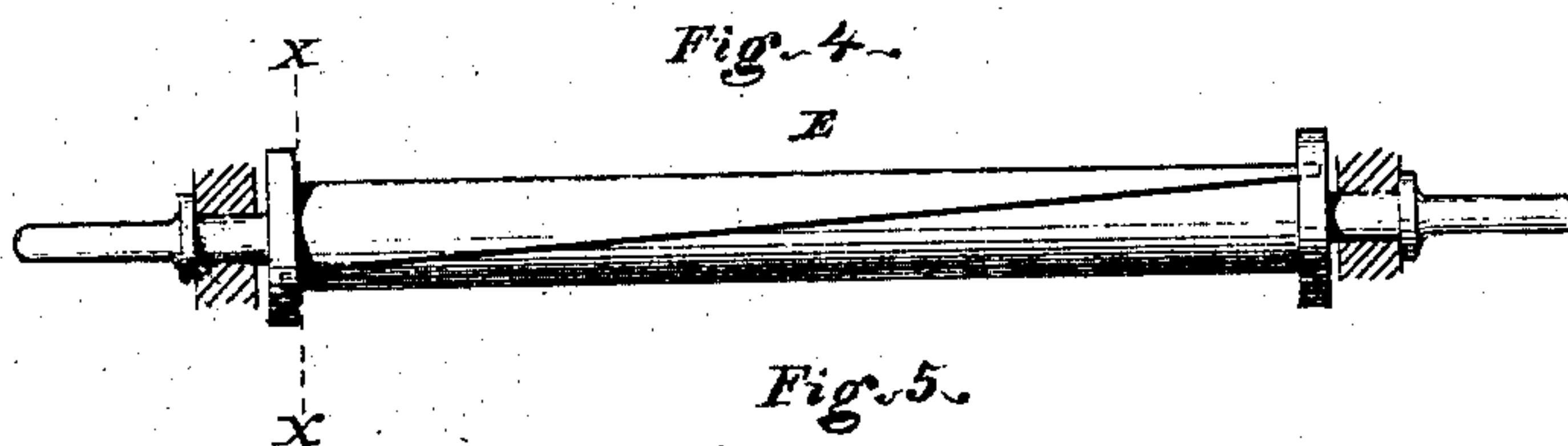
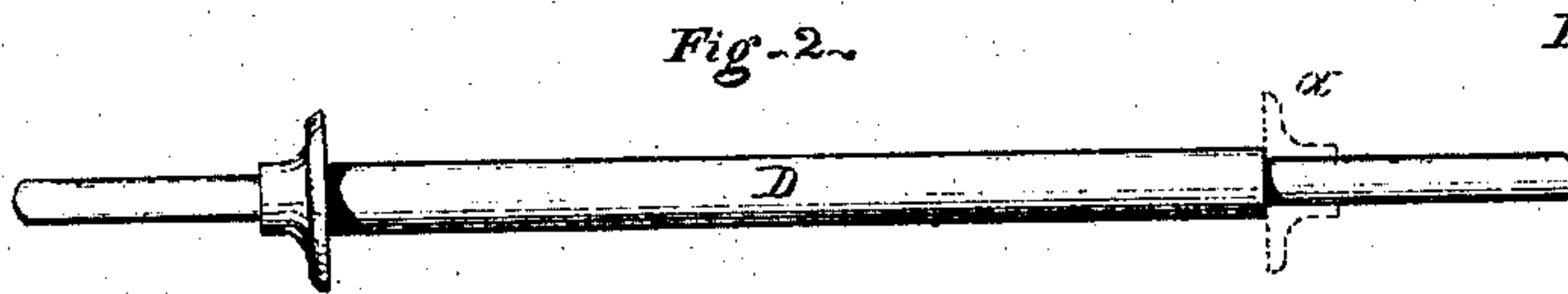
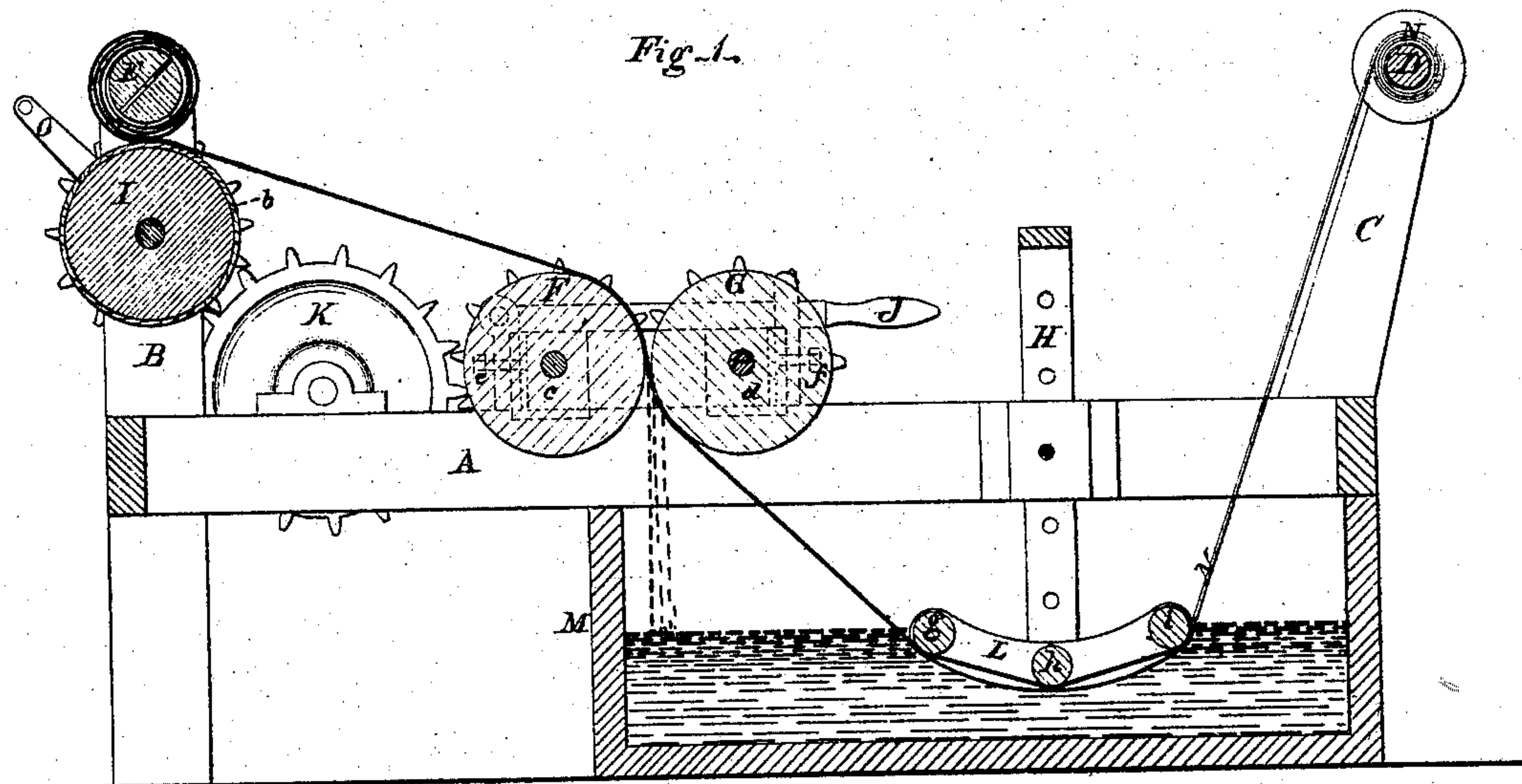


J. Roberts,
Roofing App^s.
No. 99,710. Patented Feb. 8. 1870.



Witnesses:
E. J. Sommer.
Phil. T. Dodge.

Inventor:
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by Dodge & Munro
his attys

United States Patent Office.

JOHN ROBERTS, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO HIMSELF, C. HART SMITH, OF BALTIMORE, MARYLAND, AND LEVI WILLCUTT, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 99,710, dated February 8, 1870.

IMPROVED MACHINE FOR TARRING PAPER FOR ROOFING, &c.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN ROBERTS, of Waltham, in the county of Middlesex, and State of Massachusetts, have invented certain Improvements in Machines for Tarring Paper for Roofing Purposes, of which the following is a specification, reference being had to the accompanying drawings.

My invention consists in the novel construction, arrangement, and combination of certain mechanical devices in a machine for saturating paper with coal tar, or any other substance or substances for roofing purposes, in such a manner that the paper may be thoroughly and conveniently saturated by a single operator, as hereinafter explained.

In the drawings—

Figure 1 is a longitudinal vertical section of my machine, complete, and

Figures 2, 3, and 4 are views of parts detached, and Figure 5 is a cross-section on the line *x x*, of fig. 4.

In constructing my machine, I make a suitable frame, A, of any size desired, and in open bearings.

At the upper ends of uprights C, at one end of this frame, mount a roller, D, having a loose collar, *a*, as shown in dotted lines in fig. 2, and detached in fig. 3.

In the opposite end of the frame, I mount a drying friction-roller, I, bound with cord *b*, or other material suitable for the purpose, hereinafter explained.

Above the roller I, which is mounted in the uprights B, I mount the sword or split-roller E, in open bearings, so that it may be conveniently removed.

In the same frame A, I also mount press-rollers F and G, in bearings *c* and *d*, arranged so as to be adjustable by set-screws *e* and *f*, and to be held in position by levers J, pivoted so as to allow these rollers to be removed, all as clearly shown in fig. 1.

The rollers F and G are provided with gear-wheels, and are connected with a gear-wheel on the roller I, by an intermediate gear-wheel K, as shown in the same figure.

Between the roller G and the upright C, I place a frame, H, so arranged as to slide vertically, in suitable slots or guides attached to or in the sides of the frame A, and having connected to the lower end of each of its sides curved pieces L, in which are three rollers, *g*, *h*, and *i*, and having its sides provided with holes *k*, for setting it at different heights, as desired.

In operating my machine, thus constructed, I place it over any receptacle, M, suitable for receiving the coal-tar, or other substance to be heated, and with which the paper is to be saturated, in such a manner that the frame H may carry its rollers *g*, *h*, and *i* into the liquid, and also, so that the drippings from the pressure rollers or other parts of the machine may fall into it. When the liquid is sufficiently heated I take out the

roller D, remove its collar *a*, slide onto it a roll of paper, N, return the collar *a*, and replace the roller D, with the roll of paper upon it, in its bearings in the upright C. I then pass the loose end of the paper under the rollers in the lower ends of the frame H, up through between the pressure-rollers F and G, and connect it to the sword-roller E, by passing it between the two parts of this roller, and locking it there. As this roller is divided diagonally, as shown in fig. 4, they are fastened together by having their thin ends enter a recess, *j*, under the collars of the roller, as shown in figs. 4 and 5.

When this is done, the machine is adjusted by setting the frame H and the rollers F and G as desired, then by means of a single crank, O, attached to the end of the roller I, the whole machine is operated.

The roller I, by means of friction, simply causes the roller E to turn and receive the paper, while, by means of the gearing, the pressure rollers are operated, and these in turn draw the paper through the hot liquid, around the lower end of the frame H.

The advantages of this machine over those now in use are many. The paper is first easily mounted upon the roller, preparatory to being saturated, and is readily connected to and removed from the roller about which it is wound after being saturated.

The three rollers, *g*, *h*, and *i*, on the end of the frame H, stretch the paper in passing at three different points, more completely opening its pores for the admission of the liquid than when a single roller is used.

The pressure-rollers F and G are removable, for convenience in introducing the paper, and are adjustable, so as to suit the pressure to the thickness of the paper, or to the character of the saturating liquid. The cord, or other material, bound about the roller I serves both to increase its friction and to dry the paper. Besides these advantages, the machine may be operated by a single person, and by a single crank.

I am aware that machines have been made for drawing paper from one roll onto another, through saturating liquids, about a single vertically-adjustable roller in the liquid, and then on through guide rolls and over scrapers. Having filed an application for a patent for a machine containing these devices, substantially, on the 8th of June, 1847, as will be seen by a reference to the records of the Patent Office, and having used and experimented with such machines from that time to the present, and therefore, I do not claim such a machine, broadly; but what I do claim, is—

1. A machine for saturating paper for roofing purposes, consisting of a frame A, having mounted therein the rollers D, vertically-adjustable frame H, pro-

vided with the rollers *g*, *h*, and *i*, the movable and adjustable rollers F and G, and rollers I and E, all constructed and arranged to operate as herein described.

2. The movable and adjustable pressure-rollers F and G, with their loose bearings *c* and *d*, when constructed and arranged substantially as herein described, and for the purpose set forth.

3. In combination with the roller E, the roller I, with its wrapping of cord *b*, or its equivalent, substantially as and for the purpose set forth.

4. In combination, the movable roller D, provided with loose collar *a*, the vertically-adjustable frame H, with the rollers *g*, *h*, and *i* mounted in its end-pieces L, and the sword or split-roller E, constructed and arranged to operate as described, and for the purpose set forth.

JOHN ROBERTS.

Witnesses:

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