2 Sheets—Sheet 1.

H. JENKINS.

WIRE SCREEN.

No. 5,005. **Patented Mar. 6, 1847.**

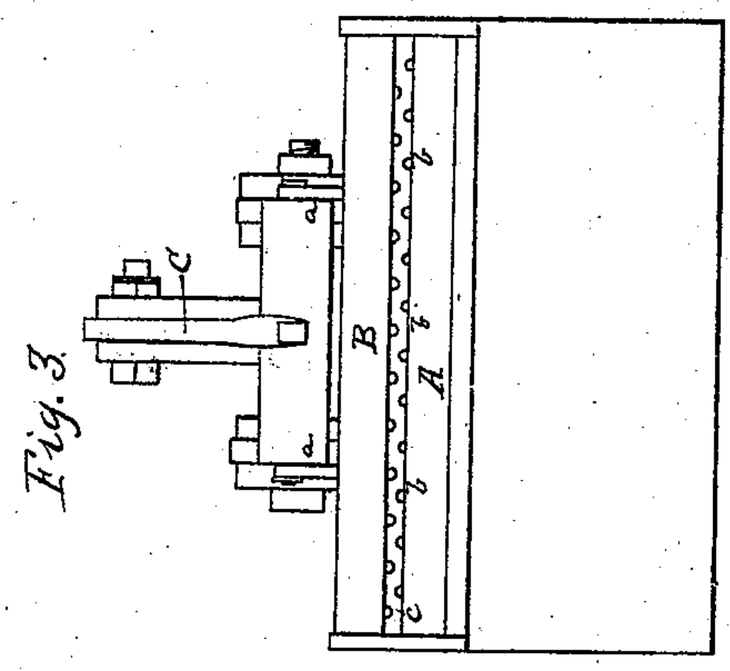

Fig. 3.

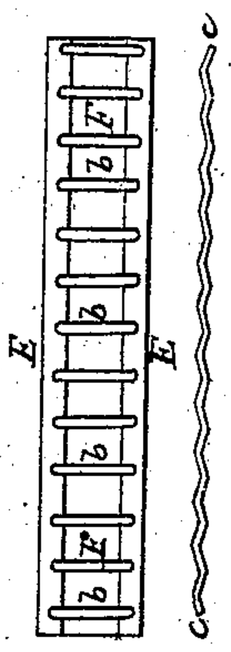

Fig. 4.

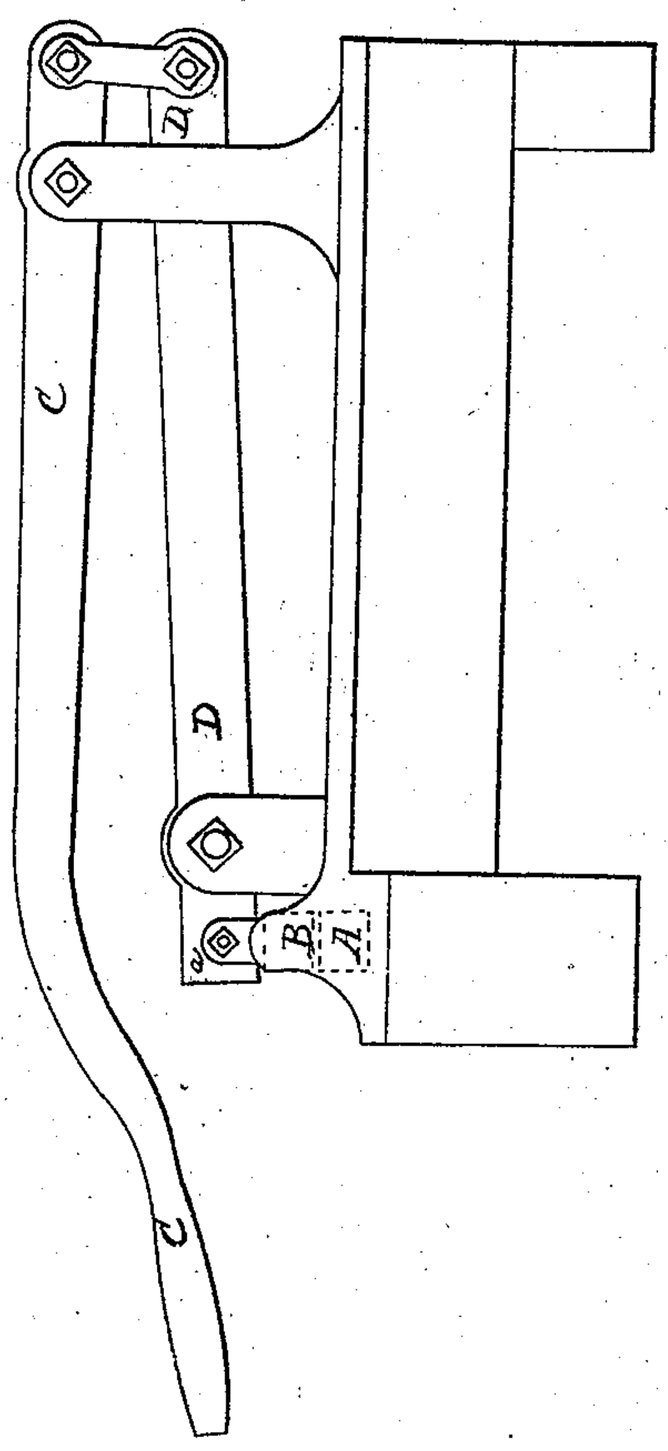

Fig. 2.

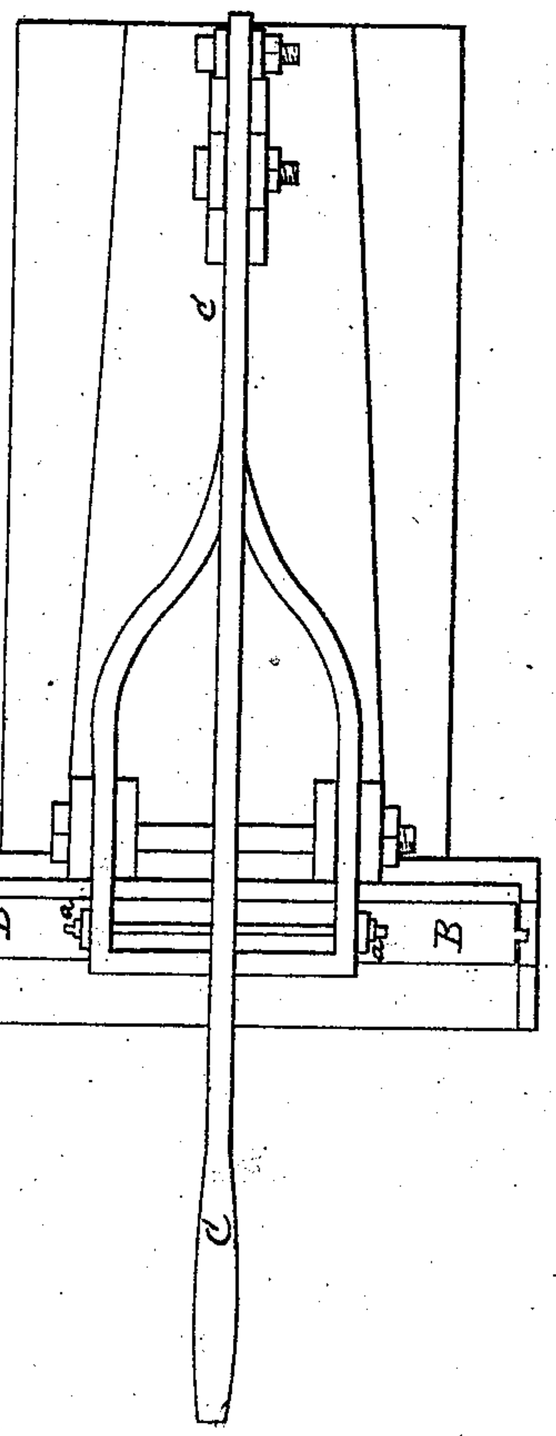

Fig. 1.

H. JENKINS.

WIRE SCREEN.

2 Sheets—Sheet 2.

No. 5,005.

Patented Mar. 6, 1847.

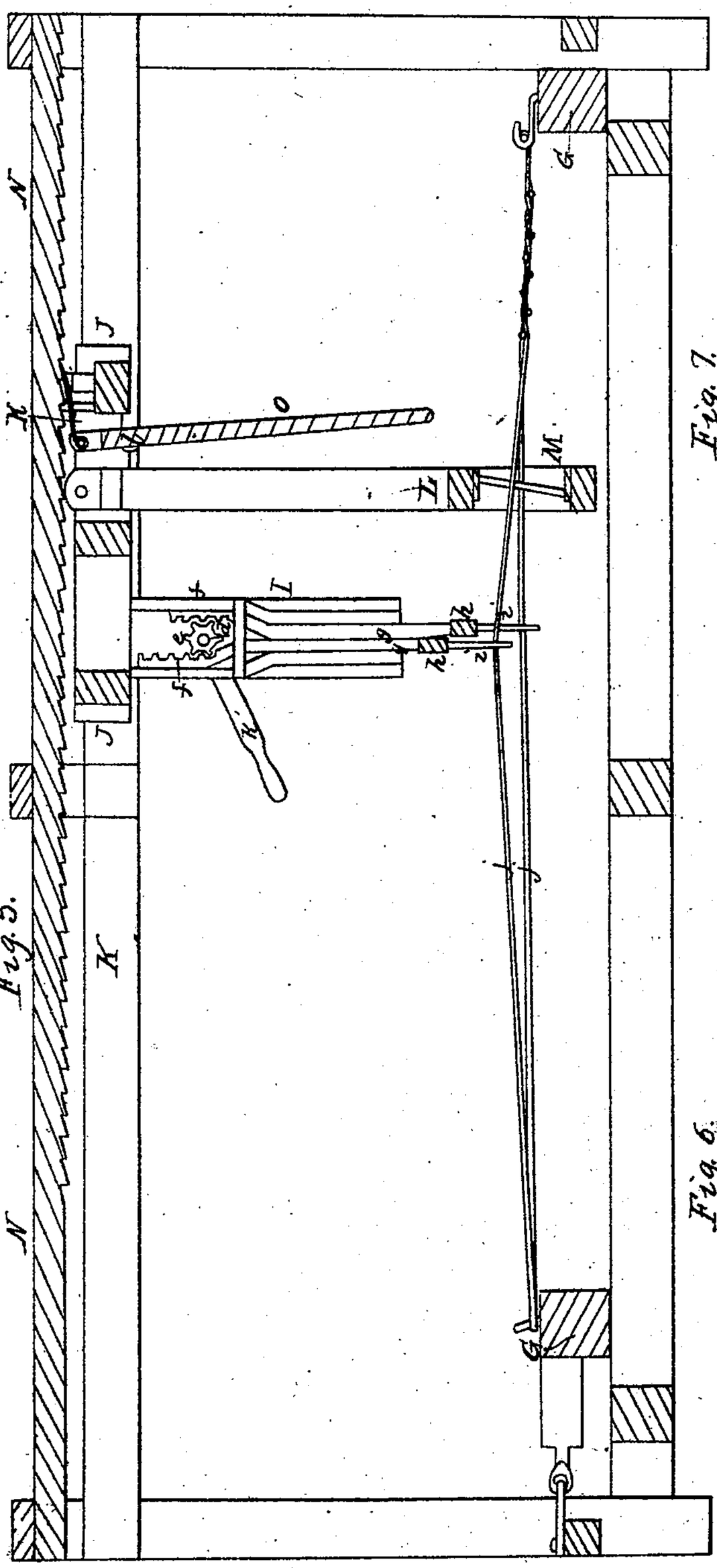

Fig. 5.

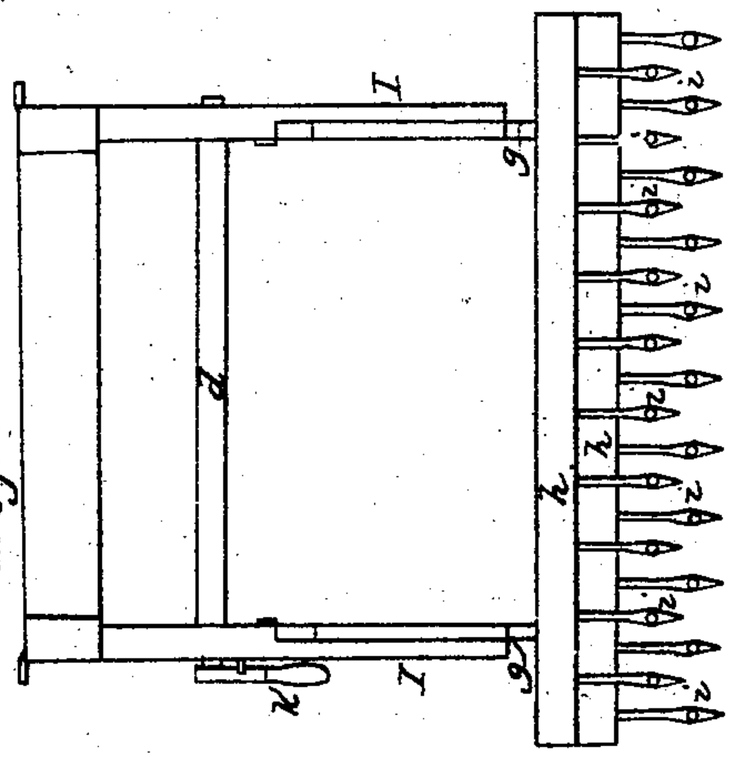

Fig. 7.

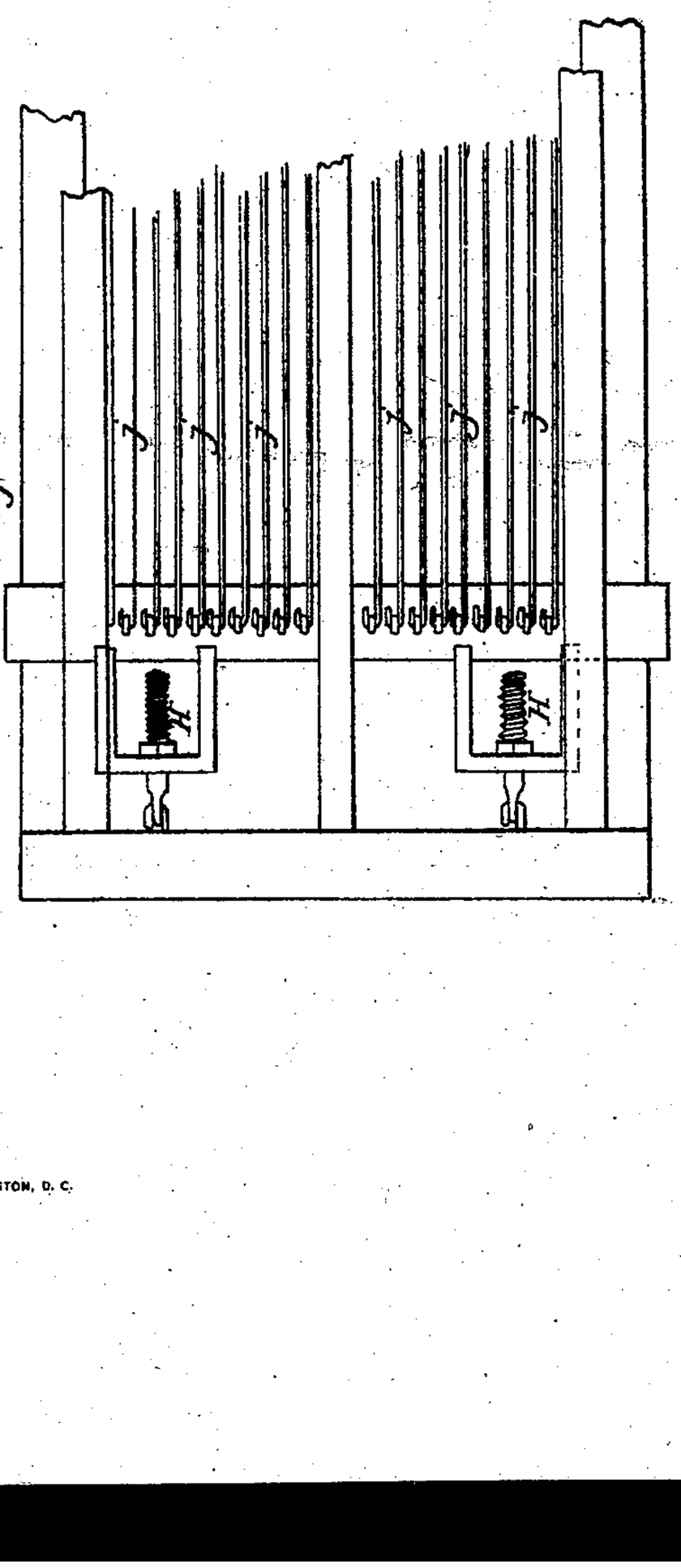

Fig. 6.

THE ECKERT LITHOGRAPHING CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY JENKINS, OF POTTSVILLE, PENNSYLVANIA.

IMPPOVEMENT IN MACHINERY FOR WEAVING WIRE GRATING.

Specification forming part of Letters Patent No. **5,005,** dated March 6, 1847.

To all whom it may concern:

Be it known that I, HENRY JENKINS, of Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and improved method of and apparatus for preparing and weaving wire of large size, for the making of wire screens for the screening or sifting of coal and other substances; and I do hereby declare that the following is a full and exact description thereof.

Screens for the sifting of coal and other heavy substances which are to be used in pieces of considerable size have been made in various ways, but to construct them in a durable manner, and so that the meshes should retain their size, has been attended with much difficulty and considerable expense. It has been attempted to make them of woven wire; but in the ordinary manner of weaving wire it has not been found possible to use that which is of a size sufficiently large, as in the operation of weaving such wire the woof or weft will not yield to the action of the warp or chain, the latter taking nearly all the bend or crimple, while the former remains nearly straight, in consequence of which the meshes thus produced are soon rendered irregular and the screen worthless.

My improvement in the process of manufacturing such screens consists in first crimpling the wire that is to constitute the woof or filling by means of a machine adapted to that purpose. When this has been done to the proper extent, the wire that is used for the warp will obtain the requisite bend or crimple in the operation of weaving.

For the purpose of enabling others to carry my improvement into operation, I have in the accompanying drawings represented a machine that I have used for crimpling the woof, and one also that I have used for weaving the wire.

In the accompanying drawings, Figure 1 is a top view of my crimpling-machine; Fig. 2, a side elevation thereof; Fig. 3, a front elevation of it, and Fig. 4 one of the bars or dies by which the crimpling is effected. Fig. 5 is a vertical section along the middle of the weaving apparatus from end to end; Fig. 6, a top view of one end of that part thereof by which the warp-wires are stretched, and Fig. 7 a front view of the hammer or apparatus for driving up the filling-wires.

A and B, Fig. 3, are the sides of the crimpling bars or dies, one of which, A, rests on the bed of the machine, and the other, B, which is placed immediately over it, is raised and lowered by means of the compound levers C D, shown most distinctly in the side elevation, Fig. 2, *a a* being links by which the bar B is connected with the lever.

Fig. 4 is a top view of one of the crimpling-bars A B, Fig. 3. These may have their sides E E of wood embracing a bar of iron, F F, between them. Into the sides E E are affixed the wires or rods *b b b*, which are best made of steel. These rest upon the bar F F. The corresponding bar or die is similarly made; but the crossing rods or wires *b b* must break joints with those in its fellow bar. The distance apart of the wires *b b* must correspond with the size of the meshes to be formed. For each sized screen there must, therefore, be a pair of such bars provided. The levers and frame-work of this machine I make of cast-iron.

The wire to be crimpled, after being straightened and cut to the proper length, is to be placed on the bar or die A, and the bar B brought down upon it by depressing the lever C, by which means the wires will be crimpled, as shown at *c c*.

To facilitate the placing and removal of the wire, the die A may be made to slide out and in under the die B. This may be effected by means of racks and pinions, or by any analogous means well known to machinists. The dies A and B, I contemplate making of bars of cast-iron chilled on their faces, instead of in separate pieces.

I will now proceed to describe the weaving apparatus which I have employed, as represented in Figs. 5 and 6. The warp-wires *j j* are shown as stretched by being hooked onto the head-blocks G G, one of which may be stationary, and the other made adjustable by tightening-screws H H. What may be denominated the "harness" is contained in a box or frame, (shown at I.) A shaft, *d*, is made to cross the machine from one of these boxes I to the other, and to carry at each of its ends a pinion, *e*, that works into the racks *f f* on the upper ends of the vertical rods *g g*. These vertical rods are framed into cross-bars *h h*. From these cross-bars descend fingers *i i*, that have holes drilled in them, through which the warp-wires *j j* pass.

k' is a handle attached to the shaft *d* for working the harness.

There are, as above indicated, two boxes, such as is shown at I, which are attached to the two sides of a sliding frame, J J, that is sustained on the string-piece K of the loom.

The manner of forming and hanging the harness is distinctly shown in Fig. 7.

To this sliding frame is also attached the sleigh L, carrying reeds M, which consist of strong rods of iron.

The frame J J is made to slide along on the string-pieces K as the work proceeds. For this purpose I extend a notched bar or rod, N N, along the middle of the upper part of the loom, and hang to the frame J a lever, *o*, carrying a pawl, *k*, that takes into notches on the bar N, and the lever O being made to vibrate on its fulcrum *l*, the harness and sleigh will be moved onward.

It will be manifest to every machinist that the crimpling and the weaving apparatus herein described may be made to assume other forms and yet produce a like effect; and it will be manifest, also, that the merit of the invention does not consist in the particular of constructing these machines, but in the process of crinkling the wires preparatory to the forming of the meshes for screens therewith.

I claim as of my invention—

The apparatus herein described for weaving the screens from wire so crinkled, said weaving apparatus consisting in the combination of the stretching frame or blocks and screws G and H with the sliding frame J J, the harness I, and the sleigh L, which are attached to the said frame, the whole of which are made to advance from one end to the other of the loom by means of the lever O and its appendages.

HENRY JENKINS.

Witnesses:
THOS. P. JONES,
EDWIN L. BRUNDAGE.