2 Sheets—Sheet 1.

A. W. McCAUSLAND.

MACHINES FOR MAKING WOODEN GUTTERS.

No. 181,794. Patented Sept. 5, 1876.

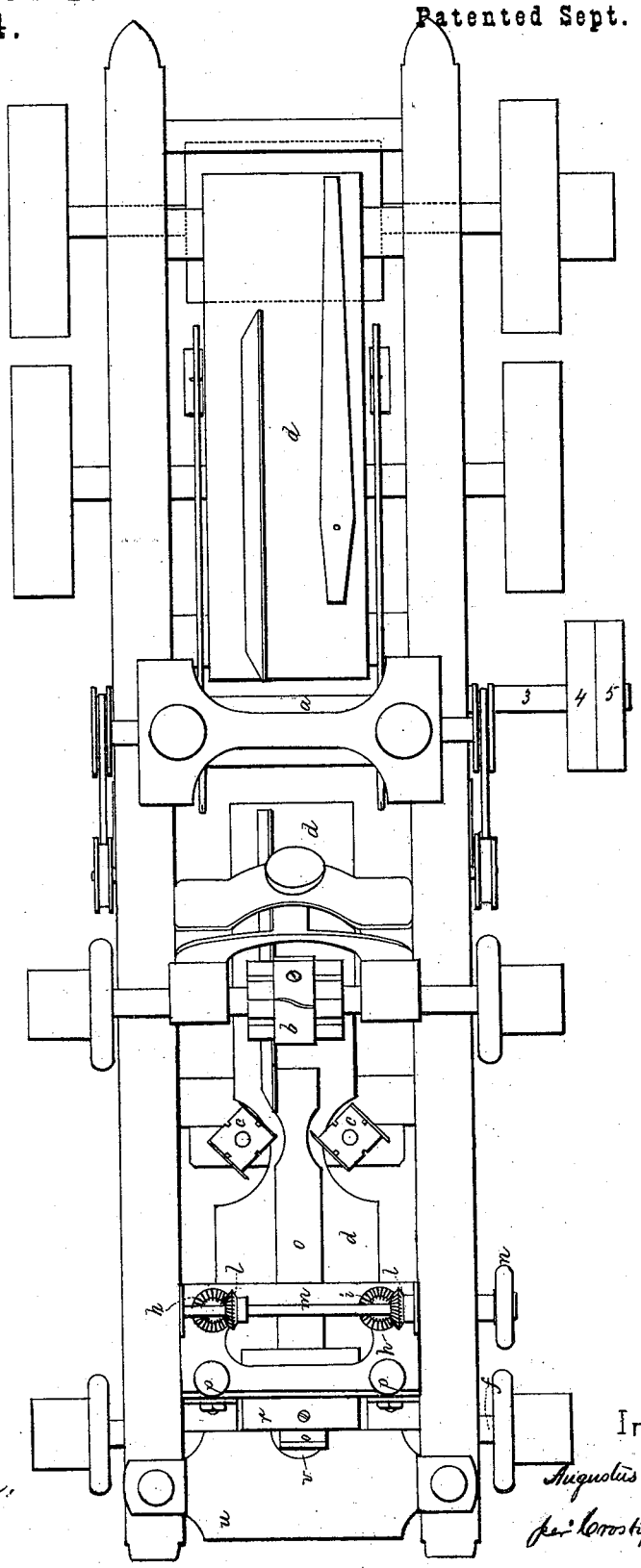

Fig. 1.

Witnesses.

E. H. Gatimer.

W. J. Pratt.

Inventor.

Augustus W. McCausland

per Crosby & Gregory Attys.

2 Sheets—Sheet 2.

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Fig. 2

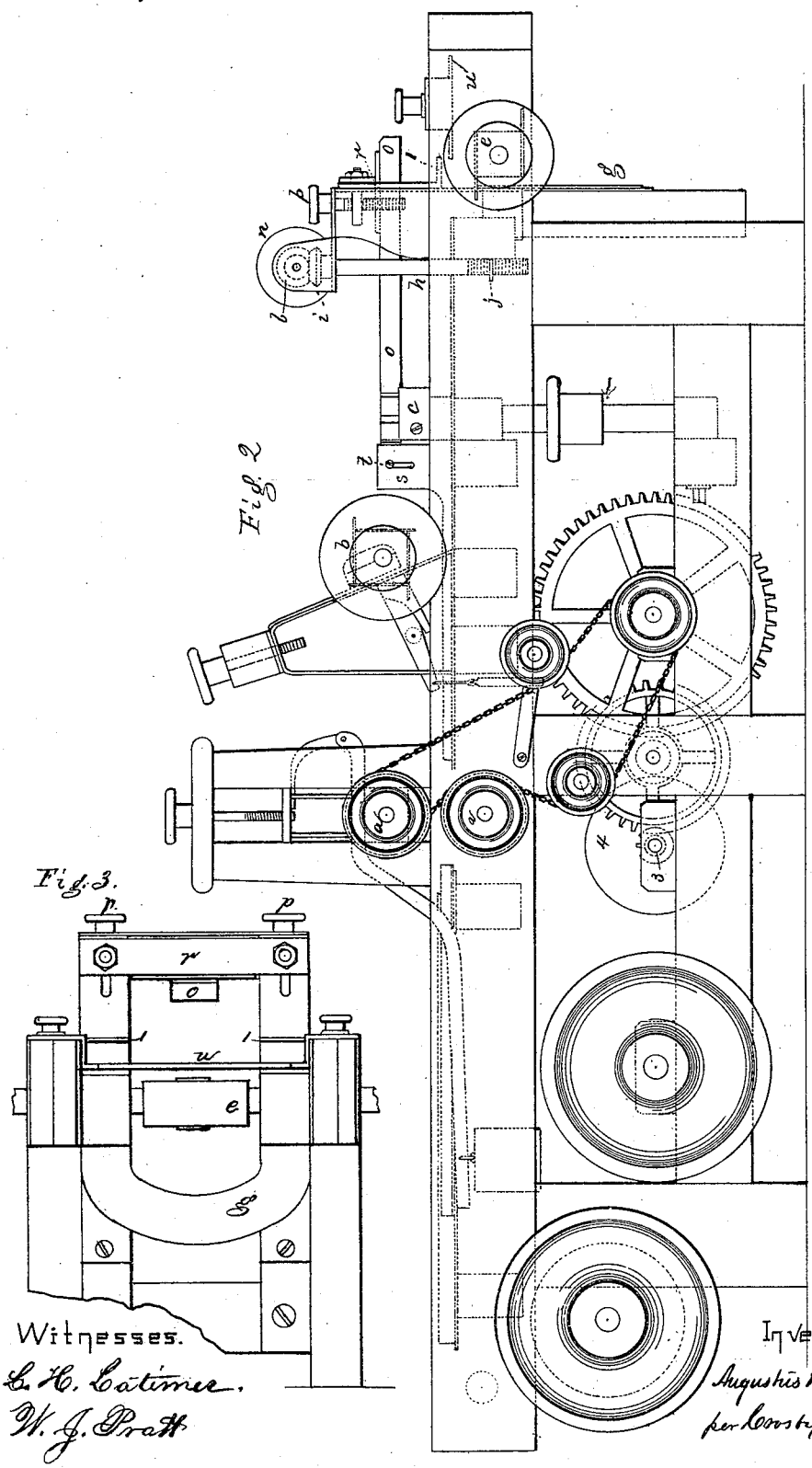

Fig. 3.

Witnesses.

L. H. Latimer.

W. J. Pratt

Inventor.

Augustus W. McCausland

per Cooby & Gregory Attys.

UNITED STATES PATENT OFFICE.

AUGUSTUS W. McCAUSLAND, OF GARDINER, MAINE, ASSIGNOR TO OAKLAND MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR MAKING WOODEN GUTTERS.

Specification forming part of Letters Patent No. **181,794**, dated September 5, 1876; application filed May 5, 1876.

To all whom it may concern:

Be it known that I, AUGUSTUS W. McCAUSLAND, of Gardiner, in the county of Kennebec and State of Maine, have invented an Improvement in Machines for Making Wooden Gutters, of which the following is a specification:

This invention relates to a machine for making wooden gutters with closed ends.

The invention is intended as an improvement on the class of machine represented in United States Patent No. 117,255; and consists in the combination and arrangement of the following instrumentalities, viz: a suitable support for the piece of wood being operated upon, a dipping cutter-head and cutters, a stop to control the movement of the cutter toward the center of the stick, a rigid fixed bed, and feeding-rollers, the fixed bed holding the stick positively in direct opposition to the action of the dipping-cutters.

Figure 1 represents a top view of a machine provided with my improvement; Fig. 2, a side view thereof, and Fig. 3 an end view.

The feeding-rollers *a*, the first cutter-head *b*, and the cutter-heads *c c* are of ordinary construction, and their purpose and operation need not be herein described. The piece of wood to be fashioned, say for a gutter, is placed on the usual support *d*, and, controlled by guides, is moved along and presented to the action of the cutter-heads, provided with knives of proper shape. The dipping rotating cutter-head *e*, provided with knives to cut out the stick and form a gutter, is carried in a frame, *g*, the head *e*, in this instance, being placed below the support, and being provided with devices to give it its dipping action, such devices consisting of vertical screw-rods *h*, that engage screw-threaded nuts *j* in the frame *g*, the rods at top having bevel-pinions *i*, engaged and moved in unison by bevel-pinions *l* on a shaft, *m*, provided with a pulley, *n*. It is obvious, however, that the cutter-head may derive its dipping movement by means of other devices.

The stick to be formed into a gutter is not cut out at its extreme ends, and consequently the gutter is left stopped by the wood, and to leave the end of the stick in this way the cutter-head *e* has given to it a movement from the outside toward the center of the stick, this movement being denominated the "dipping" movement, the knives on the cutter-head at such time acting to scoop or cut out the wood to the depth desired for the gutter, this depth being regulated by suitable adjustable stops, (shown at 1,) and then as the stick is moved longitudinally by the feeding mechanism, it is cut out to this defined depth, until the cutters reach nearly the opposite end of the stick, when the cutter-head is moved away from the stick.

The feeding-rollers *a* are moved by means of a belt or chain, 2, deriving motion from a shaft, 3, through suitable gearing, the shaft 3 being provided with a fast and loose pulley, 4 5. The stick is moved by the feed until its forward end passes beyond the cutter-head *e* far enough to leave a portion uncut for the end piece of the gutter, and then the belt that runs the shaft 3 is moved to the loose pulley, permitting the stick to rest while the cutter-head *e* is dipped to cut into the stick, as described, the feed at this time holding the stick at rest; but when the cutter-head moves sufficiently far toward the center of the stick to meet the stops 1, that govern the depth of the cut, then the feed is thrown again into operation, and the cutter-head *e* continues to cut a channel in the stick moved along and presented to it by the feed.

By stopping the feed when the cutter is being dipped, the wood is cut deeper at the extreme end of the groove than it would be were the stick moved coincidently with the dipping movement.

The stick of wood to be cut in this way must be held firmly and positively to insure the best work, and to do this I have placed above it an overhanging bed, *o*, that holds the stick down rigidly against the action of the cutter-head.

This bed *o* is, however, made adjustable, to adapt it to the thickness of the stick, by means of screws *p*, that engage threaded nuts *q*, attached to a plate, *r*, to which the forward end of the bed *o* is attached, the latter being adjustable by the screws *p*.

The back end of the bed *o* is connected ad-

justably with the standard *s* by the set-screw , and the bed may be adapted to hold down stick of any thickness, and the gutter may e made of uniform thickness at the bottom. The plate *u* at the end of the machine has an pening, *v*, for the passage of the grooving- utters on the head *e*.

In operation, it is obvious that the end of he stick being grooved will pass beyond the eed-rollers, but thereafter such stick must be noved along by the action of the end of a fol- owing stick, then between the feed-rollers. t is also obvious that the feed-rollers may be laced nearer the cutter-head *e* than shown in he drawings, and specially so if the stick is nly to be grooved for the gutter.

I am aware of United States Patent No. 17,255, but claim nothing therein shown or escribed.

I claim—

In combination, the support for the stick being acted upon, the dipping-cutter and mechanism to move it toward or from, and a stop to control its movement toward, the center of the stick, the rigid bed arranged above the dipping-cutter, and adapted to bear against the stick, and hold it positively against the support and in opposition to the cutter, and a feed, all combined and adapted to operate substantially as shown and described.

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

AUGUSTUS W. McCAUSLAND.

Witnesses:
G. W. GREGORY,
W. J. PRATT.