C. E. SAWYER.

Machines for Counting Labels, &c.

No. 204 097. Patented May 21, 1878.

Fig. 1.

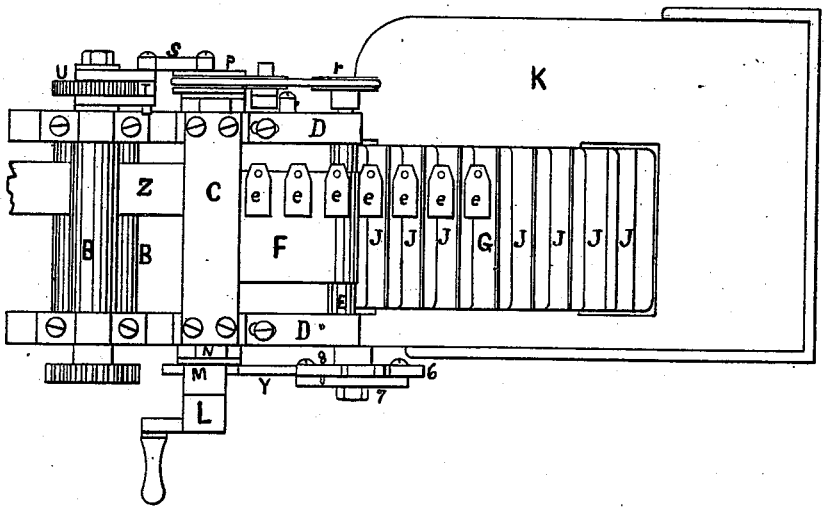
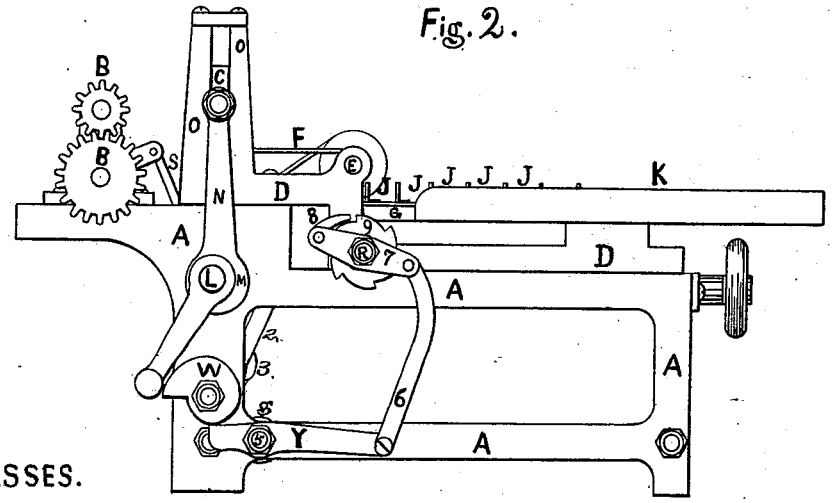


Fig. 2.



WITNESSES.

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INVENTOR.

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Fig. 3.

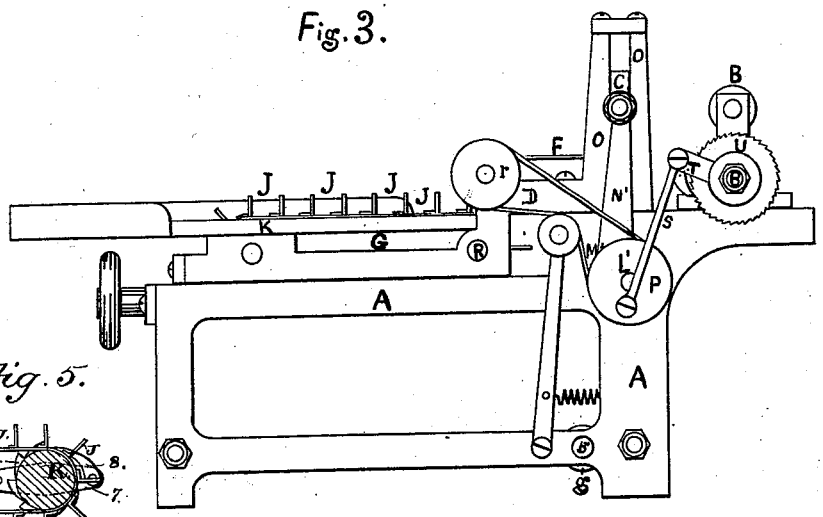


Fig. 5.

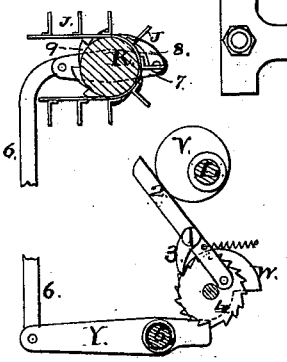
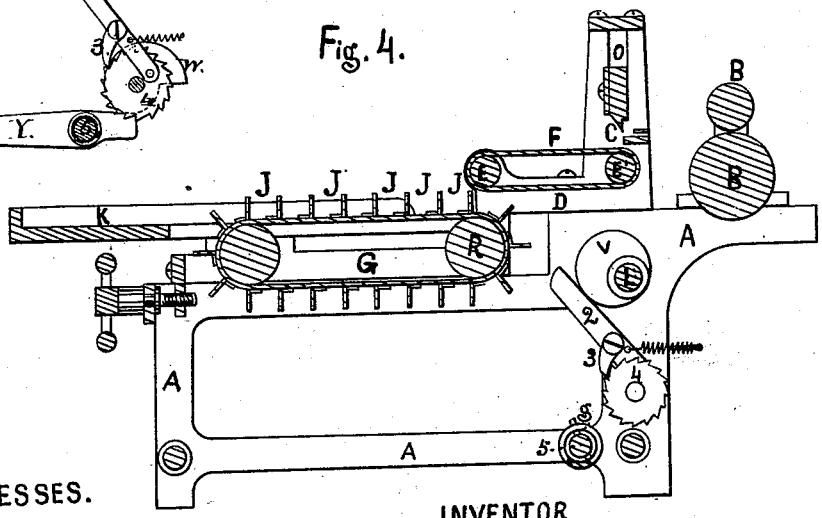


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES E. SAWYER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR COUNTING LABELS, &c.

Specification forming part of Letters Patent No. **204,097**, dated May 21, 1878; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, CHAS. E. SAWYER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Automatic Dividing Apparatus for Counting Cards, Tags, Labels, and similar articles, of which the following is a specification:

The object of my invention is to provide automatic mechanism to act in conjunction with feed-rolls and shears or cutters, so as to count or divide off cards, tags, labels, and similar articles cut from paper, card-board, or like material, into parcels of fifty, one hundred, or a thousand each, more or less, as may be desired; and it consists in the combination, with feed-rolls and shears, of an intermittent-moving disk, belt, table, or carrier, arranged in relation to said shears or cutters in such manner that when the same has made the desired number of strokes or movements so as to cut or sever from the material fed by such rolls the corresponding or desired number of cards, tags, labels, or similar articles, which are deposited, carried, or fall upon such disk, belt, table, or carrier, or into pockets or compartments arranged therein or upon the same, in such manner that when the desired number have been received upon the same or into the pocket or compartment it shall receive an intermittent motion, so as to allow the same number to be received into the next pocket or compartment in succession, from which they may be removed upon a table by the attendant, and put into packages containing the same exact number as removed from each compartment, thus counting or dividing the same into parcels of exact numbers, and without possibility of mistake, as heretofore when counted by hand. By this means a great amount of labor is saved. The packages are uniform in numbers contained in each, consequently more desirable for the consumer to buy.

Figure 1 is a plan view of my invention as connected with feed-rolls and cutters or shears. Fig. 2 is a side elevation of the same. Fig. 3 is a reverse side elevation of same. Fig. 4 is a vertical central section of the same. Fig. 5 is a detail view of the mechanism employed to intermittently operate the divider G.

A represents the frame of the machine, having suitable feed-rolls B, adjusted to feed the stock Z to be cut into cards, tags, labels, or similar pieces by the shears or cutters C, as heretofore.

In an adjustable frame, D, are mounted rolls E E′, carrying an endless belt or conveyer, F, as a means for allowing the cards or tags *e e e e* to fall upon, so as to be observed by the attendant, and permit the removal of imperfect ones, if desired, and substituted by perfect ones.

G represents the dividing apparatus, having an intermittent motion imparted to it by the pawl 8 and ratchet 9, or other mechanism, to impart the desired movement at proper intervals, so that when the desired number has been deposited in one of the pockets or compartments J to form a package, the divider G moves a short distance before the next one falls, so it shall be received into the next pocket or compartment, which in turn moves as before, until several have passed the point of reception. This allows the attendant to remove the cards or tags *e* from several of the compartments J at one time to a table, K, where they may be inclosed in wrappers containing the exact number in each, and put into boxes, secured, and labeled (ready for the consumer or market) before the compartments J J J J are filled, as before. By this means as many as ten thousand an hour may be counted and placed in packages, as above described, by one attendant.

The conveyer F may be removed or dispensed with altogether, in which case the dividing or counting apparatus would be placed near the shears or cutters C, so as to receive the cards or tags direct from the same.

The divider G may be constructed without pockets J, as the cards or tags may be held separate by a weight, spring, or otherwise, while the same is moving.

This dividing or counting apparatus may be constructed, as shown, with an endless belt, G, having thin metal partitions extending across the same at intervals, and secured thereto with rivets or otherwise; or it may be constructed circular, with partitions forming compartments converging toward its center; or it may be constructed to run back and forth, as a carriage upon ways, having the intermit-

tent motion imparted to it, while moving a sufficient distance to allow several compartments to be filled, and, when removed, to return instantly to its former position; but I prefer the endless belt G, as shown, operated by means of power applied to the driving-shaft L, to which is attached an eccentric, M, having an arm, N, connected to the shears or cutters C, which imparts a rising and falling motion to the same, sliding between the vertical guideways O.

To the opposite end of the driving-shaft L′ is connected a similar eccentric, M′, and arm N′, connecting with the opposite end of the shears. To this end of shaft L′ is also connected a pulley, P, carrying a belt to pulley *r* upon the shaft or drum E, carrying the conveyer F.

To the pulley P is connected a pitman, S, which operates a pawl, T, in the ratchet-wheel U, thus imparting the desired motion to the feed-rolls B.

Upon driving-shaft L, Fig. 4, Sheet 2, is a cam, V, which actuates a lever, 2, and pawl 3, engaging in the ratchet-wheel 4, connected to a short shaft, upon the opposite end of which is attached the cam W, Fig. 2. This cam W operates the lever Y, which is secured to the shaft 5, around which is coiled the spiral spring *g*, which has one end fastened to it, and the opposite end to the frame A, so that when the cam W is revolved it depresses the short end of lever Y, thus coiling the spring *g*, and at the same time raising the long end of the lever Y, which has an upright connecting-rod, 6, which moves an arm, 7, carrying the pawl 8 over a tooth in the ratchet-wheel 9, connected to the shaft or roll R, thereby moving the endless-belt divider G when the short end of the lever Y is passed by the point of the cam W, which allows the spiral spring *g* to suddenly recoil and move the lever Y in the opposite direction, thus bringing the pawl 8 with force against a tooth in the ratchet-wheel 9, and thus moving the divider G forward intermittently, so that the next parcel of cards or tags, when cut, shall be received into the next compartment, as before described.

This machine may be connected with an eyeleting-machine, or a machine for attaching patches to tags, so as to complete the tags at one operation, ready for shipping.

Having thus described my invention, what I claim is—

1. In a card and tag dividing machine, an endless belt, or other equivalent means therefor, having a series of compartments, in combination with shears or cutters and feed-rolls, substantially in the manner described, as and for the purposes set forth.

2. In the above-described automatic card and tag dividing machine, an endless belt, or other equivalent means therefor, having a series of compartments or spaces, actuated by a pawl and ratchet, or equivalent devices, in combination with a cam, lever, pawl, and ratchet, which impart an intermittent motion to the same, as and for the purposes set forth.

3. The above-described automatic card or tag counting machine, consisting essentially of feed-rolls, shears, and dividing apparatus, in combination with a pawl and ratchet, cam and lever, whereby an intermittent motion is imparted to the dividing apparatus, each space of which receives the same number of cards or tags as they are cut from the material, substantially in the manner described, as and for the purposes set forth.

4. In combination with feed-rolls B and cutters or shears C, the conveyer F and dividing mechanism G, substantially in the manner described, as and for the purposes set forth.

5. In combination with feed-rolls B and shears C, the endless dividing-belt G, compartments J, and table K, constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

CHAS. E. SAWYER.

Witnesses:
SYLVENUS WALKER,
H. S. TALBOT.