(No Model.)

A. E. NEWMAN.

SCUTCHING MACHINE.

No. 345,985. Patented July 20, 1886.

Fig. 1.

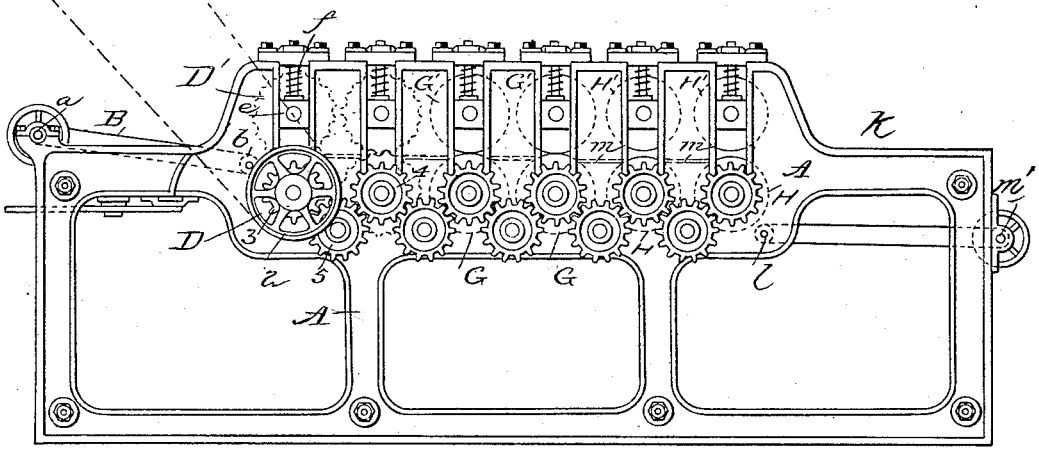
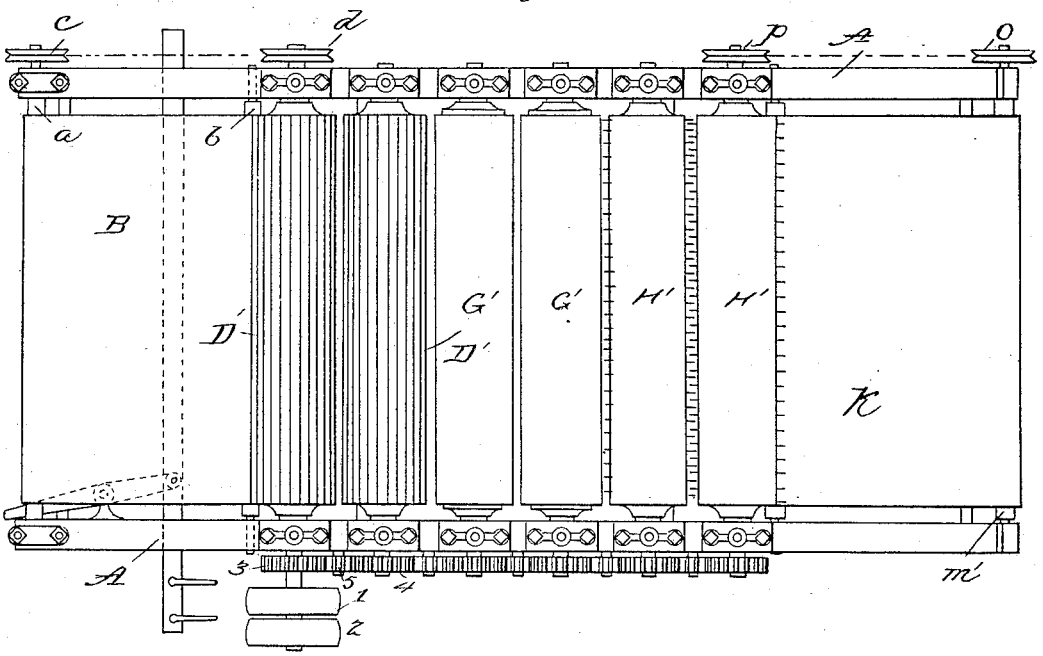


Fig. 2.



Attest:
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UNITED STATES PATENT OFFICE.

ANTON E. NEWMAN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LOUIS BECKHARDT, OF SAME PLACE.

SCUTCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,985, dated July 20, 1886.

Application filed November 21, 1885. Serial No. 183,557. (No model.)

To all whom it may concern:

Be it known that I, ANTON E. NEWMAN, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Scutching-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improved machine for breaking and removing the fiber from fiber-producing plants—such as nettles and plants of the urtica class, ramie, and the like.

It consists of breaking, rubbing, and combing mechanism combined in one machine, whereby these operations are all performed in one continuous operation.

In the accompanying drawings, Figure 1 shows a side elevation of my machine; Fig. 2, a plan view of the same.

The working parts of the machine are supported upon a frame, A, preferably of cast-iron. At the front end of the machine is an endless flexible feed-table, B, mounted upon rollers *a b*. The roller *a* is prolonged through its bearing and provided with a grooved pulley, *c*, which is driven from a pulley, *d*, on the shaft of one of the breaking-rollers. This causes the upper surface of the table to move toward the first breaking-rollers. The breaking-rollers are indicated at D D′. Of these the rollers D are underneath, and are driven and connected by gearing. The first lower roller has a pair of ordinary fixed and loose driving-pulleys, 1 and 2, on its shaft prolonged outside of its bearings, and on the same shaft is a cog-wheel, 3, which is connected to the cog-wheel 4 of the second lower breaking-roller by an intermediate gear, 5. The rollers D D′ are all fluted longitudinally. The lower rollers are in fixed bearings, but the upper are in movable bearings *e*, which are allowed vertical movement in guides, as shown, and are pressed down by springs *f*. The upper rolls are turned by reason of their contact with the lower ones. Behind these two sets of breaking-rollers are two sets or pairs of crushing or rubbing rollers, (marked G G G′ G′.) Of these rollers the lower have cog-wheels on their shafts with intermediate gears for communicating motion from the last lower fluted roller, as shown clearly in Fig. 1. The upper crushing-rollers are mounted in movable bearings with springs pressing them down, as in the description of the two preceding rollers. These upper rollers are driven also by frictional contact with the lower ones. Their surfaces are smooth, and preferably formed of porcelain. Behind these rollers are two other pairs of rollers, the lower being marked H H, and the upper H′ H′, these rollers being driven in the same manner as the rollers that precede them. The surface of these are provided with combs such as are ordinarily used for combing fibers.

Between the pairs of rollers are tables *m*, which support the stalks of fiber and conduct them from one pair of rollers to the next. These tables are simply sheet-metal plates, preferably interposed between the peripheries of the lower rolls, thus preventing the fiber from falling to the ground between the said rollers.

At the rear end of the machine is another endless flexible table, K, mounted on shafts *l m′*. The shaft *m′* has a grooved pulley, *o*, driven from another grooved pulley, *p*, on a shaft of the last roller H. The upper surface of this table moves to the rear.

In operating this machine the plants are laid upon the first table at the front end of the machine with the stalks in line, and are carried endwise to the fluted rollers, the surface of the table being in a plane with the contact-surfaces of those rollers. The fluted rollers receive the stalks and break them, passing them onto the second set, which subjects them to the same operation, the broken woody parts, which are obtained from the fiber being directed in front of the rollers by means of the tables *m*, as heretofore described. From the breaking-rollers the broken plants pass to the crushing-rollers having the porcelain surfaces, and these crush the remaining woody parts, rubbing off the outside bark by the drag of the upper rollers. From the porcelain rollers the crushed and rubbed parts pass to the comb-rollers, by the drag of the upper roller, which comb the fiber and deliver it upon the endless table K, by which it is carried to the rear of the machine and discharged. The plants are delivered to the machine in a moist state as they come from the tank in which they are heated by a process set forth in an application filed by me in the United States Patent Office

November 14, 1885, No. 182,806, or by any other suitable process, to soften wood fibers.

I claim as my invention—

1. In combination with the frame of the machine, a feed-table, fluted rollers in rear of the feed-table, the lower roller being in fixed bearings, and the upper one in movable bearings and provided with springs, smooth rollers placed next in rear of the fluted rollers, the lower roller being in fixed bearings, and the upper one in movable bearings, and provided with springs, and next in order after this comb-rollers, the lower one in fixed bearings and the upper one in movable bearings, and provided with springs, the lower rollers of each set being connected by gears, and the sets being adapted to operate in succession upon the plants, substantially as described.

2. The combination, with a frame, the endless feed-table and the upper and lower fluted rollers, of the upper and lower crushing or rubbing rollers, and the upper and lower comb-rollers, the lower rollers of the pairs being in fixed bearings, and connected by gears, and the upper ones in movable bearings and pressed down by springs, and the endless delivery-table, the parts being arranged to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANTON E. NEWMAN.

Witnesses:
F. L. MIDDLETON,
CHAS. L. STURTEVANT.