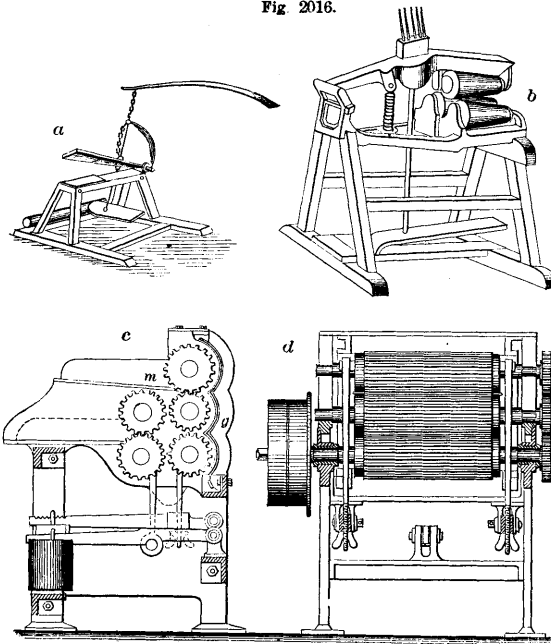


Fig. 2016.



Flax-Brakes.

Flax-brake. 1. A machine for removing the woody and cellular portion of flax from the fibrous. The hemp-brake is substantially similar in its construction and identical in its purpose.

The first mode adopted may be assumed to have been beating the rotted flax with a stick on a flat stone, alternating with rubbing by the hands. A sword of wood which descends upon the stalks laid over a pair of slats set edgewise, a farther improvement, which is shown at *a*, in which the sword is drawn down by a treadle and lifted by a spring-pole. To this succeeds a pivoted jaw with a series of parallel longitudinal serrations descending upon a similarly provided jaw on the bench.

b is a machine having a system of three rollers, the upper one of which is attached to a lever which draws it down upon the other two by means of a treadle, clamping the flax, which is then drawn through by hand, breaking the *shives* from the *hare*. This is repeated as often as may be necessary, raising the head each time for the insertion of the flax. This part of the process being completed, the flax is reduced to a fine straight fiber by means of the hackle above the lever.

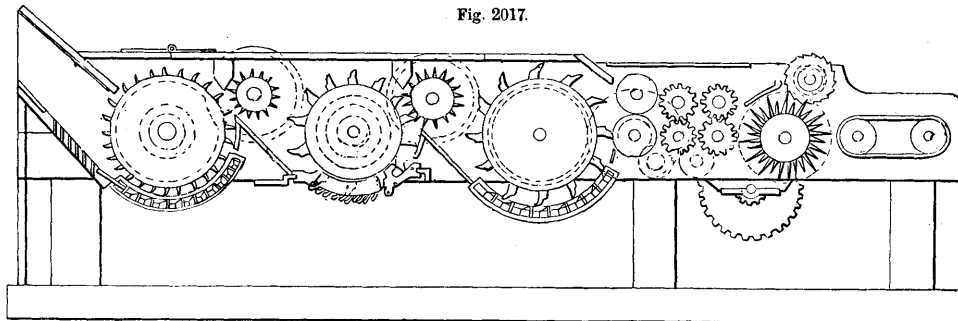
The machine shown in side and end elevations *c d* has cast-iron fluted rollers, five in number, arranged in

two vertical series, the front one of two rollers and the back one of three.

The flax straw fed into the machine at *m* passes between the top and middle rollers of the back series, and is directed downward by the back plate *g*, so as to pass between the middle and bottom rollers of the same series and then through the two rollers of the front series. The rollers are all driven and their ends have plain parts truly turned so that the flutes of one roller work into the spaces of the next adjoining roller, and leave a space for the flax straw to pass through. The rollers are weighted, and the pressure can be regulated as required.

Fig. 2017 shows a machine for consecutive rotary

Fig. 2017.



Flax Brake and Cleaner.

treatment. The devices are for drawing, straightening, and extending a layer of tangled flax so as to reduce it to a thin, even sheet of parallel stalks ready for the breaker, scutcher, beater, and picker, to which it is passed directly and continuously.

The drawing-cylinder has alternately long and short teeth, and the roller above has indentations in the peripheries of its annular rings for impaling the

stalks. The scutching and cleaning cylinders have flat, narrow, deep teeth, with inclined front edges, slightly hooked at the ends. The teeth of the picking-cylinder are made of pointed round wire, and are inclined backward at their bases, their points curving forward. The concave of the cleaning-cylinder is formed of parallel curved grate-bars, between which pass the teeth of the cylinder. The fiber is forwarded between each cylinder by chute and toothed shell roller.

2. A machine for shortening flax staple to adapt it to be worked by a given class of machines.