

INGRAM ROTARY PRESS AT THE PARIS EXHIBITION.

Class 60 of the Exhibition consists of "Apparatus and The processes used in paper making, dyeing, and printing." British Section contains, among printing machines, one invented by Mr. W. J. Ingram, M.P., managing proprietor of the *Illustrated London News*, for the rapid production of perfected copies of that journal.

"The Ingram Patent Rotary Printing Machine," as it is called in the official catalogue, is the object of much notice among visitors to the Exhibition who care for mechanical appliances. It is the second of its kind that has been made, and has received certain improvements; the printing and impression cylinders are here all of equal size, enabling three whole sheets to be printed at each revolution; or two copies of the half sheet, with a duplicate of the type, may be printed simultaneously by one of the cylinders.

Attached to the printing machine is the folding machine, which can be worked either in company with it or separately, cutting off and folding the sheets as fast as they are printed.

The difficulty formerly experienced in printing, by the action of a cylinder, sheets to be impressed with engravings, has been completely overcome; the diameter of the cylinder is so greatly increased that the plates of engravings require to have but a slight degree of curvature; while two, three, or more duplicate

Workingmen in England and France.

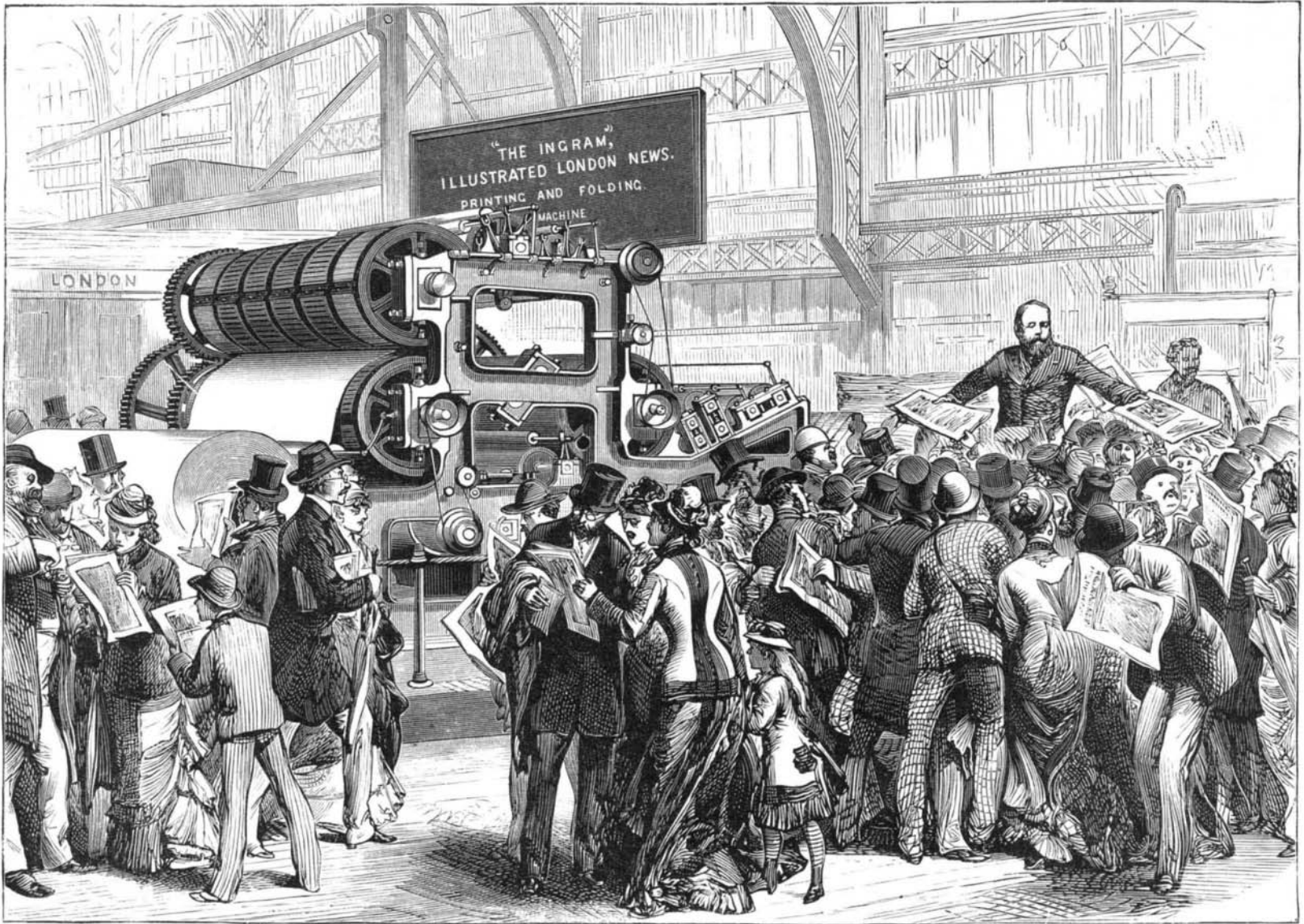
Land and Water, drawing a contrast between the working people of France and England, suggests that the latter would do well to send out a commission to France and inform itself why the people of the latter are more thrifty and have less pauperism than prevails among the English working classes. The writer proceeds to say:

"The French artisan works longer for his weekly earnings than the Englishman. On the average the difference in the number of hours is 27½ per cent, while the wages paid are 25 per cent lower, so that in these two items together the employer in France has an advantage over an English mill owner of more than 52 per cent. On the other hand, a somewhat greater number of hands have to be employed in France than in England for a similar amount of work, and some classes of English work people individually produce more than the same class of French work people; but on the whole, after allowing for these considerations, the best authorities agree that labor in France costs one fourth less than in England; in other words, the earnings of a French operative are 25 per cent less than those of the British workingman. Then are the French artisans in worse circumstances than the English industrial classes? Quite the contrary.

"The most striking fact with regard to the French working classes is that nearly all are possessed of money. How-

was 228,696; in 1875 the number of holders of French rentes was 4,380,933. Many artisans in France live in their own freehold houses; others rent small houses, or more commonly the flat of a larger house. In some districts rent is about the same as in the manufacturing districts in England; in other parts it is much lower. Butcher's meat is a trifle cheaper, but meat is not, as with us, an article of daily consumption. In the south of France, thanks to the climate and soil, fruit is to be had for very little, and wine is abundant and cheap. Clothing is far cheaper; the blue blouse, the invariable working dress, being very useful, suitable, and inexpensive. All these are points in favor of the French workingman. But then he is paid 25 per cent less than the Englishman, and therefore how is it that he is able to save so much more than the British operative?

"During various inquiries made of late years into the factory laws, eminent witnesses declared that the physique of our operatives is deteriorating; if so, then the ham, eggs, potatoes, spirits, and so forth, in which they more and more indulge, have not been of much use to them. Of course, the great mistake of the English working classes is intemperance; the public house is the sink down which he steadily pours his earnings. In France it is otherwise. French wine, if cheap, is unintoxicating; drunken men are rare, and a drunken woman is seldom seen. But, after all, it may be that the mischievous effects of an ill-administered Poor



THE INGRAM ROTARY MACHINE FOR PRINTING ILLUSTRATED NEWSPAPERS.

plates may be placed on the same printing cylinder. The "impression cylinder," which carries the paper from a roll of immense length, is made of corresponding size; this brings the paper in contact with the inked type on the "printing cylinder," rotating at the same speed. Another improvement has been made in the inking apparatus of distributing rollers, or cylinders to supply the engravings with ink, which is done so amply and evenly as to render the most perfect impressions on the paper. This machine can deliver 6,500 perfect copies an hour of the *Illustrated London News*, with its supplements, every sheet well printed on both sides, cut-off, and neatly folded. It has been manufactured by Messrs. Middleton & Co., engineers, of Southwark. Mr. James Brister, manager of the machine department in the office of that journal, was intrusted by Mr. Ingram with the practical execution of his design, and superintended the construction of the new machine. A Gold Medal was awarded to Mr. Ingram at Paris for the "Ingram Patent Rotary Printing Machine." We take our illustration from the *London News*.

A Steam Tricycle.

In one of the railway material annexes at Paris is a steam tricycle, having the boiler under the rider's seat, the hind wheels being driven by a cord from the crank shaft pulley. The engine is a tiny cylinder, inclined about 45°. The position of the boiler, which, by the way, is of a rather complicated and inexplicable type, commends itself for winter use.

ever little they earn, they save something. Thrift is their great characteristic; in fact, it is said of the French operatives that they spend less in proportion to their means than any in the world. Many keep their accumulations in an old stocking secreted in their houses; others—a daily increasing number—invest in various securities, the most popular investment being the purchase of land. Every Frenchman, when he can, becomes the owner of the house in which he lives. Of course he is greatly aided in this by the French land laws and laws of inheritance, which cut the whole country up into small holdings. Savings banks with government security, building clubs, sick clubs, and friendly societies are also in favor, but no money is tied up in trades unions. Strikes of course occur, but in some industrial centers they are very rare, as, for instance, in the woolen districts. Some authorities say that the French workmen have not yet felt and do not know their power, and believe that they will ultimately become more difficult to deal with. We doubt this explanation, because politically the French workmen have repeatedly shown that they are alive to the strength which combination gives; they understand that strength, and they have used it, often with sad consequences to themselves; but socially and commercially they have not proved themselves fond of trades unionism, and we believe those are right who tell us that the French workingman is, as a rule, well aware that his interests are bound up with his employer's, and that strikes are suicidal. How many British work people hold consols? In 1874 the number of persons entitled to dividends from the British funds

Law, operating from generation to generation, is more than anything else to be blamed for the want of thrift among our industrial classes. From father to son the traditional maxim goes, 'Why save when there are the rates to fall back on?'

[The whole secret of the Frenchman's superior thrift may be stated in three words—industry, economy, temperance.—EDS.]

New Artesian Well, Vitoria, Spain.

The new artesian well which is now being bored, under the direction of Mr. Richard, C. E., at Vitoria, Spain, has now reached a depth of nearly 2,200 feet. The diameter of the bore is about 20 inches. The drills are worked by a 32 horse power steam engine. All the machinery is described as being of the most perfect and effective character. It is hoped that one of these days the drills will reach a subterranean river capable of supplying the city with an abundance of the purest water.

A Long Train.

On the Northern Central Railroad of Pennsylvania, lately, engine No. 4 drew from Clark's Ferry to Sunbury, a distance of thirty-one miles, a train consisting of 183 empty freight cars, one loaded eight-wheeler, two cabooses, and a dead engine. It was up-grade work, but the trip was made at the rate of ten miles an hour. The train was 6,200 feet long, or 920 feet more than a mile, and, it is claimed, was the longest ever drawn by a single engine.