my improvement are mounted on a rod which extends transversely of the machine, as well as the way in which the said devices are each disposed over the path of travel of one of the binding wires, the illustration also including in perspective a portion of one of the box blanks.

As thus illustrated, the machine comprises the endless traveling work-holder A, the staplers B, and the feed mechanism C for said work-holder, which instrumentalities are, as indicated, of exactly the same construction as those shown in the previously mentioned Letters Patent. The said work-holder is, therefore, provided with spacing blocks of the kind shown in said Letters Patent, of any suitable character, for spacing the cleats of the blanks apart endwise, in the usual and well known manner. These spacing blocks are adjustable upon the chains of the work-holder, in the manner described in said Letters Patent, with respect to cleats of different lengths, whereby the length of the box-blanks can be varied at will. For some lengths of blank, however, the measuring off of the work-holder in this manner does not come out even and it frequently happens that an odd space is left which cannot be used, as it is too short for a blank, or too short for a complete section of a blank. In such case it is obvious, if the machine be run continuously, that a considerable waste of wire will occur, as it

will be compelled to jump the said space, and when the blanks are cut apart the wire where it was forced to jump the space will have to be cut out and thrown away. This is the result, assuming, of course, that no links are taken out of or put into the work-holder, in order to correct the difficulty. As previously explained, the average user, for various reasons, will prefer to let the wire jump the vacant space, and will not take the trouble to change the length of the work-holder. With a view, therefore, to correcting this difficulty, I provide the machine with the devices D which afford the opportunity for a new mode of operation of the machine, as follows: Each device consists of an arm d which is adjustably mounted upon a rod d' that crosses the machine immediately back of the staplers, above the work-holder, and of a pair of prongs d^2 at the lower end of the said arm, which prongs provide a V-shaped opening between them. It will be seen that these V-shaped openings or notches are directly over the binding wires E of the wire-bound box blank F, as shown in Fig. 3, but the said prongs d^2 do not hang down low enough to quite touch the upper surface of the blanks as they travel along below. Now, suppose that the work-holder has been measured off for a blank of a certain length, by adjusting the spacing blocks thereon, and after so doing an odd space is left over which cannot be used. In such case, and just as the said space begins to emerge or pass out from under the staplers, the attendant reaches over and lifts the blank that was last stapled upward and away from the work-holder, thus preventing the feeding of the binding wires. Then, and as soon as the next or unstapled blank has moved up close enough to the rear edge of the blank which the attendant is holding up, the said raised blank is allowed to settle into place again on the work-holder, with the result that the wires are secured to the next blank and begin to feed again, and with the result that no wire is wasted between the two blanks. The attendant will do this each time the odd or vacant space comes around, or any other arrangement can be employed for raising the blank, and thus no waste of wire is caused by the latter being compelled to jump or stretch over a space between two blanks which is greater than is ordinarily necessary for insuring wire end portions of suitable length for twisting together when the blanks are converted into boxes—that is to say, for twisting together to close the covers of the boxes in the usual and well known manner. This, however, and without some provision to the contrary, cannot be done without disarranging the wires, or without danger of so doing, and if they are disarranged there will then be trouble when the attendant allows the

blank to drop back onto the work-holder or when the next blank runs under the staplers. In other words, I have discovered that this method cannot be carried out with certainty unless something is provided back of the staplers for engaging and holding the wires in place. It is for this reason, therefore, that the devices D are provided, as they serve to engage the wires and hold them in place while the blank is being held up, and insure the proper stapling of the wires to the next blank as soon as it comes along and catches up with the one ahead which has been raised for that purpose. In this way, the machine can be adjusted for blanks of different lengths, without the necessity of changing the length of the chains of the work-holder, and without wasting the wire when a space is left over which cannot be used. By my invention, therefore, I make it possible to employ a new mode of operation for the machine, in the manner described, and with the result that a considerable saving in wire is accomplished.

What I claim as my invention is:

1. In a machine for making wire bound box blanks, a set of staplers, an endless traveling work-holder having the circumference thereof spaced or divided for blanks of a certain length, there being an odd space left over which cannot be used and which remains vacant, and means behind the staplers for engaging and holding the binding wires against disarrangement when the blank ahead of said space is lifted out of engagement with the work-holder to allow the blank behind to catch up.
2. In a machine for making wire bound box blanks, a set of staplers, an endless traveling work-holder having the circumference thereof spaced or divided for blanks of a certain length, there being an odd space left over which cannot be used and which remains vacant, and means behind the staplers for engaging and holding the binding wires against disarrangement when the blank ahead of said space is lifted out of engagement with the work-holder to allow the blank behind to catch up, said means comprising a depending arm disposed above each binding wire, the lower end of each arm being provided with a V-shaped groove for holding the wire when the blank is raised.
3. In a machine for making wire bound box blanks, an endless traveling work-holder having the circumference thereof spaced or divided for blanks of a certain length, there being an odd space left over which cannot be used and which remains vacant, and means for engaging and holding the binding wires against disarrangement when the blank ahead of said space is lifted out of engagement with the work-holder to allow the blank behind to catch up, the said machine being provided with a set of

staplers for securing the binding wires to the blanks, and the said means consisting of stationary members located in rear of said staplers, each device being disposed over the path of travel of one of the said binding wires, whereby said devices engage the wires when the stapled blank ahead of said vacant space is raised from the traveling work-holder.

- 10 4. In a machine of the class described, adapted for making wire bound box blanks, a set of staplers, and mechanism for preventing disarrangement of the wires, said

mechanism comprising a device disposed above the path of travel of each wire, each device being disposed behind a stapler and having its lower end provided with a flaring notch adapted to correctly position the wire.

Signed by me at St. Louis, Missouri, this 9th day of February, 1911.

HOWARD G. MEAD.

Witnesses:

W. J. McENIRY,
O. E. STEMME.

Correction in Letters Patent No. 1,009,917.

It is hereby certified that in Letters Patent No. 1,009,917, granted November 28, 1911, upon the application of Howard G. Mead, of St. Louis, Missouri, for an improvement in "Box-Blank Machines," an error appears requiring correction as follows: In the grant and in the heading of the printed specification, the name of the assignee was erroneously written and printed "William P. Healey," whereas said name should have been written and printed *William P. Healy*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 26th day of December, A. D., 1911.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

staplers for securing the binding wires to the blanks, and the said means consisting of stationary members located in rear of said staplers, each device being disposed over the path of travel of one of the said binding wires, whereby said devices engage the wires when the stapled blank ahead of said vacant space is raised from the traveling work-holder.

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