(No Model.)

L. W. ELDER.

BUNDLING MACHINE.

No. 306,729. Patented Oct. 21, 1884.

Fig. 1

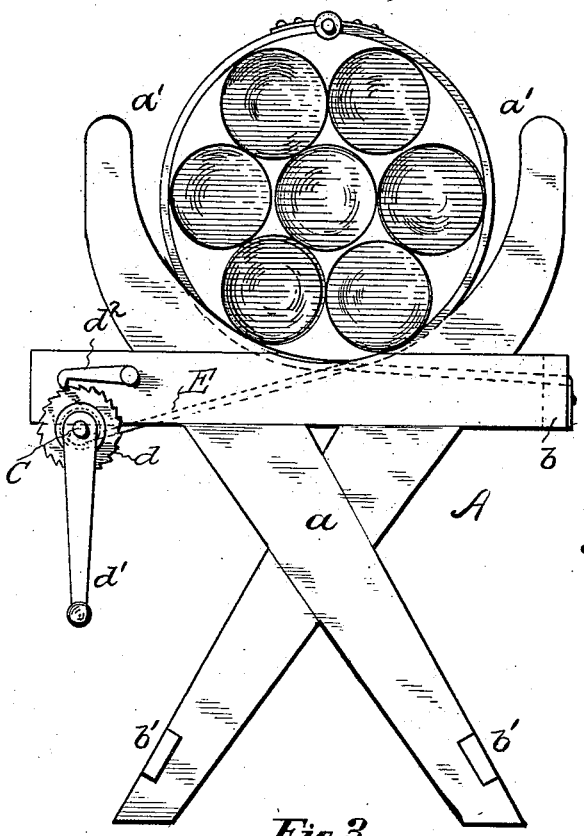


Fig. 2

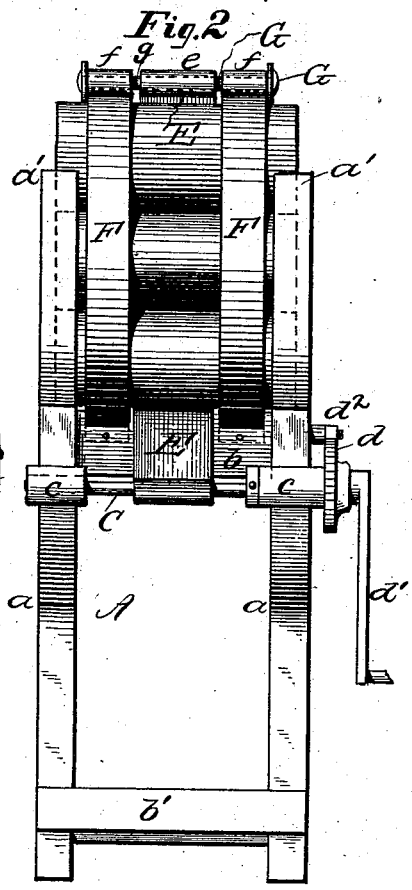


Fig. 3

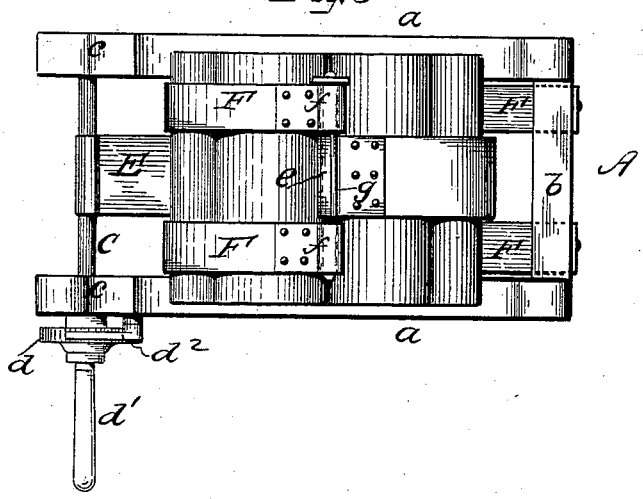
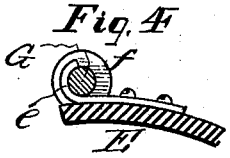


Fig. 4



WITNESSES:

Chas. F. VanHorn

Chas. W. Williams

INVENTOR,

L. W. Elder

By S. J. VanStavoren

Attorney.

UNITED STATES PATENT OFFICE.

LUCIUS W. ELDER, OF PHILADELPHIA, PENNSYLVANIA.

BUNDLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,729, dated October 21, 1884.

Application filed March 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS W. ELDER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bundling-Machines, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is an end view of my improved bundling-machine. Fig. 2 is a side elevation. Fig. 3 is a plan, and Fig. 4 is a broken detail section.

My invention has relation to machines for bundling rolls of paper, cloth, or other material or articles; and it has for its object to so construct the machine that it gives a rotary or rolling motion to the rolls or articles while being bundled, whereby they are caused to more closely settle together or impinge upon one another to make a more compact bundle and prevent any of its component parts separating from each other or falling out of the bundle after it is tied.

My invention has for its further object to provide a simple, durable, and easily-operated bundling-machine.

My invention accordingly consists of the combination, construction, and arrangement of parts, as hereinafter more specifically described and claimed.

In the drawings, A represents the frame of the machine, composed of end pieces, *a*, having curved, forked, or yoked upper ends, *a'*, for the reception of the parts to be bundled, and cross or tie bars *b b'*. At one side of the frame is a shaft, C, suitably mounted in bearings *c c*, and provided with a ratchet-wheel, *d*, and turning handle or wheel *d'*.

Upon frame A, adjoining the ratchet-wheel *d*, is a pivoted or spring pawl, d^2, for engagement with said wheel *d*, to hold or lock it and shaft C in its wound or turned position when the bundling operation is completed.

To the middle of shaft C a strap or band, E, is secured in any suitable way. The outer or free end of said strap has a hook, *e*, formed thereon or secured thereto, as more plainly shown in Fig. 4.

At each end of the cross-bar *b*, and adjoining the inner sides of the yokes *a'*, are attached straps F, the outer or free ends of which are formed or provided with eyes *f*, for the passage of a bolt or tie-rod, G, which connects said ends of straps F together, as shown, so as to leave a blank or intervening space, *g*, thereon between said straps, for attachment of hook *e* of strap E.

The operation is as follows: The rolls of paper, cloth, or other parts to be bundled having been placed in the yokes *a'*, the bands or straps F and rod G are passed beneath and around said parts or bundle to bring rod G to or near the upper part of the bundle, as illustrated. The strap E is then passed beneath and around the opposite side of the bundle until its hook *e* can be connected to the blank space *g* of rod G, as shown. The parts composing the bundle are then partially surrounded near their ends by the straps F F, and at their middle are correspondingly enveloped by strap G, which, however, proceeds from the bundle in a direction opposite to that of the straps F. It follows therefore that when the shaft C is turned and the strap E wound up thereon the parts of the bundle are given a rotary or rolling motion, which makes said parts settle more closely together and impinge upon one another with greater force, thereby making the bundle more compact. When the parts composing the bundle are sufficiently compressed, the winding operation is stopped, the pawl d^2 then holds or locks shaft C in a fixed position, to maintain the bundle in its compact form while being tied, after which the pawl is disengaged from ratchet-wheel *d* to admit of reversely turning shaft C, to loosen the tension of the straps F and E and effect a disengagement of the hook *e* of the latter from bar G, whereupon said straps fall away from the bundle, which can then be removed from the machine. Said straps or bands may be of leather or other like suitable material, or flexible metal bands may be used. In the former case the eyes *f* and hook *e* are made of metal and riveted to the straps, while in the latter case said eyes, hook, and straps are all formed integral.

I do not limit myself to the form of frame shown, as it is obvious that it may be vari-

ously configured and constructed and its operating parts be differently arranged without departing from the spirit of my invention.

What I claim is—

1. A bundling-machine comprising a frame having a receptacle for the parts to be bundled, two series of oppositely-arranged bands for encircling the bundle, and having free ends, means for uniting said ends, and a winding-shaft in gear with the ends of one of said series of bands, substantially as and for the purpose set forth.

2. In a bundling-machine, the combination of frame A, straps or bands F F, connecting-bar G, strap or band E, having hook *e*, and the winding-shaft C, substantially as shown and described.

3. In a bundling-machine, the straps F F, the free ends of which are united by a rod, G, in combination with a strap, E, adapted to be connected to said rod and to a winding-shaft, substantially as and for the purpose set forth.

4. The combination of frame A, having attached bands F F, the free ends *f* of which are connected by a rod, G, and the winding-shaft C, having band E, provided with a hook, *e*, substantially as shown and described.

5. The combination of frame A, bands F F, rod G, winding-shaft C, and band E, having hook *e*, substantially as shown and described.

6. The combination of frame A, bands F, having fixed and free ends and connecting-rod G, the strap or band E, having hook *e*, and the winding-shaft C, having a ratchet or locking mechanism, substantially as shown and described.

7. In a bundling-machine, the combination of straps or bands F, having eyes *f* and uniting-rod G, the band E, having hook *e*, and the winding-shaft C, substantially as shown and described.

8. The frame A, having attached bands F, provided with bar G, and the winding-shaft C, having attached band E, provided with a hook, *e*, substantially as shown and described.

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

LUCIUS W. ELDER.

Witnesses:
JOHN RODGERS,
S. J. VAN STAVOREN.