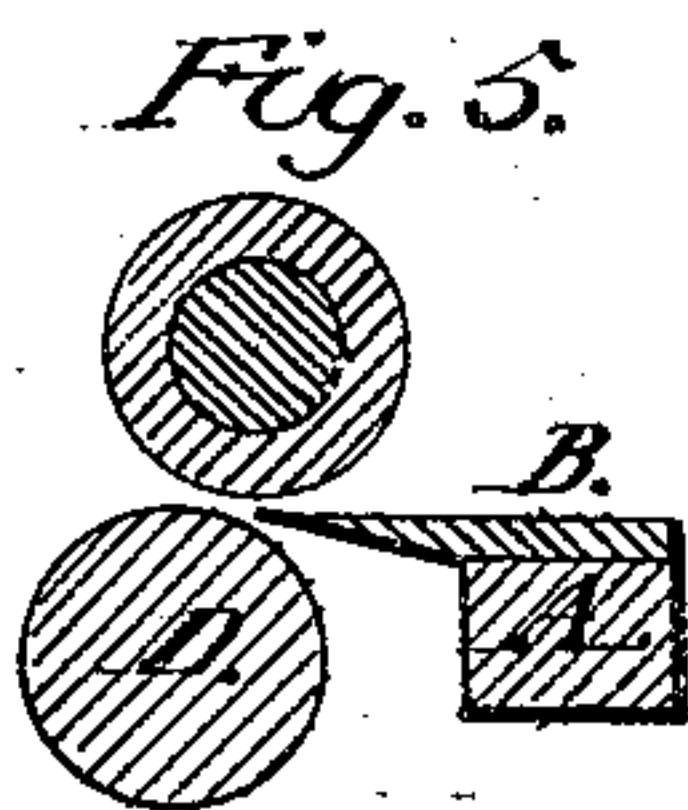
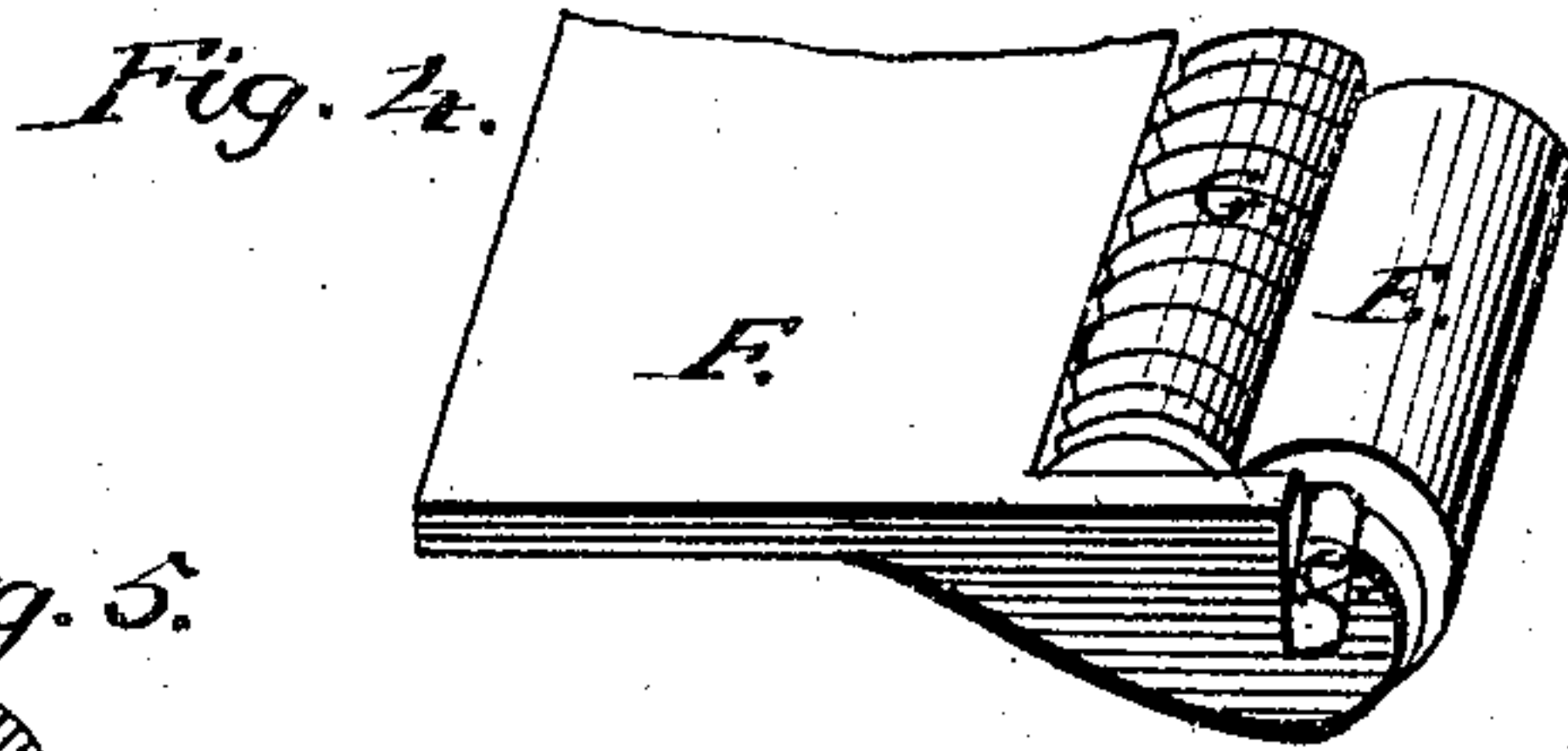
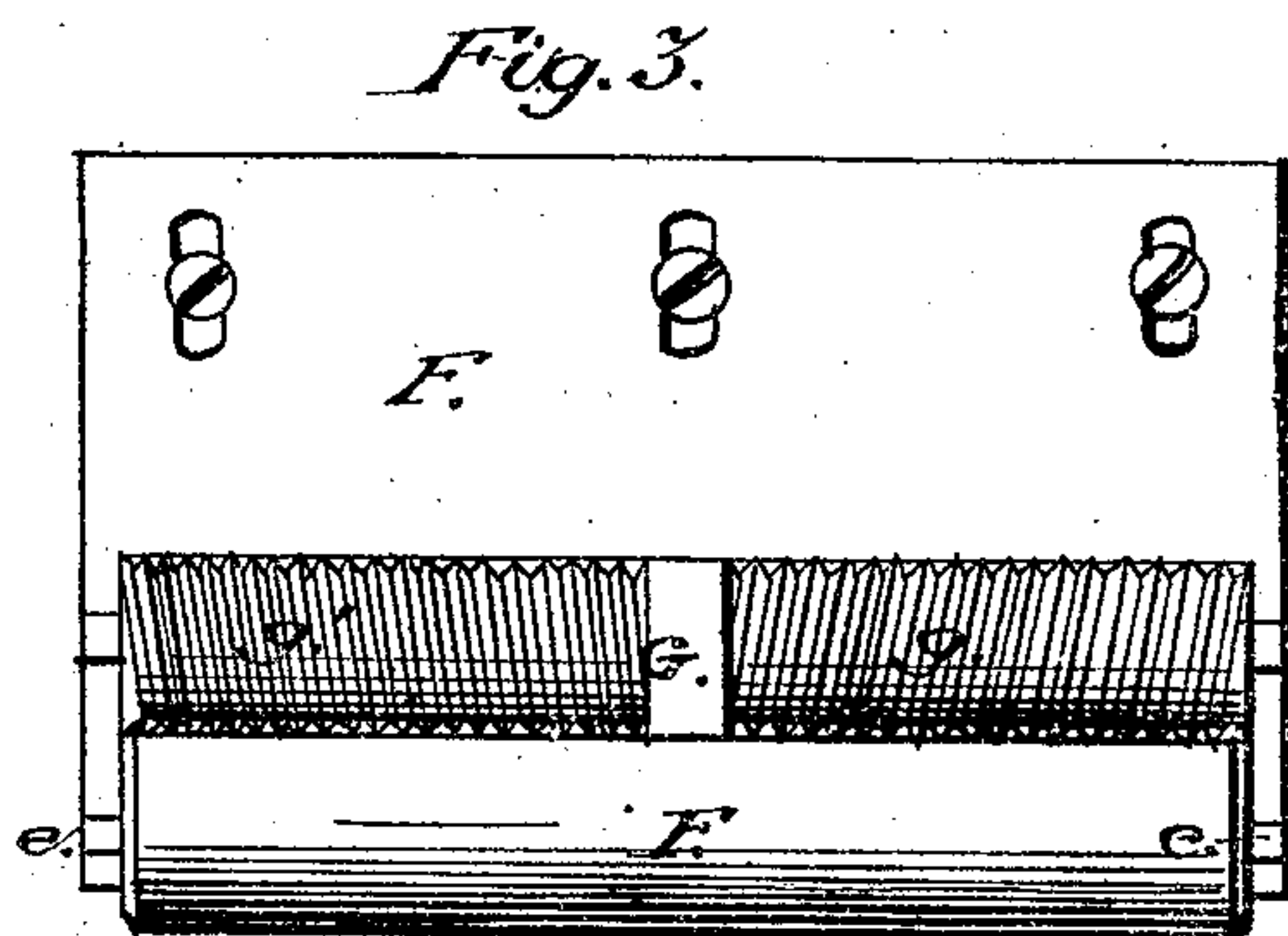
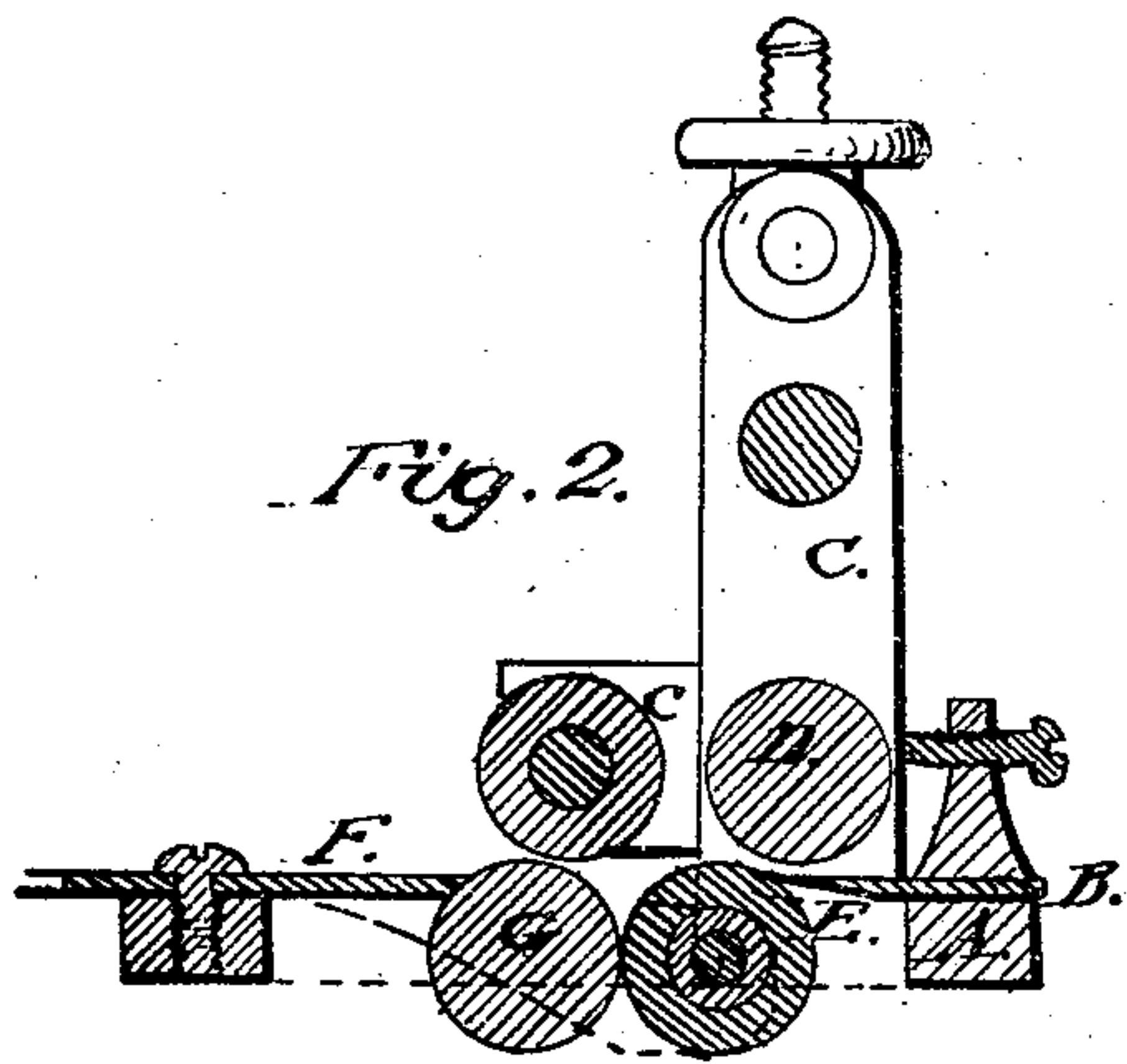
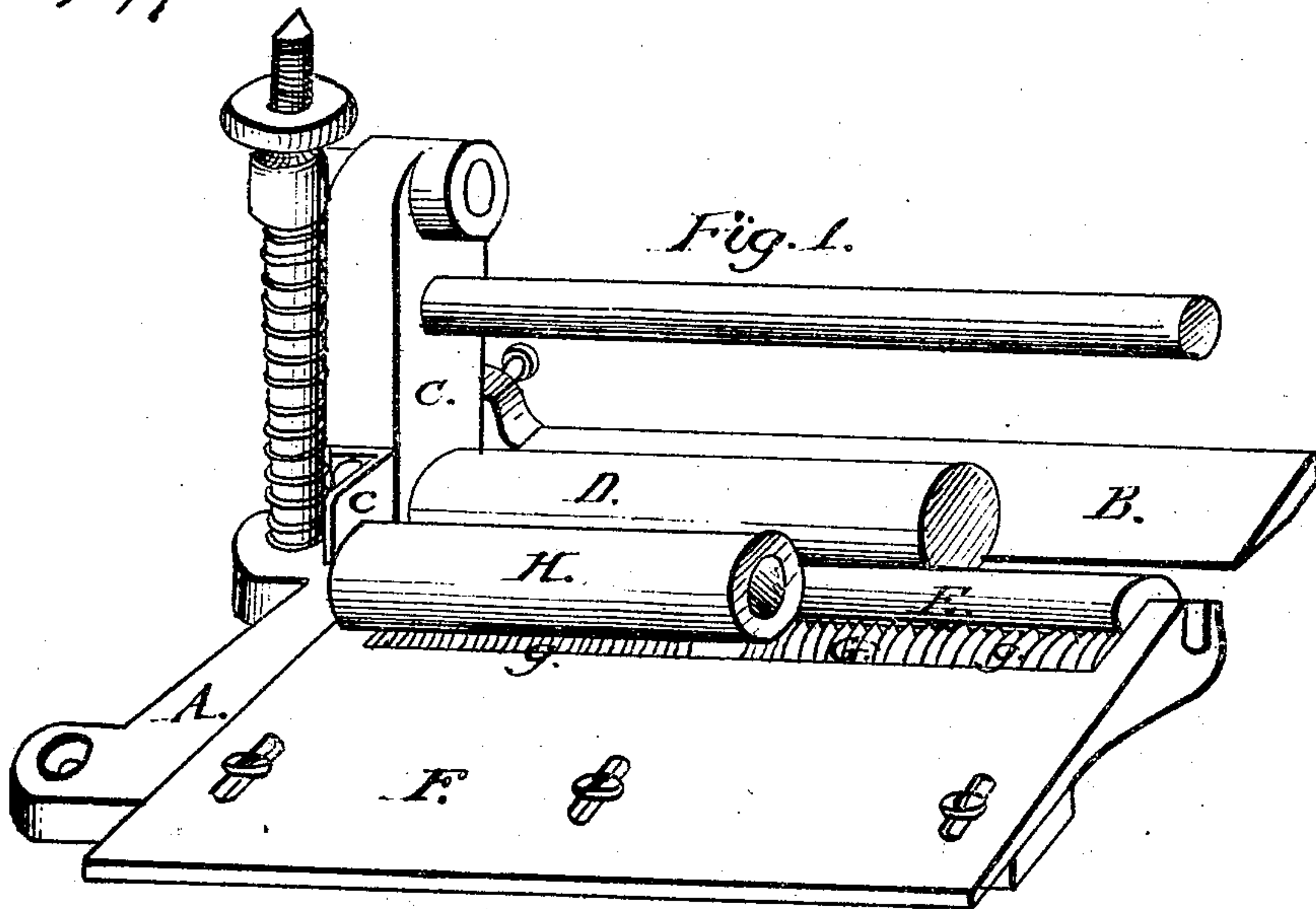


H. Cunningham,

Leather Splitting

No 95,780.

Patented Oct. 12. 1869.



Witnesses:
Alex. Selkirk
Chas. Selkirk

Inventor:
Henry Cunningham

UNITED STATES PATENT OFFICE.

HENRY CUNNINGHAM, OF ALBANY, NEW YORK.

IMPROVEMENT IN MACHINES FOR SPLITTING LEATHER.

Specification forming part of Letters Patent No. 95,780, dated October 12, 1869.

To all whom it may concern:

Be it known that I, HENRY CUNNINGHAM, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in the Mode of Constructing Machines for Splitting Leather; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 represents a perspective view of the machine as improved, with parts broken away. Fig. 2 is an end section through machine, and parts improved. Fig. 3 is a vertical view from above with upper rollers removed. Fig. 4 is a perspective view of a section of bed-plate, elastic rollers, and stretching-roller. Fig. 5 is an end section, showing bearing-roller and elastic roller in Fig. 2 reversed for skiving.

All hides of cattle are more or less cut and galled when they come in the hands of the leather-manufacturer, and they are always more or less attended with lumps and fleshy matter, which are required to be removed. The lumps and fleshy matter are generally removed by a currier's knife, while the cuts and galls remain. The hides are also sometimes excessively thicker in some parts than in others. These cuts, galls, and excessively unequal thickness in the hides operate, in the splitting-machines now generally used, in such a way as to leave in the grain side (the part required to be most perfect) their marks, in forms of thinner spots, corresponding with such galls and cuts, and thicker places, corresponding with the thicker parts of the hide. Much of the leather now manufactured and made for boots and shoes requires to be quite thin, and, to be durable, should be even in its body; but by the hard and rigid bearing-bed now universally used, the hides cut are not evenly pressed against the upper bearing-roller, immediately over the edges of the knife and bearing-bed; consequently the bearing-roller does not act fully on each and every portion of the hides as they are passed under it in the process of being split, which failure of the said bearing-roller to thus act causes the uneven cut of the grain-piece now so much complained of. Another great objection to the present machines is that the hide, when being cut, bellies or drags in the center, which tends to cut the

central portion thicker than the side portion of the hide. A third great objection to the present construction of the splitting-machine now in use is the excessive friction consequent with the pressure of the hide on the bearing-plate below by the bearing-roller above, which sometimes is so great as to cause the hide to break or tear in the process of being drawn through. By my invention these objectional difficulties and disadvantages are removed, and a machine requiring less power to operate and more under the control of the operator is produced, as well as a machine which will not leave on the grain side a mark of a cut or gall, or the beginning or ending of each halt in the process of cutting.

The nature of my invention consists in the employment of an elastic roller in the place of the solid bearing-bed now used; also, in the employment of a roller furnished with a right and left hand screw-thread, running each way from its center. The said screw-roller is placed back of the elastic roller, and operates in such a way as to stretch the hide being cut across from side to side, and prevents its bellying or dragging in its center. A second elastic roller, connecting with the supports of the usual upper bearing-roller, is also employed to press the hide down on the screw-roller, when required. In skiving with this improved machine, (which skiving cannot be done in the old machines, but must be done by hand by a currier's knife,) the order of the arrangement of the elastic bearing-roller below and the solid bearing-roller above is reversed, and the fleshy portion of the hide is delivered below, as is the case in splitting.

By these improvements from four to five good pieces can be taken from one hide, which would consist of one side of good grain-leather, two of good split and the other in form of good trunk leather, and from one to two pounds of good merchantable leather can be taken, which is now wasted in the usual process of splitting.

To enable others skilled in the art to make and use my invention, I will proceed to describe it in reference to the accompanying drawings, forming a part of this specification, and the letters of reference marked thereon, the same letters indicating like parts.

A represents any suitable frame-work for the machine. B is the usual cutting-knife. C is

the usual swinging support for carrying the usual pressing-roller D. The said pressing-roller D is solid, and has its journals in bearings in the support C, Fig. 2, one of which is broken away in the drawings, Fig. 1. The usual bearing-plate is dispensed with, and in its place is employed an elastic bearing-roller, E, working in bearings *e e*, Figs. 1, 3, and 4, made in the ends of the supporting-plate F. The said elastic roller E has its body made of suitable metal, and is covered with rubber about one-half inch thick, more or less, in large machines. Back of the elastic roller E is placed the stretching-roller G, which consists of a roller cut with a right-hand screw, *g*, and a left-hand screw, *g'*, each running from at or near the center of the roller. The stretching-roller G may be made and used in sections to advantage, especially in half-hides, when the right-hand half-side of the hide would require a longer length of screw-thread, suitable to stretch the belly portion of such hide, and a shorter length of opposite screw-threads for the back and side portions of the hide, while the left-hand half of the side of the hide would require the reverse. This stretching-roller G is revolved by friction with the bearing-roller E, in a direction contrary to it.

In case the hide operated upon should be hard, stiff, and light, I place above the stretching-roller G a second roller, H, which may be solid, though I prefer it elastic, like the bearing-roller E. The said roller H I term the supplementary roller, which is carried by the supports C by means of the pieces *c*, Fig. 1, (one not shown,) connected with the supports C. A flat weighted piece could be substituted for the said supplementary roller, to drag on the hide, or the stretching-roller, though not with as great advantage.

In operating to split with this improved machine, the hides pass first in between the supplementary roller H and the stretching-roller G, and between the elastic bearing-roller E and the solid pressing-roller *d*, which is set to gage the thickness of the piece to be cut, finished thence against the knife B. The elastic roller now acts against the under side of the hide, (the flesh side,) and passes up against every portion of the upper pressing-roller D, the hide

under it filling up or raising the galls and cuts, so that the whole upper surface of the grain side (the side opposite) will bear against the pressing-roller D immediately over the knife-edge; and when the hide is cut, the grain side of the hide will pass over the top of the knife, while the other passes below to be resplit.

In skiving off the flesh side of a hide, the order of arrangement of the pressing-roller D and the elastic bearing-roller E (shown in Fig. 2) is reversed, as shown in Fig. 5, so that the bearing-roller D will occupy the place of the elastic roller E, and the roller E that of the roller D; and, when thus arranged, the grain side of the hide, as it is cut, passes up, while the fleshy part passes under the knife; and, in the operation of skiving, the elastic roller E, acting from above, passes down on the solid roller D evenly, though the flesh side may be uneven, and causes the cut to be even and clean.

These improvements are easily applicable to all styles of cutting or splitting machines operating with a fixed and rigid knife and solid bearing-rollers, whether operated by hand or steam or other power.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a leather-splitting machine, the elastic bearing-roller E, in combination with the knife B and pressing-roller D, substantially as and for the purpose set forth.

2. In combination with a leather-splitting machine, the stretching-roller G, constructed and arranged substantially as and for the purpose set forth.

3. In combination with the stretching-roller G, the supplementary roller H, or equivalent weight, substantially as and for the purpose set forth.

4. Reversing the order of the elastic roller E and solid pressing-roller D from that shown in Fig. 2 to that shown in Fig. 5, the screw G then being out of contact with the elastic roller, the whole substantially as and for the purpose specified.

HENRY CUNNINGHAM.

Witnesses:

ALEX. SELKIRK,
CHAS. SELKIRK.