A. Y. B. Orr,

Cutting Shingles.

No. 15,302. Patented July 8, 1856.

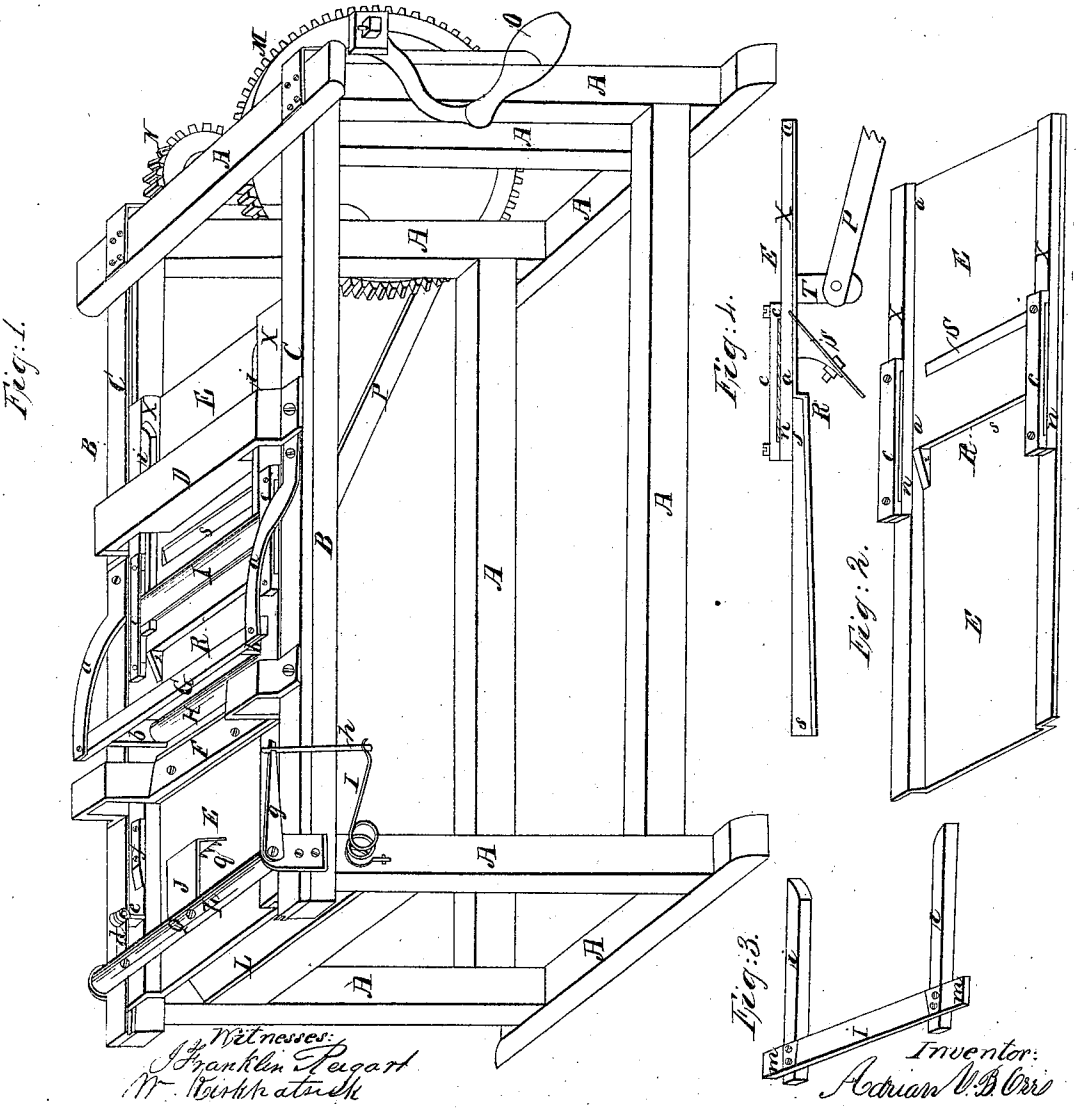

Fig: 1.

Fig: 4.

Fig: 2.

Fig: 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

ADRIAN V. B. ORR, OF LANCASTER, PENNSYLVANIA.

SHINGLE-MACHINE.

Specification of Letters Patent No. 15,302, dated July 8, 1856.

To all whom it may concern:

Be it known that I, ADRIAN V. B. ORR, of the city of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented a new and Improved Shingle-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in splitting from a bolt by means of a reciprocating plate and frow in their forward movement, a piece of stuff of the proper thickness for a shingle leaving the under side of said piece smooth, and then by the backward movement of said plate finishing the shingle by shaving the other side and giving the piece the desired taper, thus making a shingle every revolution of the driver.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 of the accompanying drawings represents a perspective view of my shingle machine. Upon the upper longitudinal pieces B, B, of a wooden or cast iron frame A, A, A, A, &c., is placed two grooved slides C, C. In these grooves the reciprocating plate E, E, works, moved by means of the connecting rod P, driver M, pinion N, and handle or pulley O. This reciprocating plate is constructed with two faces *a*, *a*, and *s*, *s*, Fig. 2, the one being on a plane with the edges of said plate which work in the aforesaid grooves; and consequently working parallel with them, the other connecting with it by a depression or offset equal to the thickness of the large end of a shingle, as seen at R, and diverging from the plane of said grooves at an angle equal to the necessary taper required. This mechanical arrangement is clearly seen by the longitudinal section of said reciprocating plate given in Fig. 4. E, the plate; *a*, *a*, the face on a plane with the grooves; R, the offset or depression; *s*, *s*, the diverging face. The object of this arrangement is to allow a taper to be given to the piece while it is carried by the back movement of the plate under a stationary knife. This face *a*, *a*, has at its sides pieces attached X, X, raised sufficiently above it to be equal to the thickness of the piece to be split from the bolt. These pieces X, X, guide the frow, and at their end next the offset R, is placed two caps *c*, *c*, in these caps are slots as seen at *n*, *n*, in these slots the ends of the frow *m*, *m*, work. In front of the offset R, in this face *a*, *a*, is a bit or knife S, and just before this knife is the piece T, to which the connecting rod P, is attached.

The frow is constructed as seen in Fig. 3, which is a perspective view of this part; I, the frow, *m*, *m*, its ends which work in the slots *n*, *n*, Fig. 2; *i*, *i*, two pieces to which the frow is fastened and which serve to keep it square in the guides X, X, Fig. 2. The object of this movement in the frow, is that it may be in the proper place, with its cutting edge over the offset R, so as to allow the piece to drop on the face *s*, *s*, when its stroke is made, and then to be out of the way of the roller H, Fig. 1, as the plate is carried under the shaving knife F, in its backward movement.

At the sides of the offset R, Fig. 2, is placed two short inclined planes 2, 2, for the purpose of allowing the roller H, to mount from one face to the other. Placed across the frame and attached to the slides C, C, is the stop D, against which the end of the bolt rests while the piece is being split off, and between this stop D, and the delivery end of the frame, at the proper distance is the shaving knife F, securely fastened to the slides C, C, and so arranged that it shall be the proper distance for the thickness of a shingle above the face *s*, *s*, of the reciprocating plate E, E, working below it. In front of this knife is the roller H, kept in its place by means of the frame G, *b*, *b*, and springs *a*, *a*; and across the delivery end of the frame, is the compound lever K, for taking off the finished shingle. This lever K, is worked by means of an inclined plane *f* placed on one side of the reciprocating plate. This inclined plane passes under the hinge arm *d*, of the lever, and raises the arm J, until the shingle passes under it. As the plate is reversed the hinge *e*, of the arm *d*, straightens and allows the teeth *q*, to be brought down on the shingle by means of the arm *g*, spring I, and bridle *h*, holding it until the plate passes from beneath it, when the shingle falls on the chute L, and so drops off.

From the foregoing description of my invention, it will be seen that when the reciprocating plate is put in motion by means of the handle or pulley O, pinion N, driver M, and connecting rod P, the bolt resting

on said plate with its end against the stop D, will have its under surface made smooth by the stroke of the bit, or knife S passing under it; the frow I, guided as described, will follow and split from the bolt a piece of the necessary thickness; this piece as soon as split off, drops on the face *s*, *s*, of the reciprocating plate E, with its end against the offset R. The plate being now reversed, the piece is pushed by said offset under the roller H, and shaving knife F, by means of which its upper surface is shaved and tapered as desired. The teeth of the arm J, of the lever K, now seize it and hold the shingle until the plate passes from under it, in its forward motion, then allows it to drop on the chute L, finished; making shingles of any length on a single machine by merely altering length of stroke, and distance between stop D, and shaving knife F.

I am aware that reciprocating plates have been constructed with tapering faces or recesses to give the necessary taper to a shingle in carrying it under a stationary knife, and I am also aware that frows or riving knives have been used which were movable. I therefore wish it to be distinctly understood that I do not claim either of these devices, separate from the combination in which I use them; but

What I claim as my invention and wish to secure by Letters Patent is—

1. Combining in a single reciprocating plate E, a straight face *a*, *a*, a tapering face *s*, *s*, with an offset R, between them and a movable frow I being combined for the purposes specified and constructed substantially as described.

2. I claim the compound lever K, constructed as described, or its equivalent for the purpose of taking the finished shingle off the plate as already set forth.

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Witnesses:

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