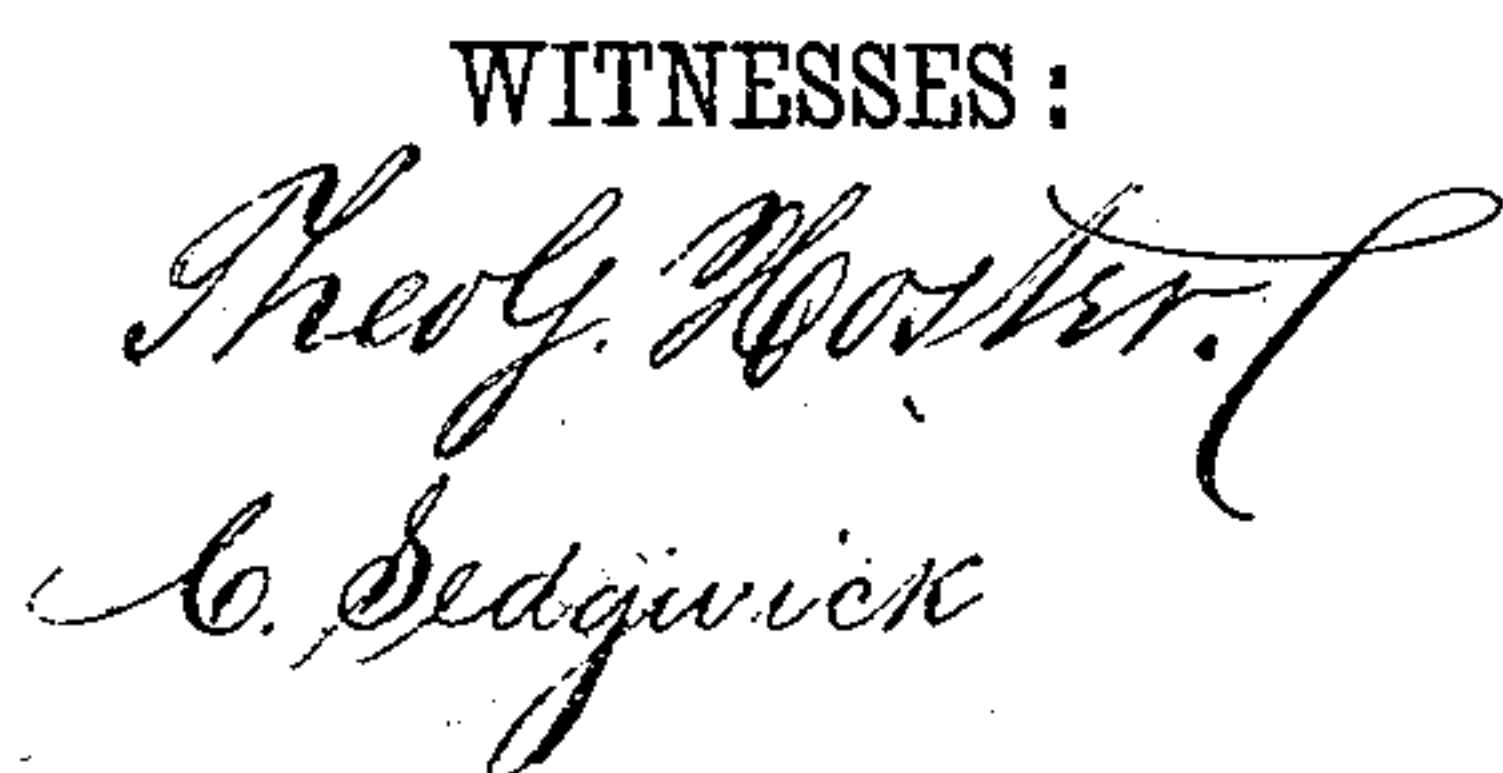


2 Sheets—Sheet 1.

No. 256,058.

Patented Apr. 4, 1882.



INVENTOR:
W. A. Sawyer
BY *Munn & Co*
ATTORNEYS.

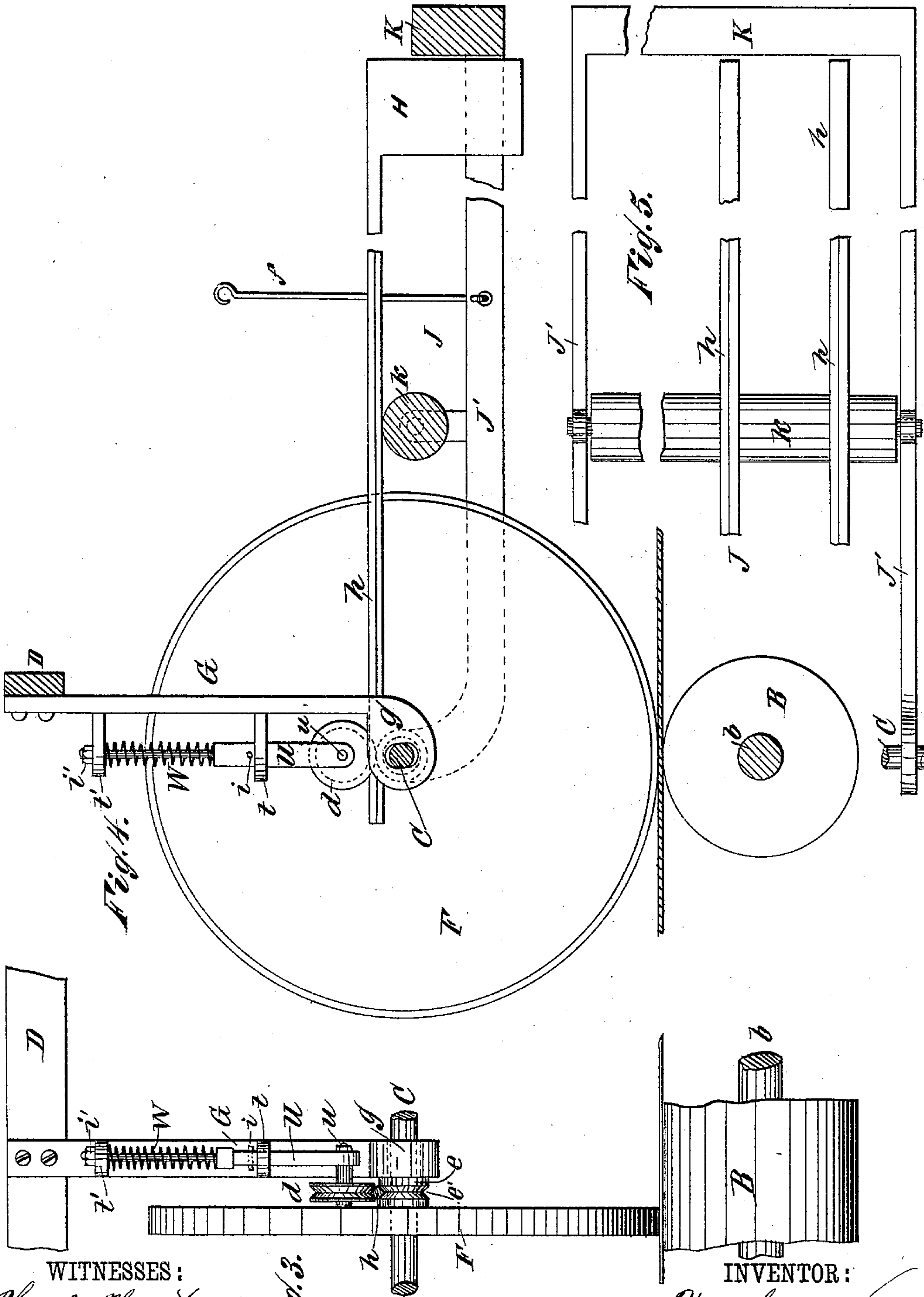
(No Model.)

2 Sheets—Sheet 2.

W. A. SAWYER.
LEATHER MEASURING MACHINE.

No. 256,058.

Patented Apr. 4, 1882.



WITNESSES:

Thos. G. Houston
C. Sedgwick

Fig. 3.

INVENTOR:

BY

W. A. Sawyer
Almon H. G.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM A. SAWYER, OF DANVERSPORT, ASSIGNOR OF TWO-FIFTHS TO
ARTHUR B. CLAFLIN, OF NEWTONVILLE, MASSACHUSETTS.

LEATHER-MEASURING MACHINE.

SPECIFICATION forming part of Letters Patent No. 256,058, dated April 4, 1882.

Application filed August 27, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SAWYER, of Danversport, in the county of Essex and State of Massachusetts, have invented a new and Improved Leather-Measuring Machine, of which the following is a specification.

The object of my invention is to provide a machine for rapidly and accurately measuring sides of leather and other similar surfaces having irregular edges.

The invention consists principally of a series of wheels or rollers adapted to move weights which operate a register indicating in feet and inches the extent of surface passed under the said wheels or rollers.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my measuring-machine. Fig. 2 is a rear elevation of the same. Fig. 3 is a detail front elevation, showing one set of wheels. Fig. 4 is a sectional elevation taken on the line *xx* of Fig. 2, and Fig. 5 is a plan view of the frame in which the weights are fulcrumed.

The main frame of the machine is composed of the uprights *A A*, which are tied together by the cross-pieces *D D'*. Upon the uprights *A A* are secured the blocks *a a*, in which the shaft *b* of the power-roller *B* takes its bearings, and above the blocks *a a* are the blocks *c c*, which hold the rod or shaft *C*.

Secured to the cross-piece *D* are the series of depending arms *G*, each of which carries a grooved roller, *d*. The lower ends of these arms *G* are formed with the perforated enlargements *g*, through which the said shaft or rod *C* passes, and upon this rod or shaft, and between these depending arms *G*, are placed the series of rollers or wheels *F*, which are loose upon the rod or shaft, and which normally rest upon the roller *B*, and are adapted to receive continuous motion therefrom. There should be a sufficient number of these rollers or wheels *F* to reach over the greatest width of the sides of leather or surfaces to be measured. The hubs *e* of these wheels are formed with the grooves *e'* to correspond with the grooves in the small wheels *d*, and the said

wheels *F* are so arranged upon the rod or shaft *C* that the grooves in the hubs come immediately under the wheels *d* for grasping the rods *h* of the weights *H* to move them back over the roller *k* of the suspended frame *J*, across which roller they are fulcrumed, the rods *h* resting at all times in the grooves of the rollers *d*. This frame *J* is composed of the side pieces, *J' J'*, the stop or end piece, *K*, and the said roller *k*, and the same hinged to the main frame of the machine by means of the side pieces, *J' J'*, being placed upon the ends of the rod or shaft *C*, which project past the uprights *A A* for that purpose, and it is suspended from the cross-bar *L* by the rods *ff* in such manner as to stand nearly horizontal, so that the weights will be held across the roller *k* about on a level with the rollers *d*.

The wheels or rollers *F*, being loose upon the shaft or rod *C*, are capable of vertical movement, so that when a side of leather or similar surface to be measured is passed from the table *M* between the power-roller *B* and the said wheels *F* those of the series under which any portion of the sheet of leather or surface being measured passes will be raised up by the thickness of the sheet, causing the hubs of the wheels to grasp the rods *h* and draw the weights forward over the roller *k*. As a greater or less number of these wheels will be raised, and consequently a greater or less number of the weights moved, according to the width of the surface passed under the wheels, and as those of the series of the weights which are moved by this elevation of the wheels will each be moved a distance corresponding to the length of surface passed under the wheels respectively, it follows that the position of the weights in the suspended frame, after the surface has passed entirely through the machine, will indicate the exact extent of surface in the sheet irrespective of its outline or shape. This indication I aggregate by means of the register or dial *N*, the pointer of which may be operated by any suitable intermediate mechanism between the said suspending cross-bar *L* and the dial.

The means which I use for operating the pointer of the dial consists of the segmental rack *n*, formed with or attached to the beam

I, which beam is suspended from the cross-piece D' of the main frame by means of arm I', and the spring O, which latter arm in turn suspends the frame J by means of the link o, 5 connected to the said beam I and cross-bar L. The beam I is dentated upon the opposite edges at opposite ends, as shown in Fig. 2, and it is furnished with the movable weight P, by means of which an equilibrium may be 10 maintained which will always bring the pointer to the zero point on the dial when the weights are all thrown back against the stop-plate K of the suspended frame.

It will be understood that the weights must 15 all be moved back against the stop-plate K of the suspended frame after the passage of each surface to be measured through the machine; and for conveniently and quickly accomplishing this backward movement of the weights I 20 provide the main frame with the lever mechanism shown in Fig. 1, to be operated by the foot of the person attending the machine. This lever mechanism consists of the main elbow-lever R and the foot-lever S, which levers are 25 pivoted to the uprights of the main frame and connected together by the rods r r, as shown in Figs. 1 and 2. The upper ends of the elbow-levers R are tied together by the cross-piece q, which, when pressure is applied to the foot-lever, comes against all of the weights and 30 forces them all back against the stop or cross-piece K to the position desired.

The movement of the elbow-levers is limited by the stop-pins s s, fixed in the arms T, which 35 are secured upon the uprights of the main frame, as shown in the drawings.

In order that the rods h of the weights may be grasped with sufficient firmness between the wheels d and the hubs of the wheels F, so 40 as to draw the weights forward with certainty while the surfaces are passing through the machine, and at the same time adapt the machine for measuring sheets of different thicknesses, I provide the vertical bars U, which carry the 45 axles u of the grooved wheels d with the spiral springs W, which hold the wheels d down with sufficient pressure to cause the rods to be firmly grasped by the hubs of the wheels F, and also permit sufficient upward movement of the 50 wheels d to allow sheets of any reasonable thickness to be passed through the machine.

The downward movements of the bars U are limited by the pins i, which pass through the

bars above the horizontal plates t, and the said bars may be adjusted by the nuts i' above the 55 plates t', which plates are secured to the depending arms G, as shown in Figs. 3 and 4 of the drawings.

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 60

1. A machine for measuring sides of leather and similar surfaces, consisting of a suitable registering device, a series of weights, and a series of wheels or rollers, the wheels or rollers being adapted to automatically move the 65 weights while the surfaces to be measured are being passed under them, substantially as described.

2. The roller B and the series of wheels or rollers F, placed loosely upon the rod or shaft 70 C, in combination with the series of weights H, the registering device N, and connecting mechanisms, substantially as and for the purposes set forth.

3. The combination, with the rods h and the 75 sliding weights carried by suspended frame J, of the series of rollers or wheels F and the main roller B, as and for the purpose described.

4. The series of wheels or rollers F, formed with the grooved hubs e, and placed loosely 80 upon the rod or shaft C, in combination with the series of wheels d and the series of weights H, provided with arms h, substantially as and for the purposes set forth.

5. The combination, with a registering de- 85 vice, substantially as described, of the suspended frame J, weights H, rods h, wheels d, vertically-movable rollers F, having hubs e, and the main roller B, as and for the purpose specified. 90

6. The vertically-movable rollers F, formed with the grooved hubs e, in combination with the corresponding spring-pressed grooved rollers d and the weights H, formed with the rods h, substantially as and for the purposes set 95 forth.

7. The arms T, provided with the stops s s, in combination with the levers R, foot-lever S, suspended frame J, and the weights H, the upper ends of the levers R being provided with 100 the cross-piece q, substantially as and for the purposes set forth.

WILLIAM ARTHUR SAWYER.

Witnesses:

GEORGE G. MERRILL,
HENRY A. SAWYER.