DRAWING IN TIME

Why animate? Everyone knows it's a lot of hard work doing all those drawings and positions. So what's the hook? Why do it?

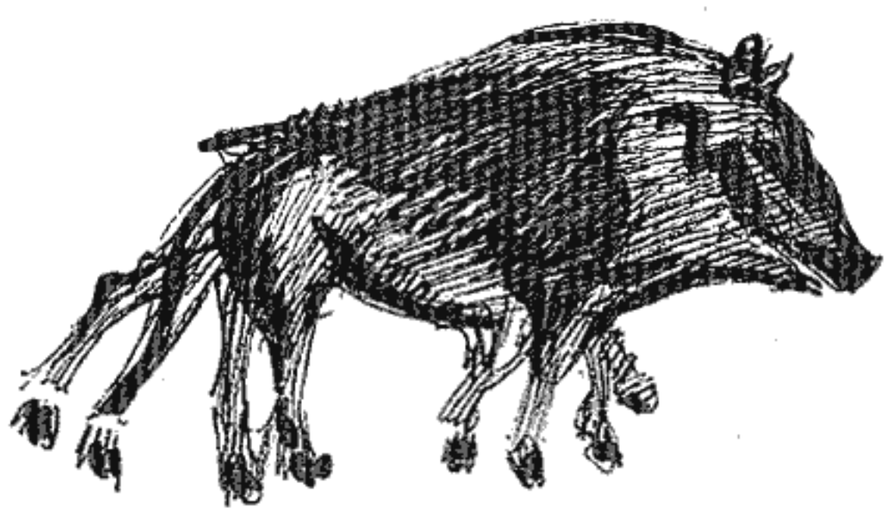
Answer: Our work is taking place in *time*. We've taken our 'stills' and leapt into another dimension.

Drawings that *walk*: seeing a series of images we've made spring to life and start walking around is already fascinating.

Drawings that walk and *talk*: seeing a series of our drawings talking is a very startling experience.

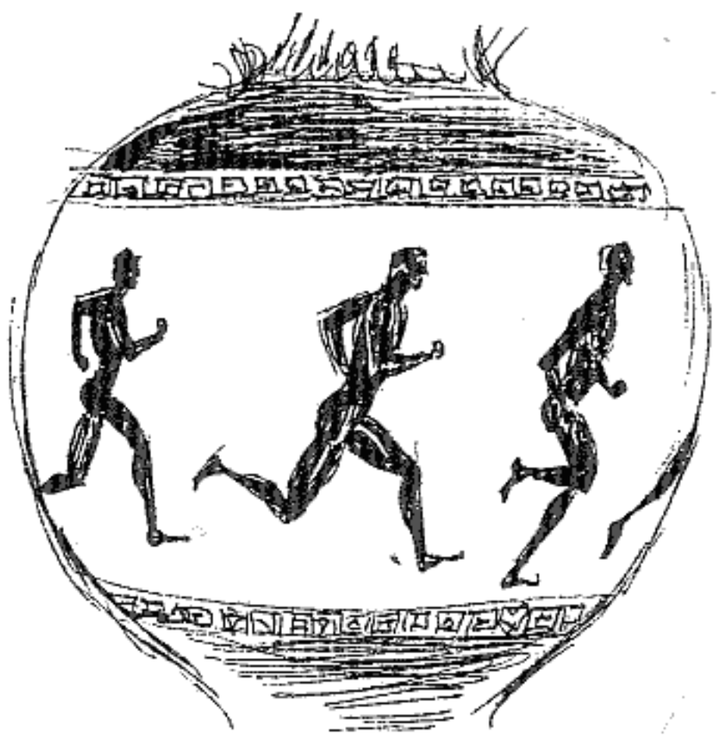
Drawings that walk and talk and *think*: seeing a series of images we've done actually go through a thinking process – and appear to be thinking – is the real aphrodisiac. Plus creating something that is unique, which has never been done before is endlessly fascinating.

We've always been trying to make the pictures move, the idea of animation is aeons older than the movies or television. Here's a quick history:

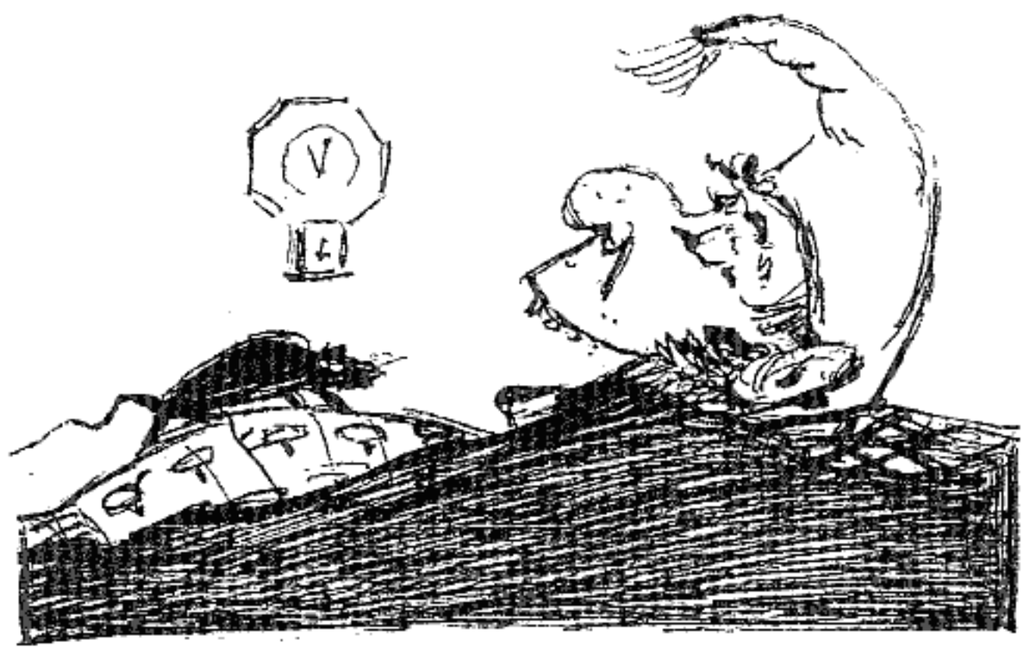


Over 35,000 years ago, we were painting animals on cave walls, sometimes drawing four pairs of legs to show motion.

In 1600 BC the Egyptian Pharaoh Rameses II built a temple to the goddess Isis which had 110 columns. Ingeniously, each column had a painted figure of the goddess in a progressively changed position. To horsemen or charioteers riding past – Isis appeared to move!



The Ancient Greeks sometimes decorated pots with figures in successive stages of action. Spinning the pot would create a sense of motion.



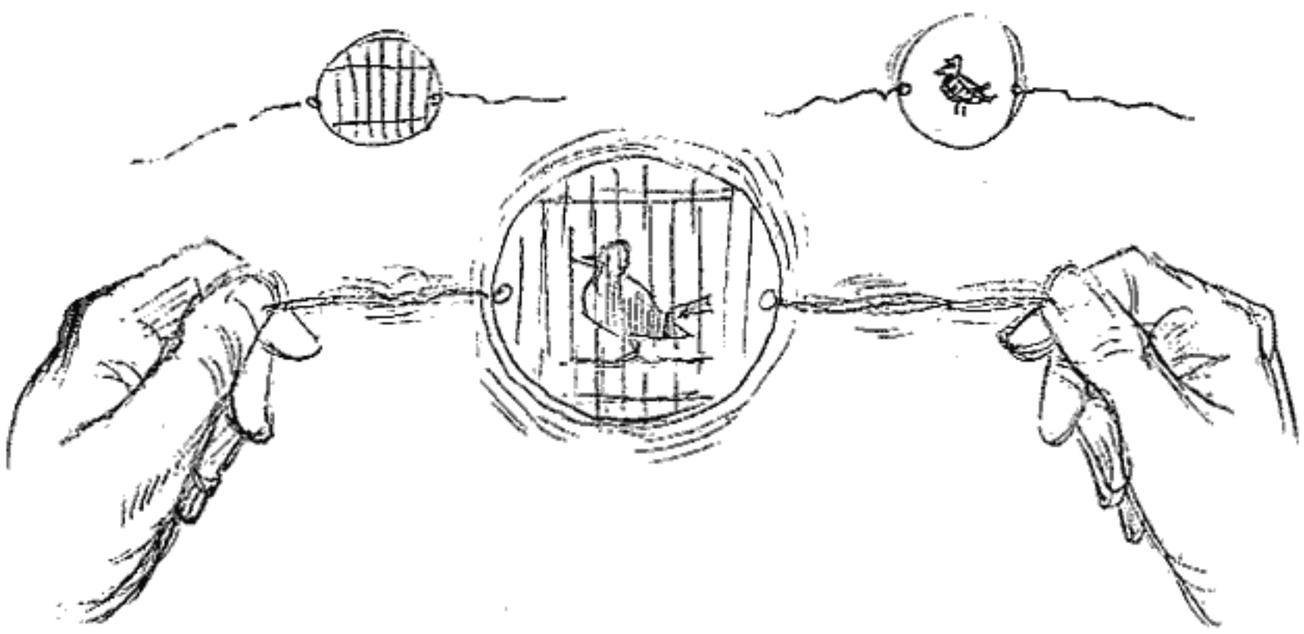
As far as we know, the first attempt to project drawings onto a wall was made in 1640 by Athonasius Kircher with his 'Magic Lantern'.

Kircher drew each figure on separate pieces of glass which he placed in his apparatus and projected on a wall. Then he moved the glass with strings, from above. One of these showed a sleeping man's head and a mouse. The man opened and closed his mouth and when his mouth was open the mouse ran in.

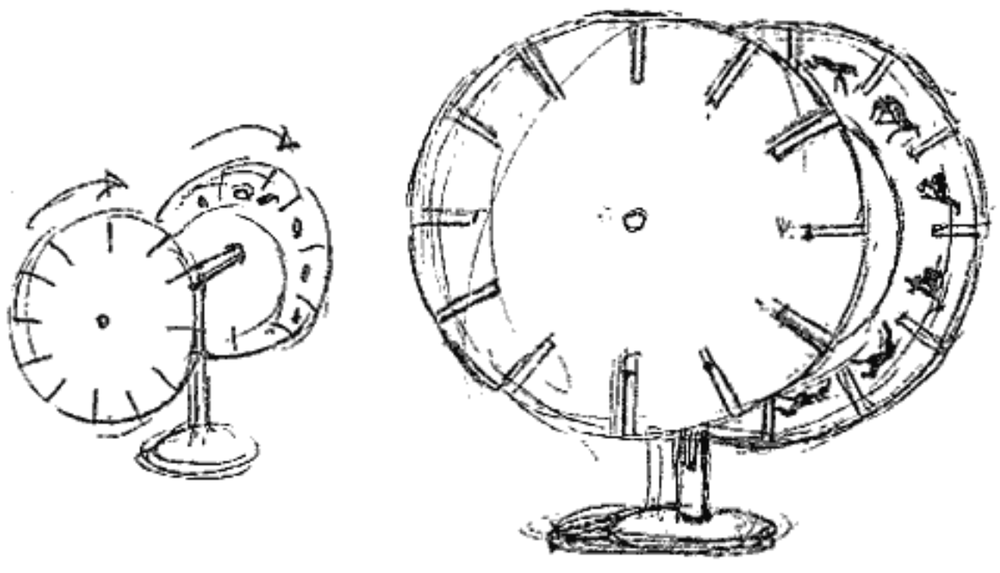
Although photography was discovered as early as the 1830s, most new devices for creating an illusion of movement were made using drawings, not photos.

In 1824 Peter Mark Roget discovered (or rediscovered, since it was known in classical times) the vital principle, 'the persistence of vision'. This principle rests on the fact that our eyes temporarily retain the image of anything they've just seen. If this wasn't so, we would never get the illusion of an unbroken connection in a series of images, and neither movies nor animation would be possible. Many people don't realise that movies don't actually move, and that they are still images that appear to move when they are projected in a series.

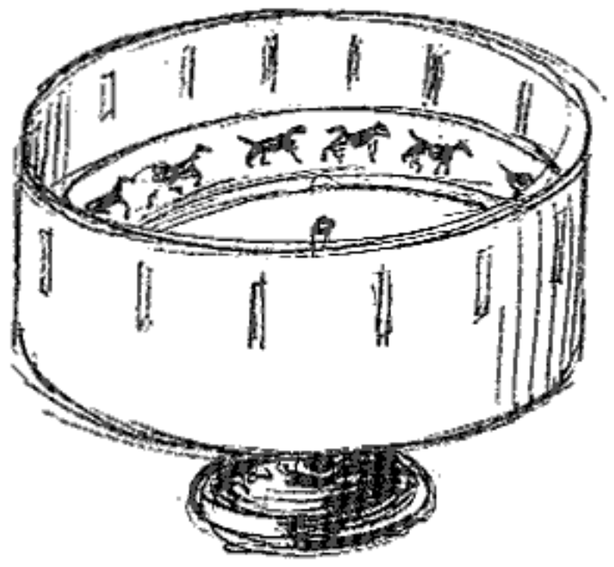
Roget's principle quickly gave birth to various optical contraptions:



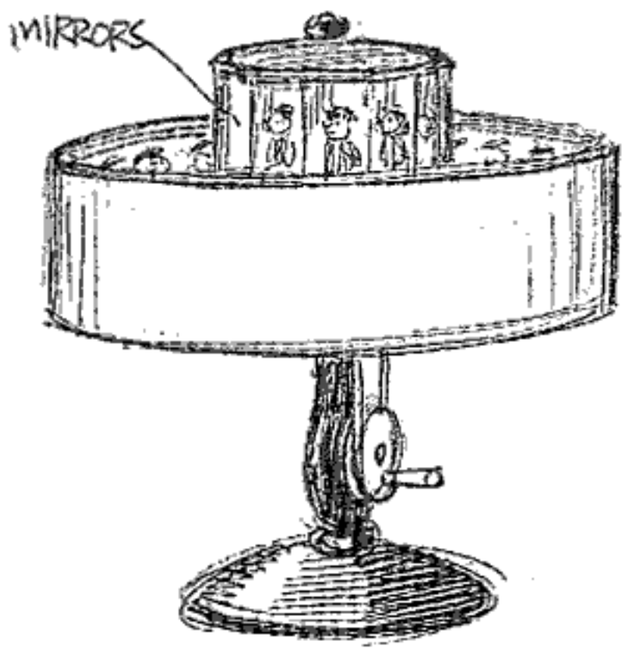
The Thaumatrope: A cardboard disc mounted on a top – or held between two pieces of string. A birdcage drawing is on one side and a bird on the other. When the top is spun or the strings are pulled the disc twirls, the images merge and the bird seems to be in the cage.



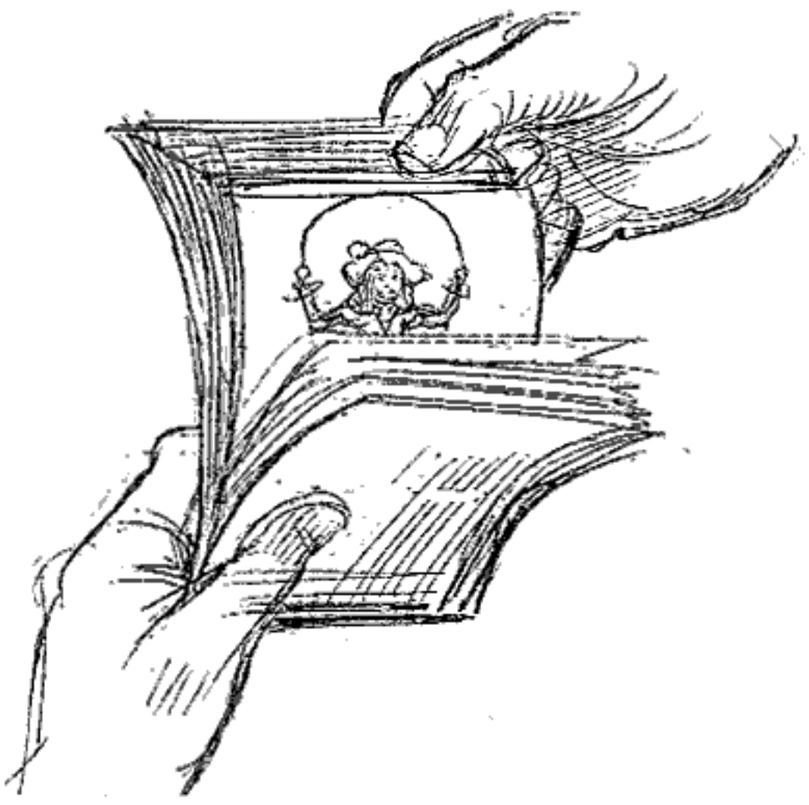
The Phenakistoscope: Two discs mounted on a shaft – the front disc has slits around the edge and the rear disc has a sequence of drawings. Align the drawings with the slits, look through the openings and as the discs revolve we have the illusion of motion.



The 'Wheel of Life' (or the Zoetrope): Appeared in the USA in 1867 and was sold as a toy. Long strips of paper with a sequence of drawings on them were inserted into a cylinder with slits in it. Spin the cylinder, look through the slits and the creature appears to move.

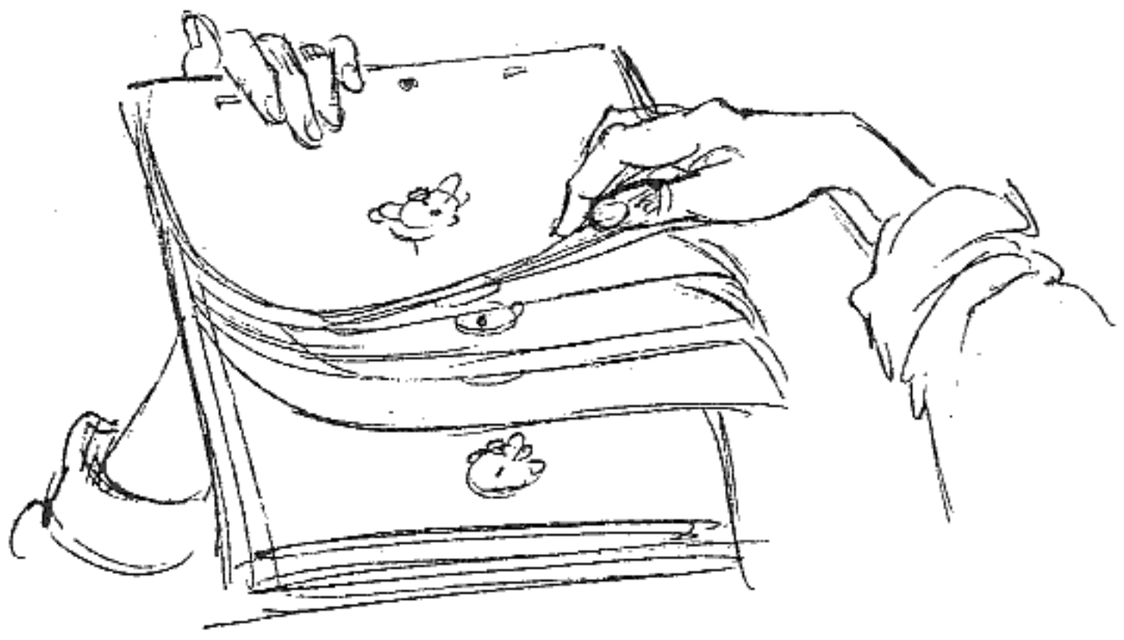


The Praxinoscope: Devised by the Frenchman Emile Reynaud in 1877. He was the first to create short sequences of dramatic action by drawing on a 30 foot strip of transparent substance called 'Crystaloid'. This opened the way for the tremendous advances to come.



The Flipper book: In 1868 a novelty called 'the flipper book' appeared worldwide and it remained the simplest and most popular device. It's just a pad of drawings bound like a book along one edge. Hold the book in one hand along the bound edge and with the other hand flip the pages and 'see 'em move'. The result is animation – the illusion of continuous action. Drawings in time.

This is the same as school kids making drawings in the corners of their math books and flipping the pages.



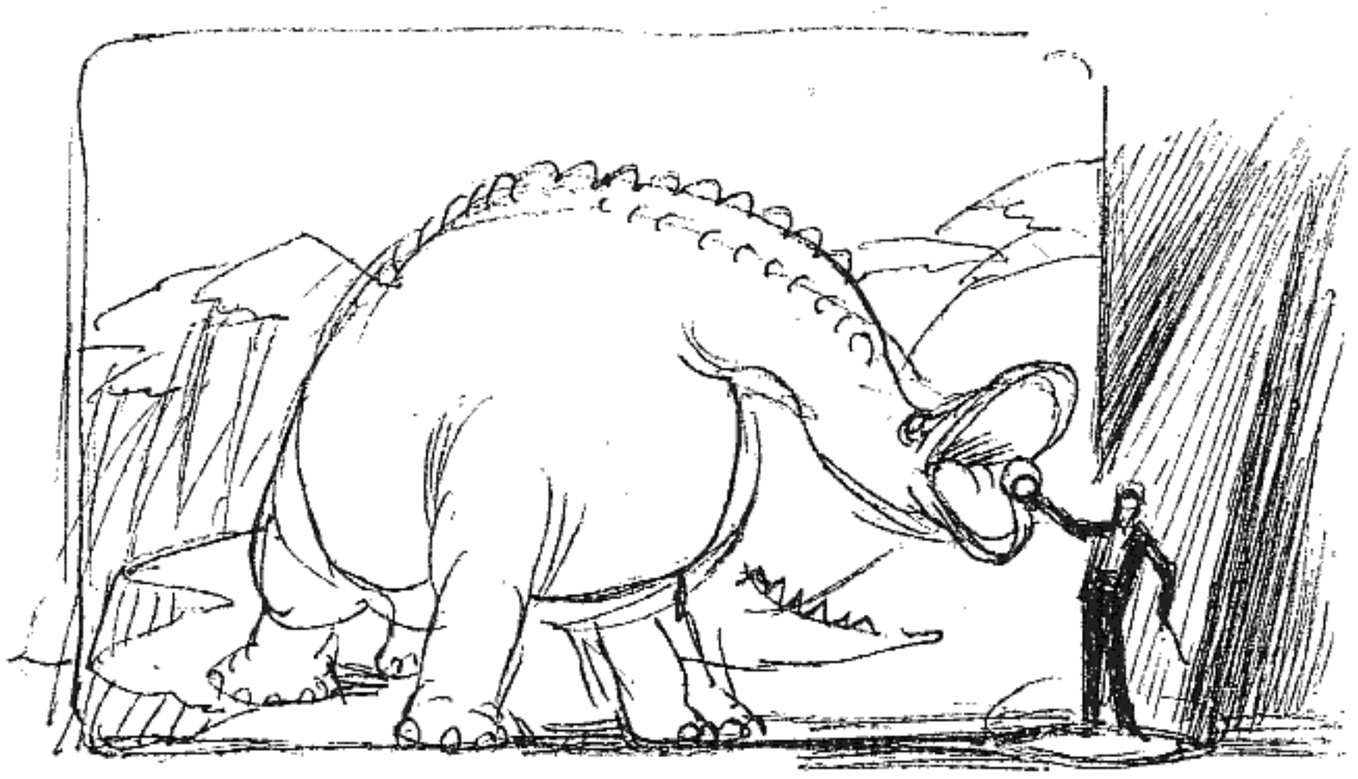
Today the 'classical' animator still flips his drawings the same way as a flipper book before testing it on the video or film camera. He places the drawings in sequence, with the low numbers on the bottom, then flips through the action from the bottom up. Eventually he should get good enough at it to approximate actual screen time and spot any errors or drawings that need altering. Now that we have the video camera with its instant playback of the drawings at film speed, not everyone learns to flip.

In 1896 a New York newspaper cartoonist James Stuart Blackton interviewed the inventor Thomas Edison who was experimenting with moving pictures. Blackton did some sketches of Edison, who was impressed by Blackton's speed and drawing facility and asked him to do some drawings in a series. Later, Edison photographed these – the first combination of drawings and photography. In 1906 they publicly released *Humorous Phases of Funny Faces*. A man puffed a cigar and blew smoke rings at his girl friend, she rolled her eyes, a dog jumped through a hoop and a juggler performed. Blackton used about 3000 'flickering drawings' to make this first animated picture – the forefather of the animated cartoon. The novelty brought explosions of laughter and was an instant hit.

A year later Emile Cohl made and showed his first animated film at the Follies Bergères in Paris. The figures were childlike – white lines on black – but the story was relatively sophisticated: a tale of a girl, a jealous lover and a policeman. He also gave lampposts and houses intelligence and movement, with emotions and moods of their own. Cohl's work prefigures the later animation dictum, 'Don't do what a camera can do – do what a camera *can't* do!'

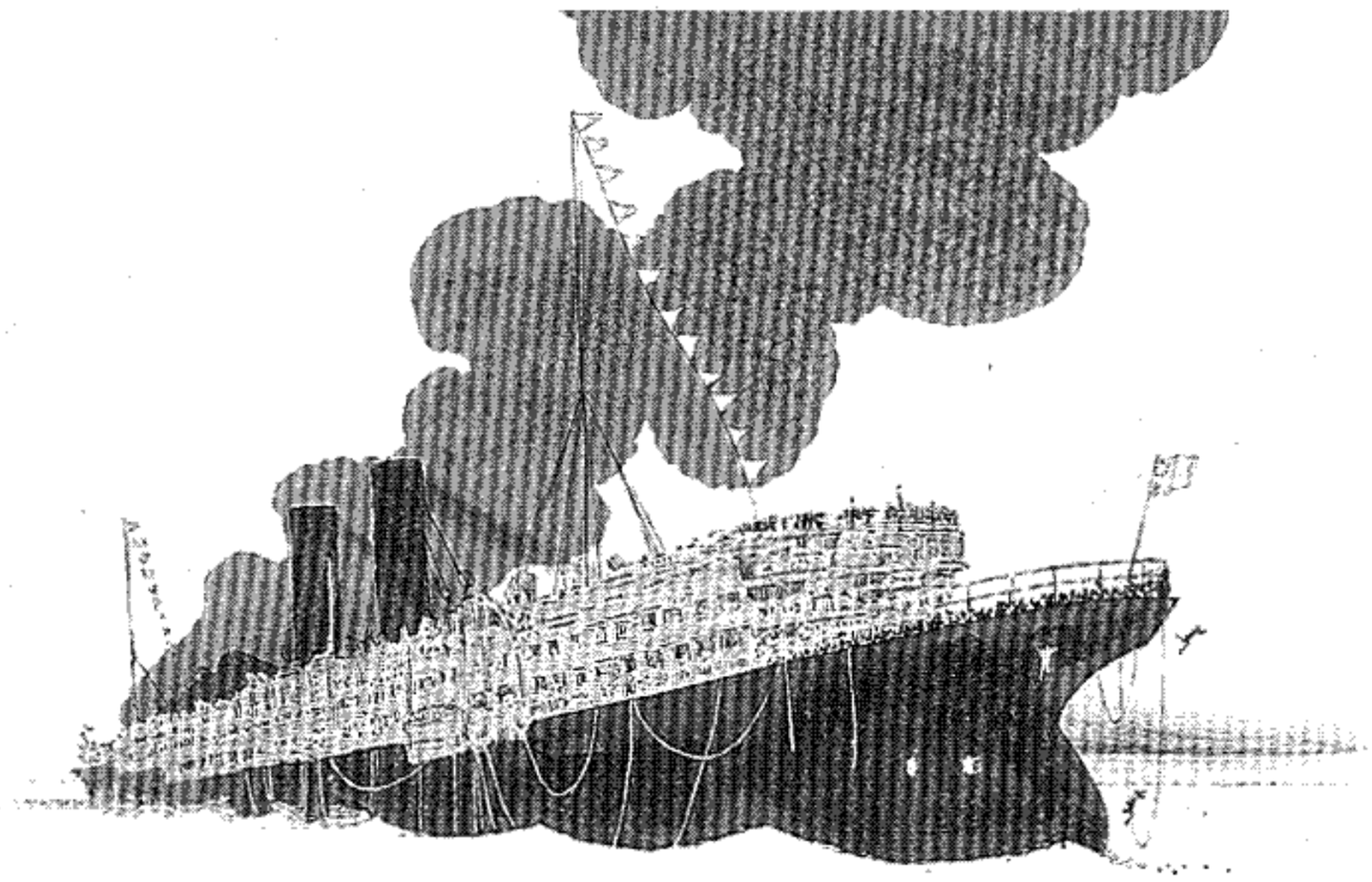
Winsor McCay, brilliant creator of the popular comic strip *Little Nemo in Slumberland*, was the first man to try to develop animation as an art form. Inspired by his young son bringing home some flipper books, he made 4000 drawings of 'Little Nemo' move. These were a big hit when flashed on the screen at Hammerstein's theatre in New York in 1911.

As another experiment he drew a bizarre short film, *How a Mosquito Operates*, which was also enthusiastically received.



Then in 1914 McCay drew *Gertie the Dinosaur* and McCay himself performed 'live' in front of the projected animation, holding an apple in front of Gertie and inviting her to eat. Gertie lowered her long neck and swallowed the fruit – astounding the audience. This was the first 'personality' animation – the beginnings of cartoon individuality. It was so lifelike that the audience could identify with Gertie. It was a sensation.

In McCay's words: 'I went into the business and spent thousands of dollars developing this new art. It required considerable time, patience and careful thought – *timing and drawing* the pictures [my italics]. This is the most fascinating work I have ever done – this business of making animated cartoons live on the screen.'



McCay also made the first serious dramatic cartoon, *The Sinking of the Lusitania*, in 1918. A war propaganda film expressing outrage at the catastrophe, it was a huge step forward in realism and drama – the longest animated film so far. It took two years of work and needed 25,000 drawings.

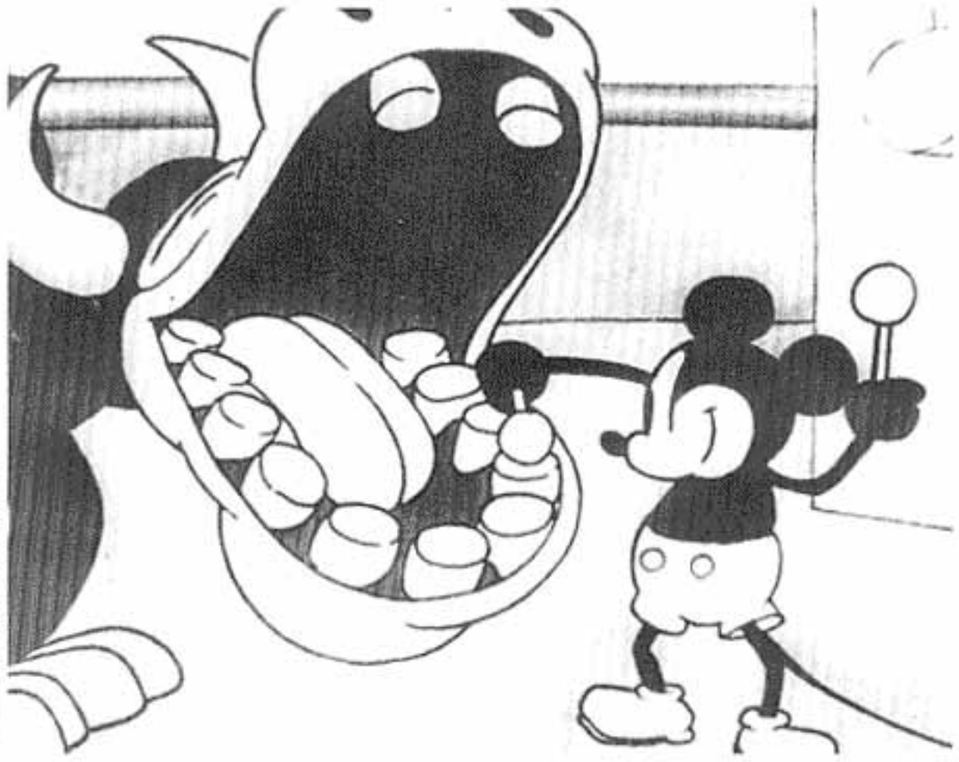
Later, as an older man being celebrated by the younger funny-cartoon animators in the business, McCay lashed out at them saying that he had developed and given them a great new art form which they had cheapened and turned into a crude money-making business done by hack artists.

This well defines the endlessly uncomfortable relationship between the pioneering artist/idealist and the animation industry – working to comfortable and predictable formulas.

Still doth the battle rage . . .

In the twenties Felix the cat became as popular as Charlie Chaplin. These short Felix cartoons were visually inventive, doing what a camera can't do. But more importantly a real personality emerged from this flurry of silent, black and white drawings and Felix 'himself' connected with audiences worldwide.

The Felix cartoons led straight to the arrival of Walt Disney, and in 1928, Mickey Mouse took off with his appearance in *Steamboat Willie* – the first cartoon with synchronised sound.

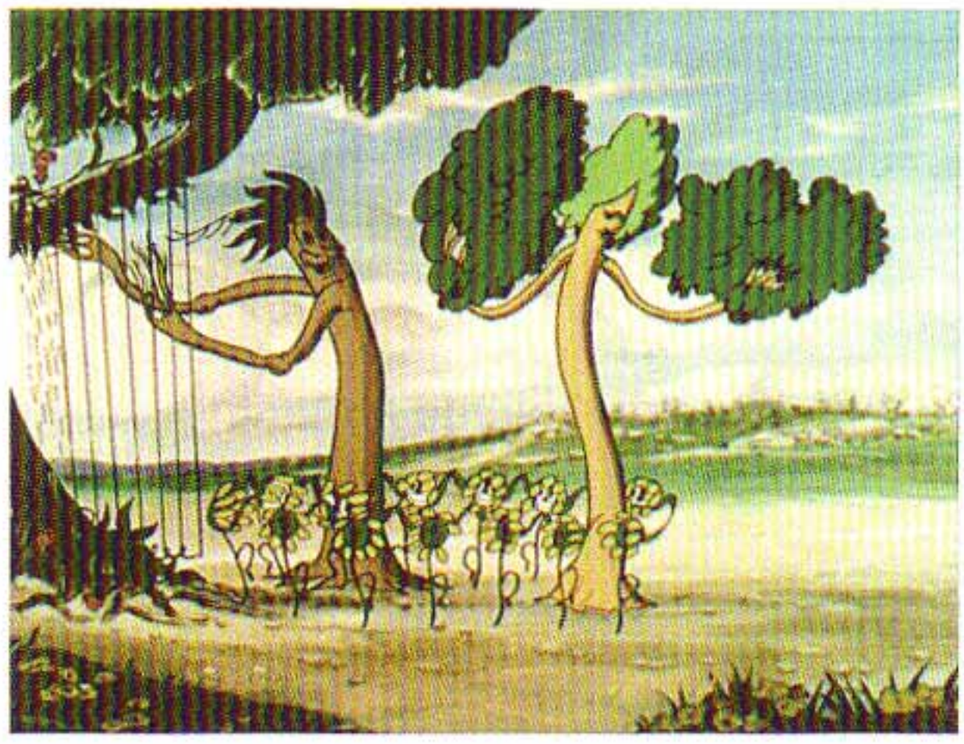


© Disney Enterprises, Inc.

The brilliant Ward Kimball, who animated Jiminy Cricket in *Pinocchio* and the crows in *Dumbo*, once told me, 'You can have *no idea* of the impact that having these drawings suddenly speak and make noises had on audiences at that time. People went crazy over it.'

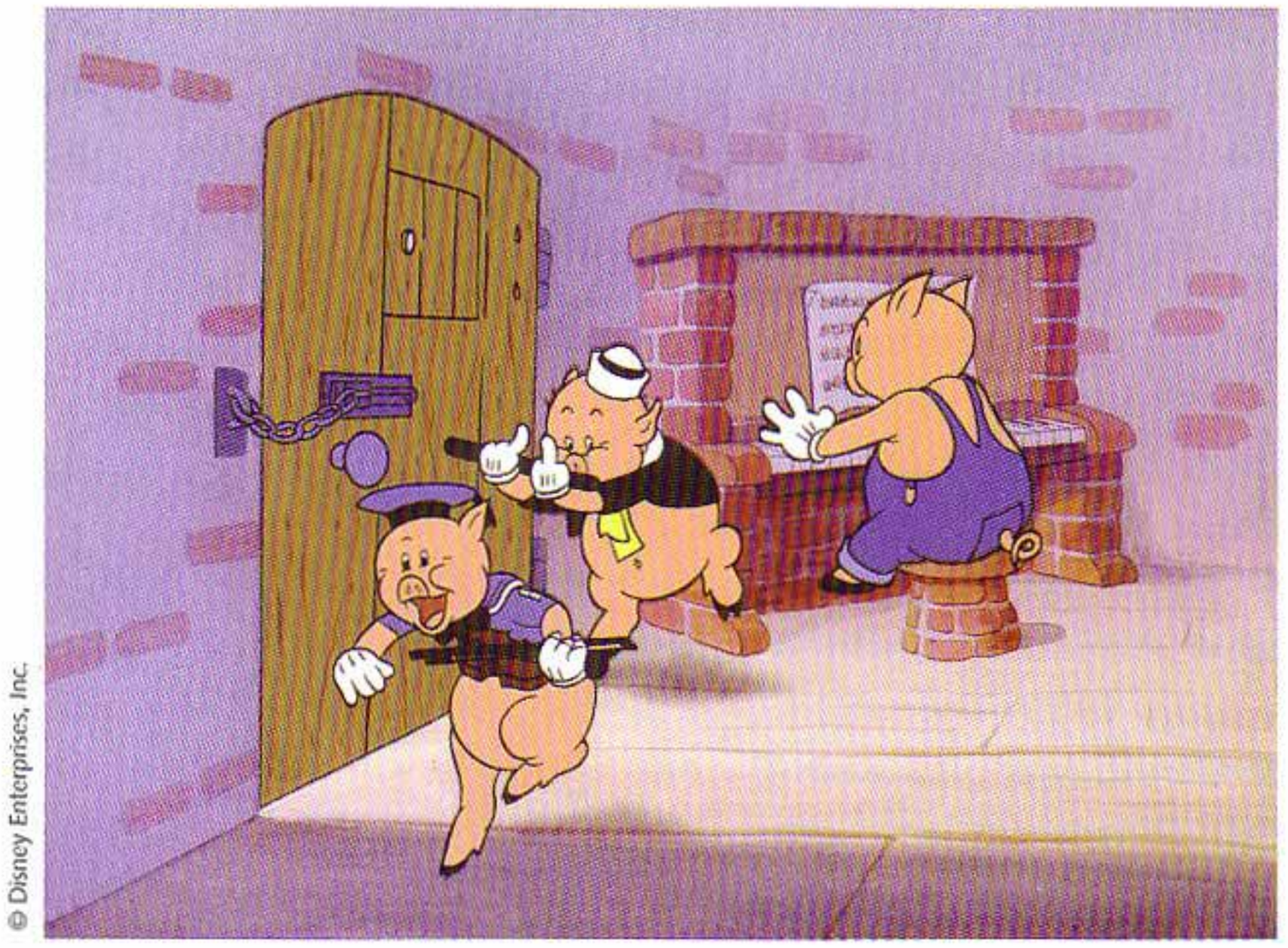
© Disney Enterprises, Inc.

Disney followed *Steamboat Willie* with *The Skeleton Dance*. For the first time, action was co-ordinated with a proper musical score. This was the first *Silly Symphony*. Ub Iwerks was chief animator on both films and a lot of the sophisticated action of *The Skeleton Dance* still holds up today.



© Disney Enterprises, Inc.

Disney leapt forward again in 1932 with *Flowers and Trees* – the first full colour cartoon.



Then he followed it one year later with *Three Little Pigs*. This had a major impact because of its fully developed 'personality' animation – clearly defined and believable separate personalities acting so convincingly that the audience could identify with and root for them. Another first.

Astonishingly, only four years after that, Disney released *Snow White and the Seven Dwarfs*, the world's first fully-animated feature-length film, raising cartoon drawings to the level of art and holding the audience spellbound for eighty-three minutes. A truly staggering feat accomplished in an incredibly short space of time. (It's said that many of the artists booked themselves in advance into hospital to recover from the effort of completing the film.)

The tremendous financial and critical success of *Snow White and the Seven Dwarfs* became the foundation of Disney's output and gave birth to the 'Golden Age' of animation: *Pinocchio*, *Dumbo*, *Bambi* and *Fantasia*, as well as the *Silly Symphonies* and Donald Duck and Mickey Mouse shorts.

Surrounding the potent Disney centre were the satellite studios: Max Fleischer with two features – *Gulliver's Travels* and *Mr Bug Goes to Town* – and Popeye shorts; Warner Bros' Looney Tunes and Merrie Melodies with Bugs Bunny, Daffy Duck, Porky Pig; MGM with Tom and Jerry, Droopy and the great anarchic Tex Avery shorts, and Walter Lantz with Woody Woodpecker. Fed as they were by the knowledge and expertise emanating from the Disney training centre, their much wilder humour was often in reaction to or in rebellion against Disney 'realism' and 'believability'.

But after the Second World War the situation changed.

The arrival of television and its voracious appetite for rapidly produced product demanded simpler and cruder work. 1950s stylisation gave birth to UPA studios in Hollywood who created Mr. Magoo and Gerald McBoing Boing. UPA's approach was regarded as more graphically sophisticated than Disney and used more 'limited' and much less realistic animation. At the same time there was a worldwide flourishing of personal, experimental and 'art house' animated films made in new ways with many different techniques and with very different content to the Hollywood product. Animators were reinventing the wheel stylistically but were ignorant of the structural knowledge developed in Hollywood's Golden Age.

This knowledge, though residing in the hands of the originators, was generally ignored as being 'old hat' or was forgotten in the following thirty years.

However, in the last few years, the renaissance of animation as a form of mass entertainment is giving rebirth to the old knowledge. The startlingly successful innovations of computer animation are helping to transform animation in all it's multi-faceted forms into a major part of the entertainment mainstream. Alongside this, there is also the explosion in the computer games industry.

If drawn 'classical' animation is an extension of drawing, then computer animation can be seen as an extension of puppetry – high tech marionettes. Both share the same problems of how to give a performance with movement, weight, timing and empathy.

The old knowledge applies to *any* style or approach to the medium no matter what the advances in technology. Most of the work methods and devices in this book were developed and refined in the Hollywood animation studios between 1930–1940.

I've co-ordinated what I've learnt from various approaches and I'm presenting it here in a form based on my own experience in this medium – with its limitless possibilities of imagination.

Emery Hawkins said to me, 'The only limitation in animation is the person doing it. Otherwise there is no limit to what you can do. And why shouldn't you do it?'

I meticulously painted this poster for the 1981 London Film Festival. Everybody said, 'Oh, I didn't know you did collage.'