

(No Model.)

J. SHINN & A. F. FULLER.

MACHINERY FOR BREAKING AND SCUTCHING FLAX, &c.

No. 277,517.

Patented May 15, 1883.

Fig. 1.

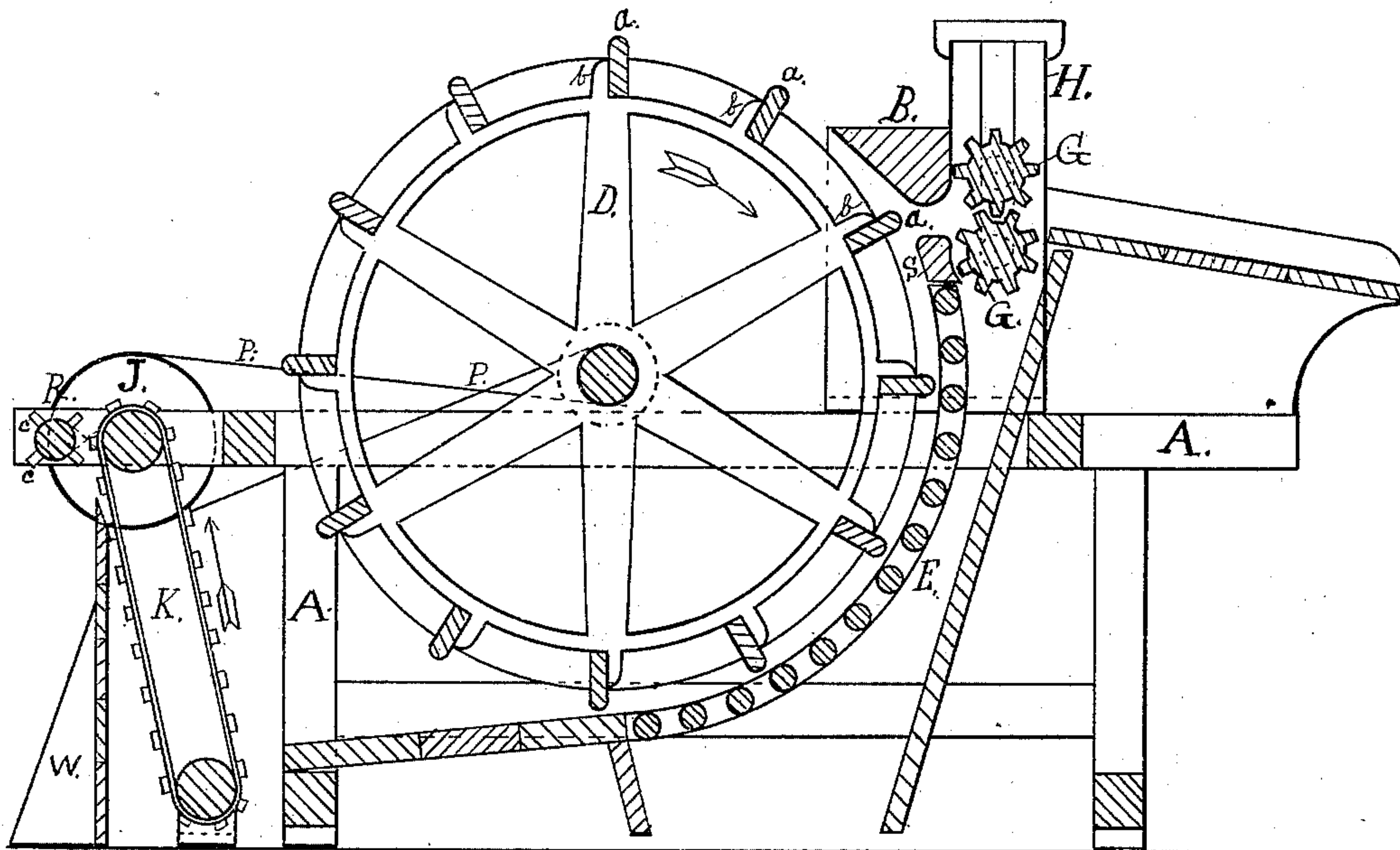
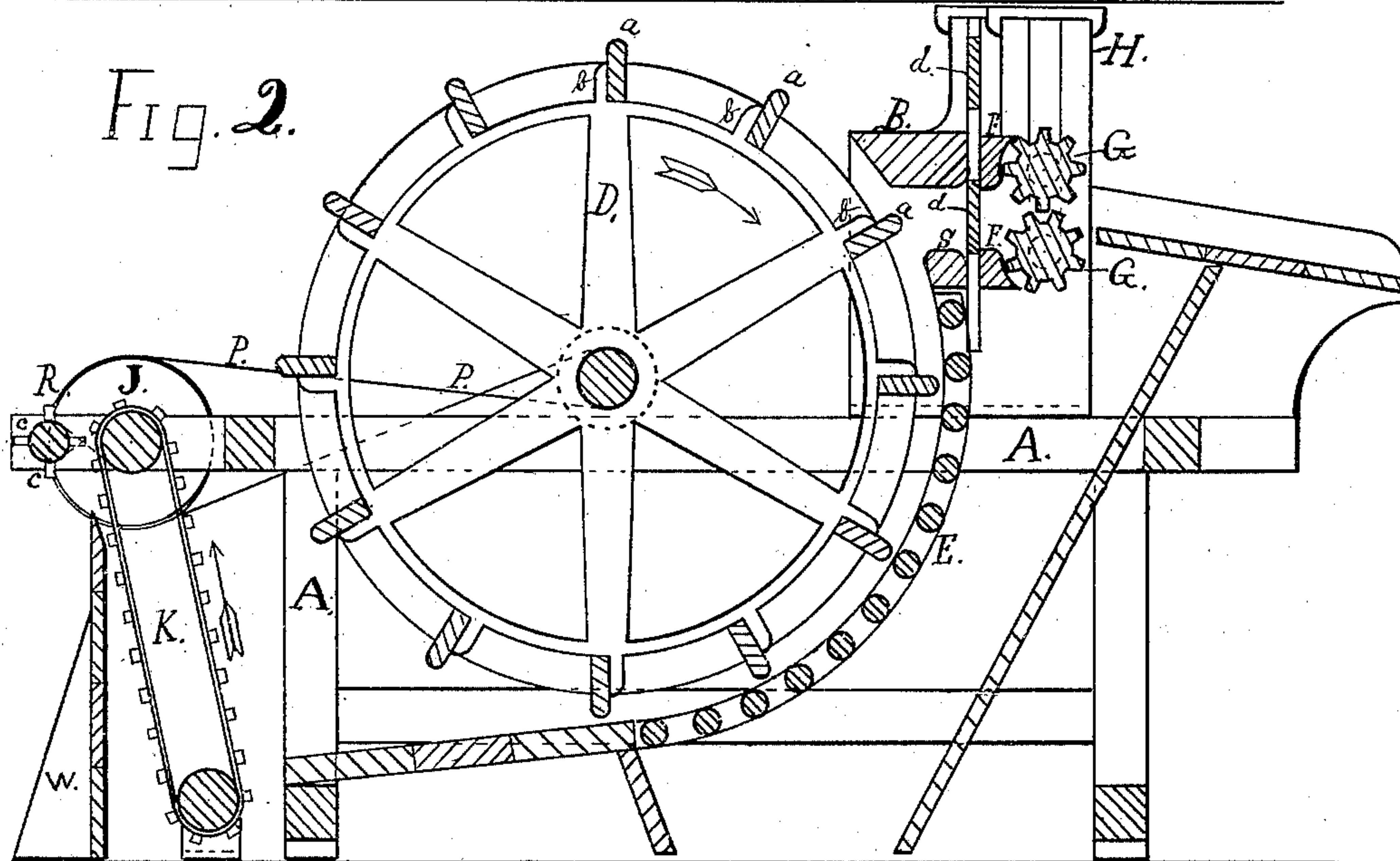


Fig. 2.



WITNESSES.

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MACHINERY FOR BREAKING AND SCUTCHING FLAX, &c.

SPECIFICATION forming part of Letters Patent No. 277,517, dated May 15, 1883.

Application filed April 3, 1882. (No model.)

To all whom it may concern:

Be it known that we, JOHN SHINN and ABBOTT F. FULLER, of the city of Philadelphia, and State of Pennsylvania, have invented new and useful Improvements in Machinery for Breaking and Scutching Flax, Hemp, and other Similar Plants, of which the following is a specification.

Previous to our invention the breaking and scutching of flax, hemp, and other like vegetable fibers on one and the same machine and by one operation have been done by machinery consisting of one or more pairs of fluted rollers for feeding and breaking, and a cylinder for scutching; or by a pair of feeding-rollers and a reciprocating break and a scutching-cylinder, as is shown in Patent No. 233,949, dated November 2, 1880. In all such machines as above described of which we have knowledge the feeding and breaking rollers are arranged to feed the straw or stalks of fiber into the machine on a level with or below the center of the scutching-cylinder. The stalks of fiber, when so fed on a level with or below the center of the cylinder, are struck by the paddles or beaters on the cylinder and bent not exceeding a right angle, in most cases less, and the lines of fibers will play between the paddles and the grate; and the scutching-cylinder does not act on the fibers to clean them as well as when the feed-rollers and bed are arranged according to the first part of our invention, the object of which is to arrange the feed-rollers and bed above the center of the scutching-cylinder, so that the stalks of fiber will be fed into the machine above the center of the scutching-cylinder, and the paddles on the scutching-cylinder will, when striking the stalks, bend them under the projecting bed, so that the fracture in the "bone" will be bent at more than a right angle and cause the fibers to hug the paddles on the scutching-cylinder, thereby giving them a better opportunity to knock off the shives from the fibers, as will be hereinafter described.

The object of the second part of our invention is the arrangement of a device for separating the tow from the shives as the tow and shives are blown from the machine; and it consists in the combination and arrangement of

an endless slatted and traveling apron with a roller provided with wings for brushing or wiping the tow off the slatted apron, and a dividing-partition for separating the tow from the shives, all as will be hereinafter described, referring to the annexed drawings, in which—

Figure 1 is a vertical section of a breaking and scutching machine constructed according to our improvements. Fig. 2 is a vertical section of a breaking and scutching machine showing our improvements, and a reciprocating break using two beaters, two breaking-beds, and one breaking and scutching bed.

Similar letters refer to similar parts throughout the several views.

A represents the frame of the machine, which may be made of wood or iron.

D is the scutching-cylinder mounted on the main shaft. This cylinder is constructed of two cast rings or spiders. These rings are cast with brackets *b b*. To these brackets are fastened iron or steel blades *a a*.

E is a grate formed of round iron bars. This grate is old, in common use, and well known to the trade.

H represents one of the housings, in which is mounted two fluted feed-rollers, G G. The feed-rollers are driven by an open and cross belt and spur-gears, as is shown in Patent No. 233,949, November 2, 1880.

S is a stationary bed bolted to the housings H. This bed is made to project over the circle described by the blades *a a* on cylinder D. The feed-rollers G G and bed S are mounted on the frame A, so as to feed the stalks into the machine above the center of the cylinder, so that when the paddles *a a* strike them they will be bent under the projecting bed S, and the fibers will hug the blades of the cylinder as they are being fed into and out of the machine.

The height to set the bed S and feed-rollers G G above the center of the cylinder will be governed according to the diameter of the cylinder D. We find in practical use for a thirty-six-inch cylinder to elevate the bed S four inches above the center of the cylinder gives good results and works well, and will thoroughly break and scutch flax-straw without the aid of any other breaking.

The second part of our improvement is constructed as follows: At the back of the machine is mounted on two rollers a slatted apron, K, which is constructed of two endless belts
 5 of leather about one and a half to two inches wide. To these belts are screwed wooden slats about one inch wide and two inches apart. The top roller is hung in the frame A, the bottom one in stands fastened to the floor, and
 10 set so as to make the apron run on an incline, as shown in the drawings. The top roller is the driver, and is driven by pulley J and cross-belt P. R is a roller mounted in frame A. It can be adjusted so that the wings *c c* will wipe
 15 the slats of the apron K. This wiping-roller R is driven by a belt from a pulley fastened to pulley J. The roller R should travel at a greater velocity than the apron K. The wings in the roller may be made of wood, leather, or
 20 thin iron. W is a board partition fixed to the floor upon which the machine stands.

The operation of our improved machine is as follows: The cylinder D runs in direction shown by the arrow. The flax or other fibers
 25 to be cleaned are fed into the machine. The rollers G G partially break the straw, and as it is fed over the bed S the blades *a a* strike, break, and bend the straws under the projecting bed S, so that the fractured shives are exposed
 30 to the action of the paddles, and the rapid motion of the cylinder will knock off the shives. Most of them will be knocked or blown between the grate-bars. When the straws have been fed into the machine so far that the rollers G
 35 G just hold the ends the motion of the rollers G G is reversed and they feed out of the machine. When the ends of the straw are reversed on the table those ends are fed into the machine and cleaned, as described in Patent
 40 No. 233,949, November 2, 1880. The speed for

a thirty-six-inch cylinder should be about two hundred and eighty to three hundred revolutions per minute. As the tow is driven out at the back of the machine it will be caught on the slats of the apron K, and such shives as
 45 are blown out with the tow will be blown through the slats and against the partition W. As the tow is raised by the apron moving in the direction of the arrow it will be knocked
 50 off by the wings on roller R, and will fall down on the left-hand side of partition W, separating it from the shives.

It is obvious that our improved tow-cleaner may be used on a machine having simply a scutching-cylinder, the breaking being done
 55 on another machine.

We do not claim a scutching-cylinder, feeding-rollers, and bed when the rollers and bed are arranged to feed the stalks of fibers into the machine on a level or below the center of
 60 the scutching-cylinder; but

As our invention we claim—

1. The combination of breaking or feeding rollers and a projecting bed, S, with the scutching-cylinder D, the feed-rollers and bed
 65 S being arranged to feed the straw or stalks into the machine above the center of the scutching-cylinder, as shown, described, and for the purpose specified.

2. In combination with the breaker and
 70 scutcher shown and described, the traveling slatted apron K, cleaning-roller R, and dividing-partition W, as shown, described, and for the purpose set forth.

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Witnesses:

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