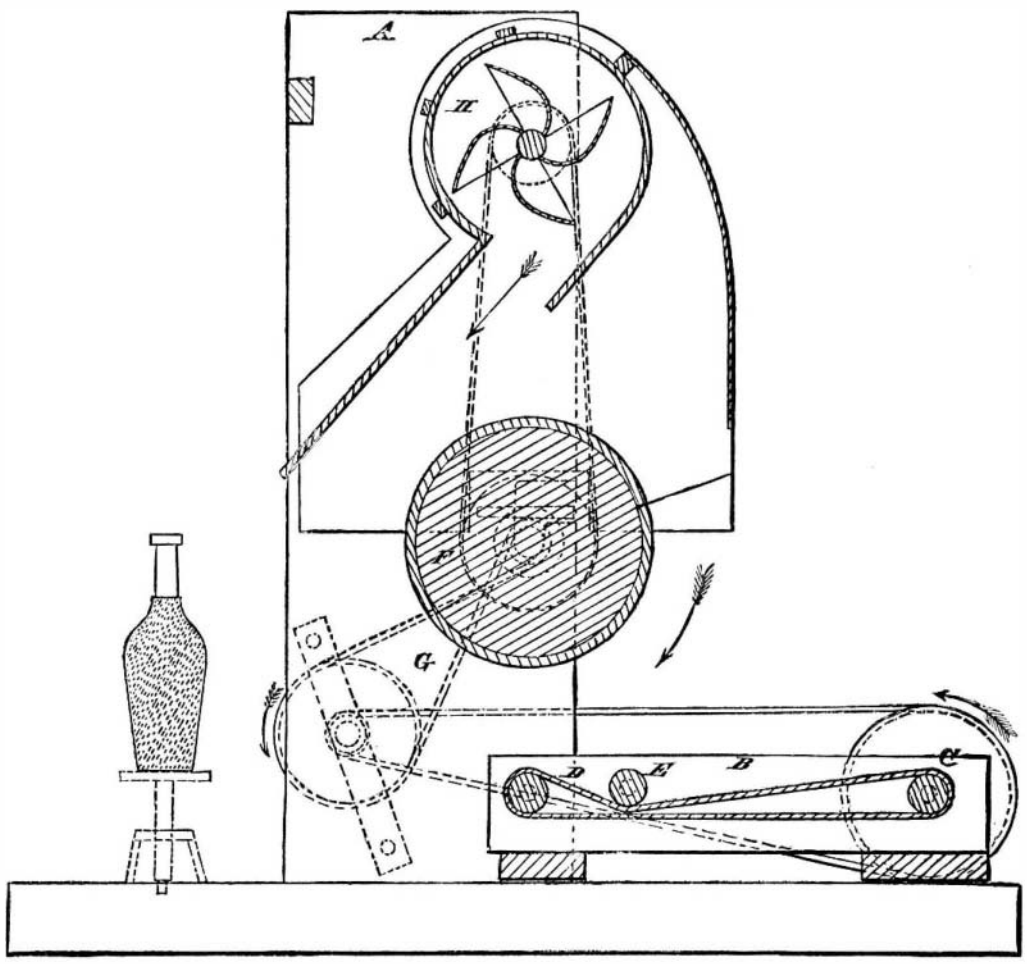
TWO NEW UTILIZATIONS OF PAPER PULP.

We illustrate herewith two new sets of apparatus for making paper pulp into either small vessels or barrels. The first, illustrated in Fig. 1. is an improved machine for depositing paper pulp upon moulds in order to form bottles, pitchers, and other vessels of *papier mache*. A is an upright frame, to which is attached a trough, B. To the end parts of the frame, B, are pivoted two rollers, C, around which passes an endless belt, D, made of wire cloth. To the forward part of the frame, B, is pivoted a third roller, E, beneath which the carrier, D, passes, so that the distributing fingers can only come in contact with its forward part. A drum, F, has rows of spring fingers, G, of such a length that their ends will come in contact with the forward end of the carrier, D, to take particles of pulp from said carrier, and project them upon the object to be coated, in front of the machine, and slowly revolved. The particles of pulp are directed more accurately against the article to be coated by the blast from a fan blower, H. In this way bottles, pitchers, and other vessels may be quickly and evenly coated with pulp, or coatings of pulp may be deposited upon forms, from which they may be withdrawn, when dry, by slitting them. The pager pulp coatings, when dry, may be polished, varnished, and otherwise finished.

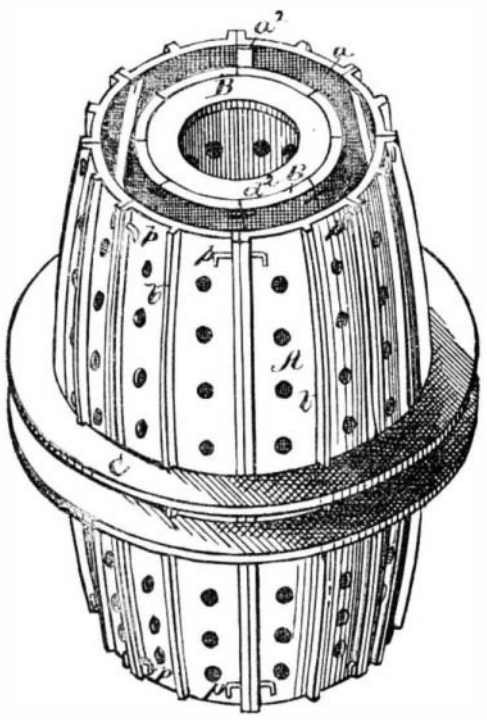


JENNINGS' PAPER PULP DISTRIBUTER.—Fig. 1.

Patented through the Scientific American Patent Agency, March 13, 1877, by Mr. Isaac Jennings, of Fairfield, Conn.

The second invention, illustrated herewith in Fig. 2, has for its object the production of a barrel or other similar article of any convenient size, and composed of ordinary straw pulp, made of straw or other suitable raw material. To this end, therefore, the invention consists of a mould or form in which to compress the pulp into proper shape.

A represents a number of staves, preferably of metal, their interior surface having the form desired for the exterior of the barrel. B B are a number of staves or sections, which, when set up inside the staves, A A, form a cone having an exterior form corresponding to that desired for the interior of the barrel. C C are rings, which are passed over the ends of the staves, A A, in the manner of hoops upon a barrel, and by their pressure preserve the external form of the mould. The stave, A, is perforated, as shown, and on its inside over the perforations is secured in



HUBBARD'S PAPER BARREL MOULD.—Fig. 2.

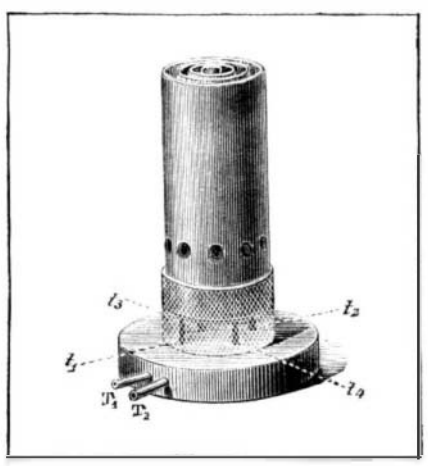
any suitable manner a wire gauze or similar device, *a*. Upon the inner edge of one side of the stave is secured a strip of thin metal forming a rabbet, a^2. This rabbet prevents the pulp from being forced out between the staves as the pressure increases, before the edges of the staves form a tight joint. Upon the back of the stave are three ribs, two of which form the edge of the stave, A, and one is a central rib, *b*. Each end of the sections, B, is formed into an offset for giving a croze or some similar formation to the ends of the barrel when pressed into shape, and said sections are perforated and covered on their exterior surface with wire gauze in the same manner as is the interior surface of the staves, A. The sections, B, are also provided with lugs, *d*, which serve to steady the sections and assist in holding them together when setting them up before pressure is brought upon the mould by serving as supports for the rings, d^2. One of the sections, B, has its edges beveled the reverse of the others, by which means it can be readily removed from the mould when the barrel is made, after which removal the other sections may be easily taken out also. The ring, C, is provided with slots or notches, *c*, which notches guide it as it is forced upon the staves, A A. These staves are also held together by wire pins, *p p*.

The complete operation of the mould or press can now be understood. The staves and sections being all set up, as above described, and the annular space between them filled with any suitable pulp, the rings, C C, are forced over the staves, A, by screw power, when the pulp will be compressed, as the rings approach each other, into the desired shape, the water contained in the pulp at the same time being forced out through the perforations in the staves and gauze. The shaped pulp, still under pressure, may now be subjected to any suitable drying process, the heat reaching it through the wire gauze and the perforations in the staves, both from the inside and outside. When the shaped barrel is considered dry enough, the rings, C C, are removed from the staves, A A. The staves thus released from pressure can readily be withdrawn, as above described, from contact with the barrel, and the barrel, as a completed article, is ready to be headed in any desired manner.

This invention was patented February 1, 1876, by Mr. Eber Hubbard, of Medina, N. Y.

THE NEW GODEFROY BURNER.

M. Godefroy's new burner, which is represented in the annexed illustration, is composed of four concentric sheet iron cylinders. The first and third are pierced with lateral holes at the base. The intervals between the cylinders communicate, some with the pipes, t^1 and t_2, joining the exterior gas tube, T, and others with the tubes, t_3, t_4, which unite with



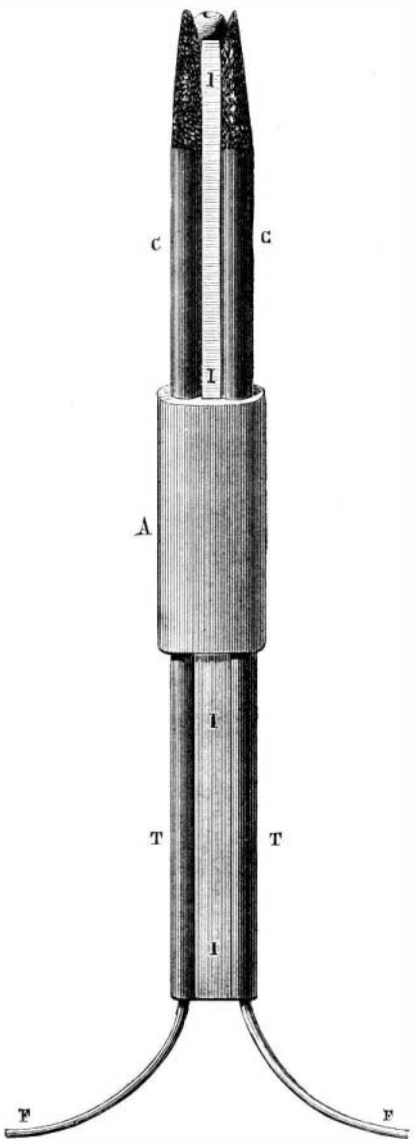
the tube, T_2. Wire gauze placed at the base of the apparatus prevents the flame from flickering, while it regulates the introduction of the air. Only two internal cylinders may be used if desired, in which case a high and regular white flame is produced.

THE ELECTRIC CANDLE.

The Jablochkoff electric candle, which we briefly described some months ago, on the occasion of its introduction to the French Academy of Sciences by its inventors, is now being used in Paris for the illumination of large stores. As the matter of lighting the streets of large cities by the electric light has of late been somewhat discussed, this invention is of timely interest, more especially as it appears to afford a new and simple means for employing that most powerful source of illumination.

The electric light, as all are aware, is now produced by means of two rods of carbon placed end to end, the extremities separated by a distance of some hundredths of an inch. Through the carbons a powerful electric current is passed, which, if the rods touch, simply heats them; but if they are separated, as above mentioned, it causes the production between the ends of the intensely luminous voltaic arc. As the rods become consumed, the arc elongates; and, finally, when the distance becomes too great, it ceases. Consequently, unless machinery is provided which compensates for this consumption by maintaining the ends of the rods always at the proper distance, the arc cannot be kept for longer than a few minutes. Electric lamps therefore are provided usually with clockwork or electro-magnetic devices for this purpose. When the source of the electricity is a battery or a continuous-current electric machine, such as the Gramme, the two rods are unequally consumed, that at the positive pole disappearing about twice as fast as the other. With other machines, whereby the current is alternately reversed, the consumption is about uniform for both.

The disadvantages attending even the most improved lamps, such as the Serrin apparatus, for example, lie in the care and attention required by the delicate mechanism, the difficulty of regulation, the casting of a shadow by the mass above the arc, the necessity of renewing the carbons at intervals of three hours, the consequent extinction of the light, and finally the high cost. It



is simply necessary to point out that M. Jablochkoff's candle aims to do away with all of these difficulties to show the importance of the invention.

The device is represented in its full dimensions in the annexed engraving, for which we are indebted to *La Nature*.