G. B. SELDEN.

MACHINES FOR SHAVING HALF ROUND HOOPS.

No. 175,880 Patented April 11, 1876.

Fig 1.

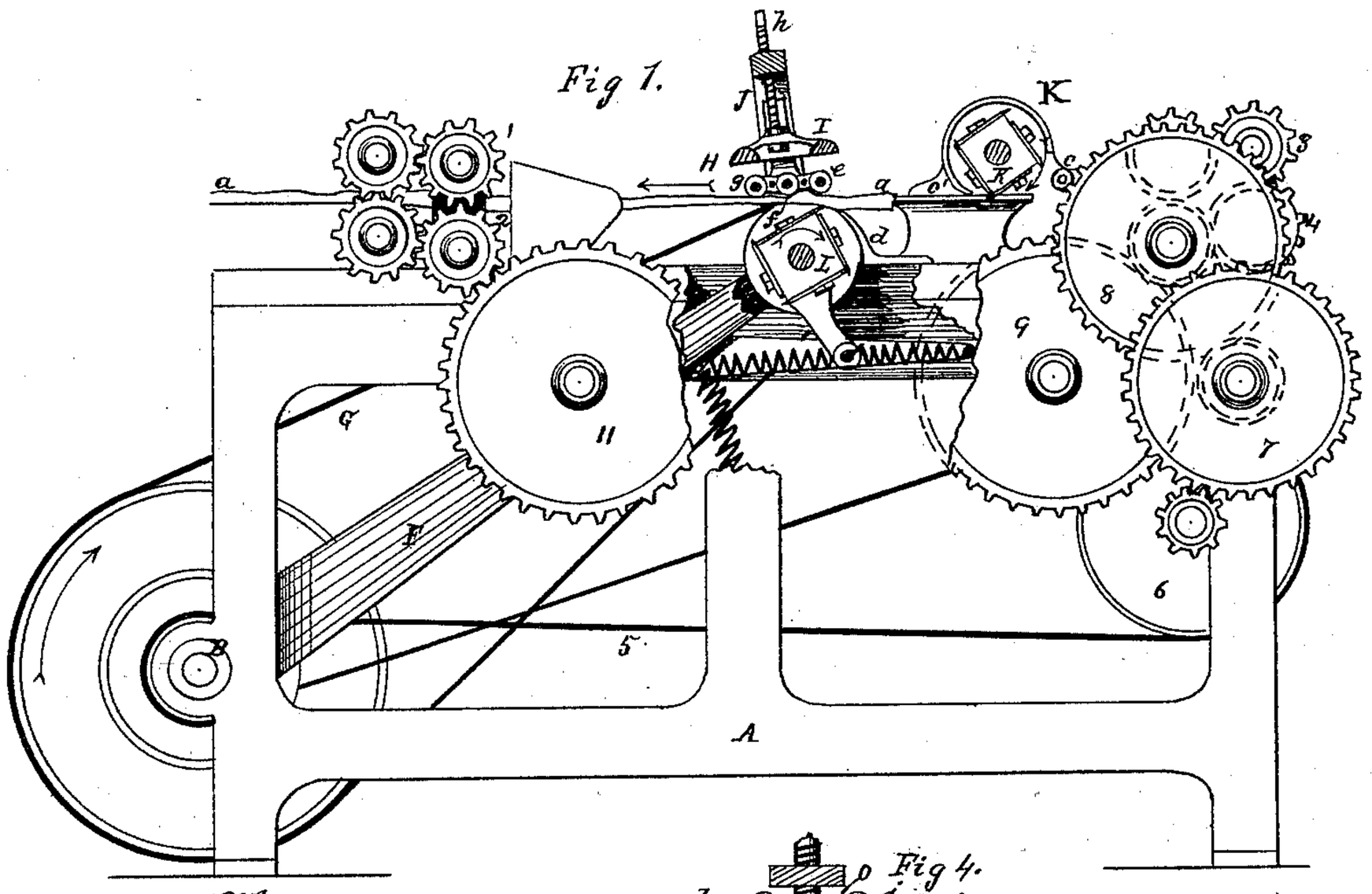


Fig 3.

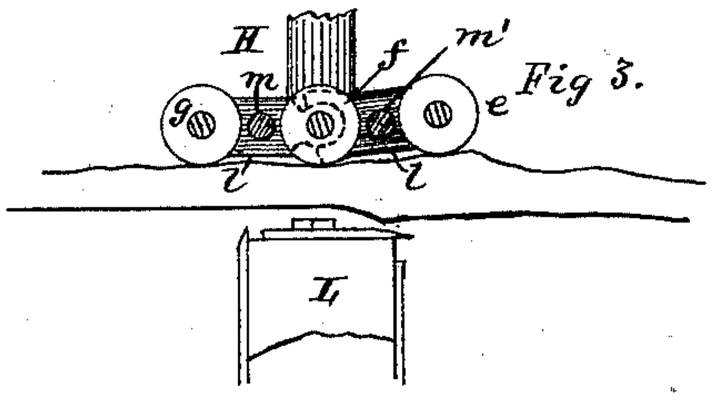


Fig 4.

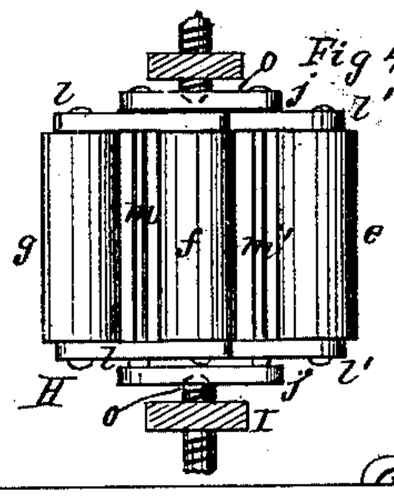


Fig 5.

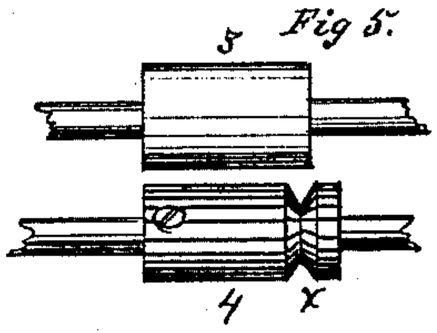


Fig 2

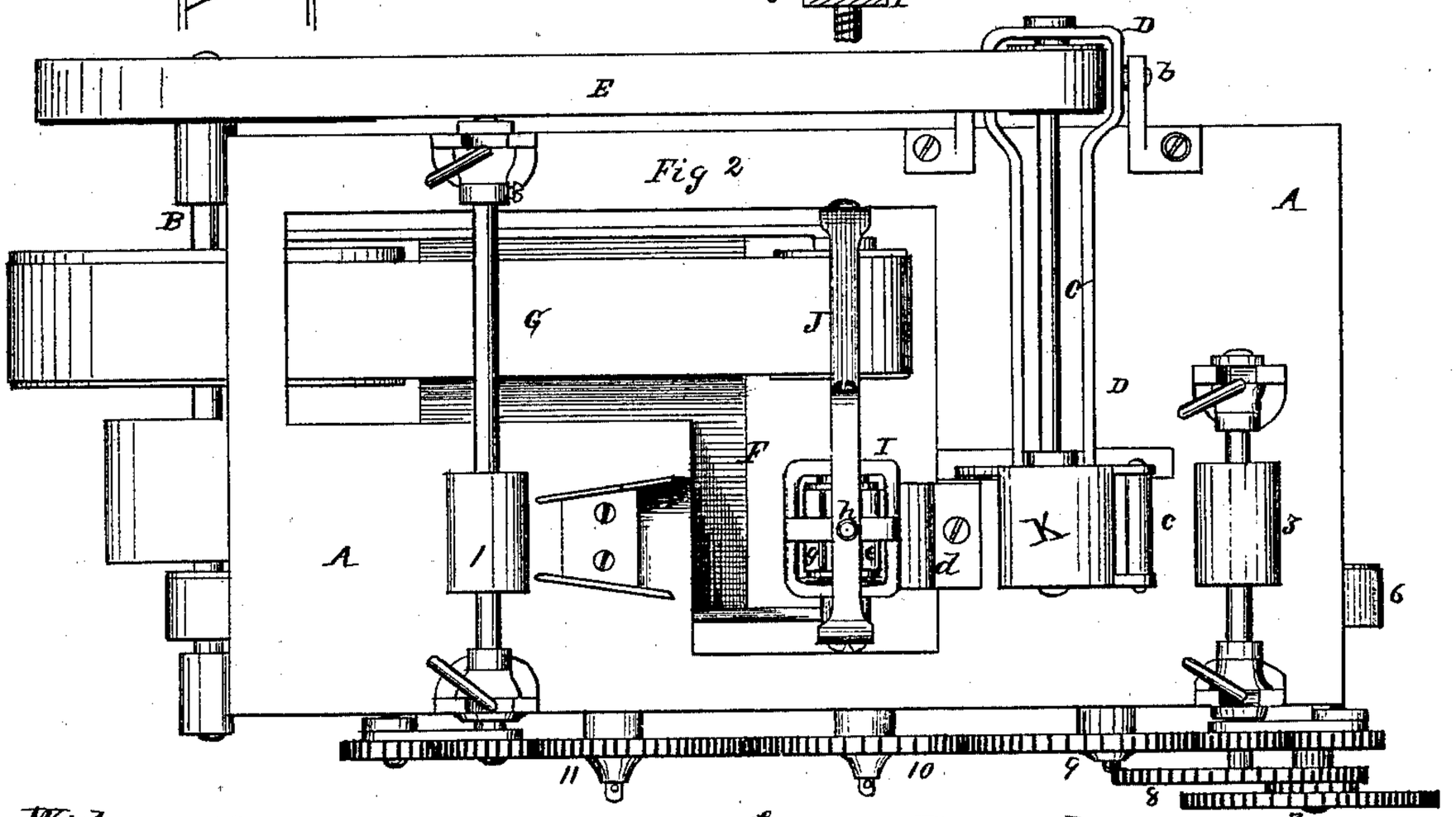


Fig 6.

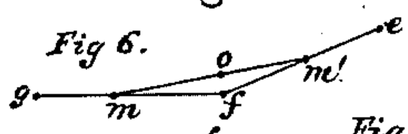
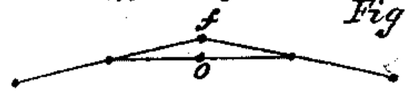


Fig 7.



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UNITED STATES PATENT OFFICE.

GEORGE B. SELDEN, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN MACHINES FOR SHAVING HALF-ROUND HOOPS.

Specification forming part of Letters Patent No. **175,880**, dated April 11, 1876; application filed January 13, 1875.

To all whom it may concern:

Be it known that I, GEORGE B. SELDEN, of the city of Rochester, in the State of New York, have invented an Improvement in Machines for Shaving Half-Round Hoops, of which the following is a specification:

The nature of this invention consists in controlling a movable cutter-head for shaving the timber or split side of the hoop by a system of equalizing rolls on the bark side, so constructed that, while they cause the head to conform to the curves of the stock, they still allow the knots or other excrescences on the bark side, when properly trimmed, to pass through between them and the cutter-head without materially thinning the hoops opposite the knots.

Figure 1 is a side elevation, partly in section, and Fig. 2 a plan view of a machine embodying my invention. Figs. 3 to 7 exhibit details.

A is the frame, and B the driving-shaft, of the machine, 1 2 and 3 4. Figs. 1, 2, and 5, are horizontal feed-rollers, driven from the shaft B by means of the belt 5, pulley 6, and train of gears 7–11. The path of the hoop through the machine is indicated at *a a*, Fig. 1.

The knot-cutter K, Fig. 1, consists of a horizontal shaft, C, mounted in a frame, D, which swings on trunnions at *b*, Fig. 2, so that the cutter-head has a slight vertical movement to enable it to adjust itself to the curves of the stock passing under it. It is driven from the shaft B by the belt E, and the cutter-head K is controlled in its action on the knots by rests *c c'*, Figs. 1 and 2, before and after the head, such rests being connected together by a frame which swivels freely about the head. The forward rest *c* is a roller, and the after rest *c'* is of sufficient thickness to prevent the head K from cutting away too much of the knot. The knot-cutter is held down by a spring or a weight, and a hand-lever may be employed to facilitate the entrance of the stock beneath it. The cutter-head L, for shaving the timber side of the hoop, has bearings upon a movable frame, F, which swings about the axis of the shaft B, and is driven by the belt G. The hoop passes over a suitable rest, *d*, before the head L, and between the head and a system of movable rollers, *e f g*, which I will designate as the equalizer H. The equalizer H is attached to the swinging frame F; and its object is to control the head L by causing it to conform to the curves of the stock, and to determine the thickness of the hoop from the bark side, and still to allow knots and excrescences, when properly trimmed by the knot-cutter, to pass through between the equalizer and the head L without gouging the stock opposite the knots. This object is effected by so connecting the rollers *e f g* together by means of movable frames in which they are supported that any one of the rollers can yield back over a knot without imparting more than a fraction of its motion to the central pivotal point of the system, from which point the cutter-head L is controlled. A frame, J, Fig. 2, is attached to the inner extremity of the swinging frame F, directly over the cutter-head L, and is fitted to receive the secondary frame I sliding on guides at right angles, or nearly so, to the axis of the head L. By means of the threaded rod *h* the secondary frame I and equalizer H pivoted to it can be moved along the guides in the frame J, to and from the head L, to gage the thickness of the hoop. The system of rollers or equalizer H is pivoted at *o*, Fig. 4, to the secondary frame I, such pivotal point being at or near the center of the bars *j j'*, which are rigidly connected together by studs *m m'*. These studs form fulcrums for the roller-frames *l* and *l'*. The rollers *f* and *g* revolve upon studs, rigidly joining together the side bars of the frame *l*, and the roller *e* is similarly attached to the frame *l'*, which has but one stud (at its outer end) and which is loosely articulated with the frame *l* at the center of the roller *f*, as indicated in dotted lines in Fig. 3. From this construction it will be observed that a series of compound levers, formed by the frames *j j'*, *l* and *l'*, is interposed between the rollers *e f g* (which bear on the bark side of the hoop) and the pivotal point *o* from which the head is controlled, and that the motion of any one of the rollers, in yielding back over a knot, will be transmitted in part only to the head. Fig. 6 represents the position of the levers and rollers when one roller, *e*, is yielding back over a knot, the center *o* having moved from the general line

only one quarter of the distance *e* has moved. In Fig. 7 is shown the position of the various parts when the middle roller *f* is passing a knot. At the same time any general motion of all the rolls of the equalizer, caused by a swell in the stock or by its increased thickness, is transmitted at once and without modification to the head L. A larger number of rollers connected together in a manner similar to that described may be employed, but the difficulty of following acute bends increases with the length of the system. I have also used a modification of this device—the two-roll equalizer—which consists of a pivoted frame containing two rollers only, one at each end of the frame. In this case the knots are only one-half equalized. The head L is held down to the level of the rest *d* when not in operation by a spring or weight, and some means should be employed to maintain the frame J near the vertical position, either by springs or a counterweight. A stop attached to the frame I limits the motion of the equalizer H on the center *o*, so that the rollers *e*, *f*, and *g* cannot get into the knives of the head L. The rest *d* may be attached either to the frame of the machine, or so arranged as to travel about the shaft L as a center. In the latter case it may be brought closer to the knives, and its outer end rests on the top plate of the machine. For shaving angular stock or splints obtained by splitting poles into three or more parts, the lower roll 4 before the head L is provided with an angular groove, *x*, Fig. 5, which fits the shape of the stock, and presents it properly to the cutter L. The same result may be attained by grooving the rest *d*, but with a large increase in resistance to the feed.

I claim—

1. In a hoop-dressing machine the multi-roller rest or equalizer H, composed of three rolls articulated together and operating to pass knots, substantially as described.

2. The combination, in a hoop-dressing machine, of a cutter-head, L, and a multi-roller rest or equalizer, H, operating substantially as described, for the purposes set forth.

3. The combination of the cutter-head L, equalizer H, and rest *d*, operating substantially as described, for the purposes set forth.

4. The combination, in a hoop-dressing machine, of the knot-trimmer K, the main cutter L, and the equalizer H, operating conjointly for the purposes set forth.

5. The combination, in a hoop-dressing machine, of the grooved feed-roller 4, the main cutter L, and the equalizer H, operating substantially as and for the purposes set forth.

6. The combination of the grooved feed-roller 4, the knot-trimmer K, the main cutter L, and the equalizer H, operating substantially as and for the purposes set forth.

7. The sustaining-frames *l* and *l'*, in combination with the pivot-bars *j j'* and rollers *e f g*, constructed and arranged substantially as described.

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