

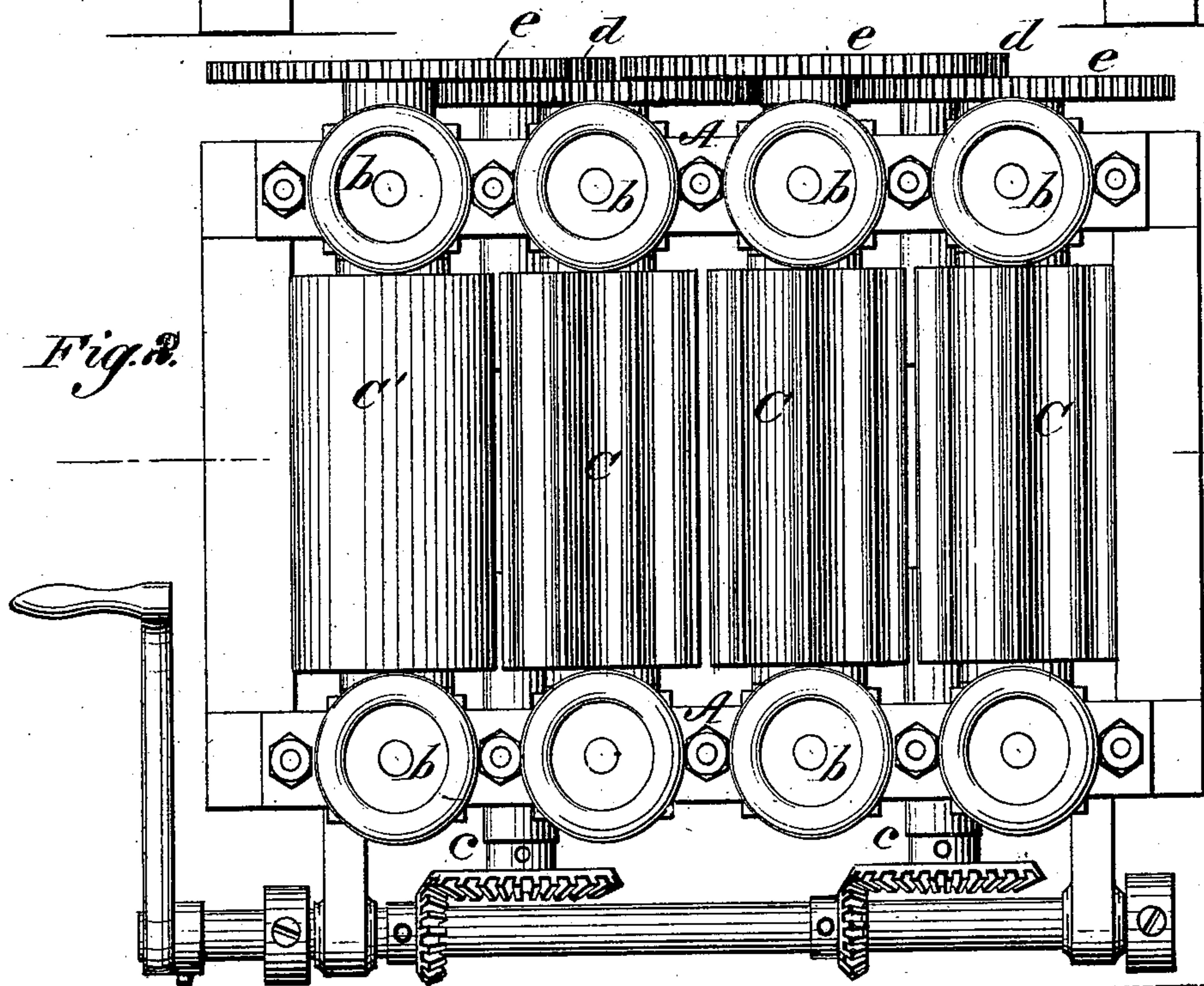
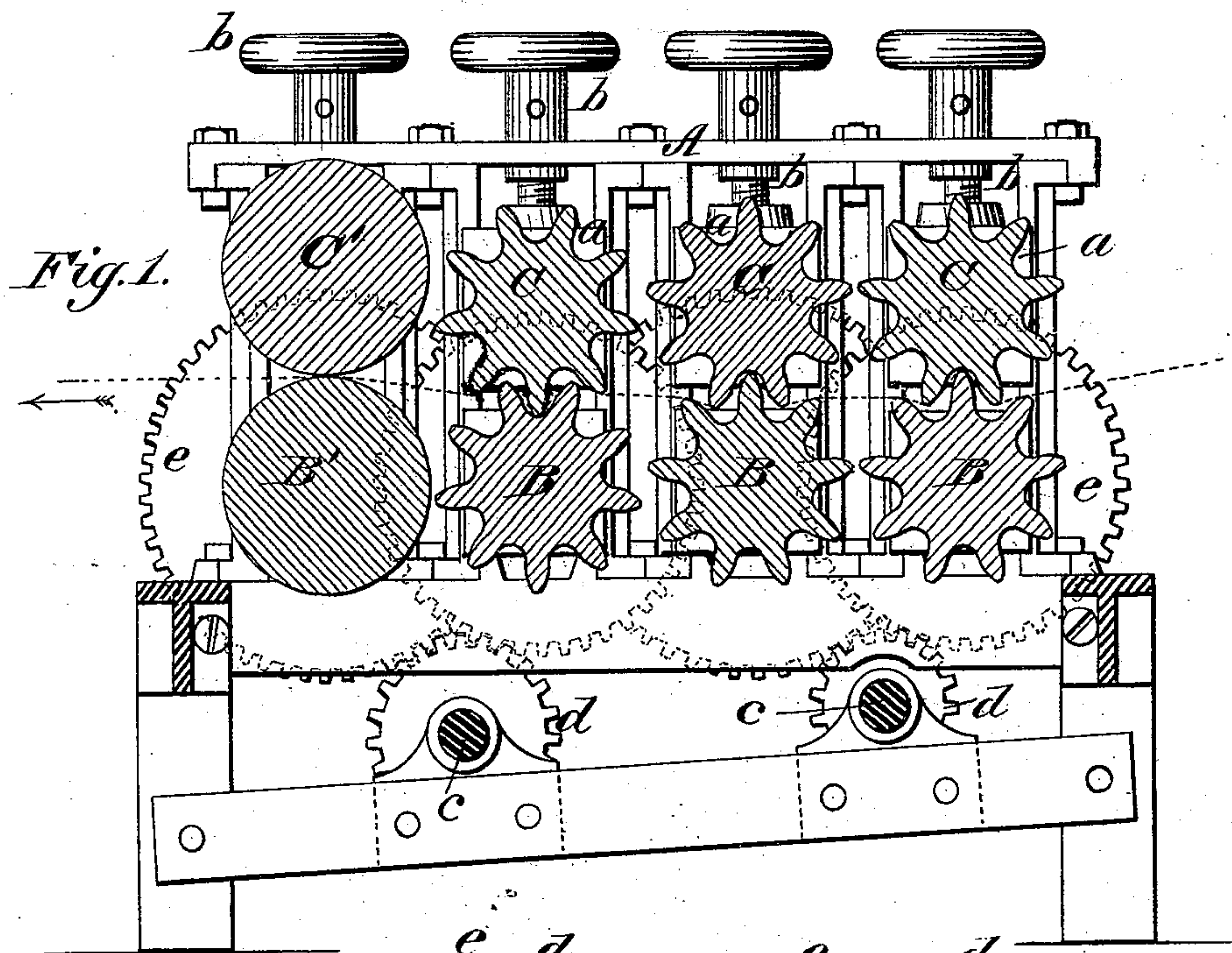
(Model.)

O. E. DROWN.

Machine for Working Rawhides.

No. 229,981.

Patented July 13, 1880.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

OTIS E. DROWN, OF PAWTUCKET, ASSIGNOR OF ONE-HALF OF HIS RIGHT  
TO HENRY L. FAIRBROTHER, OF PROVIDENCE, RHODE ISLAND.

## MACHINE FOR WORKING RAWHIDES.

SPECIFICATION forming part of Letters Patent No. 229,981, dated July 13, 1880.

Application filed May 5, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, OTIS E. DROWN, of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Machines for Working Rawhides, of which the following is a specification.

My improvements relate to machines for breaking, rubbing, and stretching rawhide in the manufacture of leather for belting and lacing, which work has heretofore been done by winding the hides on shafts or drums while tension was applied by fixed bars between which the hides were stretched.

The object of my invention is to facilitate the operation and permit regulation of the tension; and the invention consists in a train of fluted or grooved rollers arranged in pairs, the rollers of each pair intermeshing and revolving at an increased rate of speed from the entering to the delivery rollers. The hides are entered between the rollers and drawn forward by the successive rollers, and are thereby bent, rubbed, and stretched, as required, to render them soft and pliable. The power is applied to the lower rollers, and the upper rollers fitted in adjustable boxes, so that the pressure on the hides may be adjusted.

The construction and operation will be explained more particularly with reference to the accompanying drawings, wherein Figure 1 is a vertical longitudinal section of my improved machine, and Fig. 2 is a plan view of the same.

Similar letters of reference indicate corresponding parts.

A A are side frames of the machine, constructed of iron in a suitable manner for obtaining the required strength.

B B B are the lower rollers of the train, and C C C the upper rollers, which rollers are constructed of metal, and fluted or grooved, as shown. The lower rollers, B, are sustained by their shafts in suitable boxes fixed in the side frames, A, at such distance apart as to prevent any contact; or, if desired, there may be more space between these rollers. The upper rollers, C, are sustained by their shafts in boxes *a*, that are fitted in mortises in side frames, A, so that said boxes are ca-

pable of vertical movement. Each roller C intermeshes with the roller B beneath. The extent to which the pairs intermesh is regulated by a screw, *b*, fitted in frames A above boxes *a*, and connecting with said boxes, so that by the operation of the screws the boxes may be raised and lowered, or the screws may simply bear upon the boxes *a* to limit the extent to which they may be raised by the hides passing through. The boxes may also be fitted with springs beneath the screws, whereby the rollers will be rendered less rigid.

I prefer to use four pairs of rollers, the last or delivery pair, B' C', having a smooth surface, instead of being fluted. There may, however, be more than four pairs, or in some cases less, and the smooth rollers may be dispensed with. I do not limit myself in these particulars.

The power to drive the rollers is to be applied to the shafts of the lower rollers, B. As shown, there are two shafts, *c*, driven by suitable power and carrying pinions *d*, that mesh with large gear-wheels *e* on the roller-shafts. This gearing is proportioned so that the second pair of rollers is driven about one-eighth faster than the first, and the third one-eighth faster than the second, and so on, or in the proportion of twenty-four, twenty-seven, thirty, and thirty-three revolutions per minute. The gearing may, however, be varied both in arrangement and proportion.

In operation the hide is entered between the first pair of rollers, which carry it forward to the second pair. This second pair, running faster than the first, commences to pull and rub the hide, at the same time carrying it forward to the third pair, which rubs and pulls the hide still more. The second and third pair of rollers acting together pull the hide through the first pair, and the tension and consequent stretching will be greater or less, according to the adjustment of the rolls. By this operation the hides are bent and broken to give them the required flexibility, and stretched and rubbed to the extent required. Every portion of the hide is subjected to the action described, so that there is no waste; and, if required, the hides may be run through the machine two or more times in succession.

The smooth - surface rollers B' C' act to smooth and finish the hide after the rubbing and stretching operation.

Having thus described my invention, I claim  
5 as new and desire to secure by Letters Patent—

1. In a machine for working hides, the series of pairs of longitudinally-fluted inter-meshing rollers B C, each successive pair being driven at increased speed, as and for the  
10 purpose specified.

2. In machines for working hides, the smooth rollers B' C', combined with the train of fluted rollers B C, substantially as and for the purposes set forth.

OTIS E. DROWN.

Witnesses:

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